

Summary of Comments on Consultation Paper 56- CEIOPS-CP-56/09				CEIOPS-SEC-119-09
CP No. 56 - L2 Advice on Tests and Standards for Internal Model Approval				
<p>CEIOPS would like to thank: AAS BALTA, AB Lietuvos draudimas, Association of British Insurers, Association of Run-off Companies, BARRIE & HIBBERT, CEA, ECO-SLV-09-451, CODAN Forsikring A/S (10529638), Denmark, CODAN Forsikring (Branch Norway) (991 502 491), CRO Forum, Danish Insurance Association, DIMA (Dublin International Insurance & Management , Dutch Actuarial Society – Actuarieel Genootschap (, EMB Consultancy LLP, European Union member firms of Deloitte Touche To, Federation of European Accountants (FEE), FFSA, German Insurance Association – Gesamtverband der D, GROUPAMA, Groupe Consultatif , Institut des actuaires, International Underwriting Association of London, Investment & Life Assurance Group (ILAG), Ireland\39s Solvency 2 Group, Just Retirement Limited, KPMG ELLP, Legal & General Group, Link4 Towarzystwo Ubezpieczeń SA, Lloidy\39s, Munich RE, Pearl Group Limited, PricewaterhouseCoopers LLP, RBS Insurance, ROAM – , RSA Insurance Group PLC, RSA Insurance Ireland Ltd, RSA\32\45\32Sun Insurance Office Ltd., SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799), and XL Capital Ltd</p> <p>The numbering of the paragraphs refers to Consultation Paper No. 56 (CEIOPS-CP-56/09)</p>				
No.	Name	Reference	Comment	Resolution
1.	AAS BALTA	General Comment	<p>1) We support the principles based approach that is advised in CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed</p>	<p>Noted</p> <p>Not the size is important but the content. The content of the blue box is principle based. The amount of words does not lead to a change of a principle based approach into a rule based approach.</p> <p>CEIOPS developed advice that, in our view, reflected good practice in insurers’ models.</p>

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			<p>and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	<p>Noted</p> <p>Noted</p> <p>Noted</p>
2.	AB Lietuvos draudimas	General Comment	<p>1) We support the principles based approach that is advised in CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p>	Please see our comment on 1

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		<p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
3.		Confidential comment deleted.	
4.	Association of British Insurers	<p>General Comment</p> <p>The ABI broadly welcomes this paper which provides some helpful advice and interpretation on the different tests firms will have to comply with for the approval of their internal model. We welcome in particular:</p> <p><input type="checkbox"/> Use test – We welcome the principles based approach taken by CEIOPS</p>	Thank you

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		<div><div><div><input type="checkbox"/> The framework set out for internal models governance.</div><div><input type="checkbox"/> Statistical quality standards - We agree less rich probability distribution forecast should be allowed for.</div><div><input type="checkbox"/> Calibration - We agree with that CEIOPS firms should have the choice to use a different time horizon from one year, provided it can demonstrate equivalence.</div></div><div>We are concerned however by the following:</div><div><div><div><input type="checkbox"/> The use of internal model should be encouraged and should not become so burdensome that it would discourage firms to move away from the standard formula. Whilst the majority of the proposals seem sensible individually, taken as a whole, they could have significant operational implications in order to prepare, document and demonstrate compliance to the regulator.</div><div><input type="checkbox"/> Potential excessive efforts for groups (ensuring group-wide consistency of approaches, data, etc.)</div><div><input type="checkbox"/> Use test - We would interpret the list of uses provided as general guidance and not as binding requirements as this would not fit all companies (particularly for companies whose parent is outside the EU) and as the use test is an evolving test that will require flexibility when being implemented (as was seen when Basel II was applied). The list of uses should therefore be seen as an illustration of best practice.</div><div><input type="checkbox"/> Some documentation and validation requirements seem unrealistic, especially regarding expert judgement and external</div></div></div></div>	<div>Noted</div> <div>Noted</div> <div>CEIOPS does not intend the list of uses to be binding. However, we consider that it is the responsibility of the undertaking to set out the uses of the internal model in its application, and to link these to the scope of the internal model.</div>	

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			models <input type="checkbox"/> Differences between financial reporting and solvency II should be minimised	The major problem with proprietary external models is that they are - to a certain extent - a "black box" for users. The documentation and validation requirements for external models are supposed to alleviate the resulting problems thus allowing undertakings the use of sophisticated external models CEIOPS is of the opinion that this is very hard to handle because the reporting requirements are very different between the EU countries.
5.	Association of Run-off Companies	General Comment	The tests and standards for model approval outlined are reasonably prescriptive and will be onerous for small companies or those with limited resources. It is not clear how appropriate the SCR calculation will be to general insurance companies in run-off, particularly those with specialised portfolios. Run-off entities may feel compelled to develop an internal model for a realistic assessment of the capital required to support the business but may lack the resources to gain approval successfully. It is not clear how the principles of proportionality will apply here and to what level partial models will be acceptable or achievable.	The regulation and application for internal models are principle based and oriented at the risks of the undertaking. This interpretation includes already the proportionality principle.
6.			Confidential comment deleted.	
7.	BARRIE & HIBBERT	General Comment	B+H are happy to discuss the attached comments in person or on a call.	Thank you

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8.	CEA, ECO-SLV-09-451	General Comment	<p>The consultation paper is well structured and covers the essential aspects with regard to the approval of internal models. We appreciate the effort that went into clarifying these important aspects that provide the base to operate internal models under Solvency II.</p> <p>The CEA however recognizes five potential areas of concern:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The implicit expectation of how the model might be used by companies <ul style="list-style-type: none"> - There is an expectation that many of the uses of the model (in the 'use test') are based only on the application of the SCR. - Companies should use the same model across its applications however it may use different measures (e.g. 1-in-20 earnings at risk rather than 1-in-200 capital) for different purposes. <input type="checkbox"/> The validation requirements as well as some of the documentation and data requirements seem unrealistic, especially regarding expert judgement and external models <ul style="list-style-type: none"> - There is an unrealistic expectation that any expert judgement should be refutable, testable and falsifiable. <input type="checkbox"/> Prescriptive model governance with potential excessive effort for groups <ul style="list-style-type: none"> - Quite prescriptive model governance section and partially 	<p>Thank you</p> <p>That is why we demand only one modelling framework. So we want the undertaking to use the model within their steering process and we want them to use the model for the regulatory requirements. But we also recognize that we can not force the undertaking to use the internal model for every business decision. That is why we focussed on decisions with a big impact on the financial stability of an undertaking. Nevertheless we do not expect the undertaking to use the results of the model blindly.</p> <p>The major problem with proprietary external models is</p>

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			<p>unrealistic involvement of top level management in internal modelling.</p> <ul style="list-style-type: none"> - Potential excessive efforts for groups (ensuring group-wide consistency of approaches, data, etc.). <p><input type="checkbox"/> Perceived preference for full stochastic approaches compared to deterministic ones</p> <ul style="list-style-type: none"> - The approaches have to be appropriate for the particular purpose. In some cases deterministic approaches are appropriate and in some cases not. <p><input type="checkbox"/> The purpose of P&L attribution and risk rankings remain unclear</p> <p><input type="checkbox"/> In order to allow for the validation of internal models as soon as Solvency II comes into force, we would expect Ceiops to produce level 3 guidance on internal models earlier in the process.</p> <ul style="list-style-type: none"> - Indeed, given the importance of internal models and the benefits a more accurate assessment and quantification of a company's risk exposure will bring to undertakings and policyholders, it is crucial that supervisors are in the position to approve internal models as soon as Solvency II comes into force. 	<p>that they are - to a certain extent - a "black box" for users. The documentation and validation requirements for external models are supposed to alleviate the resulting problems thus allowing undertakings the use of sophisticated external models</p> <p>We are of the opinion that if someone does not understand the internal model how should he bases his decisions on it. The top management has to take decisions which have got a material impact on the undertaking e.g. strategic decisions. So we are not of the opinion that the involvement of the top management is unrealistic as it is now written in the CP 56.</p> <p>Thank you CEIOPS may consider this on Level 3 guidance.</p> <p>Thank you we have noted this.</p>

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				Thank you we have noted this.
9.	CODAN Forsikring A/S (10529638), Denmark	General Comment	<p>1) We support the principles based approach that is advised in CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too "rules based" resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term "diversification" is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	<p>Please see our comment on 1.</p> <p>Thank you CEIOPS may consider this on Level 3 guidance.</p>

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10.	CODAN Forsikring (Branch Norway) (991 502 491)	General Comment	<p>1) We support the principles based approach that is advised in CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	<p>Please see our comment on 1.</p> <p>Please see our comment on 9.</p>

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11.	CRO Forum	General Comment	<p>56.A Solo undertakings as part of a group should be allowed to place more reliance on group expertise (priority: very high)</p> <p>In a number of areas covered by this consultation paper, it is not clear how requirements will be set for solo undertakings which are part of a group and where the group internal model is used. The solo undertaking should be allowed to place some reliance on group expertise. More advice in this area would be useful. This holds particularly for requirements on internal model governance, validation and documentation. In the case of a Group model, the model governance (both high level governance and detailed governance) may be performed primarily at Group level. At the level of single undertakings the governance may be limited to assessing at the high level whether the Group model is appropriate for the risk profile of the undertaking.</p> <p>3. 56.B Governance and internal controls important for standard model firms (priority: very high)</p> <p>4. In general we would like to point out that many of the requirements around governance and internal controls, set-out in this consultation paper, are as important for companies using a standard model as for companies using an internal model.</p> <p>5. 56.C Overly onerous process and documentation requirements (priority: high)</p> <p>6. In a number of areas the requirements on processes and documentation are overly onerous, especially in comparison with the requirements for standard models. For example with respect to the use of expert judgement.</p>	<p>Article 229 will be interpreted in such a way, that solo undertakings belonging to a group and that shall be integrated into the group internal model in order to calculate the Group SCR, have to sign as well the application formular submitted by the parent undertaking to the group supervisor</p> <p>Thank you for this comment. This was our intention. The internal model governace part is just one extra part for undertakings which use an internal model. But all of the undertakings have to fullfill the governace requirements as</p>

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				they are written under the article 42 to 49 of the level one text. Thank you we have noted this.
12.	DIMA (Dublin International Insurance & Management	General Comment	<p>DIMA welcomes the opportunity to comment on this paper.</p> <p>Comments on this paper may not necessarily have been made in conjunction with other consultation papers issued by CEIOPS.</p> <p>The onerous requirements of the internal model reduce the scope for undertakings to adopt them as a matter of commercial benefit; as such the preponderance of smaller undertakings may well be forced to rely on the Standard Formula as supplemented by the ORSA. This may represent a lost opportunity to encourage engagement with the internal model agenda. Furthermore, such a system may place a heavier burden on the supervisory review process and the Capital Add On regime than initially entertained as such we would appreciate a more integrated consideration of the balance between these systems.</p> <p>Further clarification is needed on where responsibilities lie (risk managers, actuaries, etc) where an internal model is used.</p> <p>While we cannot argue with the rationale of the many requirements, it sets the bar for the development, documentation, scrutiny and approval of internal models at such a high level that the likelihood of companies having their internal models approved by supervisory authorities over the next 18 months appears to be somewhat untenable. As a result, it is likely that many small and medium-sized companies would find it hard to justify using an internal models on a cost/benefit basis, even where internal models are actually being used to manage the business, which appears to</p>	<p>Thank you. But this is still in the level 1 Text. Here article 19 explains the principle of proportionality.</p> <p>Thank you we have noted this.</p>

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			<p>go against the ethos of Solvency II.</p> <p>The use test requirements proposed by the paper are very stringent. It could be difficult to demonstrate the wide use of models in decision-making; this implies senior management has a hands-on knowledge of the model. Clarification is required about if the model output needs to be the key decision factor or one of the decision-making factors.</p> <p>It is important to ensure that all supervisors are interpreting the principles for the use test in the same way, though it is not clear how this can be achieved.</p>	<p>CEIOPS thinks that it must be an important factor in decision making. The management must always be able to explain why it did not choose the internal model output as the main decision factor.</p> <p>Thank you. CEIOPS may consider this on Level 3 guidance.</p>
13.	Dutch Actuarial Society – Actuariel Genootschap (General Comment	<p>We are familiar with the (draft) Comments of Group Consultatif on CP56. The Actuariel Genootschap also supports their comments.</p> <p>We emphasize that the Dutch AG supports this principle based approach and that we see an important role for actuaries in the development, implementation and validation of the internal model.</p> <p>We note that this level 2 document tends in certain areas to rule based supervision as opposed to principle based supervision. Rule based supervision tends to end in overkill and may demand a significant amount of additional scarce (actuarial and non-actuarial) resources, both from the insurance companies as well as from the supervisor. This holds in particular for the amount and detail of documentation that is required.</p> <p>The requirements may imply that no company will be able to qualify for the use of a full model for Solvency II purposes by 2012. We emphasize therefore that the approval process should also be</p>	<p>Thank you.</p> <p>CEIOPS will consider this under its work on the pre-application paper.</p>

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			<p>focussed on proportionality and materiality.</p> <p>We would like to know if CEIOPS will prepare (additional) guidelines for requirements for insurance companies when they would like to start the (pre) application phase. These guidelines should enable a European level playing field with respect to the approval of internal models. In particular, the Dutch insurance sector has been encouraged to participate in RISK, a study largely similar to QIS4 but on 2008 year-end figures. We wonder whether participation in such an exercise may be a requirement in order to qualify for the use of an internal model.</p> <p>An insufficient fit of the standard formula to the company is a possible motivation to go for the internal model. However, we remark that both company and supervisor have a role in determining the fit of the standard model to the risk profile of the company in order to prevent cherry picking. In that light, we are looking forward to see the consultation paper on Partial Internal models.</p> <p>The requirements to apply for an internal model are quite severe. But for the calculation of the fair value of the liabilities and the required capital by means of the standard formula, these requirements are not implied. A lot of the data and methods required for the calculation of the fair value of the liabilities and the required capital (especially for non life) are also required for the internal model. This is therefore out of balance. We recommend posing equivalent requirements for the calculation of the fair value</p>	<p>See above</p> <p>Thank you we will consider this on our work on the PIM Paper.</p>

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			of the liabilities and the required capital by means of the standard formula.	
14.	EMB Consultancy LLP	General Comment	We have taken the approach of responding specifically to the paragraphs marked as CEIOPS" advice rather than the peripheral paragraphs.	Noted
15.	Federation of European Accountants (FEE)	General Comment	Generally, we consider the Paper's proposals to be comprehensive and capable of practical and consistent application. This situation is reflective of the prior communication between CEIOPS and relevant stakeholder groups, information gathered through the QIS process, as well as the CEIOPS "Stock-taking Report on the use of internal models in insurance".	Thank you we have noted this
16.	FFSA	General Comment	<p>The level of requirements in this consultation paper appears to be so stringent that FFSA fears it will be extremely difficult for any internal model to be validated by the supervisors in 2012. Therefore FFSA recommends that CEIOPS acknowledges the possibility to have some internal models validated in 2012 even if they do not strictly meet all criterias set out in this CP provided that (i) such model already complies with all the main objectives of this paper and (ii) the company commits on a timeframe to fully comply with the recommendations made in this CP. Of course, if a company doesn't follow its transitional plan, the supervisory approval could be withdrawn.</p> <p>In term of more specific details within this CP, FFSA thinks:</p> <ul style="list-style-type: none"> <input type="checkbox"/> There is an unrealistic expectation that any expert judgement should be refutable, testable and falsifiable. <input type="checkbox"/> Use test: principles-based assessment for the use test need to be defined in level 2 <input type="checkbox"/> CEIOPS envisage a high degree of embedding of the internal 	Thank you we have noted this

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			<p>model in both the risk management system and the wider business, including using the model to inform business strategy.</p> <p><input type="checkbox"/> Overall, the tests and standards for internal model approval remain relatively onerous.</p>	
17.			Confidential comment deleted.	
18.	German Insurance Association – Gesamtverb and der D	General Comment	<p>GDV appreciates CEIOPS' effort regarding the implementing measures and likes to comment on this consultation paper. In general, GDV supports the comment of CEA. Nevertheless, the GDV wants to add some comments to particular paragraphs and additionally summarises high level issues at the beginning of each section.</p> <p>It should be noted that our comments might change as our work develops. Our views may evolve depending, in particular, on other elements of the framework which are not yet fixed – e.g. specific issues that will be discussed not until the third wave is disclosed.</p> <p>The consultation paper is well structured and covers the essential aspects with regard to the approval of internal models. We appreciate the effort that went into clarifying these important aspects that provide the base to operate internal models under Solvency II.</p> <p>The GDV however recognizes five main areas of potential concern:</p>	Thank you we have noted this

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			<p>purpose. In some cases deterministic approaches are appropriate and in some cases not.</p> <p><input type="checkbox"/> The purpose of P&L attribution and risk rankings remain unclear</p> <p>In order to allow for the validation of internal models as soon as Solvency II comes into force, we would expect CEIOPS to produce level 3 guidance on internal models earlier in the process.</p> <p>Indeed, given the importance of internal models and the benefits a more accurate assessment and quantification of a company's risk exposure will bring to undertakings and policyholders, it is crucial that supervisors are in the position to approve internal models as soon as Solvency II comes into force.</p>	
19.	GROUPAMA	General Comment	Groupama would like to emphasize that it is not clear which requirements are needed for an internal model which is used in the company but which does not meet all the requirements of the Directive. The company in this case will use the standard formula for SCR calculations, but what level of requirements in terms of governance will be asked of the company?	For a undertaking which does not work with an internal model the requirements set out in the article 41 to 49 have to be fulfilled
20.	Groupe Consultatif	General Comment	The Groupe Consultatif welcomes the majority of the proposed advice put forward by CEIOPS in Consultation Paper 56. However, we would caution against the widespread use of absolute terms such as "all" and "every" throughout the advice and promote the principles of proportionality and materiality in setting the requirements (for example see our comments in 3.72, 6.39/41 and	Thank you we have noted this

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			<p>9.11).</p> <p>We understand that the consultation paper was developed in distinct parts by separate groups and believe that the paper would benefit from cross-references between the sections and the removal of obvious inconsistencies between sections.</p> <p>We would highlight that any model of the future will be subject to error and recommend that CEIOPS exercise some pragmatism when setting internal model standards to ensure that these standards are proportionate and achievable and that, as a result, there is an appropriate incentive for a better understanding of the risks within the undertaking. One key area in this regard is to recognise the important role of expert judgement in an internal model in both the presence and absence of historical data. We are concerned that the current draft advice sets some standards around the application of expert judgement that are impossible to fulfil and we would highlight our comments on 5.147 and 5.165-7.</p>	
21.	International Underwriting Association of London	General Comment	<p>Consistency between Supervisors in respect of their application of the use test is essential for harmonisation to be achieved.</p> <p>Whilst we recognise that opting for internal models will present a cost to firms, we would urge CEIOPS to ensure that excessive costs are not incurred which might unduly deter some firms from opting for an internal model. This might particularly be the case for some medium sized firms who do not have a typical risk-profile.</p> <p>Question: Section 9 - Level of documentation. If the level of detail required will vary according to the audience, could this result in several documents for the same purpose? Is this unduly onerous? Does this create practical difficulties, for example when it come to updating the documents (i.e. maybe discrepancies between these documents could develop over time?)</p>	Thank you CEIOPS will consider this on our work on the upcoming Level 3 pre-application paper.

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22.	Investment & Life Assurance Group (ILAG)	General Comment	<div><div><input type="checkbox"/> The CP is welcomed as providing clarity to many of the requirements.</div><div><input type="checkbox"/> The internal model requirements are significant. For a wide range of firms (small to medium sized, or firms with simpler risk profiles) the approach is unlikely to be appealing.</div><div><input type="checkbox"/> The associated costs on implementing and maintaining an internal model will be significant.</div><div><input type="checkbox"/> Achieving full internal model approval in the timescales set out will be difficult for many firms.</div><div>There seems to be a conflicting requirement of flexibility in the model to meet the use test (ability to produce quick updates, to use model for planning, strategy, etc) and the other requirements for statistical quality, documentation, etc. We would encourage a more proportionate approach to certain model applications.</div></div>	<div>Thank you</div> <div>Noted</div> <div>The principle of proportionality is a overall principle which comes out of the level one text (article 19)</div>
23.	Ireland's Solvency 2 Group	General Comment	We fear that many (re)insurers will be forced to rely on the Standard Model, because of the onerous standards that must be met for approval of internal models. This would be contrary to the objectives of the architects of Solvency II. Such an outcome would also place a heavier burden on the supervisory review process.	Noted

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24.	Just Retirement Limited	General Comment	<p>We generally welcome the content of this paper, and believe the proposed tests to be reasonable.</p> <p>However we do not believe that enough information is provided on the application of the proportionality principle in the context of the internal model and the way in which the tests would be applied to smaller entities, less material product lines and/or less material risks. In particular the requirements, as proposed, for documenting and justifying the use of expert judgement, external models and external data are disproportionate for many undertakings and for the majority of uses to which they are likely to be put.</p> <p>Further information on this needs to be provided within the final Level 2 rules.</p>	<p>Thank you we will consider this on our work on the upcoming Level 3 pre-application paper.</p> <p>The major problem with proprietary external models is that they are - to a certain extent - a “black box” for users. The documentation and validation requirements for external models are supposed to alleviate the resulting problems thus allowing undertakings the use of sophisticated external models</p>
25.	KPMG ELLP	General Comment	Overall we believe the proposals put forward by CEIOPS are reasonable. However, we would wish CEIOPS to consider the totality of the requirements as they will generate a significant burden on firms and also bear in mind pragmatism in the approach to internal model approval especially in the area of expert judgement.	Please see our comment on 1
26.	Legal & General Group	General Comment	The majority of the proposals seem sensible individually but as a whole there are significant operational implications in order to prepare, document and demonstrate compliance to the regulator.	Thank you
27.	Link4 Towarzystw	General Comment	1) We support the principles based approach that is advised in CP56. However, the blue text has a tendency to have too much	Please see our comment on 1

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	o Ubezpieczeń SA		<p>detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
28.	Lloyd's	General Comment	<p>Lloyd's welcomes the opportunity to comment on CP56.</p> <p>We welcome the principles-based approach, which is certainly more</p>	<p>Thank you we have noted this</p> <p>Please see also our comment on 1</p>

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			<p>appropriate than a rules-based approach for undertakings that have unique or unusual features. However, we are concerned that the guidance is too detailed or too prescriptive in some places (see detailed feedback that follows). There is also sometimes a “counsel of perfection” which, whilst understandable, may make it very hard for any models to ever actually gain approval. In a number of places we feel that the guidance should refer explicitly to the principle of proportionality.</p> <p>We have particular concerns over the approach set out in respect of “expert judgment “. This seems to be viewed with some suspicion but, on a wider interpretation, it is essential throughout the construction and operation of a model, and the guidance should flag this up, with the onus on firms showing that there is ENOUGH of it. The various concerns and controls raised in the guidance seem to reflect a very narrow interpretation, along the lines of “setting assumptions, etc, differently from what the data suggests.”</p> <p>Additionally, we have concerns over certain elements of the requirements set out in respect of data. In non-life insurance, it is very unusual that any data can be considered complete and appropriate, according to the definitions set out in the guidance. Therefore, “demonstrating” completeness and appropriateness will rarely be possible. What is important is to demonstrate that any issues regarding the completeness and appropriateness of the data have been identified, understood and appropriately taken account of.</p> <p>We also believe that the guidance seems to take more comfort than it should from validations against experience - there is only a tiny increment in experience each year, and it is by definition usually going to be far from the extremes that should drive the SCR.</p>	

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			<p>The requirements for the use of the internal model generally appear reasonable. There is a significant step up in the degree to which the model needs to be embedded compared to requirements under the ICAS regime. The overriding principle that the model should be widely and consistently used within the undertaking for it to be approved is good.</p> <p>We believe some of the principles – for example principles 3,4,5,8 and principles 6 and 9 have significant overlap and could be combined.</p>	
29.	Munich RE	General Comment	<p>We fully support all of the GDV statements and would like to add the following points:</p> <p>We appreciate the effort that went into clarifying these important aspects that provide the base to operate internal models under Solvency II.</p> <p>However, certain aspects of the CP may provide considerable efforts just in terms of documentation requirements. Here especially the described policies for data and validation may create substantial burden at the undertakings. Also there is a danger that different supervisors will require different standards. It should be considered to have a smooth introduction, e.g. by using the pre-approval process. In general we think it is important that the proportionality principle is applied to not create excessive burden on undertakings.</p> <p>In some cases it is not clear how requirements will be set for solo undertakings which are part of a group. The solo undertaking should be allowed to place some reliance on group expertise.</p>	Agreed, this is allowed, it is a delegation of tasks not of responsibilities.

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30.	Pearl Group Limited	General Comment	<p>We welcome this paper which provides some helpful advice and interpretation on the different tests we will have to comply with for the approval of their internal model.</p> <p>We are concerned by the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prescriptive model governance with potential excessive effort for groups <ul style="list-style-type: none"> - Quite prescriptive model governance section and partially unrealistic involvement of top level management in internal modelling - Potential excessive efforts for groups (ensuring group-wide consistency of approaches, data, etc.) <input type="checkbox"/> Use test - We would interpret the list of uses provided as general guidance and not as binding requirements as this would not fit all companies and as the use test is an evolving test that will require flexibility when being implemented (as was seen when Basel II was applied). The list of uses should therefore be seen as an illustration of best practice. <input type="checkbox"/> Some documentation and validation requirements seem unrealistic, especially regarding expert judgement and external models <p>We would also appreciate further guidance on the following points</p> <ul style="list-style-type: none"> <input type="checkbox"/> There are only a couple of places that refer to the 	<p>Thank you we have noted this</p> <p>The major problem with proprietary external models is that they are - to a certain extent - a "black box" for users. The documentation and validation requirements for external models are supposed to alleviate the resulting problems thus allowing</p>

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			<p>administration or management body as a group. This implies that in the other cases each member of the management body is meant to have the required knowledge / understanding. This seems impractical and would in practise restrict who could be Non Executive Directors.</p> <p><input type="checkbox"/> Throughout the CP CEIOPS refers to rerunning the (full) Internal Model. However, in some cases it is more likely/practical that only the calculation kernel will be rerun. CEIOPS should be more specific about where they mean the Internal Model and where they mean the calculation kernel.</p> <p><input type="checkbox"/> In several places, e.g. Principle 2 [3.106a in the CP] it is implied that the Internal Model has to be consistent with the technical provisions. This could be read as technical provisions have to be calculated stochastically. This would not be appropriate for some business, e.g. non-profit. CEIOPS should explicitly state what is expected for the calculation of the technical provisions.</p>	undertakings the use of sophisticated external models
31.	PricewaterhouseCoopers LLP	General Comment	<p>Overview</p> <p>This consultation paper is an excellent step forward in defining the standards for granting approval for internal models, and in giving the insurance industry a good base for their work with internal models.</p>	Thank you.
32.	RBS Insurance	General Comment	<p>We welcome this paper, which brings more clarity to our understanding of the standards required for internal model approval. In our detailed comments we have highlighted areas where we feel consistency with other consultations (eg- CP43, CP55) would be helpful, and also areas where we believe it is</p>	Thank you

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			important that proportionality is applied in the application of the guidelines to avoid undue burden on undertakings. We support the principles based approach to the use test for the internal model.	
33.			Confidential comment deleted.	
34.	ROAM –	General Comment	<p>The level of requirements in this consultation paper appears to be so stringent that ROAM fears it will be extremely difficult for any internal model to be validated by the supervisors in 2012. Therefore ROAM recommends that CEIOPS acknowledges the possibility to have some internal models validated in 2012 even if they do not strictly meet all criteria set out in this CP provided that (i) such model already complies with all the main objectives of this paper and (ii) the company commits on a timeframe to fully comply with the recommendations made in this CP. Of course, if a company doesn't follow its transitional plan, the supervisory approval could be withdrawn.</p> <p>In term of more specific details within this CP, ROAM thinks:</p> <ul style="list-style-type: none"> <input type="checkbox"/> There is an unrealistic expectation that any expert judgement should be refutable, testable and falsifiable. <input type="checkbox"/> Use test: principles-based assessment for the use test need to be defined in level 2 <input type="checkbox"/> CEIOPS envisage a high degree of embedding of the internal model in both the risk management system and the wider business, including using the model to inform business strategy. <input type="checkbox"/> Overall, the tests and standards for internal model approval remain relatively onerous. 	Thank you we have noted this
35.	RSA	General	1) We support the principles based approach that is advised in	Please see our comments on 1

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	Insurance Group PLC	Comment	<p>CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
36.	RSA	General	1) We support the principles based approach that is advised in	Please see our comments on 1

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	Insurance Ireland Ltd	Comment	<p>CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
37.	RSA - Sun	General	1) We support the principles based approach that is advised in	Please see our comments on 1

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	Insurance Office Ltd.	Comment	<p>CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
38.	SWEDEN:	General	1) We support the principles based approach that is advised in	Please see our comments on 1

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	Trygg-Hansa Försäkrings AB (516401-7799)	Comment	<p>CP56. However, the blue text has a tendency to have too much detail and be too prescriptive over many of the tests. This is dangerous as it may make the internal model too “rules based” resulting in a tick box exercise to fulfil the requirements for model approval. This is not a desirable outcome for the undertaking or for the regulator. It would be more desirable for the undertaking to specify what they intend to do for governance, build and testing as part of the approval process based on what is most useful for their business.</p> <p>2) Some clarification over the term “diversification” is needed. In many places the text infers that the total model is made up from separate models for various elements and then aggregated together to give the total model. Diversification is then discussed and appears to mean the difference between the total model result and the result that would be produced by simply summing the separate models.</p> <p>However, many models are not built in this way. Instead the model is built by applying risk drivers to the whole business directly producing the total model. Diversification in this case is the result of the way the risk drivers impact each part of the model. In our view this method produces a superior model but does make measurement of diversification effects harder to measure.</p> <p>CEIOPS should review section 5.228 – 5.250 to ensure that the meaning of diversification is clear and that the guidance covers all types of model that may be built.</p>	
39.	XL Capital	General	Overall we welcome the principles based approach that CEIOPS	Thank you we have noted this

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	Ltd	Comment	<p>propose for assessing compliance with the Internal Model Use test. However much of the wording of CP 56 and the requirements set out therein appear to be significantly more prescriptive than a principles based framework warrants. We believe that CP 56 should be written to allow more flexibility to allow the processes to be tailored appropriately given the size / nature / diversity of the company.</p> <p>We also have concerns about how CP56 can, in practice, be applied to a globally diversified group of companies with an internal model at the EEA solo entity level and also at the Group level.</p>	
40.	AAS BALTA	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	We do not propose reducing the number of principles as we consider that they cover the areas we wish to cover. However, we have re-ordered them to put all the risk management ones together.
41.	AB Lietuvos draudimas	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
42.			Confidential comment deleted.	
43.	CODAN Forsikring A/S (10529638), Denmark	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
44.	CODAN Forsikring (Branch	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.

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	Norway) (991 502 491)				
45.	CRO Forum	3.	The discussion on different possible uses is helpful but we strongly support the principle based approach. The list of uses (Annex A) is viewed as general guidance and indicative of best practice.	Thank you for these comments. They reflect our intention.	
46.	DIMA (Dublin International Insurance & Management	3.	Group model and solo model could in some cases give different results especially due to the consideration of diversification benefit at the group level, for instance for pricing purpose. To which extent could the group model be effectively used and the solo model considered only for SCR calculation? It is not mentioned which model gets the lead in the use test. Of the two models, clarification is required as to whether the tests and documentation are to be presented in one set or two separate processes.	CEIOPS may give more advice on group internal models in level 3 guidance. Our aim is to develop an assessment process for internal models that reflects the variety of internal model structures in use. We recognise that diversification effects at group level may lead to the group SCR being different to the total of solo SCRs.	
47.	German Insurance Association – Gesamtverb and der D	3.	(Use Test) The internal model shall be used within the scope of risk strategy and risk management if a significant impact of the undertaking's risk profile is to be expected. The administrative and management body should not have to be able to explain details of the model. It shall guarantee the appropriateness of the internal model by creating adequate	We assume that the impact referred to here is the impact of risk on the undertaking. CEIOPS would be surprised if an undertaking that developed an internal model did not use it in its risk strategy or risk management, regardless of the impact. CEIOPS explains in Principle 1 the extent of senior management understanding required. In order	

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			<p>organisational general conditions as well as by discussing the model and its results regularly.</p> <p>Some of the results (undertaking specific details) of the use test should only be part of supervisory reporting, but should not be disclosed generally.</p>	<p>for supervisory authorities to assess compliance with the Use test, we expect that this understanding will be demonstrated. We may publish level 3 guidance to supervisors on assessing senior management understanding of the internal model.</p> <p>We assume the final comment refers to 3.47. We are rewording this paragraph.</p>
48.	Link4 Towarzystwo Ubezpieczeń SA	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
49.	RSA Insurance Group PLC	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
50.	RSA Insurance Ireland Ltd	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
51.	RSA - Sun Insurance Office Ltd.	3.	Principle approach is sensible. However, the nine principles can easily be condensed into a smaller set.	Please see our comments on number 40.
52.	SWEDEN:	3.	Principle approach is sensible. However, the nine principles can	Please see our comments on

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	Trygg-Hansa Försäkrings AB (516401-7799)		easily be condensed into a smaller set.	number 40.
53.			Confidential comment deleted.	
54.			Confidential comment deleted.	
55.	KPMG ELLP	3.6.	We agree with the principle behind the use test that a model that is widely used and plays an important role in risk management is likely to prove to be more robust and rigorous than one that is not.	Thank you.
56.	XL Capital Ltd	3.6.	We agree with the basic philosophy of the use test that "if an undertaking does not trust its model sufficiently to use it, why should the supervisory authority?"	Thank you
57.	KPMG ELLP	3.8.	We agree that an internal model used actively for risk management and decision making will assist in protecting policyholders.	Thank you
58.	XL Capital Ltd	3.9.	We agree with CEIOPS' view that "undertakings will develop models that reflect their business needs and the structure of the business", however we feel that the high level of prescription within CP56 may hinder this, or even to prevent it being possible.	We are disappointed that you consider that CP56 has a high level of prescription. CEIOPS developed advice that, in our view, reflected good practice in insurers' models.
59.	KPMG ELLP	3.10.	We would also like to highlight that there is a potential risk of over-reliance on the use test as the 'acid test' as the (re)insurance undertaking may be relying on incorrect modelling assumptions. This risk is at least partially observable in the events of the last few years.	Thank you, we have noted this. In the other internal model requirements we have tried to counter this, and have also taken account of CEIOPS' report on lessons learned from the crisis. And we have also stated out that we do not expect the undertaking

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				to follow the output of the model without question (Principle 6).
60.	CEA, ECO-SLV-09-451	3.11.	In para 3.11 it is not yet clear how modelling framework is defined. Companies should have the freedom to also use different models than the risk model for certain business decisions, e.g. the risk model may not be granular enough to price of far out of the money-options and nevertheless may capture the risk profile of an the undertaking appropriately.	CEIOPS is keen that undertakings define the scope of the internal model and we discuss this in our CP on partial internal models. We have added more detail into 3.11 that should help.
61.	CRO Forum	3.11.	In para 3.11 it is not yet clear how modelling framework is defined. Companies should have the freedom to also use different models than the risk model for certain business decisions, e.g. the risk model may not be granular enough to price of far out of the money-options and nevertheless may capture the risk profile of the undertaking appropriately. Furthermore there maybe more criteria to address in parallel decision making.	Please see our response to 60
62.	European Union member firms of Deloitte Touche To	3.11.	There is a risk that CEIOPS has overestimated the synergies between management processes and the regulatory requirements of internal models. Management are interested in extreme events but they are also interested in more moderate events because these are more likely to happen. Management is interested in profits as well as possible losses. Management focus may be more on value (risk neutral) probabilities than the real world probabilities that underlie the SCR definition. Management perceptions of risks would include risks of failing to meet budget profit and risk of loss to shareholders, and threats to franchise value, in addition to the regulatory focus which is rightly restricted to a policyholder view. Management may focus on multiple horizons; own cost of funds (affected by own credit risk) may affect management view of	Our discussion of the statistical quality standards explains that CEIOPS expects undertakings to be interested in more than extreme events. This is the rationale for CEIOPS' desire for a complete probability distribution forecast to be output from the internal model. CEIOPS also expects all undertakings to develop a risk

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		<p>liabilities; and management view of liquidity premiums and risk margins may be different from those specified under the Solvency II liability valuations. Management view will incorporate the competitive landscape, growth prospects, customer retention and cross-sale perspective. Management have also learned to avoid excessive reliance on sophisticated quantitative models and to apply general reasoning and common sense.</p> <p>All of these aspects imply that a regulatory perspective focused on policyholder protection is likely to be only one of many inputs to management process. There is a concern that a requirement for "embedding" could pressurise firms to rely on solvency-focused models where these models are inappropriate. The result could be worse decisions, causing harm potentially to policyholders, shareholders and management themselves.</p>	<p>appetite, and we agree that many undertakings will include the aspects you describe. We also expect that the economic capital assessment will link to this risk appetite. CEIOPS also expects the undertaking not to follow the results without question. CEIOPS expects the undertaking to take the results into account during their decision making process.</p> <p>CEIOPS considers that these comments are perhaps looking at what we are trying to implement from solely the regulatory perspective. Our aim for internal models is to take advantage of the economic capital models developed by undertakings for their own risk management and decision-making in order to assess regulatory capital. In our view, the SCR will be one output from the internal model, among many outputs that the undertaking will need.</p>
63.	German Insurance Association	3.11.	<p>In para 3.11 it is not yet clear how modelling framework is defined. Companies should have the freedom to also use different models than the risk model for certain business decisions, e.g. the risk</p> <p>We give more information about our views on modelling framework in our CP on partial</p>

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	- Gesamtverb and der D		model may not be granular enough to price of far out of the money-options and nevertheless may capture the risk profile of the undertaking appropriately.	internal models. However, we consider that industry should be clear that the internal model is more than the calculation kernel. We have now added more detail to 3.11 to carify this.
64.	Groupe Consultatif	3.11.	It is not yet clear how the modelling framework is defined. Companies should have the freedom to also use different models than the risk model for certain business decisions.	Please see our response to 63
65.	KPMG ELLP	3.11.	In many (re)insurance undertakings various 'modelling tools' will be used for different purposes. We agree that these tools should be consistent but highlight that the purposes may require different calibrations and different levels of detail (e.g. to allow rapid updating or quick runs).	We agree and consider that principles 5 and 7 in particular cover this point.
66.			Confidential comment deleted.	
67.	Munich RE	3.11.	In 3.11. it is not yet clear how modelling framework is defined. Companies should have the freedom to also use different models than the risk model for certain business decisions, e.g. the risk model may not be granular enough to price of far out of the money-options and nevertheless may capture the risk profile of an undertaking appropriately.	Please see our response to 63
68.	XL Capital Ltd	3.11.	While we understand and agree with the sentiment behind this paragraph, the strong wording such as "insurance and reinsurance undertakings must have one and only one modelling framework" and " the model which is used for regulatory solvency capital requirements shall, for example, also be used for internal capital allocation" may be difficult to achieve in practice particularly where a global insurance and reinsurance group must allocate capital to businesses outside of the EEA.	See our response to 63

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69.	Federation of European Accountants (FEE)	3.13.	<p>We concur that the supervisor should use a principles-based assessment to assess compliance with the 'Use test' and that the foundation principle is "the undertaking's use of the internal model shall be sufficiently material to result in pressure to improve the quality of the internal model".</p>	<p>Thank you. This is a helpful point. CEIOPS has carefully considered the link between the Foundation Principles and the approval process, and we consider that the important link is the internal model change policy developed by an undertaking. We are considering the need for level 3 guidance on this point, as well as the link to the supervisory review policy. We are also including this topic in our continuing programme of pre-visits to undertakings in order to understand good practice.</p>
70.	KPMG ELLP	3.13.	<p>We support a principle based approach to assessing compliance with the use test.</p> <p>However, while we agree with the Foundation Principle that the undertaking's use of the internal model shall be sufficiently material to result in pressure to improve the quality of the internal model, we believe there is a danger that this could lead to regular re-approval processes being required for the model. There is therefore a need to define how the Foundation Principle and its aims fit with the approval and re-approval process for internal models outlined in CP37.</p>	<p>This is a helpful point. CEIOPS has carefully considered the link between the Foundation Principles and the approval process, and we consider that the important link is the internal model change policy developed by an undertaking. We are considering the need for level 3 guidance on this point, as well as the link to the supervisory review policy. We are also including this topic in our continuing programme of pre-visits to undertakings in order to</p>

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				understand good practice.
71.	XL Capital Ltd	3.13.	We support the foundation principle “the undertaking’s use of the internal model shall be sufficiently material to result in pressure to improve the quality of the internal model”	Thank you
72.	European Union member firms of Deloitte Touche To	3.14.	There will always be pressure to improve models from a technical perspective and there will always be constraints on available resources. We encourage CEIOPS to recognise that a model change that allows answers almost as good as before but at lower cost, could be an improvement.	Thank you, we have noted this.
73.	Lloyd’s	3.14.	We agree that the Foundation Principle will encourage the use of the internal model; however, we believe that care should be taken in the implementation of the principle, so that firms are not under pressure to make changes for their own sake	Thank you. We are considering the need for level 3 guidance on this point. Please also see our response to 70.
74.	DIMA (Dublin International Insurance & Management	3.16.	Fourth point: We suggest the sentence to be modified as follows: “The internal model is seemingly producing low results compared with the results of the undertaking’s ORSA or with other comparable results from other undertakings”.	Thank you, we have made this change.
75.			Confidential comment deleted.	
76.	KPMG ELLP	3.18.	One of the elements of the Use Test is to assess the impact of the model on the level playing field between undertakings. We believe more guidance is required regarding how this will be achieved in practice, both within Member States and across the EEA. It is likely that only supervisors will have access to the information required to assess elements e and f. There is therefore a need for supervisors to be transparent about the basis of their conclusions over these elements so firms can understand them fully.	CEIOPS is considering this as part of developing a consultation paper on the pre-application process for internal models.

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77.	AAS BALTA	3.19.	We strongly support the Principle based assessment route	Thank you	
78.	AB Lietuvos draudimas	3.19.	We strongly support the Principle based assessment route	Thank you	
79.	CODAN Forsikring A/S (10529638), Denmark	3.19.	We strongly support the Principle based assessment route	Thank you	
80.	CODAN Forsikring (Branch Norway) (991 502 491)	3.19.	We strongly support the Principle based assessment route	Thank you	
81.	Link4 Towarzystwo Ubezpieczeń SA	3.19.	We strongly support the Principle based assessment route	Thank you	
82.	Llody's	3.19.	We believe that harmonization across supervisors is ideal. The failings of a "detailed list" approach are noted. We favour a principle based assessment which gives a degree of flexibility to supervisory authorities. We believe that it is important the "use test" reflects the "use" for that firm and that the Internal Model is not developed to suit "prescribed use tests", as it is unlikely to adequately capture all risks and opportunities faced by all undertakings.	Thank you, that is our intention.	
83.	RSA	3.19.	We strongly support the Principle based assessment route	Thank you	

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	Insurance Group PLC				
84.	RSA Insurance Ireland Ltd	3.19.	We strongly support the Principle based assessment route		Thank you
85.	RSA - Sun Insurance Office Ltd.	3.19.	We strongly support the Principle based assessment route		Thank you
86.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.19.	We strongly support the Principle based assessment route		Thank you
87.	AAS BALTA	3.22.	Agree		Thank you
88.	AB Lietuvos draudimas	3.22.	Agree		Thank you
89.	CODAN Forsikring A/S (10529638), Denmark	3.22.	Agree		Thank you
90.	CODAN Forsikring (Branch Norway) (991 502 491)	3.22.	Agree		Thank you

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91.	Link4 Towarzystw o Ubezpieczeń SA	3.22.	Agree		Thank you
92.	RSA Insurance Group PLC	3.22.	Agree		Thank you
93.	RSA Insurance Ireland Ltd	3.22.	Agree		Thank you
94.	RSA - Sun Insurance Office Ltd.	3.22.	Agree		Thank you
95.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.22.	Agree		Thank you
96.	AAS BALTA	3.23.	Agree		Thank you
97.	AB Lietuvos draudimas	3.23.	Agree		Thank you
98.	CODAN Forsikring A/S (10529638), Denmark	3.23.	Agree		Thank you

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99.	CODAN Forsikring (Branch Norway) (991 502 491)	3.23.	Agree		Thank you
100.	Link4 Towarzystw o Ubezpieczeń SA	3.23.	Agree		Thank you
101.	RSA Insurance Group PLC	3.23.	Agree		Thank you
102.	RSA Insurance Ireland Ltd	3.23.	Agree		Thank you
103.	RSA - Sun Insurance Office Ltd.	3.23.	Agree		Thank you
104.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.23.	Agree		Thank you
105.	XL Capital Ltd	3.25.	We support a principle-based assessment approach.		Thank you

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106.	XL Capital Ltd	3.26.	We agree that this approach has important pros such as flexibility, but feel that much of the remainder of CP 56 does not reflect this flexibility.	Please see our response to 58	
107.	CRO Forum	3.27.	<p>"...a high degree of communication between supervisory authorities..."</p> <p>Supervisory authorities should communicate with each other as much as possible, for example through the College of Supervisors or as part of educating each other. This will benefit supervisory convergence and enhance the level playing field.</p>	<p>Thank you, we are considering the mechanics of this in our development of our consultation paper on the pre-application process for internal models.</p> <p>Please see also the CEIOPS advice on colleges.</p>	
108.	Groupe Consultatif	3.27.	A high degree of communication is necessary not only in the first period of application but in all future periods. Principles are likely to be interpreted in different ways by new people and so issues will need to be discussed continuously.	Thank you, we are considering how communication will work in our development of our consultation paper on the pre-application process for internal models.	
109.	KPMG ELLP	3.27.	Although the principles-based assessment appears to be the most practical approach to adopt, we note that there is still a large degree of discretion in applying the principles that may result in a lack of harmonization between supervisory authorities. The text suggests that this can be mitigated by a high level of communication between authorities in the first period of application. However, we feel that communication will need to be on an on-going basis to ensure there is not a divergence over time.	Please see our response to 107	
110.	Lloyd's	3.27.	A principles-based approach is more appropriate, as undertakings are not uniform in nature and this gives the opportunity to exercise judgment and include the relevant uses. The initial work required in drawing up the principles to be used for this approach is likely to be	Thank you, this is our intention.	

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			less onerous than the work required to draw up a list of all possible uses as suggested in Section 3.20.		
111.	AAS BALTA	3.28.	Agree principle based assessment method is better.		Thank you
112.	AB Lietuvos draudimas	3.28.	Agree principle based assessment method is better.		Thank you
113.	CODAN Forsikring A/S (10529638), Denmark	3.28.	Agree principle based assessment method is better.		Thank you
114.	CODAN Forsikring (Branch Norway) (991 502 491)	3.28.	Agree principle based assessment method is better.		Thank you
115.	Link4 Towarzystw o Ubezpieczeń SA	3.28.	Agree principle based assessment method is better.		Thank you
116.	RSA Insurance Group PLC	3.28.	Agree principle based assessment method is better.		Thank you
117.	RSA Insurance Ireland Ltd	3.28.	Agree principle based assessment method is better.		Thank you

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118.	RSA - Sun Insurance Office Ltd.	3.28.	Agree principle based assessment method is better.		Thank you
119.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.28.	Agree principle based assessment method is better.		Thank you
120.	KPMG ELLP	3.30.	We agree that a case-by-case approach to assessing compliance with the use test is not a viable approach as it will be impossible to achieve harmonization between supervisory authorities.		Thank you
121.	KPMG ELLP	3.32.	The process adopted to develop the principles appears to be reasonable		Thank you
122.	KPMG ELLP	3.34.	These 7 'areas' effectively cover the main uses of models and should provide a sufficient spread of usages.		Thank you
123.	Lloyd's	3.34.	We believe that allocating model results to a sufficiently granular level to inform business decisions is a serious technical challenge. There is no single agreed capital allocation methodology and establishing suitable criteria will be a key issue for many of the indicated uses of the model. Supervisors must be free to agree with particular undertakings the appropriate level of granularity for each.		Thank you for this helpful comment. We are indeed looking at capital allocation methods as part of developing education for supervisors on internal models. We agree that there is no single method and highlighted this in our Stocktake report in section 10.2
124.	KPMG ELLP	3.35.	We agree that the internal models should be used to guide decision making rather than 'run' the business. The text suggests that the rationale for decisions that are not		Thank you for this helpful comment. We have amended 3.35 and 3.84 to reflect this. We couldn't see the reference in

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			supported by the internal model results would need to be adequately documented for the (re)insurance undertaking to meet the requirements of the use test. We believe that this statement could be strengthened to require that the rationale for all decisions should be adequately documented of which supporting evidence from the internal model should form a part. In other words to meet the requirements of the use test the rationale for all material decisions must be documented which should include reference to the internal model results. Also applies to 3.84 and 3.107	3.107
125.	XL Capital Ltd	3.35.	We appreciate the clarity provided in this paragraph regarding the meaning of “used” as “widely used in and plays an important part in”	Thank you
126.	European Union member firms of Deloitte Touche To	3.40.	We would welcome clarity on what CEIOPS understands by “risk balancing” and “efficient use of capital”. In the banking industry, capital efficiency has come to mean increasing business exposure while reducing regulatory capital requirements – that is, arbitraging the regulatory capital rules.	Thank you for this helpful comment. We have added some more information to 3.40.
127.	KPMG ELLP	3.41.	We agree that the internal model should be used for economic capital purposes.	Thank you
128.	AAS BALTA	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.
129.	AB Lietuvos draudimas	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.
130.	CEA,	3.43.	New products are an example for the use-test where care needs to	Thank you, this is an interesting

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	ECO-SLV-09-451		<p>be taken how the internal model can be used. For certain new products it is straightforward to apply the model if the products can be modelled with components already included into the model. However, in cases where new risk classes are involved, the model may need to be expanded and cannot readily be used. In such cases it needs to be ensured that the model principles (e.g. market-consistency, time-horizon etc. are used when modelling.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.</p>	<p>point. We would refer to the section on the use of expert judgement in Chapter 5.</p> <p>Yes, we agree, but consider that the use of expert judgement might be of assistance here.</p>
131.	CODAN Forsikring A/S (10529638), Denmark	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.
132.	CODAN Forsikring (Branch Norway) (991 502 491)	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.
133.	CRO Forum	3.43.	<p>New products are an example for the use-test where care needs to be taken how the internal model can be used. For certain new products it is straightforward to apply the model if the products can be modelled with components already included into the model. However, in cases where new risk classes are involved, the model may need to be expanded and cannot readily be used. In such cases it needs to be ensured that the model principles (e.g.</p>	Please see our comment on 130.

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			market-consistency, time-horizon etc.) are used when modelling. Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.	
134.	European Union member firms of Deloitte Touche To	3.43.	<p>There are many ways to set targets within insurance businesses. Budgets are expressed in monetary terms, and may reflect many aspects such as the perceived potential profitability of the underlying customer base, growth potential, strategic fit, franchise value and the extent of shareholder risk entailed including possible associated frictional costs. SCR is at best a crude proxy for shareholder risk.</p> <p>We do not think it appropriate to require firms to set targets in terms of return on capital. This is an appropriate metric for some businesses, a crude approximation for some and could be distorting for others. We think that this is a management/shareholder decision rather than a regulatory decision. We recognise the need for a consistent approach to capital calculations but we do not consider policyholder interests are served by an imposed uniformity of management styles.</p>	Thank you. We have amended 3.43 to reflect this.
135.	German Insurance Association – Gesamtverb and der D	3.43.	<p>New products are an example for the use-test where care needs to be taken how the internal model can be used. For certain new products it is straightforward to apply the model if the products can be modelled with components already included into the model. However, in cases where new risk classes are involved, the model may need to be expanded and cannot readily be used. In such cases it needs to be ensured that the model principles (e.g. market-consistency, time-horizon etc. are used when modelling.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the</p>	Please see our comments on 130

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			internal model.	
136.	Groupe Consultatif	3.43.	New products are an example relating to the use-test where care needs to be taken as to the way in which the internal model can be expected to be used. For certain new products it is straightforward to apply the existing model if the products can be modelled using components already included into the model. However, in cases where new risk classes are involved, the model may need to be expanded and cannot readily or immediately be used. In such cases it needs to be ensured that the model principles (e.g. market-consistency, time-horizon, ...) are used when carrying out this modelling.	Please see our comments on 130
137.	Link4 Towarzystw o Ubezpieczeń SA	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.
138.	Munich RE	3.43.	New products are an example for the use-test where care needs to be taken how the internal model can be used. For certain new products it is straightforward to apply the model if the products can be modelled with components already included into the model. However, in cases where new risk classes are involved, the model may need to be expanded and cannot readily be used. In such cases it needs to be ensured that the model principles (e.g. market-consistency, time-horizon, ...) are used when modelling.	Please see our response to 130
139.	RSA Insurance Group PLC	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.

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140.	RSA Insurance Ireland Ltd	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.	
141.	RSA - Sun Insurance Office Ltd.	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.	
142.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.43.	It may not be appropriate to consider the internal model for customer benefits. This will depend on the nature of the undertaking and how it is evolving.	Thank you, we have noted this.	
143.	XL Capital Ltd	3.46.	"... the internal model should at least be able to produce results by entities and material lines of business and have overall economic capital results split by material risks. ... The results of the model have to be at least able to produce the results on a level where the decision-making processes take place." If decisions on capital allocation are taken at Group level (encompassing entities both inside and outside the EEA) – then this implies that the internal model may need to include non EEA entities. Is this a correct interpretation? We would welcome more guidance on how non EEA domiciled groups should be treated from model approval standpoint.	We plan to cover the treatment of group internal models in our paper on the pre-application process for internal models. However, the Framework Directive is clear that a group internal model must include all entities, regardless of domicile. So, yes, non-EEA entities should be included.	
144.	CRO Forum	3.47.	f. "The results of the Use test shall be comparable with the Profit and loss attribution described in Article 121. For a group internal model this shall include the sources of profit and loss for solo entities and on a consolidated basis." The intention of this sentence is not clear. It is unclear how the result of the use-test and the profit & loss attribution can be comparable. We would ask for clarification.	We think this refers to Principle 2. CEIOPS considers that the results of the P&L attribution will feed into the undertaking's view of the effectiveness of the internal model structure, and hence its future development. We have	

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			<p>Comparison of ex ante results of an internal model with ex post P&L attribution is part of the validation.</p> <p>In our view, the use of the internal model shall be linked proportionally to the major risks and, thus, there is a natural link to P&L attribution.</p>	amended the text.
145.	German Insurance Association – Gesamtverb and der D	3.47.	<p>It is unclear how the result of the use-test and the profit & loss attribution can be comparable.</p> <p>Comparison of ex ante results of an internal model with ex post P&L attribution is part of the validation.</p> <p>In our view, the use of the internal model shall be linked proportionally to the major risks and, thus, there is a natural link to P&L attribution.</p>	Please see our response to 144
146.	Groupe Consultatif	3.47.	It is unclear how the use-test and the profit & loss attribution can be comparable. – This also refers to 3.106 f.	Please see our response to 144
147.	Munich RE	3.47.	It is unclear how the use-test and the profit & loss attribution can be comparable. In our view, the use of the internal model shall be linked proportionally to the major risks and, thus, there is a natural link to P&L attribution.	Please see our response to 144
148.	CEA, ECO-SLV-09-451	3.48.	The risk steering of the undertaking should be the starting point for the use-test. If it is done from a group perspective then the group P&L should be reviewed, if there are steering applications on a solo level these should be reviewed on the solo level. It is important that the proportionality principle is taken into account to concentrate on the major risks.	This is noted. We are considering giving more information about review of group internal models in the pre-application

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149.	CRO Forum	3.48.	The risk steering of the undertaking should be the starting point for the use-test. If it is done from a group perspective then the group P&L should be reviewed, if there are steering applications on a solo level these should be reviewed on the solo level. It is important that the proportionality principle is taken into account to concentrate on the major risks.	Please see our comment on 148
150.	German Insurance Association – Gesamtverb and der D	3.48.	The risk steering of the undertaking should be the starting point for the use-test. If it is done from a group perspective then the group P&L should be reviewed, if there are steering applications on a solo level these should be reviewed on the solo level. It is important that the proportionality principle is taken into account to concentrate on the major risks.	Please see our comment on 148
151.	Groupe Consultatif	3.48.	The risk steering of the undertaking should be the starting point for the use-test. If it is done from a group perspective then the group P&L should be reviewed, if there are steering applications on a solo level these should be reviewed on the solo level. It is important that the proportionality principle is taken into account to concentrate on the major risks.	Please see our comment on 148
152.	Munich RE	3.48.	The risk steering of the undertaking should be the starting point for the use-test. If it is done from a group perspective then the group P&L should be reviewed, if there are steering applications on a solo level these should be reviewed on the solo level. It is important that the proportionality principle is taken into account to concentrate on the major risks.	Please see our comment on 148
153.	AAS BALTA	3.49.	Not clear that this table is actually very useful in practice.	Noted. The table is for information only.
154.	AB Lietuvos	3.49.	Not clear that this table is actually very useful in practice.	Please see our comment on 153

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	draudimas				
155.	CEA, ECO-SLV-09-451	3.49.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings.</p> <p>The table shall, be interpreted as a list of examples, but not as minimum requirement for the uses of the model.</p> <p>Reconciliation between internal models outputs and internal and external financial reporting may not be insightful in case that reporting is not done on an economic basis.</p> <p>Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start; the impacts of these decisions on the risk profile, however, need to be assessed with the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of it extends from risk management to business strategies.</p>		Please see our comment on 153
156.	CODAN Forsikring A/S (10529638), Denmark	3.49.	Not clear that this table is actually very useful in practice.		Please see our comment on 153
157.	CODAN Forsikring (Branch Norway)	3.49.	Not clear that this table is actually very useful in practice.		Please see our comment on 153

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158.	CRO Forum	3.49.	<p>We assume that the P&L contribution should be compared to the SCR and not to changes in the SCR. This should not be part of public reporting. So we propose to drop “and public” in the last sentence.</p> <p>It is important that the proportionality principle is applied to not create an excessive burden on undertakings. In cases where substantial implications on the risk situation of an undertaking is expected the internal model should be applied.</p> <p>The table shall, thus, be interpreted as a list of examples, but not as minimum requirement for the uses of the model.</p>	<p>CEIOPS considers that the P&L attribution should give insight into the sources of profit and loss and which risks give risk to the profit and loss. These profits and losses will directly affect the basic own funds and may affect the assessment of the SCR if the conclusion is that the internal model is not structured effectively.</p> <p>Also, please see our comments on 153</p>
159.	German Insurance Association – Gesamtverb and der D	3.49.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings. Mainly in those cases where substantial implications on the risk situation of the undertaking are expected the internal model should be applied.</p> <p>The table shall, be interpreted as a list of examples, but not as minimum requirement for the uses of the model.</p> <p>Reconciliation between internal models outputs and internal and external financial reporting may not be insightful in case that reporting is not done on an economic basis.</p>	<p>Please see our comments on 153.</p> <p>Thank you – the table is a for information, and reflects some of the uses CEIOPS has seen in practice.</p>

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			Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start; the impacts of these decisions on the risk profile, however, need to be assessed with the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of it extends from risk management to business strategies.	
160.	Groupe Consultatif	3.49.	<p>It should be emphasised that the listed uses are potential and not comprehensive.</p> <p>It is important that the proportionality principle is applied so as not to create an excessive burden on undertakings. The internal model should be applied whenever the issue being considered is expected to have significant implications for the risk exposure/profile of the undertaking.</p> <p>Reconciliation between internal model outputs and internal and external financial reporting may not be insightful, and therefore may be unnecessary, where that reporting is not done on an economic basis.</p> <p>Reconciliation between internal models and the implementation of management actions: Many consider management actions/rules as part of the internal model.</p> <p>It is unclear in how far internal models should be used for product development and pricing. This will mostly be covered by other tools; internal models can however give additional input like the cost of capital or give indications on impacts of setting up new price structures.</p>	Please see our response to 159

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			<p>Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start. The impacts of these decisions on the risk profile, however, need to be assessed using the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of extends from risk management to business strategies.</p> <p>The use regarding underwriting policies is unclear.</p> <p>The content/scope of the reasonableness check mentioned is not clear and should be either be explained in more detail or left out.</p>
161.	KPMG ELLP	3.49.	<p>The use test requirements for an internal model with respect to the calculation of technical provisions could be strengthened. The text suggests that it is sufficient to perform a reconciliation between the internal model and the technical provisions for the purposes of the use test. We believe that there is an intrinsic link between the two and therefore would suggest that a (re)insurance undertaking should use the internal model for the purpose of calculating technical provisions.</p> <p>Thank you for this comment. We refer you to section 5.3.2.2 in CP56, where we discuss the link between the internal model and technical provisions.</p> <p>Technical liabilities have to be calculated in accordance with Art. 74-82 – Please see also CP 39. An internal model may be approved according to Art. 110-1 to calculate the SCR but has to be based on methods consistent with those used to estimate the technical liabilities (Art 119-2 and please see section 5.3.2.2. of CP 56). Imposing the use of an internal model for the calculation of technical liabilities would not be in line with the Level 1 text.</p>

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162.	Link4 Towarzystw o Ubezpieczeń SA	3.49.	Not clear that this table is actually very useful in practice.	Please see our response to 153	
163.	Munich RE	3.49.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings. In cases where substantial implications on the risk situation of an undertaking is expected the internal model should be applied.</p> <p>Reconciliation between internal models outputs and internal and external financial reporting may not be insightful in case that reporting is not done on an economic basis.</p> <p>Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start; the impacts of these decisions on the risk profile, however, need to be assessed with the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of extends from risk management to business strategies.</p>	Please see our response to 159	
164.	RSA Insurance Group PLC	3.49.	Not clear that this table is actually very useful in practice.	Please see our response to 153	
165.	RSA Insurance Ireland Ltd	3.49.	Not clear that this table is actually very useful in practice.	Please see our response to 153	
166.	RSA - Sun Insurance Office Ltd.	3.49.	Not clear that this table is actually very useful in practice.	Please see our response to 153	

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167.	SWEDEN: Trygg-Hansa Försäkrings AB (516401- 7799)	3.49.	Not clear that this table is actually very useful in practice.		Please see our response to 153
168.	CRO Forum	3.50.	<p>We suggest to change the introduction of this paragraph to; "The table below gives an indicative overview of possible uses of".</p> <p>It is important that the proportionality principle is applied to not create an excessive burden on undertakings. In cases where substantial implications on the risk situation of an undertaking is expected the internal model should be applied.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.</p> <p>The table shall be interpreted as a list of examples, but not as minimum requirement for the uses of the model.</p>		<p>Thank you – we have made this change.</p> <p>CEIOPS has applied the proportionality principle throughout the paper, and may give more information on this in level 3 guidance. Also, please see our response to 47 and 130</p>
169.	German Insurance Association – Gesamtverb and der D	3.50.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings. Mainly in those cases where substantial implications on the risk situation of the undertaking are expected the internal model should be applied.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.</p> <p>The table shall be interpreted as a list of examples, but not as minimum requirement for the uses of the model.</p>		Please see our response to 169

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170.	Groupe Consultatif	3.50.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings. The internal model should be applied whenever the issue being considered is expected to have significant implications for the risk exposure/profile of the undertaking.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.</p>	Please see our response to 169	
171.	Institut des actuaires	3.50.	<p>As undertakings might resort to paragraph 3.49 and 3.50 to analyse the importance of specific uses mentioned in Annex A when designing their internal model and setting out the scope of the internal model as part of their application for approval (see 3.97), could CEIOPS mention :</p> <ul style="list-style-type: none"> - how was the distinction made between the uses listed in paragraph 3.49 and the ones listed in paragraph 3.50 ? - if paragraph 3.50 mention tasks considered by the CEIOP to be of second importance for the use test and for which reason ? <p>Example: why are IFRS market value (or fair value) evaluations not an indicator of conformity to the test? The funding is mentioned many times in articles 41 to 49 (article 43 - article 47).</p> <p>Could CEIOPS specify what is the difference between the adequate pricing mentioned in paragraph 3.50 and the pricing mentioned in paragraph 3.49 (area "risk management system")?</p>	<p>The approach set out on 3.31 of CP56 was used to develop our thinking on essential / good practice / nice to have uses of an internal model. This sets out how the uses were split between 3.49 and 3.50.</p> <p>The tables are for information, as CEIOPS has concluded that a list-based approach is not suitable for assessment of compliance with the Use test.</p>	
172.			Confidential comment deleted.		

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173.	Munich RE	3.50.	<p>It is important that the proportionality principle is applied to not create excessive burden on undertakings. In cases where substantial implications on the risk situation of an undertaking is expected the internal model should be applied.</p> <p>Also for M&A not all data may be available pre-closing and thus approximations need to be made when assessing an M&A with the internal model.</p>	Please see our response to 159	
174.	AAS BALTA	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you	
175.	AB Lietuvos draudimas	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you	
176.	CODAN Forsikring A/S (10529638), Denmark	3.51.	Agree with this comment. Use tables should not be used in the guidance. ²²	Thank you	
177.	CODAN Forsikring (Branch Norway) (991 502 491)	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you	
178.	European Union member firms of Deloitte Touche To	3.51.	We agree with this warning, which we think should be given more prominence.	Thank you. We will consider this.	

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179.	KPMG ELLP	3.51.	We agree that a list based approach is not practical as it removes the ability to apply the principle of proportionality. Also applies to 3.58	Thank you
180.	Link4 Towarzystw o Ubezpieczeń SA	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you
181.	RSA Insurance Group PLC	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you
182.	RSA Insurance Ireland Ltd	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you
183.	RSA - Sun Insurance Office Ltd.	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you
184.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.51.	Agree with this comment. Use tables should not be used in the guidance.	Thank you
185.	AAS BALTA	3.56.	Agree with this statement	Thank you
186.	AB Lietuvos draudimas	3.56.	Agree with this statement	Thank you
187.	CODAN	3.56.	Agree with this statement	Thank you

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	Forsikring A/S (10529638), Denmark				
188.	CODAN Forsikring (Branch Norway) (991 502 491)	3.56.	Agree with this statement		Thank you
189.	European Union member firms of Deloitte Touche To	3.56.	The requirement for "skin in the game" should be balanced by the need to avoid over-reliance on sophisticated mathematical models.		Noted. We think this is made clear throughout the paper.
190.	Link4 Towarzystw o Ubezpieczeń SA	3.56.	Agree with this statement		Thank you
191.	RSA Insurance Group PLC	3.56.	Agree with this statement		Thank you
192.	RSA Insurance Ireland Ltd	3.56.	Agree with this statement		Thank you
193.	RSA - Sun	3.56.	Agree with this statement		Thank you

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	Insurance Office Ltd.				
194.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.56.	Agree with this statement		Thank you
195.	KPMG ELLP	3.57.	<p>We agree that CEIOPS should not provide rules regarding the frequency of the calculation of economic capital. This should be at management's discretion. However, we believe that the frequency of the calculation will be implicitly linked to the calculations required to meet the requirement of the use test.</p> <p>As the SCR forms part of the regulatory capital requirement, we support a minimum frequency for its calculation (as set out in Principle 7). We believe that it should not be possible to demonstrate compliance with the use test if the undertaking does not calculate the SCR on a regular basis.</p> <p>Also applies to 3.84 and 3.117</p>		Thank you, this was our intention.
196.	AAS BALTA	3.58.	Agree with this statement		Thank you
197.	AB Lietuvos draudimas	3.58.	Agree with this statement		Thank you
198.	CODAN Forsikring A/S (10529638), Denmark	3.58.	Agree with this statement		Thank you
199.	CODAN	3.58.	Agree with this statement		Thank you

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	Forsikring (Branch Norway) (991 502 491)				
200.	Link4 Towarzystw o Ubezpieczeń SUPERVISORY AUTHORITY	3.58.	Agree with this statement		Thank you
201.	Llody's	3.58.	<p>The example list of uses of internal models is very helpful. It provides, at a high level, a case for the benefits of the internal model to the wider business.</p> <p>We agree with the conclusion that a list-based approach to assessing compliance with the use test is unreasonable and that it does not adequately allow for the principle of proportionality. As such, we are strongly supportive of a principles-based approach for the assessment of the use test.</p>		Thank you, this reflects our intentions.
202.	RSA Insurance Group PLC	3.58.	Agree with this statement		Thank you
203.	RSA Insurance Ireland Ltd	3.58.	Agree with this statement		Thank you
204.	RSA - Sun	3.58.	Agree with this statement		Thank you

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	Insurance Office Ltd.				
205.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.58.	Agree with this statement		Thank you
206.	European Union member firms of Deloitte Touche To	3.59.	We welcome the adoption of a principles-based approach to assess compliance with the use test. We are, however, concerned about inconsistent treatment being applied across different territories. We also believe that the principles could be condensed as there appears to be significant overlaps between some of the suggested principles, particularly with respect to risk management.		Thank you, we have noted this. We may be publishing level 3 guidance on many aspects of internal model assessment and this will reduce inconsistencies. We have reviewed the principles and do not consider that the number needs reducing.
207.	KPMG ELLP	3.59.	We agree that a principle based approach to assessing compliance with the use test is preferable to the other two options presented in the text.		Thank you
208.	XL Capital Ltd	3.61.	See comment at 3.13		Thank you
209.	CRO Forum	3.64.	The principle should be extended by "to the extent that their responsibilities are concerned". The detailed knowledge of all parts of the model should not be required by all senior managers.		Please see our comment on 47
210.	German Insurance Association – Gesamtverb	3.64.	The principle should be extended by "to the extent that their responsibilities are concerned". The detailed knowledge of all parts of the model should not be required by all senior managers.		Please see our comment on 47

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	and der D			
211.	Groupe Consultatif	3.64.	<p>We suggest the following: Senior management, including the administrative or management body, shall be able to demonstrate general understanding of the internal model; each senior manager should have detailed knowledge of the model within his or her area of responsibility.</p> <p>Asking each senior manager to have more than general knowledge of the entire model does not seem realistic to us.</p>	Please see our comment on 47. We have reworded the discussion of principle 1 to reflect some of these points.
212.	KPMG ELLP	3.64.	<p>The principle requires that senior management should be able to demonstrate an understanding of the internal model. There is no reference to materiality. We would have thought that it is not possible for senior management to understand all the intricacies of a complex model. Rather management should have an overall awareness of the model structure, methodology and material weaknesses. In addition, senior management should be able to retain advice from a specialist on specific aspects of the model and still be able to meet the principle that requires them to demonstrate understanding of the internal model.</p> <p>Also applies to 3.102</p>	Please see comment on 211
213.	Munich RE	3.64.	The principle should be extended by "to the extent that their responsibilities are concerned". The detailed knowledge of all parts of the model should not be required by all senior managers.	Please see comment on 211
214.	XL Capital Ltd	3.64.	We believe that Principle 1 should be worded to clarify that the expectation is for Senior Management as a body shall be able to demonstrate understanding of the internal model, since Senior Management is likely to comprise individuals with different areas of specialist knowledge (e.g. actuarial / Risk Management / Governance)	Please see comment on 211.

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215.	Groupe Consultatif	3.65.	We believe that a deep understanding of the internal model should primarily be required for the management which has responsibility for the areas where the internal model is used.	Please see comment on 211
216.	XL Capital Ltd	3.65.	We agree with CEIOPS expectation that "... outputs which have a major impact on the risk profile of an undertaking will be discussed with the risk-management function and that the results of this discussion are reported to the senior management and can therefore be seen in the minutes of the board meetings"	Thank you
217.	XL Capital Ltd	3.66.	As in 3.64 we believe this should refer to the administrative or management body as a whole.	Please see comment on 211
218.	DIMA (Dublin International Insurance & Management	3.67.	<p>"Senior management ... shall be able to demonstrate understanding of the internal model".</p> <p>Elements that must be understood are listed on article 3.67. But what does the word "understand" cover? It should be clarified that understanding means at least: senior management has an available and updated documentation on the subject and is able to explain to the supervisors the main drivers of the subject.</p> <p>The limits of the requirements for senior management should be clarified especially when put close to article 9.8: "One would not expect the Board of Directors or the senior management to be able to understand all the details of the internal model."</p>	Please see comment on 47
219.	XL Capital Ltd	3.67.	As in 3.64 we believe this should refer to the administrative or management body as a whole.	Please see comment on 211
220.			Confidential comment deleted.	
221.	XL Capital Ltd	3.70.	"management should not, for example, manipulate the internal model to get the results that they want" – Do CEIOPS really need to say this? Are management not required to be fit, proper, and	CEIOPS is keen to emphasise this point.

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			behave in an honest and ethical manner	
222.	Groupe Consultatif	3.71.	We believe that guidance is required on what level of detail (e.g. the level of granularity) the internal model needs to fit the business model. We believe that a principles based approach would indicate this detail should be the level that is reasonable and proportionate for the use of the model.	We are considering whether to produce level 3 guidance on this issue.
223.			Confidential comment deleted.	
224.	XL Capital Ltd	3.71.	It is difficult to see how the requirements of this paragraph (Principle 2: The internal model shall fit the business model" can be met in practice by a Group with entities both inside and outside of the EEA and which is managed on a global basis with not all business decisions taken at individual entity level. If the internal model is designed in alignment with the undertaking's business model, so that the output is useful in decision making – at the EEA individual entity level, then it becomes difficult to prove consistency with the global group internal model.	CEIOPS intends the internal model regime to reflect the reality of internal model usage in undertakings. We do not wish to impose modelling restrictions. We may be giving further guidance on group internal models, including dealing with non-EEA entities, in level 3.
225.	AAS BALTA	3.72.	b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.	This comment links to principle 5. CEIOPS view is that when senior management are making a decision it is likely to base it on an internal, economic view of the possible outcomes. However, we also acknowledge that senior management are likely to want to understand the effect on reported figures, which will probably be on a different basis or bases.

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				We have amended the discussion on principle 5 to make this clear.
226.	AB Lietuvos draudimas	3.72.	b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.	Please see comment on 225
227.	Association of British Insurers	3.72.	<p>Para d)</p> <p>This paragraph currently requires “the assessment of the contribution of each entity of the consolidated profit and loss, as well as to the contribution to changes in the SCR and required and actual economic capital ... which will also form part of supervisory and public reporting”. According to the mentioned Article 121 this should be done by major business units and risk categories. This reporting could be extremely detailed.</p> <p>Further, it is difficult to trace back changes in the capital once the diversification benefit is applied at group level.</p> <p>Finally, public reporting at this granular level would reveal competitive information (detailed risk and reward by business units and risk type). Everything should rather be subject to the proportionality principle and the undertaking should only disclose the principal components proportionate to nature and scale of risks.</p>	<p>CEIOPS considers that reporting should reflect the structure of the internal model. If the internal model is complex, then reporting will be complex. This is part of the principle of proportionality as set out in our previous advice to the Commission.</p> <p>We recognise this difficulty, but are concerned that diversification effects can be large and hence have a major effect on capital requirements.</p>
228.	CODAN	3.72.	b) It is not clear how producing output on every conceivable	Please see comment on 225

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	Forsikring A/S (10529638), Denmark		accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.	
229.	CODAN Forsikring (Branch Norway) (991 502 491)	3.72.	b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.	Please see comment on 225
230.	CRO Forum	3.72.	b.: The internal model should not be required to cover all accounting regimes. Such a requirement is not in line with the level 1 text. Moreover, it is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view (Solvency II valuation basis). If at all, reconciliations at an aggregate level should suffice. f.: We assume that the P&L contribution should be compared to the SCR and not to changes in the SCR. This should not be part of public reporting. Thus, drop "and public" in the last sentence.	Please see comment on 225 and 158
231.	German Insurance Association – Gesamtverb and der D	3.72.	b.: The internal model should not be required to cover all accounting regimes. Such a requirement is not in line with the level 1 text. Moreover, it is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view (Solvency II valuation basis). If at all, reconciliations at an aggregate level should suffice.	Please see comment on 225 and 158

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			f.: We assume that the P&L contribution should be compared to the SCR and not to changes in the SCR. This should not be part of public reporting. Thus, drop "and public" in the last sentence.	
232.	Groupe Consultatif	3.72.	<p>b) the internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice. – This also refers to 3.77, 3.106b, 3.112.</p> <p>d) We believe that only changes in the business model fundamental to the use of the internal model should require a change of the internal model. The examples given are fundamental if these are material for the entity, but there could be other changes that are minor and not relevant for the model. This requirement should be followed in accordance with a principles based approach taking into account the proportionality.</p>	<p>Please see comment on 225.</p> <p>We have amended the paper. Thank you for this comment.</p>
233.	Legal & General Group	3.72.	<p>We feel principle 3 would benefit from the following addition in order to make it more effective.</p> <p>"The internal model shall cover sufficient material risks to make it useful for risk management and decision-making"</p>	Noted
234.	Link4 Towarzystwo Ubezpieczeń SA	3.72.	b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to	Please see comment on 225

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			published accounts.	
235.	Munich RE	3.72.	<p>b.: the internal model not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should be done.</p> <p>f.: we assume that the P&L contribution should be compared to the SCR and not to changes in the SCR.</p>	Please see comment on 225 and 158
236.	RSA Insurance Group PLC	3.72.	<p>b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.</p>	Please see comment on 225
237.	RSA Insurance Ireland Ltd	3.72.	<p>b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.</p>	Please see comment on 225
238.	RSA - Sun Insurance Office Ltd.	3.72.	<p>b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.</p>	Please see comment on 225

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239.	SWEDEN: Trygg-Hansa Försäkrings AB (516401- 7799)	3.72.	b) It is not clear how producing output on every conceivable accounting basis is actually useful in practice. It would be preferable for the firm to specify how it intends to report results to senior management and for this to support the approval process rather than there being prescribed outputs from the model. Clearly the model at outset should be able to be reconciled to published accounts.	Please see comment on 225	
240.			Confidential comment deleted.		
241.	AAS BALTA	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	CEIOPS recognises this problem, but is concerned about being able to assess the extent of diversification effects. From the internal models we have seen to date, there is a wide variety of approaches to modelling and hence to estimating diversification effects. Some approaches effectively hide the effects, and we are keen to ensure that undertakings are fully aware of where the effects arise and how big they are.	
242.	AB Lietuvos draudimas	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241	
243.	CODAN Forsikring A/S (10529638),	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241	

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244.	CODAN Forsikring (Branch Norway) (991 502 491)	3.76.	The words “at each point” make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
245.			Confidential comment deleted.	
246.	Groupe Consultatif	3.76.	<p>(1) In an internal model there are diversification effects at many levels, for instance between individual risks, between LoBs, regions, etc. It does not seem feasible or useful to quantify the diversification at all these levels. Furthermore, some undertakings allocate capital and diversification benefits between risks and business lines but others do not. We do not think that it is the role of CEIOPS to mandate a particular method of running the business.</p> <p>(2) We agree that responsibilities should be clear but would like to stress that the allocation should also be done consistently throughout all levels, which suggests a coordinated approach.</p> <p>- These two points also refer to 3.110.</p>	<p>Please see our response to 241</p> <p>We agree.</p>
247.	Link4 Towarzystw o Ubezpieczeń SA	3.76.	The words “at each point” make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
248.	Llody's	3.76.	Diversification effects in the internal model begin with the second policy on the liability side and with the second bond on the asset	Please see our response to 241. In addition, we are keen that

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			<p>side. With this in mind, it is unrealistic to expect clear responsibility for quantifying and allocating such benefits "at each point" where they occur.</p> <p>Presumably, the text is intended for situations where diversification is modelled explicitly, through dependency relationships, rather than implicitly, within the parameterisation of a business unit, asset class, etc. This should be clarified.</p>	undertakings also understand the effect of modelling diversification implicitly, due to the effect this can have on the resulting required capital numbers.
249.	RSA Insurance Group PLC	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
250.	RSA Insurance Ireland Ltd	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
251.	RSA - Sun Insurance Office Ltd.	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
252.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.76.	The words "at each point" make this point unachievable. There are diversification effects throughout the model not just when different sub models are added together.	Please see our response to 241
253.	AAS BALTA	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	We have made this paragraph clearer. Please see our comment to 225
254.	AB Lietuvos draudimas	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253

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255.	CODAN Forsikring A/S (10529638), Denmark	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253	
256.	CODAN Forsikring (Branch Norway) (991 502 491)	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253	
257.	CRO Forum	3.77.	The internal model should not be required to cover all accounting regimes. The prevailing view for solvency purposes should be the economic view. Reconciliations at an aggregate level should suffice.	Please see our comment on 253	
258.	Dutch Actuarial Society – Actuarieel Genootschap (	3.77.	It is our opinion that the importance of the accounting method is overstated here. The internal method is used effectively if (among other) it enables/ supports the (re-) insurance undertaking in its decision making process based on consistent economic valuation. Decisions made by management should not be dependent on the relevant accounting basis.	Please see our comment on 253	
259.	German Insurance Association – Gesamtverband der D	3.77.	The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice. 8.	Please see our comment on 253	
260.	Groupe Consultatif	3.77.	The internal model as defined for Solvency II should not be required to cover different accounting systems. However,	Please see our comment on 253	

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			significant inconsistencies in the data used should be avoided.	
261.	Link4 Towarzystw o Ubezpieczeń SA	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253
262.			Confidential comment deleted.	
263.	Munich RE	3.77.	The internal model not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice.	Please see our comment on 253
264.	RSA Insurance Group PLC	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253
265.	RSA Insurance Ireland Ltd	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253
266.	RSA - Sun Insurance Office Ltd.	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253
267.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.77.	Strongly disagree with this statement. Producing results on several accounting bases does not necessary help the decision making process.	Please see our comment on 253

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268.	German Insurance Association – Gesamtverb and der D	3.79.	In case of groups the use test should be aligned with the way groups are managed. Thus, the use test at solo level may consist in an application of (parts of) the group model and not in a full-fledged application of the solo model (e.g. for pricing purposes). 9.	Thank you, we may be considering this in more detail at level 3.	
269.	Llody's	3.79.	The reference to "The Use test should always attach at least at the level at which risk strategy and risk management are defined." for group and entity level is an important feature of the test. The decision making and risk strategy often resides in "management groupings" rather than legal entity groupings and as such the applicability/implication of the use test to follow along similar lines is important. However, there should be greater clarity that this should not impact the SCR calculations at a group or solo entity level.	Please see comment on 268	
270.	Munich RE	3.79.	In case of groups the use test should be aligned with the way groups are managed. Thus, the use test at solo level may consist in an application of (parts of) the group model and not in a full-fledged application of the solo model (e.g. for pricing purposes).	Please see comment on 268	
271.	Groupe Consultatif	3.81.	This paragraph should not be taken to presume that the expected profit and loss is the sole or even necessarily primary decision-making or performance metric (this is particularly true for mutuals). A broader set of risk-return metrics could be taken into account.	Thank you, we have noted this	
272.	Llody's	3.83.	It would be useful if CEIOPS could clarify whether this refers to each individual on the management body, or to the management body collectively.	Please see our comment on 47	
273.	KPMG ELLP	3.84.	The principle seems to imply that a full run of the internal model is	This refers to principle 7. We use	

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			necessary whenever there is a key strategic decision. This could be as frequently as monthly. We are unclear as to whether this was intended and rather factors such as the materiality of the decision and full run of the model versus approximated updates should be considered. Also applies to 3.117	the word "significant" to highlight that a full run is needed when there are significant changes arising from a variety of causes.
274.	Llody's	3.85.	Principle 7 could be shortened to: "The SCR shall be calculated at least annually and, additionally, when there is a significant change to the undertaking's risk profile or to the model's methodology, assumptions or data inputs". The additional detail is adequately addressed in the subsequent expansionary paragraphs.	Noted.
275.	KPMG ELLP	3.86.	We believe that the parameters and data input to the internal model should be updated at least as frequently as the required annual SCR based on a full run.	This is covered in the chapter on the statistical quality standards.
276.	XL Capital Ltd	3.89.	We believe it may be difficult to do a full run of the internal model "where risk drivers are changing rapidly and the effect on output is hence uncertain". We would welcome a more flexible approach in this respect.	CEIOPS recognises this point, but is of the opinion that this is the point where the internal model will add most value to the undertaking's decision-making and so it should be updated frequently. It also reflects the spirit of Article 102.
277.	European Union member firms of Deloitte	3.90.	Non-life insurance business is of an annual nature and so are the model structure and assumptions; precise modelling for intermediate calculation dates requires more modelling effort. As such, calculations on a more frequent basis than annually seems to be a challenging requirement. We suggest that this paragraph	Thank you. We have expanded the text.

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	Touche To		should mention that supervisor's decision to request full run calculation on a more frequent basis be justified by specific or marketwide circumstances.	
278.	Groupe Consultatif	3.90.	Transparency about the criteria used by supervisors to demand extra full runs is needed.	Please see our comment on 277
279.			Confidential comment deleted.	
280.	Association of British Insurers	3.91.	See comments under 3.118	Please see our comments on 521
281.	CRO Forum	3.91.	<p>CROF welcomes CEIOPS comments on proportionality and believes that the preceding paragraphs on the use of approximations are applicable for this quarterly recalculation of the SCR for use in determination of SCR, for example replicating portfolios or other estimation methods</p> <p>The MCR should be calculated quarterly, as it is linked to SCR, therefore the SCR needs to be calculated quarterly as well. (This is also discussed in response for advice on 'Calculating the MCR' – CP55)</p>	Thank you.
282.	European Union member firms of Deloitte Touche To	3.91.	<p>This means quarterly calculation of the SCR. We believe this implies an important workload on firms using an internal model, which should be checked against proportionality principles.</p> <p>The wording of this paragraph appears to be prescriptive ("shall apply a quarterly calculation that is sufficiently sophisticated to produce the quarterly SCR"). Therefore, it would seem appropriate to include this paragraph in the "blue box" advice from a consistency point of view.</p>	<p>We are clear that this should be on a sufficiently sophisticated basis.</p> <p>We have added this to the blue box.</p>
283.	Groupe	3.91.	Reliable approximations should be allowed for the quarterly	We would appreciate your input

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	Consultatif		recalculation of the SCR.	into how we should assess a "sufficiently sophisticated" calculation.
284.	Institut des actuaires	3.91.	<p>This requires a quaterly calculation for the SCR, and approximation should be allowed, as the complete calculation should be time consuming. We suggest to write it explicitly :</p> <p>"CEIOPS is aware that the MCR must be calculated quaterly and that the proposed methodology requires a link to the SCR. This requires a quaterly calculation for the SCR. Under the principle of proportionality (see CEIOPS advice on Proportionality), undertakings using an internal model shall apply a quaterly calculation that is sufficiently sophisticated to produce the quaterly SCR. However this doesn't assume necessarily a full model run, and approximations may be allowed"</p>	<p>Agreed</p> <p>Thank you for this very helpful suggestion</p> <p>We have made this change:</p> <p>"CEIOPS is aware that the MCR must be calculated quaterly and that the proposed methodology requires a link to the SCR. This requires a quaterly calculation for the SCR. Under the principle of proportionality (see CEIOPS advice on Proportionality), undertakings using an internal model shall apply a quaterly calculation that is sufficiently sophisticated to produce the quaterly SCR(Please see CEIOPS Advice on the Calculation of the MCR).</p>
285.	Llody's	3.91.	We believe that the reference at the end of this paragraph to "the quarterly SCR" should be to "the quarterly MCR".	No, it's the SCR. This is then used to work out the MCR corridor.
286.			Confidential comment deleted.	
287.	RBS Insurance	3.91.	There seems to be slight contradiction in the wording of this paragraph which implies a quarterly calculation of a "sufficiently	Please see our comment on 283

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			sophisticated" SCR, and principle 7 which is saying an annual calculation would be acceptable. A bit more clarity on what "sufficiently sophisticated" would be helpful. We believe the requirements on simplifications in CP55 are suitable – that a recalculation is only required in modules where there has been a material change.	
288.	Llody's	3.95.	The reference in this paragraph to "CEIOPS Consultation Paper 3311" should be to CP 33.	Thank you!! Well spotted.
289.	German Insurance Association – Gesamtverb and der D	3.96.	Delete the last two sentences.	Thank you but we do not consider this change appropriate.
290.	Groupe Consultatif	3.96.	We believe that more emphasis should be given to the communication of the results to the management.	Thank you. We assume you mean that management will require tailored communication to enable them to understand the internal model output? We have amended the paper to reflect this.
291.	CEA, ECO-SLV-09-451	3.97.	(Use test – Example uses) List of possible uses should be seen as indicative. Annex A provides a list of possible uses. It should be made clear that those are best-practise examples rather than binding requirements. Therefore companies should not be required to match the list with their applications of the internal model. Furthermore, many of the listed uses will not be implemented	Please see our response to 42

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			<p>straight away, but will evolve over time.</p> <p>Clarify that the list of uses is best-practise and that many of these will probably evolve over time.</p> <p>The proportionality principle should be taken into account.</p>	
292.	German Insurance Association – Gesamtverb and der D	3.97.	<p>(Use test – Example uses)</p> <p>List of possible uses should be seen as indicative.</p> <p>Annex A provides a list of possible uses. It should be made clear that those are best-practise examples rather than binding requirements. Therefore companies should not be required to match the list with their applications of the internal model. Furthermore, many of the listed uses will not be implemented straight away, but will evolve over time.</p> <p>Clarify that the list of uses is best-practise and that many of these will probably evolve over time.</p> <p>The proportionality principle should be taken into account.</p>	Please see our response to 42

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293.	Groupe Consultatif	3.97.	We agree that it needs to be made clear that the list of uses is indicative only and it will not be used by the supervisory authority as a check list for the use test. Also, Annex A should either be matched to the final version of 3.49 or 3.97 should simply refer to 3.49 instead of Annex A. – This also refers to 3.107	Please see our response to 42
294.	AAS BALTA	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.	Thank you – we have amended the text in 3.14 etc.
295.	AB Lietuvos draudimas	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.	Please see our response to 294
296.	Association of British Insurers	3.100.	We welcome the principles based approach taken by CEIOPS. We would interpret the list of uses provided as general guidance and not as binding requirements as this would not fit all companies (particularly for companies whose parent is outside the EU) and as the use test is an evolving test that will require flexibility when being implemented (as was seen when Basel II was applied). The list of uses should therefore be seen as an illustration of best practice.	Thank you. Please see our response to 42
297.			Confidential comment deleted.	
298.	CEA, ECO-SLV-09-451	3.100.	Ceiops indicates that undertakings may use different ways to show compliance with the 9 principles set. The CEA would like to know how the expression “different ways” should be understood. We also recommend, to specify explicitly what is not a part of the use test, e.g.: <input type="checkbox"/> The management strategy.	CEIOPS recognises that undertaking will implement internal models in different ways to reflect their business model and the uses they make of the internal model. For this reason, we do not wish to be prescriptive in the way undertakings should

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		<p><input type="checkbox"/> In case of partial internal modelling those parts of the model which are identical to the standard formula.</p> <p>Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start; the impacts of these decisions on the risk profile, however, need to be assessed with the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of it extends from risk management to business strategies.</p>	<p>demonstrate compliance. We consider that undertakings should think carefully about how they use their internal model and how they will demonstrate this to the supervisory authority.</p> <p>For partial internal models, our CP on this will answer the point.</p> <p>We recognise that internal models are used to quantify risks in undertakings and so could be regarded solely as a risk management tool. However, CEIOPS' aim for Solvency 2 internal models is to bring together risk management and decision-making, including strategic decision-making. We consider that the internal model framework will give useful insights into these decisions.</p> <p>CEIOPS is also considering level 3 guidance for supervisors on how to assess this, and we have referred to this in the advice.</p>
299.	CODAN Forsikring A/S (10529638),	3.100.	<p>The foundation principle should specify that pressure to improve the model comes from outside of the model build team.</p> <p>Please see our response to 294</p>

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300.	CODAN Forsikring (Branch Norway) (991 502 491)	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.	Please see our response to 294
301.	Dutch Actuarial Society – Actuariel Genootschap (	3.100.	CEIOPS states in 3.100 that undertakings may use different ways to show compliance with use test. Is there any convergence to widely accepted and used risk-management criteria/ performance indicators for non-life insurers (RAROC/ Economic Value Added/ Economic Profit Value New Business)? Shall these be part of the level 3 guidelines?	Please see our response to 298
302.	EMB Consultancy LLP	3.100.	We welcome the principles based approach to the use test, and the recognition that fulfilling the requirements implied by these will necessarily be a different journey for different undertakings. There are significant overlaps between many of the principles and perhaps a fewer number of these might help to make them more memorable and easier to communicate.	Please see our response to 206
303.	FFSA	3.100.	CEIOPS says that undertakings may use different ways to show compliance with the 9 principles set. FFSA wants to know how the expression “different way” could be understood.	Please see our response to 298
304.	German Insurance Association	3.100.	CEIOPS indicates that undertakings may use different ways to show compliance with the 9 principles set. The GDV would like to know how the expression “different ways”	Please see our response to 298 and 206

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	- Gesamtverb and der D		<p>should be understood.</p> <p>We support a principle based approach. However, some of the nine principles are overlapping.</p> <p>We also recommend, to specify explicitly what is not a part of the use test, e.g.</p> <p><input type="checkbox"/> the management strategy</p> <p><input type="checkbox"/> in case of partial internal modelling those parts of the model which are identical to the standard formula</p> <p>Strategic decision making may also be triggered by peer group analysis or other tools and thus does not require the internal model at the start; the impacts of these decisions on the risk profile, however, need to be assessed with the internal model. There is a danger that business decisions in general are tested by the use-test and thus the scope of it extends from risk management to business strategies.</p>	<p>For partial internal models, our CP on this will answer the point.</p> <p>We recognise that internal models are used to quantify risks in undertakings and so could be regarded solely as a risk management tool. However, CEIOPS' aim for Solvency 2 internal models is to bring together risk management and decision-making, including strategic decision-making. We consider that the internal model framework will give useful insights into these decisions. As of the huge importance of strategic decisions and the overall responsibility of management CEIOPS expects that the results of the internal model shall be used within the decision making process.</p>

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					CEIOPS is also considering level 3 guidance for supervisors on how to assess this, and we have referred to this in the advice.
305.	Link4 Towarzystw o Ubezpieczeń SUPERVISORY AUTHORITY	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.		Please see our response to 294
306.	PricewaterhouseCoopers LLP	3.100.	The proposed principles based approach is very sensible as any prescriptive, list-based, approach would fail to capture the reality of usage in the wide range of insurers across the EU. The exposition of the areas where usage might be expected is however extremely helpful. We note that in 3.59 CEIOPS suggest further Level 3 text. Depending on the eventual status of CEIOPS level 3 text this could yet become a requirement and care should be taken not to reverse the Level 2 advice to go for a principles based approach.		Thank you, we have noted this.
307.	RBS Insurance	3.100.	We agree with the principles based approach to assessing compliance with the Use test.		Thank you
308.	RSA Insurance Group PLC	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.		Please see our response to 294
309.	RSA	3.100.	The foundation principle should specify that pressure to improve		Please see our response to 294

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	Insurance Ireland Ltd		the model comes from outside of the model build team.	
310.	RSA - Sun Insurance Office Ltd.	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.	Please see our response to 294
311.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.100.	The foundation principle should specify that pressure to improve the model comes from outside of the model build team.	Please see our response to 294
312.	XL Capital Ltd	3.100.	We welcome the principles based approach that CEIOPS propose for assessing compliance with the Internal Model Use test.	Thank you
313.	AAS BALTA	3.101.	Agree	Thank you
314.	AB Lietuvos draudimas	3.101.	Agree	Thank you
315.	Association of British Insurers	3.101.	Foundation principle Monitoring the accuracy of the internal model is clearly a desirable feature. However, Sub point b implies the need for internal processes to highlight when the accuracy of the internal model falls. Practically such a requirement will be very difficult to implement as it may only be known retrospectively. A more effective requirement would be that internal processes need to setup to monitor the accuracy of the internal model and take action if there is evidence that it is declining significantly.	Thank you. We will take account of this in the validation section.
316.	CODAN Forsikring A/S	3.101.	Agree	Thank you

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	(10529638), Denmark			
317.	CODAN Forsikring (Branch Norway) (991 502 491)	3.101.	Agree	Thank you
318.	CRO Forum	3.101.	c. "The undertaking lacks a process for improving the internal model; and" In our view evaluation of the model on a regular basis is necessary. However, this may show that the model is still appropriate and improvement is not possible or needed. Therefore we suggest replacing "improving" by "(SWISS RE) "monitoring appropriateness of ".	Thank you for this helpful comment. We have amended the text to reflect this.
319.	EMB Consultancy LLP	3.101.	The foundation principle appears sound and well thought out. However, we would suggest that the phrase "pressure to improve" is perhaps too open as it does not specify from whom this may come and what the pressure may be;; arguably there is always likely to be some pressure from somewhere so the question is whether this results in action. We would offer "a clear business case to improve" as an alternative. Our understanding is that the use test requirements are intended to be applied to the internal model as used in the day to day business;; the model that would be used as appropriate to produce the ORSA. We support this position. However, we understand that the rest of the model approval standards concern the scope of the SCR calculation and feel that this should be pointed clearly.	Please see our response to 294. We do not understand the requirements thus. As far as CEIOPS is concerned, the requirements apply to the internal model as a whole.

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320.	FFSA	3.101.	<p>Rewriting of section a. CEIOPS says that one example of non-compliance with the Use test is that "the internal outputs are calculated solely with little or no internal incentive for ensuring the quality of those outputs".</p> <p>FFSA suggests rewriting this sentence with "the internal outputs are calculated with little or no internal incentive for ensuring the quality of those outputs", since what is targeted here is to exclude cases where there is an evident absence of incentive for quality improvement.</p> <p>Remark on section b. CEIOPS says that an example of non-compliance for Use test is a deterioration in the accuracy, robustness or timeliness of the internal model outputs, which is unlikely to be picked up by the undertaking's internal processes.</p> <p>FFSA thinks that criteria for the term "accuracy", "robustness" and "timeliness" has to be precised. In particular, to what extent and granularity of outputs these criteria apply?</p>	<p>Thank you, this is a very helpful suggestion and we have incorporated it.</p> <p>Thank you, we have noted this and will consider whether we should produce guidance on these terms.</p>
321.	Groupe Consultatif	3.101.	<p>c. We believe that it would be enough to regularly evaluate the model but, depending on the need or proportionality, the improvement would not need to be automatically implemented.</p> <p>d. How would the supervisor assess whether or not the results are "artificially low", especially if the model takes into account risk mitigation techniques in an appropriate way?</p> <p>To be able to be used as a check, the ORSA process needs to be specified in more detail.</p>	<p>Please see our comment on 318</p> <p>We may consider this in more detail in our level 3 guidance.</p>
322.	Legal & General	3.101.	Monitoring the accuracy of the internal model is clearly a desirable feature.	Please see our comments on 318

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	Group		<p>Sub point b:</p> <p>However, Sub point b implies the need for internal processes to highlight when the accuracy of the internal model falls. Practically such a requirement will be very difficult to implement as it may only be known retrospectively. A more effective requirement would be that internal processes need to be setup to monitor the accuracy of the internal model and take action if there is evidence that it is declining significantly.</p>	
323.	Link4 Towarzystw o Ubezpieczeń SA	3.101.	Agree	Thank you
324.	RSA Insurance Group PLC	3.101.	Agree	Thank you
325.	RSA Insurance Ireland Ltd	3.101.	Agree	Thank you
326.	RSA - Sun Insurance Office Ltd.	3.101.	Agree	Thank you
327.	SWEDEN: Trygg-Hansa Försäkrings	3.101.	Agree	Thank you

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	AB (516401-7799)				
328.	AAS BALTA	3.102.	Sensible Principle		Thank you
329.	AB Lietuvos draudimas	3.102.	Sensible Principle		Thank you
330.	CEA, ECO-SLV-09-451	3.102.	<p>Ceiods defines in Principle 1 the ability of senior management, including the administrative or management body, to be able to demonstrate understanding of the internal model.</p> <p>The CEA believes that the term "Senior management" has to be precise, with a link to section 4 on Internal model governance.</p>	<p>A very good point. We have amended the text to reflect this.</p> <p>We have amended principle 1.</p>	
331.	CODAN Forsikring A/S (10529638), Denmark	3.102.	Sensible Principle		Thank you
332.	CODAN Forsikring (Branch Norway) (991 502 491)	3.102.	Sensible Principle		Thank you
333.	FFSA	3.102.	CEIOPS defines in Principle 1 the ability of senior management, including the administrative or management body, to be able to demonstrate understanding of the internal model.		Please see our response to 330

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			FFSA believes that the term "Senior management" as to be précised, with a link to section 4 on Internal model governance displayed in the current CP56, since senior management here is "administrative or management body" and "risk management function", as displayed in §4.10.		
334.	German Insurance Association – Gesamtverb and der D	3.102.	<p>CEIOPS defines in Principle 1 the ability of senior management, including the administrative or management body, to be able to demonstrate understanding of the internal model.</p> <p>The GDV believes that the term "Senior management" has to be precise, with a link to section 4 on Internal model governance.</p>	Please see our response to 330	
335.	Investment & Life Assurance Group (ILAG)	3.102.	Principle 1. Many firms will be discouraged by the technical skills they will have to acquire and demonstrate.	We have had very little similar feedback and do not propose to amend this. Principle 1 reflects the lessons we have learned from the financial crisis.	
336.	Link4 Towarzystw o Ubezpieczeń SA	3.102.	Sensible Principle	Thank you	
337.	RSA Insurance	3.102.	Sensible Principle	Thank you	

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	Group PLC			
338.	RSA Insurance Ireland Ltd	3.102.	Sensible Principle	Thank you
339.	RSA - Sun Insurance Office Ltd.	3.102.	Sensible Principle	Thank you
340.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.102.	Sensible Principle	Thank you
341.	XL Capital Ltd	3.102.	<p>We feel it would be helpful to provide more detail regarding the level at which senior management (as a body or individually?) shall demonstrate their understanding of the internal model.</p> <p>We also believe that their level of understanding should be commensurate to their needs.</p>	Please see our answer to 47
342.	Association of British Insurers	3.103.	<p>Principle 1</p> <p>We believe this requirement needs to be proportionate to the level of knowledge which is expected from Senior management, depending on the role of the member concerned.</p> <p>We would imagine it to be a collective and appropriate understanding from Senior management as a whole, as was stated in CEIOPS CP33 on System of Governance, rather than an individual responsibility of Board members.</p>	CEIOPS considers that each member of the administrative or management body shall have an overall understanding of the internal model. CEIOPS considers that this understanding may be gained from training provided by the undertaking. Each member of the senior management shall have an overall understanding of the internal model as well as a

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					detailed understanding in the areas where they use the internal model.
343.			Confidential comment deleted.		
344.	CEA, ECO-SLV-09-451	3.103.	<p>(Use test - Principle 1: Understanding of senior mgmt)</p> <p>The administrative and management bodies are expected to demonstrate a partially profound understanding of the internal model structure, dynamics and inputs.</p> <p>More guidance should be given of the requirement to demonstrate understanding of the internal model. Top level management (e.g. CEO) should not have to understand the structure and / or details of the internal model. Rather this responsibility should be given to suitably qualified and mandated senior managers who should understand the drivers of the models relevant for their decisions, as well as the limitations of the model outputs for different decisions. The profound understanding of the model structure, dynamics and inputs (e.g. diversification benefits) should be delegated further to qualified staff. However, administrative and management bodies need to ensure that the delegated tasks and processes are working properly, so that they can take final responsibility for the results and decisions based upon those results. Every senior manager and Board member should at least be responsible for the model applications within his/ her own area of responsibility.</p> <p>Clarify that the profound understanding of the internal model can</p>		Please see our answer to 47 and 342

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			be delegated as long as the top level management ensures that the delegated tasks and processes are well functioning, so that they are able to take responsibility for the results and decisions based upon them.	
345.	CRO Forum	3.103.	<p>"... The administrative or management body of the undertaking shall demonstrate where the outputs of the internal model are used in decision-making."</p> <p>We would like to have further clarification on the practical implications of 'demonstrate". Should this be read as; should fully understand?</p>	Please see our answer to 47 and 342
346.	EMB Consultancy LLP	3.103.	<p>Principle 1 reinforces the need for the use of the model to be driven from the top of the organisation down, which we support. The wording only specifies that understanding need be demonstrated and we would argue that in fact this could be tightened to say that management (that is, the decision makers in the business who use the internal model) should collectively be able to demonstrate a thorough understanding of the internal model.</p> <p>We agree with the wording "inform decision making" and are keen to see that undertakings understand that they are not to blindly use internal model outputs, rather to use them as an extra informant to decision making, and to question these outputs as they would any other piece of information they are using to inform an important decision.</p>	Please see our answer to 47 and 342
347.	German Insurance Association	3.103.	(Use test - Principle 1: Understanding of senior mgmt)	Please see our answer to 47 and 342

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	- Gesamtverb and der D		<p>The administrative and management bodies are expected to demonstrate a partially profound understanding of the internal model structure, dynamics and inputs.</p> <p>More guidance should be given of the requirement to demonstrate understanding of the internal model. Top level management (e.g. CEO) should not have to understand the structure and / or details of the internal model. Rather this responsibility should be given to suitably qualified and mandated senior managers who should understand the drivers of the models relevant for their decisions, as well as the limitations of the model outputs for different decisions. The profound understanding of the model structure, dynamics and inputs (e.g. diversification benefits) should be delegated further to qualified staff. However, administrative and management bodies need to ensure that the delegated tasks and processes are working properly, so that they can take final responsibility for the results and decisions based upon those results. Every senior manager and Board member should at least be responsible for the model applications within his/ her own area of responsibility.</p> <p>Clarify that the profound understanding of the internal model can be delegated as long as the top level management ensures that the delegated tasks and processes are well functioning, so that they are able to take responsibility for the results and decisions based upon them.</p>	
348.	International Underwriting Association	3.103.	We seek clarification that the senior management's "understanding" of the internal model, should not necessarily be in-depth technical understanding - and instead relate to the scope, capabilities and	Please see our answer to 47 and 342

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	of London		limitations of the internal model, and how it fits in with the business. They should be able to make the necessary strategic decisions from their knowledge, but without all necessarily having an in-depth technical knowledge. In fact, senior management will likely have differing levels of knowledge based upon their expertise. For example, although Chief Risk Officers might be able to have the requisite technical understanding, it not be practical for other board members to have such in-depth understanding. For this reason, we would appreciate clarity on whether "understanding" relates to individuals within a management function, or the collective of individuals forming the body of senior management.	
349.	Llody's	3.103.	We question how the management body would "demonstrate understanding" in practice. It is realistic to require that this information is communicated to the management body in such a way as to give them the opportunity to adequately understand the material points, and to rely on the "fit and proper" requirements to ensure that they take the necessary steps to ensure that they do understand it. Actually "demonstrating" such understanding will be impractical.	Please see our answer to 47 and 342
350.	Pearl Group Limited	3.103.	<p>Principle 1</p> <p>We believe this requirement needs to be proportionate to the level of knowledge which is expected from Senior management, depending on the role of the member concerned.</p> <p>We would imagine it to be a collective and appropriate understanding from Senior management as a whole, as was stated in CEIOPS CP33 on System of Governance, rather than an</p>	Please see our answer to 47 and 342

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			individual responsibility of Board members. In fact we believe that all references to Senior management responsibility should be a requirements on the group and not apply to each member individually.	
351.	RBS Insurance	3.103.	For principle 1 we would recommend the wording changes to "demonstrate a collective and appropriate understanding of the internal model". This is more proportionate to the different levels of senior management that are in place.	Please see our answer to 47 and 342
352.	AAS BALTA	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.	We do not agree that the list is prescriptive. CEIOPS considers that this is the minimum level of understanding required, based on the lessons we have learned from the financial crisis. We consider that undertakings will, in fact, require their administrative or management body to have more knowledge of the internal model than in the list.
353.	AB Lietuvos draudimas	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.	Please see our comments on 352
354.	Association of British	3.104.	These requirements to demonstrate the Board understands the model will need to be reasonably interpreted.	Please see our answer to 47 and 342

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	Insurers			
355.			Confidential comment deleted.	
356.	CEA, ECO-SLV-09-451	3.104.	DITTO	Please see our answer to 47 and 342
357.	CODAN Forsikring A/S (10529638), Denmark	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.	Please see our comments on 352
358.	CODAN Forsikring (Branch Norway) (991 502 491)	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.	Please see our comments on 352
359.	CRO Forum	3.104.	Our interpretation administrative or management body is consistent with that described in advice on 'system of governance' (CP 33)." It is important to recognize that the level of detailed knowledge in relation to an internal model in practice will need to differ between different hierarchical levels depending on where which decisions are made. "The administrative and management body shall demonstrate that they understand the internal model, including: a. the structure of the internal model an how this fits with their business model and risk-management framework;	Please see our answer to 47 and 342 Thank you for these comments – we have amended the text to reflect them. For a., we consider that this is included in the section

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			<p>b. the logic behind the model;</p> <p>c. the dynamics of the model;</p> <p>d. the limitations of the internal model and that these limitations are taken account of in decision-making;</p> <p>...</p> <p>g. the scope of the internal model and the risks covered by the internal model, as well as those not covered."</p> <p>a. In our view management should understand the structure of the internal model and how it fits with their business model. In addition we would add that management should make sure that a robust internal framework is in place so that reliance can be placed on the outcomes of the internal model.</p> <p>b. We propose to clarify the meaning of the word "logic" by changing it to "model methodology"</p> <p>c. The meaning of the word "dynamics" should be clarified here. Does this only relate to risk drivers and their interdependencies ".</p> <p>d. We propose to change "taken account of in" to "taken into account in"</p> <p>g. We propose to replace "the scope of the internal model" by "the scope and purpose of the internal model".</p>	on internal model governance.
360.	EMB Consultancy LLP	3.104.	<p>We agree that most of the points set out should form areas in which management need to demonstrate understanding, and as mentioned above we feel that collectively management should be able to demonstrate thorough understanding.</p> <p>For point f) we would suggest that just understanding</p>	Thank you, we have noted these points and will take them into account in developing level 3 guidance.

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			<p>diversification effects is not enough and that an understanding of the dependency throughout the risk profile is what is required.</p> <p>Point g) highlights the importance of the scope of the model and we feel that this is an area that will be challenging for undertakings: both those that have had models for many years now, as well as those that are currently putting new capabilities in place in advance of Solvency II.</p>	
361.	European Union member firms of Deloitte Touche To	3.104.	The expression "the dynamics of the model" is not clear; we suggest CEIOPS clarifies the meaning of this term.	Please see response to 359
362.	FFSA	3.104.	<p>CEIOPS presents here the knowledge of the internal model senior management shall demonstrate.</p> <p>FFSA believes that the top management should not have to understand the structure and/or details of the internal model. Rather this responsibility should be given to suitably qualified and mandated senior managers. Top level management needs to know and to understand the impact of decisions on the internal model outputs.</p>	Please see our answer to 47 and 342
363.	German Insurance Association – Gesamtverb and der D	3.104.	DITTO	Please see our answer to 47 and 342

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364.	Groupe Consultatif	3.104.	<p>"The administrative or management body shall demonstrate that they understand the internal model, including:"</p> <p>We would suggest rephrasing as:</p> <p>"The administrative or management body shall demonstrate that it understands relevant aspects of the internal model covering its area of responsibility, including:"</p> <p>b. It needs to be clear that the responsibility is limited to knowing the logic behind the parts used.</p> <p>d & e.: We do not see a reason for having both d. and e. The scope in e. is already covered by d. We suggest deleting e.</p> <p>More guidance would be useful as to what is meant by 'dynamics of the model'.</p>	Please see our answer to 47 and 342, and 359	
365.	Institut des actuaires	3.104.	<p>Point d. and point e. are redundant, we suggest to merge them into one paragraph.</p> <p>It would be useful that CEIOPS specify the kind of approach that it recommends in order for managers to demonstrate that they understand the internal model.</p>	Please see our answer to 47 and 342	
366.	Legal & General Group	3.104.	<p>Sub point c:</p> <p>It is not clear what the management body would be expected to understand in terms of the "dynamics of the model". It would be helpful to further clarify this e.g. does it mean the sensitivity of the model to key assumptions?</p>	Please see 359	
367.	Link4 Towarzystw	3.104.	<p>This list is too prescriptive. Alternative wording suggestion:</p> <p>The administrative or management body shall demonstrate that</p>	Please see our comments on 352	

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	o Ubezpieczeń SA		they understand the internal model.	
368.	Llody's	3.104.	<p>Senior management should understand the limitations of the model and ensure that these limitations are taken into account in decision-making.</p> <p>The understanding of the limitations of the model for decision-making by senior management is an area which should be encouraged.</p>	Thank you
369.			Confidential comment deleted.	
370.	Pearl Group Limited	3.104.	These requirements to demonstrate the Board understands the model will need to be reasonably interpreted.	Noted
371.	RBS Insurance	3.104.	We believe point (f) would be very difficult to achieve in practice at the level stated, we would recommend that the wording changes to "in which areas within the undertaking/group diversification effects arise"	Please see our comment on 241
372.	ROAM –	3.104.	<p>CEIOPS presents here the knowledge of the internal model senior management shall demonstrate.</p> <p>ROAM believes that the top management should not have to understand the structure and/or details of the internal model. Rather this responsibility should be given to suitably qualified and mandated senior managers. Top level management needs to know and to understand the impact of decisions on the internal model outputs.</p>	Please see our answer to 47 and 342, and 352 and 359
373.	RSA Insurance	3.104.	This list is too prescriptive. Alternative wording suggestion:	Please see our comments on 352

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	Group PLC		The administrative or management body shall demonstrate that they understand the internal model.		
374.	RSA Insurance Ireland Ltd	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.		Please see our comments on 352
375.	RSA - Sun Insurance Office Ltd.	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.		Please see our comments on 352
376.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.104.	This list is too prescriptive. Alternative wording suggestion: The administrative or management body shall demonstrate that they understand the internal model.		Please see our comments on 352
377.			Confidential comment deleted.		
378.	Association of British Insurers	3.105.	It is unlikely that Senior management will attempt to “manipulate the internal model” as it will be subject to full fit and proper requirements. We would also imagine firms to determine levels of responsibility and accountability for the internal model as part of their overall governance arrangements.		CEIOPS agrees with this point, but still considers it is worth emphasising the potential problem.
379.	CEA,	3.105.	DITTO		Please see our comment on 378.

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	ECO-SLV-09-451		<p>Agreed. However, it should be acknowledged that the sensitivity testing of different model inputs and their effects on the results is the basis for most model uses. This should therefore not be interpreted as manipulation.</p> <p>Furthermore, we believe that the paragraph should be re-written: "3.105 the undertaking shall not manipulate the internal model in order to obtain outputs that do not appropriately reflects its risk profile."</p>	Thank you – we have made this change.
380.	CRO Forum	3.105.	<p>"The administrative body shall not manipulate the internal model in order to obtain outputs that do not appropriately reflect their risk profile"</p> <p>We propose to add: "and shall document material underlying assumptions and consecutive changes over time."</p>	We agree with the point made, but consider that this is covered appropriately in the documentation standards.
381.	EMB Consultancy LLP	3.105.	This takes quite a negative standpoint. Though clear large-scale manipulation is obviously to be discouraged and should be detectible we feel this would be more difficult in more likely cases where it may occur on a small scale. We would suggest that more positively asserting that "management should be able to demonstrate that outputs appropriately reflect their risk profile" would be better.	Please see our response to 378
382.	FFSA	3.105.	<p>CEIOPS says that the administrative or management body shall not manipulate the internal model in order to obtain outputs that do not appropriately reflects their risk profile.</p> <p>FFSA thinks that the paragraph has to be rewritten has "3.105 the undertaking shall not manipulate the internal model in order to</p>	Please see our response to 378

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			obtain outputs that do not appropriately reflects its risk profile.”	
383.			Confidential comment deleted.	
384.	German Insurance Association – Gesamtverb and der D	3.105.	<p>DITTO</p> <p>Agreed. However, it should be acknowledged that the sensitivity testing of different model inputs and their effects on the results is the basis for most model uses. This should therefore not be interpreted as manipulation.</p> <p>Furthermore, we believe that the paragraph should be re-written: “3.105 the undertaking shall not manipulate the internal model in order to obtain outputs that do not appropriately reflects its risk profile.”</p>	<p>Please see our comment on 378.</p> <p>Thank you – we have made this change.</p>
385.	Llody’s	3.105.	It would be clearer if the phrase “their risk profile” were altered to “the undertaking’s risk profile” so that the paragraph would read “The administrative or management body shall not manipulate the internal model in order to obtain outputs that do not appropriately reflect the undertaking’s risk profile.”	We have amended the paragraph
386.	Pearl Group Limited	3.105.	It is unlikely that Senior management will attempt to “manipulate the internal model” as it will be subject to full fit and proper requirements.	Please see our comment on 378.

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			We would also imagine firms to determine levels of responsibility and accountability for the internal model as part of their overall governance arrangements.	
387.	XL Capital Ltd	3.105.	See comment on para 3.70	And please see our comment
388.	AAS BALTA	3.106.	Sensible Principle	Thank you
389.	AB Lietuvos draudimas	3.106.	Sensible Principle	Thank you
390.	Association of British Insurers	3.106.	<p>Principle 2</p> <p>We believe this should be applied in a flexible manner. If this requirement was applied too strictly, it would be particularly challenging and onerous in the context of a group where there might be differences in business models between the group and the solo levels. In particular, there should different possible ways to implement bullet points e), f) and g) in para 3.106. What is most important here is to ensure there is no inconsistency in methods rather than imposing identical approaches throughout the organisation.</p> <p>Therefore we believe that, for the purpose of principle 2, principle 5 and para 4.52, groups should be to fulfil the requirements at business unit level, cluster of entities, or even product groups, in accordance with the way the business is actually run, and not necessarily at solo legal entity level.</p> <p>Sub point e)</p>	CEIOPS is considering providing more information about group internal models in guidance to be provided for level 3.

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			The proposal that granularity of the capital allocation should reflect the undertakings risk management system and its business model is helpful. Although, this does assume that there is a degree of flexibility in the approach. It is not clear how "consumption of regulatory capital" fits in with this decision. We would welcome further clarification.	
391.			Confidential comment deleted.	
392.	CEA, ECO-SLV-09-451	3.106.	<p>(Use test - Principle 2: Fit with business model)</p> <p>"Fit for purpose" rather than "fit with business model"</p> <p>Rather than being "fit with the business model", the focus here should be "fit for purpose" for the different uses. This seems a much more relevant criteria and it would make some of the listed aspects less narrow. Obviously, if there are material changes in the business model, the internal model would need to reflect those in order to support decisions in an appropriate manner (fit for purpose).</p> <p>Shift focus to "fit for purpose" which would also result in less narrow specification of this principle.</p> <p>Furthermore, we propose the following changes to the text:</p> <p><input type="checkbox"/> b.: The internal model outputs should not be required to reconcile with reporting which do not follow a Solvency II valuation basis. Such a requirement is not in line with the level 1 text. Moreover, it is questionable what insight will be gained from this comparison.</p>	<p>CEIOPS considers that the key point in principle 2 is that the internal model should reflect the undertaking's business model. Our rationale is that the internal model will not reflect the risk profile of the undertaking unless the business model is embedded in the internal model.</p> <p>In terms of the proposed changes:</p> <p>b) please see our answer to 225</p> <p>d) we consider that this is implicit in the current wording, given the process set out in CP37</p>

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		<input type="checkbox"/> "d. the internal model shall be changed within a reasonable period to reflect changes in the business model". <input type="checkbox"/> f. Second sentence: "... include the major sources of profit and losses". See also our comments to section 7. <input type="checkbox"/> g.: Replace "entities and material lines of business" by "entities or material lines of business".	f) We have amended f in line with changes to the P&L attribution. g) We prefer our original wording
393.	CODAN Forsikring A/S (10529638), Denmark	3.106.	Sensible Principle
394.	CODAN Forsikring (Branch Norway) (991 502 491)	3.106.	Sensible Principle
395.	CRO Forum	3.106.	b. "reconciliation between the outputs of the internal model and internal and external financial reporting" Where we welcome a high-level reconciliation of the internal model and internal / external financial reports it is important to clarify that this will not be required for all reporting types such as Embedded value. Moreover, we would also welcome a concept of proportionality where these reconciliations are performed at business unit level as opposed to line of business or entity level. For example, principle 2 could be unduly onerous if applied too

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			<p>rigidly. Although 'consistency' and 'ability to reconcile' are key requirements, some scope should be allowed for flexibility in the other aspects provided these key requirements are not compromised.</p> <p>f. "The results of the Use test shall be comparable with the Profit and loss attribution described in Article 121. For a group internal model this shall include the sources of profit and loss for solo entities and on a consolidated basis."</p> <p>The intention of this sentence is not clear. We would ask for clarification.</p> <p>g. "The internal model shall at least be able to produce results between entities and material business lines and have overall capital results split by material risks to assist in risk-management activities. The granularity of the internal-model output shall reflect the insurance and reinsurance undertaking's decision making processes."</p> <p>We agree that the granularity of the internal model output shall reflect the insurance and reinsurance undertaking's decision making processes. We propose to start the bullet point with this sentence. It should not be required to have the model output at entity level (especially outside EEA), as the first sentence suggests. We propose to replace "entities and material business lines" by "entities or material business lines"</p>	<p>CEIOPS may be giving more detail on group internal models in level 3 guidance on internal model assessment.</p> <p>CEIOPS is satisfied that the current wording reflects our view.</p>
396.	EMB Consultancy LLP	3.106.	<p>Principle 2 appears sound and will serve to make sure that undertakings are not using inflexible "off the peg" solutions. Interestingly, it does implicitly question the very existence of the standard formula approach under Solvency II.</p> <p>The aspects mentioned raise some interesting questions. We agree with the sentiments but would point out that some of these could</p>	Thank you

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			be taxing depending on how closely the design of the model has to “align”.	
397.	FFSA	3.106.	<p>CEIOPS write down the criterion for the internal to fit the business model.</p> <p>FFSA suggests to rewrite the sentence “d. the internal model shall be changed to reflect changes in the business model” to “d. the internal model shall be changed within a reasonable period to reflect changes in the business model”</p> <p>Moreover, FFSA thinks that in point f. a proportionality principle shall be used to keep the profit and loss attribution process simple and understandable, especially at group level. FFSA moreover restates (as done in answer to CP 60 on Group Solvency Assessment) that it would prefer accounting scope and supervisory scope to be as close as possible. If that was not the case, the profit and loss attribution might be complicated to do.</p>	<p>CEIOPS may be publishing guidance on this at level 3.</p> <p>We prefer our original wording</p> <p>CEIOPS considers that assessment of group internal models should reflect the structure of the group and the internal model.</p>
398.	German Insurance Association – Gesamtverb and der D	3.106.	<p>(Use test - Principle 2: Fit with business model)</p> <p>“Fit for purpose” rather than “fit with business model”</p> <p>Rather than being “fit with the business model”, the focus here should be “fit for purpose” for the different uses. This seems a much more relevant criteria and it would make some of the listed aspects less narrow. Obviously, if there are material changes in the business model, the internal model would need to reflect those in</p>	Please see our response to 392 and 395

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			<p>order to support decisions in an appropriate manner (fit for purpose).</p> <p>Shift focus to "fit for purpose" which would also result in less narrow specification of this principle.</p> <p>Furthermore, we propose the following changes to the text:</p> <ul style="list-style-type: none"> - b.: The internal model outputs should not be required to reconcile with reportings which do not follow a Solvency II valuation basis and might be non-uniform itself. Such a requirement is not in line with the level 1 text. Moreover, it is questionable what insight will be gained from this comparison. - "d. the internal model shall be changed within a reasonable period to reflect changes in the business model" - f. Second sentence: "... include the major sources of profit and losses". See also our comments to section 7. - g.: Replace "entities and material lines of business" by "entities or material lines of business". 	
399.	Groupe Consultatif	3.106.	See our comments on 3.71 and 3.72	And see our responses
400.	Institut des actuaires	3.106.	Point e. and point g. (the granularity of capital allocation and model results has to correspond to the processes of decision taking, information about consuming required capital) may be very restricting according to the detail level that is considered. We suggest that more details of what is required are given.	CEIOPS is considering producing level 3 guidance on these areas. Your comments will be very

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			<p>Point f is very demanding. It can be very complex depending on the used accounting principles.</p> <p>We believe a group P&L analysis shall be considered as done when every business unit already made a P&L analysis.</p>	helpdul.	
401.	Legal & General Group	3.106.	<p>Sub point e:</p> <p>The proposal that granularity of the capital allocation should reflect the undertakings risk management system and its business model is helpful. However, this does assume that there is a degree of flexibility in the approach. It is not clear how "consumption of regulatory capital" fits in with this decision.</p>	CEIOPS is of the view that undertakings should understand the key drivers of risk capital and how these change Furthermore every decision has got an influence on the solvency required capital. The SCR has to be calculated at least annually. So it is important that a decision taker has got the impact of his decision on the SCR also in mind.	
402.	Link4 Towarzystw o Ubezpieczeń SA	3.106.	Sensible Principle	Thank you	
403.	Llody's	3.106.	<p>i) Subpara a: suggest this be rewritten as follows - "The methods used to calculate the probability distribution forecast underlying the internal model shall be consistent with the methods used to calculate technical provisions";</p> <p>(ii) Subpara b: suggest this be rewritten as follows - "The outputs of the internal model shall reconcilie with internal and external [financial] reporting";</p>	These are really helpful drafting suggestions, that we have included.	

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			<p>(iii) Subpara e:</p> <p>* it may be clearer if the word "include" in the third line were replaced with the phrase "the internal model shall enable the provision of", so that the first sentence of this subparagraph would read - "The capital-allocation approach and the granularity of allocation shall reflect the undertaking's risk-management system and its business model, and the internal model shall enable the provision of information on the consumption of regulatory capital";</p> <p>* the second sentence - i.e. "The granularity shall especially correspond to the level of decision-making processes within the undertaking" - presumably relates to the comments in para 3.72e about a group internal model, where it is said that "CEIOPS also expects that required and actual economic capital will be allocated as a minimum between subsidiaries and related undertakings". If so, it would be clearer to amend the second sentence of para 3.106e to read "For a group internal model, the granularity shall extend at least as between subsidiaries and related undertakings". If not, some clarification of the meaning of the statement that "The granularity shall especially correspond to the level of decision-making processes within the undertaking" would be helpful;</p> <p>(iv) Subpara f: suggest this be rewritten as follows - "The results of the Use test shall enable the undertaking to satisfy the requirements of Article 121 concerning profit and loss attribution and, in the case of a group internal model, enable the sources of profit and loss for solo entities and on a consolidated basis to be reviewed".</p>	<p>We do not agree here, however. It is important that the decision taker also takes the impact on the SCR in his decision making process into account.</p> <p>We propose to give more guidance on group internal models and on the use test.</p>

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					Please see our comment on 144 – we have amended the advice to reflect our comment.
404.	Pearl Group Limited	3.106.	<p>We believe this should be applied in a flexible manner. If this requirement was applied too strictly, it would be particularly challenging and onerous in the context of a group where there might be differences in business models between the group and the solo levels. In particular, there should different possible ways to implement bullet points e), f) and g) in para 3.106. What is most important here is to ensure there is no inconsistency in methods rather than imposing identical approaches throughout the organisation.</p> <p>Therefore we believe that, for the purpose of principle 2, principle 5 and para 4.52, groups should be to fulfil the requirements at business unit level, cluster of entities, or even product groups, in accordance with the way the business is actually run, and not necessarily at solo legal entity level</p>		Please see our response to 390
405.	PricewaterhouseCoopers LLP	3.106.	<p>The requirement to produce results split by material lines of business is not necessarily onerous of itself. However, depending on how diversification and possibly risks such as operational risk are apportioned, the result could differ from one insurer to another. It should not be part of the Use Test that such allocation is part of Use - as this may legitimately be not applicable (applies to point g).</p>		CEIOPS would emphasise the link with the Statistical Quality Standards and the requirement for the internal model to rank risk. We interpret this as involving capital allocation. We

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					do understand that results will differ depending on the capital allocation method, but regard this as a key part of model use.
406.	RSA Insurance Group PLC	3.106.	Sensible Principle		Thank you
407.	RSA Insurance Ireland Ltd	3.106.	Sensible Principle		Thank you
408.	RSA - Sun Insurance Office Ltd.	3.106.	Sensible Principle		Thank you
409.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.106.	Sensible Principle		Thank you
410.	XL Capital Ltd	3.106.	See comment on para 3.71		And please see our response
411.	AAS BALTA	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.		Please see our comment on 40
412.	AB Lietuvos draudimas	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.		Please see our comment on 40
413.	Association	3.107.	Principles 3 and 4		Please see our comment on 40

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	of British Insurers		<p>We believe these two principles to be very closely related and it might therefore be helpful to group them under one single principle.</p> <p>Otherwise, we feel principle 3 would benefit from the following addition in order to make it more effective. "The internal model shall cover sufficient material risks to make it useful for risk management and decision-making".</p>	
414.			Confidential comment deleted.	
415.	CEA, ECO-SLV-09-451	3.107.	<p>(Use test - Principle 3: Cover sufficient risks for uses)</p> <p>Principle 3 in the current format seems obsolete since it provides no additional guidance on the actual risks to be covered (further than specified in article 101 of the Level 1 text as well as 5.221 ff).</p> <p>Principle 3 is not clear, and should either be clarified or deleted, together with the two articles following it. While obviously an internal model should cover the full spectrum of risks, and should be sufficiently granular to support decisions about the management of risks, the minimum scope of the internal model is given by the structure of the standard formula.</p> <p>Delete principle 3 and this paragraph.</p>	<p>Please see our comment on 40</p> <p>The requirements for the SCR are covered in Section 4 of the Framework Directive, Article 101. This applies to the standard formula as well as the internal model. However, principle 3 aims to reflect CEIOPS' desire to ensure that the internal model is indeed used in the undertaking. Undertakings should ensure that the scope of the internal model covers sufficient uses to satisfy principle 3.</p>
416.	CODAN Forsikring	3.107.	<p>Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one</p>	Please see our comment on 40

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	A/S (10529638), Denmark		principle.	
417.	CODAN Forsikring (Branch Norway) (991 502 491)	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.	Please see our comment on 40
418.	CRO Forum	3.107.	We welcome CEIOPS' decision to include example uses, and not an exhaustive list, outside the implementing measure in Annex A We consider principle 3 to be reasonable. The list of uses (Annex A) should be proposed as general guidance and indicative of best practice.	Thank you, this reflects our intention
419.	EMB Consultancy LLP	3.107.	Principle 3 seems reasonable. We would suggest "sufficient material risks" rather than "sufficient risks" Capital allocation is mentioned as a requirement but no purpose is given, nor is any indication given as to what level in the entity, line of business or risk type structure this allocation is required.	Thank you. Capital allocation is mentioned in the level 1 text. We are considering giving more guidance at level 3.
420.	FFSA	3.107.	CEIOPS refers to Annex A and §3.50 on a list of possible uses for the allowance of the Use test. FFSA thinks that no allowance to any list has to be done, and that the list given has to be clearly and definitively stated as an example, with no coercion possibility.	This reflects our intention.

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421.	German Insurance Association – Gesamtverb and der D	3.107.	<p>(Use test - Principle 3: Cover sufficient risks for uses)</p> <p>Principle 3 in the current format seems obsolete since it provides no additional guidance on the actual risks to be covered (further than specified in article 101 of the Level 1 text as well as 5.221 ff).</p> <p>Principle 3 is not clear, and should either be clarified or deleted, together with the two articles following it. While obviously an internal model should cover the full spectrum of risks, and should be sufficiently granular to support decisions about the management of risks, the minimum scope of the internal model is given by the structure of the standard formula.</p> <p>Delete principle 3 and this paragraph.</p>	Please see our comment on 415
422.	KPMG ELLP	3.107.	<p>In principle 3 the guidance refers to the list of possible uses of the model which is very extensive yet the discussion in the text suggests that CEIOPS do not want to go for a list approach. We would welcome clarification on this issue.</p> <p>While the examples given are useful to illustrate how this may work in practice, we believe it is important that these do not become prescriptive and assessment of the Use Test remains principles based and proportionate.</p>	The reference to Annex A states clearly that these are example uses. CEIOPS' advice clearly states that we do not consider a list based approach to assessing compliance to be appropriate.
423.	Link4 Towarzystw o	3.107.	<p>Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.</p>	Please see our comment on 40

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	Ubezpieczeń SA				
424.	ROAM –	3.107.	CEIOPS refers to Annex A and §3.50 on a list of possible uses for the allowance of the Use test. ROAM thinks that no allowance to any list has to be done, and that the list given has to be clearly and definitively stated as an example, with no coercion possibility.	Please see our comment on 420	
425.	RSA Insurance Group PLC	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.	Please see our comment on 40	
426.	RSA Insurance Ireland Ltd	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.	Please see our comment on 40	
427.	RSA - Sun Insurance Office Ltd.	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.	Please see our comment on 40	
428.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.107.	Is there really a need to have separate principles for 3,4,5 & 8. The total content is sensible but it could easily be covered by one principle.	Please see our comment on 40	
429.	CEA, ECO-SLV-09-451	3.108.	DITTO	Please see our comments above	
430.	EMB	3.108.	We agree with the idea but in practice judging what should be	Thank you we will consider this	

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	Consultancy LLP		deemed "significant" will be difficult. The principle of proportionality should be applied. We would also like to see some emphasis on the fact that undertakings will use their model in the ORSA context rather than the SCR context.	on our work on the PIM paper. The principle of proportionality is a general principle which applies to undertakings which use internal models as well as to undertakings which do use the standard formula. So there is no need to explicitly focus here on the principle of proportionality.	
431.	German Insurance Association – Gesamtverb and der D	3.108.	DITTO	Please see our comments above	
432.	Institut des actuaires	3.108.	Concerning paragraph 3.108, could CEIOPS specify what it is aiming for ? Is it the fact that the internal model will be able to provide information allowing a better calculation of the SCR in order to gain approval?	Thank you. Our aim is to ensure that there is just one modelling framework which is used to calculate the regulatory requirements as well as it is used within the decision making process. This was one major aspect from the lessons learned from the crisis.	
433.	Pearl Group Limited	3.108.	Principles 3 and 4 We believe these two principles to be very closely related and it might therefore be helpful to group them under one single	Please see our comment on 40	

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			principle.	
434.	Association of British Insurers	3.109.	<p>Point c) We would highlight that risk limits alone will not be used to formulate risk limits, other considerations will be taken into account in this respect.</p> <p>The draft refers to 'risk limits' twice but it seems that for the second occurrence, it should refer to risk appetite?</p>	We do not understand what is being referred to here.
435.			Confidential comment deleted.	
436.	CRO Forum	3.109.	We consider principle 4 to be reasonable.	Thank you
437.	EMB Consultancy LLP	3.109.	<p>We support the principle that the internal model should be integrated with risk management.</p> <p>We would take the list given to be some examples of the kinds of evidence of model use in a risk management capacity that undertakings may record on an occasional basis. Ongoing demonstration of these points would be onerous.</p> <p>In b) we would suggest that risk management should be focusing not just on diversification effects, but dependency in a more general context including accumulation of risk and tail dependence.</p>	<p>Thank you.</p> <p>CEIOPS expects that if undertakings are using the internal model they will be able to demonstrate this.</p> <p>These are good points and we have amended the text.</p>
438.	FFSA	3.109.	<p>CEIOPS says that undertaking shall demonstrate that the internal model is used in the risk management system in areas that may include [...] a. the quantifications of risks and risk ranking, including the diversification effects produced by the internal model.</p> <p>FFSA does not understand how the internal model could produce diversification effects by itself. FFSA suggests rewriting point a. as follows: "the quantifications of risks and risk ranking, including the</p>	Good point, thank you. We have amended the text.

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			diversification effects derived from studies conducted with the internal model."	
439.	Llody's	3.109.	It would be clearer if the first two lines of this paragraph were rewritten as follows - "Undertakings shall demonstrate that the internal model is used in the risk-management system. Uses of the model that will assist in demonstrating that this is the case include:", and if the word "that" were inserted at the beginning of subparas a , b and c.	Thank you – we have amended the text
440.	Pearl Group Limited	3.109.	c) We would highlight that risk limits alone will not be used to formulate risk limits, other considerations will be taken into account in this respect. The draft refers to 'risk limits' twice but it seems that for the second occurrence, it should refer to risk appetite?	Please see our comment on 434
441.	AAS BALTA	3.110.	The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits" It would be sensible to have a paragraph that ensured that key diversification effects are explained. Should replace by "The diversification inherent in the internal model should be well understood by the undertaking"	Please see our comment on 241

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442.	AB Lietuvos draudimas	3.110.	<p>The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	Please see our comment on 241
443.	Association of British Insurers	3.110.	'At each point in the internal model..'. We believe this is too specific and would suggest as an alternative: 'where diversification effects occur in the internal model...'. We believe this requirement is disproportionate and would be impossible to implement in practice. In extremis, it could require the assessment of diversification effects at individual policy level.'	Please see our comment on 241
444.			Confidential comment deleted.	
445.	CEA, ECO-SLV-09-451	3.110.	<p>We believe that this is excessive.</p> <p>Delete: "and allocating any diversification benefits".</p>	Please see our comment on 241
446.	CODAN Forsikring A/S (10529638),	3.110.	The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"	Please see our comment on 241

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	Denmark		<p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	
447.	CODAN Forsikring (Branch Norway) (991 502 491)	3.110.	<p>The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	Please see our comment on 241
448.	CRO Forum	3.110.	<p>"At each point in the internal model where diversification effects occur, there shall be clear responsibility in the undertaking for quantifying and allocating any diversification benefits."</p> <p>We believe that this is too prescriptive and also makes assumptions about model structure. We propose a concept of proportionality should apply. We recommend a more general statement < There shall be clear responsibility in the undertaking for quantifying and allocating diversification benefits. ></p> <p>To "At each point" and also "instances where diversification effects</p>	Please see our comment on 241

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			occur” presume a certain model structure.	
449.	EMB Consultancy LLP	3.110.	<p>This paragraph does not really make sense in the context of a full stochastic model, in which there will be some form of dependency relationship between any 2 stochastic quantities, and therefore some form of diversification effect.</p> <p>We would suggest instead undertakings are required to demonstrate that, at an appropriate level given business and also internal model structure, there is ownership and challenge of the level of diversification allowed for in the internal model results.</p>	Please see our comment on 241
450.			Confidential comment deleted.	
451.	German Insurance Association – Gesamtverb and der D	3.110.	<p>We believe that this is excessive.</p> <p>Delete: “and allocating any diversification benefits”.</p>	Please see our comment on 241
452.	Groupe Consultatif	3.110.	See our comments on 3.76.	And our response
453.	Just Retirement Limited	3.110.	The requirement to identify diversification effects “at each point” is likely to be impractical, as there will be a number of minor effects which could be classified as “diversification effects”. Therefore this should be restricted to material diversification effects.	Please see our comment on 241
454.	Legal & General Group	3.110.	The phrase “at each point” is too specific. We propose deleting the first phrase “At each point in the internal model where diversification effects occur”.	Please see our comment on 241
455.	Link4 Towarzystw	3.110.	The words “at each point” should be replaced. Diversification effects happen everywhere in an internal model. It would not be	Please see our comment on 241

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	o Ubezpieczeń SA		<p>possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	
456.	Llody's	3.110.	<p>Diversification effects in the internal model begin with the second policy on the liability side and with the second bond on the asset side. With this in mind, it is unrealistic to expect clear responsibility for quantifying and allocating such benefits "at each point" where they occur.</p> <p>Presumably, the text is intended for situations where diversification is modelled explicitly, through dependency relationships, rather than implicitly, within the parameterisation of a business unit, asset class, etc. This should be clarified.</p>	Please see our comment on 241
457.	Pearl Group Limited	3.110.	'At each point in the internal model..'. We believe this is too specific and would suggest as an alternative: 'where diversification effects occur in the internal model...'	Please see our comment on 241
458.	PricewaterhouseCoopers LLP	3.110.	The term "allocating diversification" implies, by virtue of 3.76, a detailed capital allocation that uses each level of diversification – diversification within market risk say and across to insurance risk say. While such evidence of capital allocation may be commonplace in the largest undertakings we do not believe it should be an effective requirement for all undertakings.	Please see our comment on 241

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459.	RBS Insurance	3.110.	We believe this area is too specific in the area of diversification effects and would recommend removing the initial words and putting "Where diversification effects occur within the internal model, there shall be..."	Please see our comment on 241
460.	RSA Insurance Group PLC	3.110.	<p>The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	Please see our comment on 241
461.	RSA Insurance Ireland Ltd	3.110.	<p>The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	Please see our comment on 241
462.	RSA - Sun	3.110.	The words "at each point" should be replaced. Diversification	Please see our comment on 241

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	Insurance Office Ltd.		<p>effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	
463.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.110.	<p>The words "at each point" should be replaced. Diversification effects happen everywhere in an internal model. It would not be possible to quantify them all. It is also not clear what is meant by "allocating any diversification benefits"</p> <p>It would be sensible to have a paragraph that ensured that key diversification effects are explained.</p> <p>Should replace by</p> <p>"The diversification inherent in the internal model should be well understood by the undertaking"</p>	Please see our comment on 241
464.			Confidential comment deleted.	
465.	CRO Forum	3.111.	Clearly the internal model should be changed to reflect changes in the risk-management system, but a reasonable amount of time should be allowed for this.	Thank you, we may be producing guidance on issues such as these at level 3.
466.	EMB Consultancy	3.111.	It should also be noted that proposed changes in the risk management system should take account of the internal model,	We consider that this is covered in 3.75

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	LLP		since the model should be widely integrated with the risk management system and form a core part of its function.	
467.	RBS Insurance	3.111.	We would recommend changing the wording to "If there are material changes to the risk management system...".	We would wish undertakings to assess the need for change, and be able to demonstrate that the risk management system and the internal model are aligned.
468.	AAS BALTA	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 225
469.	AB Lietuvos draudimas	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 225
470.	Association of British Insurers	3.112.	<p>Principle 5</p> <p>Similarly to our comments on principle 2, we believe this will need to be applied with some flexibility in order to avoid imposing the same approach to every single entity within a group. It might be helpful to consider this requirement at a cluster of entities level rather at the single entity level.</p> <p>This paragraph suggests that the model "shall produce output that is based on the relevant accounting basis for each use". It would be helpful to include the examples given in 3.77 i.e. local GAAP, IFRS, internal management accounting and Solvency II regulatory basis as sometimes the term "accounting bases" is used to refer to bases that exclude those used for regulatory reporting.</p>	This is our intention. We have reworded the text. Also, please see our comment on 225
471.			Confidential comment deleted.	
472.	CEA, ECO-SLV-09-451	3.112.	(Use test - Principle 5: Consistent integration for all uses)	We agree and have amended the text. Please also see our comment on 225.

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			<p>"Avoidance of inconsistency" rather than "consistency" as a general principle, especially in a group context</p> <p>There is no need for full "consistency" as a general principle. However, it needs to be possible for a group to govern the use across its activities which does require a certain level of consistency. Where there are differences, the group needs to make sure that the model and use governance takes such differences into account.</p> <p>Soften consistency requirement, especially in a group context.</p>	
473.	CODAN Forsikring A/S (10529638), Denmark	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 225
474.	CODAN Forsikring (Branch Norway) (991 502 491)	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 225
475.	CRO Forum	3.112.	<p>"The internal model shall produce output that is based on the relevant accounting basis for each use." It is not exactly clear what is meant with "the relevant accounting basis" and what the implications are of this sentence.</p> <p>The advice in this paragraph suggests that the internal model is expected to be used to produce output for a range of measures</p>	Please see our comment on 225

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			"based on relevant accounting basis". It is important to clarify that the internal model is expected to produce the capital numbers under Solvency II basis and there should be no expectation of the internal model to produce output that is based on the relevant accounting basis for each use.	
476.	EMB Consultancy LLP	3.112.	<p>We believe that principle 5 may prove testing.</p> <p>Depending on the reading of "consistent" this could be very difficult to achieve in practice.</p> <p>We would question the value of spending substantial effort on this.</p> <p>We would recommend changing the phrasing from "accounting basis" to "basis", since some outputs may not have a direct standard accounting interpretation.</p>	Please see our comment on 253
477.	German Insurance Association – Gesamtverb and der D	3.112.	<p>(Use test - Principle 5: Consistent integration for all uses)</p> <p>"Avoidance of inconsistency" rather than "consistency" as a general principle, especially in a group context</p> <p>There is no need for full "consistency" as a general principle. However, it needs to be possible for a group to govern the use across its activities which does require a certain level of consistency. Where there are differences, the group needs to make sure that the model and use governance takes such differences into account.</p> <p>Soften consistency requirement, especially in a group context.</p> <p>The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from</p>	Please see our comment on 472

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			comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice.	
478.	Groupe Consultatif	3.112.	See our comments on 3.77.	And our response
479.	Institut des actuaires	3.112.	The comparison between terms of principle 5 and paragraph 3.112 does not seem quite clear, could CEIOPS give more precisions : should the internal model function by choosing the relevant accounting basis for each use or by using a unique accounting basis adequate to all uses? What is required from the managers in order to demonstrate that they understand the basis?	Please see our comment on 252
480.	Legal & General Group	3.112.	This paragraph suggests that the model "shall produce output that is based on the relevant accounting basis for each use". It would be helpful to include the examples given in 3.77 i.e. local GAAP, IFRS, internal management accounting and Solvency II regulatory basis as sometimes the term "accounting bases" is used to refer to bases that exclude those used for regulatory reporting.	We have amended the text to deal with this
481.	Link4 Towarzystwo Ubezpieczeń SA	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 252
482.	Pearl Group Limited	3.112.	Similarly to principle 2, Principle 5 will need to be applied with some flexibility in order to avoid imposing the same approach to every single entity within a group. It might be helpful to consider this requirement at a cluster of entities level rather at the single	Please see our comment on 470

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			entity level.	
483.	RSA Insurance Group PLC	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 252
484.	RSA Insurance Ireland Ltd	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 252
485.	RSA - Sun Insurance Office Ltd.	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 252
486.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.112.	Not clear what the benefit is of producing output on several accounting bases. This comment should be removed.	Please see our comment on 252
487.	Association of British Insurers	3.113.	It could be possible that the risk strategy and management may be defined higher up within the Group but that decision making within the set boundaries may be exercised at lower levels of management in the group. This being the case, it should be possible to meet the Use Test at these lower levels.	We agree, and may give more guidance at level 3.
488.	CEA, ECO-SLV-09-451	3.113.	Use tests only make sense at a level that has a defined risk strategy The statement that use tests "shall always apply at least at the level at which risk strategy and risk management are defined" will usually include the group level since this is where the pillars of risk strategy will be defined. However, some groups will chose to use a standard model on group level and internal models for certain subsidiaries. In those cases, the use test for the internal model will	We may be publishing more guidance on group internal models and how they will be treated in internal model assessment as part of level 3.

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			<p>need to be limited to the subsidiaries that actually have internal models implemented and approved.</p> <p>"The Use test shall only always apply at least at the levels at which risk strategy and risk management are defined. If these are defined at a group level, the Use test shall also apply at this level. The uses included in the scope of the internal model shall then be assessed by the supervisory authorities at a group level. In addition, the Use test shall be assessed at the level of related undertakings. We recognise in certain cases there may only be a partial model and a full model in certain subsidiaries and appropriate account of that will need to be made in the use test."</p>	
489.	CRO Forum	3.113.	<p>"The Use test shall always apply at least at the level at which risk strategy and risk management are defined. If these are defined at a group level, the Use test shall also apply at this level. The uses included in the scope of the internal model shall then be assessed by the supervisory authorities at a group level. In addition, the Use test shall be assessed at the level of related undertakings."</p> <p>We understand that this paragraph effectively means that, as a minimum, the Use Test will be applied at the undertaking level. It is important to note that for smaller subsidiaries or in cases where risk management expertise and responsibility is shared between a parent and a subsidiary, the use test may need to be applied at a level above the entity level.</p>	Please see our comment to 488
490.	German Insurance Association	3.113.	<p>Use tests only make sense at a level that has a defined risk strategy</p> <p>The statement that use tests "shall always apply at least at the</p>	Please see our comment to 488

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	- Gesamtverb and der D		<p>level at which risk strategy and risk management are defined” will usually include the group level since this is where the pillars of risk strategy will be defined. However, some groups will chose to use a standard model on group level and internal models for certain subsidiaries. In those cases, the use test for the internal model will need to be limited to the subsidiaries that actually have internal models implemented and approved.</p> <p>“The Use test shall only always apply at least at the levels at which risk strategy and risk management are defined. If these are defined at a group level, the Use test shall also apply at this level. The uses included in the scope of the internal model shall then be assessed by the supervisory authorities at a group level. In addition, the Use test shall be assessed at the level of related undertakings. We recognise in certain cases there may only be a partial model and a full model in certain subsidiaries and appropriate account of that will need to be made in the use test.”</p>	
491.	Groupe Consultatif	3.113.	<p>The Use test shall always apply at least at the level at which risk strategy and risk management are defined. If these are defined at a group level, the Use test shall also apply at this level. The uses included in the scope of the internal model shall then be assessed by the supervisory authorities at a group level. In addition, the Use test shall be assessed at the level of related undertakings.</p> <p>For clarity we suggest rephrasing this as:</p> <p>The Use test shall always apply at least at the level at which risk strategy and risk management are defined, and at a level where risk related decisions are taken. If these are defined at a group</p>	Please see our comment to 488

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			level, the Use test shall also apply at this level. The uses included in the scope of the internal model shall then be assessed by the supervisory authorities at a group level. In addition, the Use test shall be assessed at the level of related undertakings.	
492.	XL Capital Ltd	3.113.	See comment on para 3.70	And our response
493.	AAS BALTA	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Thank you, we have noted this.
494.	AB Lietuvos draudimas	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
495.	Association of British Insurers	3.114.	Principle 6 In order to be consistent with the proportionality principle laid out in para 3.115, we would interpret 'verify' as meaning 'evaluate'. This requirement will need to be linked to the materiality of the decision. It may be appropriate to change the wording "support and verify the decision making" to read "support the decision making".	Please see our comment to 493
496.			Confidential comment deleted.	
497.	CEA, ECO-SLV-09-451	3.114.	(Use test - Principle 6: Support and verify decision making) "Expected profit" does not seem the correct metric here Internal models will not usually output expected profit or the variability in the expected profit, but different related risk measures that deliver insights on the risk-return profile of activities. It	Please see our comment on 271

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			therefore seems inappropriate to focus on "expected profit" in this paragraph. Include a broader set of risk-return metrics or delete this paragraph.	
498.	CODAN Forsikring A/S (10529638), Denmark	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
499.	CODAN Forsikring (Branch Norway) (991 502 491)	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
500.	CRO Forum	3.114.	<p>"The internal model shall be used in decision-making processes, including the setting of a business or risk strategy. Internal models shall be able to give undertakings information that will allow them to assess the expected profit from potential decisions and assess the variability in the expected profit from potential decisions."</p> <p>The mention of expected profit is too specific, as a number of other measures coming out of an internal model can be used to make decisions. For example, an undertaking may look at the volatility of available capital if it wanted to affect a hedge to limit this volatility. We propose the following re-wording:</p> <p>"The internal model shall be used in decision-making processes, including the setting of a business or risk strategy. Internal models</p>	Please see our comment to 271 and also to 493

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			<p>shall be able to give undertakings useful information to facilitate this process and measure some of the implications of potential decisions."</p> <p>In Principle 6 the word 'verify' seems too strong (and does not appear in the following paragraphs, 3.114-3.117). The word 'assess' (used in 3.114) may be a better alternative. It is important to make it clear that this would only apply to material decisions.</p>	
501.	EMB Consultancy LLP	3.114.	<p>This principle overlaps with principle 3 to some extent, and echoing the key point of the use test.</p> <p>We would suggest the model facilitates decision making, rather than verifies it.</p> <p>It is unclear how much the model needs to be used to support and verify decision making. We interpret this as undertakings need to be able to show evidence that the principle has been met;; it is not practical, proportionate or appropriate to bring the internal model into all business decisions.</p> <p>We welcome the mention of both the expected level of profits and the variability. The phrase "variability in the expected profit" is misleading and would suggest as a minimum "potential variability in the profit". However, talk of just variability is rather loose and does not for example bring to mind the potential extreme downside, so perhaps "full range of potential outcomes" would be better. Ideally there would also be some consideration of period of return, as this also forms an important component of business decision making.</p>	<p>Please see our comment to 493.</p> <p>We agree, however, we consider that the internal model can be used for decisions that were not anticipated when the internal model was first designed. Furthermore we stress that we do not expect the undertaking to use the results for every small decision (3.82).</p> <p>Thank you</p>

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502.	German Insurance Association – Gesamtverb and der D	3.114.	<p>(Use test - Principle 6: Support and verify decision making)</p> <p>Merge this principle (para 3.114-3.117) with principle 9 (para 3.123-3.124).</p> <p>“Expected profit” does not seem the correct metric here</p> <p>Internal models will not usually output expected profit or the variability in the expected profit, but different related risk measures that deliver insights on the risk-return profile of activities. It therefore seems inappropriate to focus on “expected profit” in this paragraph.</p> <p>Include a broader set of risk-return metrics or delete this paragraph.</p>	Please see our comment to 271 and also to 493
503.	Groupe Consultatif	3.114.	See our comments on 3.81.	And our response
504.	Legal & General Group	3.114.	In the definition of principle 6 “verify” should be replaced by “evaluate”.	Please see our comment to 493
505.	Link4 Towarzystw o Ubezpieczeń SA	3.114.	Principle 6. the words “and verify” should be replaced by “and inform”. “Verify” implies it is used as a check rather than a support to decision making.	Please see our comment to 493

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506.	Pearl Group Limited	3.114.	In order to be consistent with the proportionality principle laid out in para 3.115, we would interpret 'verify' as meaning 'evaluate'. This requirement will need to be linked to the materiality of the decision.	Please see our comment to 493
507.	PricewaterhouseCoopers LLP	3.114.	We did not understand why the internal model would always be able to assess the expected profit from potential decisions. We could see the internal model would be able to provide the capital and risk management impact of a potential decision against which any assessed profit could be viewed.	We expect that internal models will be able to produce estimates of expected profit, in addition to capital requirements.
508.	RBS Insurance	3.114.	We would prefer the word "inform" be used to replace the word "verify" in principle 6. We believe this puts a more proactive slant on the principle.	Please see our comment to 493
509.	RSA Insurance Group PLC	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
510.	RSA Insurance Ireland Ltd	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
511.	RSA - Sun Insurance Office Ltd.	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493
512.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.114.	Principle 6. the words "and verify" should be replaced by "and inform". "Verify" implies it is used as a check rather than a support to decision making.	Please see our comment to 493

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513.	EMB Consultancy LLP	3.115.	This is a good rule of thumb but may not be practical in all cases, for example where analysis is highly difficult or where a decision has to be made in very tight timescales where the supporting analysis is deemed highly questionable.	We would emphasise that the internal model is a modelling framework and that may include techniques such as those outlined in our discussion of principle 7, which allow more speedy analysis.
514.	FFSA	3.115.	CEIOPS writes that the analysis that supports decision-making shall be proportionate to the outcome of the decision. FFSA suggests rewriting §3.115 as follows: "The analysis that supports decision-making shall be proportionate to the outcome of the decision. This analysis shall be documented."	Thank you, we have made this change.
515.	Llody's	3.115.	The reference in this paragraph to the "outcome of the decision" should be to the "expected" outcome so that the paragraph would read: "The analysis that supports decision-making shall be proportionate to the expected outcome of the decision".	Thank you, we have made this change.
516.	EMB Consultancy LLP	3.116.	We agree with this and would suggest that such discussions should have actions arising recorded.	Thank you. We have amended the text.
517.	DIMA (Dublin International Insurance & Management	3.117.	"Undertakings shall not make decisions that blindly follow the output of the internal model." This could be modified to: "Undertakings shall not make decisions that follow the output of the internal model without question".	Good suggestion – we have made this change
518.	EMB Consultancy	3.117.	We strongly support the ideas behind this paragraph.	Thank you

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519.	Llody's	3.117.	<p>For consistency with what is said in para 3.84 about the shortcomings of the internal model "as documented by the undertaking", the word "documented" could be added before the word "shortcomings" in the second sentence of this paragraph so that it would read: "Decision makers shall be aware of the documented shortcomings of the internal model and tailor their decisions accordingly."</p> <p>Internal model output would not normally "indicate" a decision. Rather, it will give insight into the risk and return implications of a particular decision. The requirement should be for undertakings to document the reasons why significant decisions are made, including how the output of the internal model was factored into the eventual decision</p>	<p>We do not agree.</p> <p>Thank you, we have noted this.</p>
520.			Confidential comment deleted.	
521.	Association of British Insurers	3.118.	<p>Principle 7</p> <p>We agree with CEIOPS the full run of the model should not be demanded too frequently because of the delays involved in producing the full run and review of the model assumptions. This would prevent firms from using the internal model as a timely business tool. On a quarterly basis, it would be more relevant to use certain simplifications, with a full review of assumptions undertaken annually.</p> <p>In addition, requiring the model to be run too frequently would also interfere with the ability to progress model development / enhancement.</p>	<p>Thank you. This was the intention of our paper. However, CEIOPS would like to see insurers investing in improvements in modelling that enable speedier production of outputs from a full run of the internal model.</p>
522.			Confidential comment deleted.	

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523.	CEA, ECO-SLV-09-451	3.118.	(Use test - Principle 7: Frequency of SCR recalculation) Model applications will usually need more frequent output and will therefore often not be based on the full SCR run, but use approximation techniques. Frequency of the full calculation of the SCR must consider materiality and proportionality as laid out in the level 1 text that requires quarterly MCR calculations, but allows for approximation of SCR in between the annual full runs (see 3.91). It is also important to note that model applications will often not be based on the full calculations of the SCR – this should not be inconsistent with meeting the requirements. Add reference to materiality and proportionality.	We may produce more guidance on “sufficiently sophisticated” at level 3
524.	CRO Forum	3.118.	We agree with the ‘at least annual’ requirement in Principle 7, but there should be flexibility to allow the annual cycle to be different for different elements of the model. In other words no element of the model should be more than 1 year since a full update at any point in time. (provided this is conducted through a predefined time scheme).	We do not agree, as the internal model will need to assess interactions between risks.
525.	EMB Consultancy LLP	3.118.	Principle 7 is reasonable and we understand it to reflect requirements set out in the directive for the SCR. We would point out that it is difficult to know when there has been a significant change in the risk profile and therefore that a model re-run is required, if the model is one of the key tools used to understand the risk profile.	Thank you, we will bear this in mind when drafting guidance

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526.	FFSA	3.118.	<p>CEIOPS writes that undertakings shall calculate the Solvency Capital Requirement using the internal model at least annually, and may calculate the Solvency Capital Requirement more frequently.</p> <p>FFSA thinks that the frequency of the full SCR must consider materiality.</p> <p>FFSA suggests rewriting §3.118 as follows: "Undertakings shall calculate the Solvency Capital Requirement using the internal model at least annually, and may calculate the Solvency Capital Requirement more frequently if material."</p>	We consider our current draft to be appropriate.
527.			Confidential comment deleted.	
528.	German Insurance Association – Gesamtverb and der D	3.118.	<p>(Use test - Principle 7: Frequency of SCR recalculation)</p> <p>Model applications will usually need more frequent output and will therefore often not be based on the full SCR run, but use approximation techniques.</p> <p>Frequency of the full calculation of the SCR must consider materiality and proportionality as laid out in the level 1 text that requires quarterly MCR calculations, but allows for approximation of SCR in between the annual full runs (see 3.91). It is also important to note that model applications will often not be based on the full calculations of the SCR – this should not be inconsistent with meeting the requirements.</p> <p>Add reference to materiality and proportionality.</p>	We may produce more guidance on "sufficiently sophisticated" at level 3

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529.	Legal & General Group	3.118.	There is a move to use quarterly calculation runs to meet MCR and SCR requirements. We believe that these runs should be done using simplifications to produce more timely and cost effective answers.	Thank you, that is the intention of our paper.	
530.	Llody's	3.118.	Principle 7 is more of a treatise than a principle and could be shortened to: "The SCR shall be calculated at least annually and, additionally, when there is a significant change to the undertaking's risk profile or to the model's methodology, assumptions or data inputs". The additional detail is superfluous in the principle itself and is adequately addressed in the subsequent expansionary paragraphs.	We are satisfied with the current wording.	
531.	Pearl Group Limited	3.118.	We agree with CEIOPS the full run of the model should not be demanded too frequently because of the delays involved in producing the full run and review of the model assumptions. This would prevent us from making full use of the internal model as a timely business tool. On a quarterly basis, it would be more relevant to use certain simplifications, with a full review of assumptions undertaken annually.	We will produce more guidance on "sufficiently sophisticated" at level 3	
532.	ROAM –	3.118.	CEIOPS writes that undertakings shall calculate the Solvency Capital Requirement using the internal model at least annually, and may calculate the Solvency Capital Requirement more frequently. ROAM thinks that the frequency of the full SCR must consider materiality.	We will produce more guidance on "sufficiently sophisticated" at level 3	

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			ROAM suggests rewriting §3.118 as follows: "Undertakings shall calculate the Solvency Capital Requirement using the internal model at least annually, and may calculate the Solvency Capital Requirement more frequently if material."	
533.			Confidential comment deleted.	
534.	CEA, ECO-SLV-09-451	3.119.	<p>Circumstances that might require additional full SCR runs should be limited.</p> <p>Additional guidance should be provided on the circumstances where a supervisory may deem it necessary to do a full run of the model more frequently than annually. There seems to be only few situations where the "use" of an internal model is improved by more frequent updates of the full SCR. One example could be a CAT risk limit that should be recalculated when new CAT data is available.</p> <p>"Supervisory authorities may require undertakings to calculate the SCR using a full run of the internal model more frequently than annually if necessary significant impact on the "use" can be expected from the updated results. Examples include ...".</p> <p>The level 1 text says that the SCR has to be calculated once per year. Thus supervisory authorities should only require a new full run of the internal model if there is sufficient evidence that the risk situation of the insurance undertaking has substantially changed.</p>	<p>CEIOPS is keen to learn from the recent financial crisis. One key lesson is that supervisory authorities should be able to assess risk in undertakings quickly. This seems to us to be a key requirement, and also one where prescription would be unhelpful.</p> <p>Thank you we have noted this.</p>
535.	EMB	3.119.	We would express concern that undertakings could be forced down	Thank you, this is our intention.

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	Consultancy LLP		<p>the route of frequent calculation (via the regulatory option) and note that focus on the SCR rather than the economic capital is against the point of the use test, diverting time and resources from the more business-aligned activity.</p> <p>However we recognise that this as this option is likely to be used particularly where a firm is under highly stressed conditions and hence economic capital calculations could become meaningful. Focus at that point is on policyholder protection and regulators have to be proactive.</p>	
536.	European Union member firms of Deloitte Touche To	3.119.	See our comments on para. 3.90	And our response
537.	FFSA	3.119.	<p>CEIOPS writes that supervisory authorities may require undertakings to calculate the Solvency Capital Requirement using a full run of the internal model more frequently than annually if necessary.</p> <p>FFSA would like Supervisory authorities to be very careful and not to ask for a full run on the internal model too frequently. FFSA thinks that an annual basis is a good basis, and would like CEIOPS to precise on Level 2 the exceptional criteria that could lead to a full run. And these exceptional criteria must remain exceptional.</p>	Please see our response to 534
538.			Confidential comment deleted.	

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539.	German Insurance Association – Gesamtverb and der D	3.119.	<p>Circumstances that might require additional full SCR runs should be limited.</p> <p>Additional guidance should be provided on the circumstances where a supervisory may deem it necessary to do a full run of the model more frequently than annually. There seems to be only few situations where the “use” of an internal model is improved by more frequent updates of the full SCR. One example could be a CAT risk limit that should be recalculated when new CAT data is available.</p> <p>“Supervisory authorities may require undertakings to calculate the SCR using a full run of the internal model more frequently than annually if necessary significant impact on the “use” can be expected from the updated results. Examples include ...”</p> <p>The level 1 text says that the SCR has to be calculated once per year. Thus supervisory authorities should only require a new full run of the internal model if there is sufficient evidence that the risk situation of the insurance undertaking has substantially changed.</p>	Please see our response to 534
540.	Groupe Consultatif	3.119.	See our comments on 3.90.	And our response
541.	Institut des actuaires	3.119.	The complete calculation of the SCR by running the internal model can be time-consuming. It would be wiser if the supervisory authority could provide objective reasons or if the situation of the undertaking would satisfy particular criteria in order for the authority control to ask an undertaking to make recalculations more frequent than an annual frequency. It would avoid that those	Please see our response to 534

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			demands become too frequent and not always justified. Moreover, according to 3.91, a quaterly calculation for the SCR is required. It should be reminded here (in the blue box). For example the paragraph could be modified in : "Supervisory authorities may require undertakings to calculate the Solvency Capital Requirement using a full run of the internal model more frequently than annually provided that the undertaking justify specific criteria for example... / if the authority provides objective reasons for which the new calculation might have significant impact. Moreover the calculation of MCR requires a quaterly calculation for the SCR. Under the principle of proportionality (see CEIOPS advice on Proportionality), undertakings using an internal model shall apply a quaterly calculation that is sufficiently sophisticated to produce the quaterly SCR. However this doesn't assume necessarily a full model run, and approximations may be allowed"	
542.	Munich RE	3.119.	The level 1 text says that the SCR has to be calculated once per year. Thus supervisory authorities should only require a new full run of the internal model if there is sufficient evidence that the risk situation of the insurance undertaking has substantially changed.	Please see our response to 534
543.	ROAM –	3.119.	CEIOPS writes that supervisory authorities may require undertakings to calculate the Solvency Capital Requirement using a full run of the internal model more frequently than annually if necessary. ROAM would like Supervisory authorities to be very careful and not to ask for a full run on the internal model too frequently. ROAM thinks that an annual basis is a good basis, and would like CEIOPS to precise on Level 2 the exceptional criteria that could lead to a full	Please see our response to 534

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			run. And these exceptional criteria must remain exceptional.	
544.	XL Capital Ltd	3.119.	We would welcome a flexible approach which would allow undertakings to perform summarised or simplified model runs outside the annual reporting periods.	Please see our response to 534
545.	EMB Consultancy LLP	3.120.	This may not be appropriate. Depending on the structure of the model it may not be possible to isolate effects, particularly if we consider a full integrated stochastic model that is not structured around ""risk modules"" as in the standard formula. An example might be changing economic assumptions, which may affect not only projections of asset returns, but also projections of liabilities and hence the full projected balance sheet.	We say "may" to reflect this.
546.	Groupe Consultatif	3.120.	We would add 3.92 to principle 7.	We do not agree
547.	Association of British Insurers	3.121.	Principle 8 We are broadly happy with this principle.	Thank you
548.			Confidential comment deleted.	
549.	EMB Consultancy LLP	3.121.	This appears to strongly overlap with principle 4.	Please see our comment on 40
550.	Pearl Group Limited	3.121.	We agree with Principle 8.	Thank you
551.	AAS BALTA	3.123.	Amalgamate with principle 6.	Please see our comment on 40
552.	AB Lietuvos draudimas	3.123.	Amalgamate with principle 6.	Please see our comment on 40

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553.	Association of British Insurers	3.123.	<p>Principle 9</p> <p>We believe this principle to be redundant with principle 6.</p> <p>Furthermore, this might be in contradiction with the model change policy.</p>	Please see our comment on 40	
554.			Confidential comment deleted.		
555.	CEA, ECO-SLV-09-451	3.123.	<p>(Use test - Principle 9: Facilitate analysis of business decisions)</p> <p>We believe this principle to be redundant with principle 6. Indeed, rather than the internal model “design”, the related “communication and reporting processes” seem to be key in order to facilitate the analysis of business decisions.</p> <p>Principle 9 is less about the design of internal models, but about communication and reporting. Internal communication processes and reporting should be set up in a way that ensures administrative and management bodies receive regular and comprehensive internal model results that relate to the relevant business decisions. This might mean that additional transformations of internal model results are needed in order to make them “fit for management decisions”.</p> <p>Potentially move to the governance section and replace by requirements that:</p> <p><input type="checkbox"/> The administrative body takes formal ownership for the uses and results of the internal model, and that strategic decisions have adequately taken into account the information provided by the internal model.</p>	Please see our comment on 40	

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			A process exists that helps the administrative body to take ownership effectively.		
556.	CODAN Forsikring A/S (10529638), Denmark	3.123.	Amalgamate with principle 6.		Please see our comment on 40
557.	CODAN Forsikring (Branch Norway) (991 502 491)	3.123.	Amalgamate with principle 6.		Please see our comment on 40
558.	EMB Consultancy LLP	3.123.	Principle 9 is very closely linked to 6. We would suggest that saying only that results should be communicated to the board so that they are able to take responsibility for the results is too passive, and in fact the board should ensure that they are comfortable with the results.		Please see our comment on 40
559.	German Insurance Association – Gesamtverb and der D	3.123.	(Use test - Principle 9: Facilitate analysis of business decisions) We believe this principle to be redundant with principle 6. Indeed, rather than the internal model “design”, the related “communication and reporting processes” seem to be key in order to facilitate the analysis of business decisions. Principle 9 is less about the design of internal models, but about		Please see our comment on 40

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			<p>communication and reporting. Internal communication processes and reporting should be set up in a way that ensures administrative and management bodies receive regular and comprehensive internal model results that relate to the relevant business decisions. This might mean that additional transformations of internal model results are needed in order to make them “fit for management decisions”.</p> <p>Potentially move to the governance section and replace by requirements that:</p> <p><input type="checkbox"/> The administrative body takes formal ownership for the uses and results of the internal model, and that strategic decisions have adequately taken into account the information provided by the internal model</p> <p>A process exists that helps the administrative body to take ownership effectively</p>	
560.	Groupe Consultatif	3.123.	See our comments on 3.96.	And our response
561.	Legal & General Group	3.123.	This can be incorporated into principle 6	Please see our comment on 40
562.	Link4 Towarzystw o Ubezpieczeń SUPERVISO	3.123.	Amalgamate with principle 6.	Please see our comment on 40

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	RY AUTHORITY				
563.	Pearl Group Limited	3.123.	Principle 9 seems to be covered by Principle 6, which is a broader requirement, and so isn't required.	Please see our comment on 40	
564.	RSA Insurance Group PLC	3.123.	Amalgamate with principle 6.	Please see our comment on 40	
565.	RSA Insurance Ireland Ltd	3.123.	Amalgamate with principle 6.	Please see our comment on 40	
566.	RSA - Sun Insurance Office Ltd.	3.123.	Amalgamate with principle 6.	Please see our comment on 40	
567.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	3.123.	Amalgamate with principle 6.	Please see our comment on 40	
568.	XL Capital Ltd	3.123.	Principle 9 ("Design the internal model in such a way that it facilitates analysis of business decisions") appears to overlap with Principle 6 ("The Internal Model shall be used to support and verify decision making in the undertaking")	Please see our comment on 40	
569.	CEA, ECO-SLV-09-451	3.124.	This paragraph seems obsolete since it provides no apparent guidance to implementation. Earlier paragraphs make clear that the internal model should be used beyond risk management and that the applications should be sufficiently broad that it will result in the business challenging the	Please see our comment on 40	

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			model. This paragraph does not add any guidance. Delete paragraph.	
570.	FFSA	3.124.	CEIOPS says that undertakings may use the results of the internal model for (1) their development plan for the internal model, (2) internal project plans, (3) their governance strategy, and (4) their model change and data policy. FFSA thinks it should be clear that it is not required for the model to be used at every level of the organisation. However, it should also be clear that it should be used beyond risk management and that the applications should be sufficiently broad that it will result in the business challenging the model	We consider that this is clear from our paper.
571.	German Insurance Association – Gesamtverb and der D	3.124.	This paragraph seems obsolete since it provides no apparent guidance to implementation. Earlier paragraphs make clear that the internal model should be used beyond risk management and that the applications should be sufficiently broad that it will result in the business challenging the model. This paragraph does not add any guidance. Delete paragraph.	We consider that the paragraph gives useful guidance
572.	ROAM –	3.124.	CEIOPS says that undertakings may use the results of the internal model for (1) their development plan for the internal model, (2) internal project plans, (3) their governance strategy, and (4) their model change and data policy. ROAM thinks it should be clear that it is not required for the model to be used at every level of the organisation. However, it should	Please see our comment on 570

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			also be clear that it should be used beyond risk management and that the applications should be sufficiently broad that it will result in the business challenging the model		
573.	AAS BALTA	4.	Section is sensible		Thank you
574.	AB Lietuvos draudimas	4.	Section is sensible		Thank you
575.	Association of British Insurers	4.	We are broadly happy with the framework set out for internal models governance. This is consistent with CP 33 on System of governance.		Thank you, that is our intention
576.	CODAN Forsikring A/S (10529638), Denmark	4.	Section is sensible		Thank you
577.	CODAN Forsikring (Branch Norway) (991 502 491)	4.	Section is sensible		Thank you
578.	CRO Forum	4.	As a general comment: This section misses a differentiation between requirements that need to be met at Group level and that need to be met at the level of a single undertaking. It is not clear how a system of governance would work at the level of a solo undertaking whose SCR is calculated using a group internal model. Presumably the solo undertaking can rely on the group system to a large extent. Further advice on this area would be welcome.		Thank you, this will be helpful if we develop guidance on assessing group internal models.

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			<p>In the case of a Group model, the model governance (both high level governance and detailed governance) may be performed primarily at Group level. At the level of single undertakings the governance may be limited to assessing at the high level whether the Group model is appropriate for the risk profile of the undertaking.</p> <p>This section covers methodology governance only (design, implementation, validation documentation). Production governance (sign-off, reporting procedures) is not covered and companies are free in determining appropriate production governance procedures.</p>	
579.	German Insurance Association – Gesamtverb and der D	4.	<p>(Internal Model Governance)</p> <p>The section misses differentiation between requirements that need to be fulfilled at the group level or the solo level.</p>	Please see our comment on 578
580.	Link4 Towarzystw o Ubezpieczeń SA	4.	Section is sensible	Thank you
581.	Llody's	4.	<p>The requirement to have policies in place to cover various aspects of the internal model (including data, validation and documentation) and the requirement to have checks in place to ensure that policy is being carried out is good governance practice and is a reasonable expectation of undertakings seeking internal model approval.</p> <p>The requirement for the model to be updated as the business risks</p>	Thank you

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			change and as more recent data becomes available is likely to mean that models are being updated almost continually. For the governance to ensure that the model remains appropriate, it is reasonable to require the governance process to monitor the compliance of the model on an ongoing basis.	Yes, the is our intention – please see paragraph 4.20
582.	Munich RE	4.	It is not clear how the system of governance would work in the group context. Presumably the solo undertaking can rely on the group system to a large extent. Further advice on this area would be welcome.	Please see our comment on 578
583.	Pearl Group Limited	4.	We are broadly happy with the framework set out for internal models governance. This is consistent with CP 33 on System of governance.	Thank you
584.	RSA Insurance Group PLC	4.	Section is sensible	Thank you
585.	RSA Insurance Ireland Ltd	4.	Section is sensible	Thank you
586.	RSA - Sun Insurance Office Ltd.	4.	Section is sensible	Thank you
587.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	4.	Section is sensible	Thank you
588.	Institut des actuaires	4.5.	We ask to CEIOPS a clarification of the differences between the internal model matches the undertaking's risk profile and the	In 4.5, we are keen to make clear that undertakings should not only

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			outputs reflect the risk profile?	review the appropriateness of the internal model, but also validate the output.
589.	Dutch Actuarial Society – Actuarieel Genootschap (	4.7.	<p>In this paragraph, CEIOPS presents their view of the tasks and responsibilities of the risk-management function. Because of the detailed level of the operation of the risk-management function, we suggest to include also the professional qualifications that the personnel carrying out the risk-management function should meet. For example, by analogy with the definition of the 'Actuarial function' (Level 1 text, Article 47):</p> <p>"The risk-management function shall be carried out by persons who have knowledge of risk management mathematics and risk management standards, commensurate with the nature, scale and complexity of the risks inherent in the business of the insurance or reinsurance undertaking, and who are able to demonstrate their relevant experience with applicable professional and other standards."</p>	We consider that this is too detailed for level 2 measures, although CEIOPS may produce level 3 guidance on this. CHECK WITH PV
590.	KPMG ELLP	4.7.	The list of responsibilities given for the risk management function includes designing and implementing the internal model and testing and validating the internal model. There is a conflict of interest here, as the risk management function will effectively be reviewing their own work.	We regards this as taking responsibility for making sure the validation happens. We cover validation and independence in chapter 8, and have also clarified this point in 4.24.
591.			Confidential comment deleted.	
592.	KPMG ELLP	4.9.	We consider the feedback loop to be particularly important and would even suggest that each (re)insurance undertaking sets out a process in order to facilitate this feedback.	Thank you, this is helpful. We have amended the text.
593.	CRO Forum	4.10.	On the high-level governance: Decisions at the high level should be	We disagree, as a series of minor

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			taken for material changes to the model rather than any changes to the model.	changes can accumulate to a major change. We consider that the high-level governance should have a process for approving those changes.	
594.	Groupe Consultatif	4.10.	Internal model governance: Third bullet point: Deciding on the strategic direction of the model and hence any changes to the model We would suggest rephrasing this as: Deciding on the strategic direction of the model and hence material changes to the model.	Please see comment to 593	
595.	Institut des actuaires	4.10.	The CEIOPS shall be more precise about the role and responsibilities of the actuarial function in the model governance. Resuming these by a communication loop seems inadequate regarding the i point of the 47th article of the Solvency 2 directory We advice the CEIOPS to clarify these points	We may issue level 3 guidance on this.	
596.	KPMG ELLP	4.10.	The definition of the "risk management function" does not seem clear. In particular, whether this is the same as the "risk management system" defined in Article 43 and CP33. We would expect the list of tasks for "Detailed internal model governance" may be the responsibility of the actuarial function, which is defined separately to the "risk management system" in CP33. Clarification of the responsibility of these tasks would be useful.	The risk management function is defined in Article 43 of the Framework Directive. The responsibilities in respect of the internal model are laid out there.	

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597.			Confidential comment deleted.	
598.	Groupe Consultatif	4.11.	<p>A dialogue should be encouraged between users of the model about aspects of the internal model relevant to them.</p> <p>We would also note that the actuarial function is likely to be a significant user of the internal model.</p>	<p>Yes, this is an important point, and we covered it in the use test section.</p> <p>We have amended 4.35 to reflect this.</p>
599.	DIMA (Dublin International Insurance & Management	4.12.	<p>An internal model committee would be part of the model governance structure.</p> <p>For entities that are part of overall groups, should this be at an entity level of a group level or both?</p>	We say that undertakings may set up such a committee as this might be useful. With this in mind, we would regard the location of such a committee as the decision of the undertaking.
600.	CRO Forum	4.14.	We consider the approval by the entire management or administrative body to be overly burdensome, it is not clear whether this is implied here. It should be possible to delegate the approval to at least two members of the Board (e.g. the CRO and the CFO).	Fair point. However, CEIOPS expects to see decisions ratified by the full administrative or management body.
601.	KPMG ELLP	4.15.	We agree that a system should be in place to decide whether a change is considered major or minor. However, although some guidance was provided in CP37, we believe further guidance on how major and minor are defined would be useful.	The internal model change policy must be developed by the undertaking (Please see CP37), and this has to include a mechanism for classing changes as major or minor. CEIOPS may be providing more guidance at level 3.
602.	Groupe Consultatif	4.16.	We believe that high level governance should decide on any necessary material changes to the model.	Please see our comment on 600

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603.	KPMG ELLP	4.16.	We feel that not every change to the internal model necessarily needs the approval of the administrative or management body. For example, simple coding changes to the actuarial valuation models that have minimal impact on the results would not need this level of approval.	Please see our comment on 593 and 600	
604.	CEA, ECO-SLV-09-451	4.17.	It should be stressed that the monitoring of the alignment of the internal model with the risk profile of the undertaking will in general be a more qualitative process. Requiring sophisticated quantitative processes may come close to the development of a second modelling framework which would contradict section 3.11.	CEIOPS does not consider that this needs to be a sophisticated quantitative process, but does regard this as important. Undertakings should be considering now how to implement this.	
605.	German Insurance Association – Gesamtverb and der D	4.17.	It should be stressed that the monitoring of the alignment of the internal model with the risk profile of the undertaking will in general be a more qualitative process. Requiring sophisticated quantitative processes may come close to the development of a second modelling framework which would contradict section 3.11.	Please see our comment on 604	
606.	Munich RE	4.17.	It should be stressed that the monitoring of the alignment of the internal model with the risk profile of the undertaking will in general be a more qualitative process. Requiring sophisticated quantitative processes may come close to the development of a second modelling framework which would contradict section 3.11.	Please see our comment on 604	
607.	Association of British Insurers	4.18.	This text appears to go further than the Use Test. In addition, it is important that these time lags are notified to the industry as soon as possible as they may have consequences for the technology solutions undertakings are planning to put in place.	Please note that this is different point to Principle 9 of the use test. Principle 9 deals with the frequency of calculation. This point deals with the time lag	

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					between deciding to re-run the internal model and getting some results. CEIOPS is keen that undertakings develop solutions that speed up this process, and can form part of the internal model framework. In our discussion of principle 7 we included details of some of the techniques that we have seen being used currently. We may provide further guidance when developing level 3 guidance.
608.	Institut des actuaires	4.18.	<p>What is an acceptable time lag?</p> <p>Considering that the internal models outputs reflect correctly the risk profile of the undertaking at the beginning of the year, the time lag of one year seems to be reasonable enough, except for variables which movements have great impact. That sort of variables is outlined throughout the sensitivity test.</p> <p>We propose that CEIOPS give us a rule that specify an acceptable time lag for hypothesis update according to sensitivity tests performed during model development</p>		Please see our comment on 607
609.	KPMG ELLP	4.21.	We would expect the use of external models to be explicitly included in this list so that the administrative or management body fully understand and review the level of materiality and reliance on external models, as well as the limitations of the external model.		We consider that this is implicit in the other requirements – the requirements for approval cover the tests and standards specified, and these apply equally to internal and external models and

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				data.
610.	DIMA (Dublin International Insurance & Management)	4.22.	Adequate independent review procedures need to be in place. This should include an assessment of potential conflicts of interest. How often does this review need to take place?	We cover this in chapter 8 on validation.
611.	European Union member firms of Deloitte Touche To	4.22.	We suggest CEIOPS expands the details on “adequate independent review procedures” beyond the example of “possible conflict of interests”: what is required at a minimum in terms of processes, calculations, etc. to be reviewed and what should be an appropriate frequency for the review? For example, we understand that the validation process envisioned in section 8 would be in the scope of such independent review.	We cover this in chapter 8 on validation.
612.	Groupe Consultatif	4.22.	More details would be useful on the “adequate independent review procedures” to avoid any misunderstanding of the supervisor’s expectations. What exactly will be required in terms of processes, calculations, frequency etc to be reviewed?	We cover this in chapter 8 on validation. VALIDATION
613.	Institut des actuaires	4.22.	The model governance can have use of professionals that already share a professional practice agreement. Actuaries have to comply with professional standards that promote independence.	Thank you, this is helpful information.
614.			Confidential comment deleted.	
615.	CRO Forum	4.26.	There is a reference error in the CP document.	Thank you
616.	KPMG ELLP	4.26.	There is a reference error in this paragraph.	Thank you
617.	Llody’s	4.26.	There is an error in the referencing.	Thank you
618.	KPMG ELLP	4.27.	It would be useful to give an indication of how regularly CEIOPS consider the reports on the performance of the model should be	CEIOPS considers that undertakings are best placed to

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			presented to the administrative or management body.		develop this, reflecting the structure of the internal model and the uses made of it.
619.	Institut des actuaires	4.35.	The CEIOPS shall be more precise about the role and responsibilities of the actuarial function in the model governance. Resuming these by a communication loop seems inadequate regarding the i point of the 47th article of the Solvency 2 directory We advice the CEIOPS to clarify these points		Please see our comment on 595
620.	KPMG ELLP	4.35.	We agree that communication between the risk management function and the actuarial function is key, but as noted elsewhere, we feel that there is some significant overlap of responsibilities in the way that the governance is currently set out.		Please see our response to 595
621.			Confidential comment deleted.		Confidential comment deleted.
622.	CEA, ECO-SLV-09-451	4.37.	16.		
623.	CRO Forum	4.37.	We do not consider Level 3 to be appropriate for such more detailed regulation and would recommend having such regulation entirely in Level 2.		We prefer detail to be at level 3.
624.	German Insurance Association – Gesamtverb and der D	4.37.	Details should be provided under level 2.		Please have look at our comment on 623

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625.	Groupe Consultatif	4.37.	Level 3 would be appropriate for a more detailed elaboration of the risk management responsibilities described in 4.30 and 4.47. However, additional responsibilities should not be added in Level 3.	Thank you. We have no intention of adding more responsibilities, just more detail.	
626.	KPMG ELLP	4.38.	We support the consistent approach for 'group models' and 'solo entity' models.	Thank you, that is our intention.	
627.	Groupe Consultatif	4.40.	It would be useful if CEIOPS could clarify whether subsidiaries' internal models are necessarily deemed part of the group internal model or not.	To be honest, that is up to the undertaking and how it designs its group internal model. CEIOPS may be producing more guidance on group internal models.	
628.	Association of British Insurers	4.42.	Although there is no prescribed method, and a distribution with few data points (selected quartiles) might be accepted, we believe the criteria to be met by a business such as payment protection and mortgage insurance are quite onerous.	I think this is a SQS comment.....	
629.	CRO Forum	4.42.	The parent undertaking will in many cases exercise most of the model governance and not just the items mentioned here (see general comment above).	Please see our comment on 627	
630.	CRO Forum	4.44.	Lit e and lit h: There may not be an internal model for the subsidiary and an internal model for the Group. In most cases there will be only one model, which will be applied at the subsidiary level and at the Group level. Subsidiaries may report results of their internal model to the Group, or they may submit data and parameters to the Group model, which will then produce results at the subsidiary level. The exact approach differs per company.	Please see our comment on 627	
631.	XL Capital Ltd	4.44.	We would welcome clarification on how Groups should be defined. In particular, we would suggest that the following permutations be considered:	This is covered in CP 60	

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			<input type="checkbox"/> Non EEA group with combination of non EEA and EEA subsidiaries <input type="checkbox"/> EEA group with combination on non EEA and EEA subsidiaries	
632.	Groupe Consultatif	4.45.	We suggest stressing the importance of the communication relating to the internal model to ensure there is an appropriate level of understanding of the relevant requirements: We suggest rephrasing as: The parent undertaking will formalise and inform all the related undertakings and entities within the group that are covered by the group internal model about the internal model criteria used to identify, measure, manage and control their risks. The parent undertaking shall make sure the process is communicated effectively and the related undertakings have the appropriate level of understanding of the relevant requirements.	Thank you – we have made this helpful change (with a small amendment), and also changed it in the advice section. Groups
633.			Confidential comment deleted.	
634.	Association of British Insurers	4.46.	c) We welcome the collective responsibility of Senior management. d) We would interpret this requirement as allowing for some flexibility when applied to recently employed personnel. Their responsibility will grow whilst they gain appropriate skills, knowledge and expertise. In the meantime, we would expect them to be adequately supervised. g) We would assume the performance of 'multiple tasks' is more relevant for smaller undertakings.	Please also see our amendments to Principle 1 of the use test Thank you, this is what we mean.
635.			Confidential comment deleted.	
636.	CEA,	4.46.	(Model Governance)	CEIOPS considers that

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	ECO-SLV-09-451		<p>General comment: The described model governance in the paragraphs 4.46-4.53 appears prescriptive rather than principle based.</p> <p>c. We would like to point out that top management would rather base its judgment on the basis of its experience and knowledge more than on its professional qualifications, for which a diploma is not always a good indicator. Delete: ... professional qualifications ...".</p>	professional qualifications are important and are an indicator of knowledge.
637.	CRO Forum	4.46.	<p>Lit e: All relevant personnel ...The requirements listed do seem equally relevant to groups as to solo entities (e.g. branches).</p> <p>In particular the 'collective' responsibility on the management body (para c) should be emphasised. This did not always come across from other parts of the CP. Para I should allow for appropriate flexibility in how the different functions listed are defined and their responsibilities covered.</p>	Please see our comment on 633
638.	EMB Consultancy LLP	4.46.	The proposals seem sensible and well-worded. When read with the principle of proportionality in mind these proposals make sense for most conceivable undertakings.	Thank you
639.	FFSA	4.46.	<p>CEIOPS says that the overall governance of the undertaking shall in respect of the internal model [...] c. ensure that the members of the administrative or management body possess sufficient professional qualifications, knowledge and experience...</p> <p>FFSA stresses that it could appear that top management could</p>	Please see our comment on 636

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			based its judgment on the basis of its experience and knowledge more than on professional qualifications, for which a diploma is not always a good indicator. As a consequence, FFSA suggests rewriting this sentence has follows: "c. ensure that the members of the administrative or management body possess sufficient knowledge and experience..."	
640.			Confidential comment deleted.	
641.	German Insurance Association – Gesamtverb and der D	4.46.	<p>(Model Governance)</p> <p>General comment: The described model governance in the paragraphs 4.46-4.53 appears prescriptive rather than principle based.</p> <p>c. We would like to point out that top management would rather base its judgment on the basis of its experience and knowledge more than on its professional qualifications, for which a diploma is not always a good indicator. Delete: ... professional qualifications ..."</p>	Please see our comment on 636
642.	Groupe Consultatif	4.46.	e.: We suggest adding: All relevant personnel ...	We have made this change and now need to check with PV
643.	Legal & General Group	4.46.	We support the collective nature of the responsibility (4.46 c)	Thank you
644.	Pearl Group	4.46.	c) We agree that Senior management responsibilities should be	Thank you

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	Limited		<p>collective rather than expecting every member of the senior management team have the responsibility individually.</p> <p>d) We would interpret this requirement as allowing for some flexibility when applied to recently employed personnel. Their responsibility will grow whilst they gain appropriate skills, knowledge and expertise. In the meantime, we would expect them to be adequately supervised.</p>	Please see our comment on 634
645.	ROAM –	4.46.	<p>CEIOPS says that the overall governance of the undertaking shall in respect of the internal model [...] c. ensure that the members of the administrative or management body possess sufficient professional qualifications, knowledge and experience...</p> <p>ROAM stresses that it could appear that top management could based its judgment on the basis of its experience and knowledge more than on professional qualifications, for which a diploma is not always a good indicator. As a consequence, ROAM suggests rewriting this sentence has follows: "c. ensure that the members of the administrative or management body possess sufficient knowledge and experience..."</p>	Please see our comment on 636
646.	CEA, ECO-SLV-09-451	4.47.	<p>Companies should not be required to create overly formal structural divisions.</p> <p>In particular, it should be possible to run both high-level and detailed internal model governance from within risk management – with suitable separation between model developers and independent audit. (Sentence I requires to "establish and maintain adequate risk management, compliance, internal audit and actuarial functions").</p>	CEIOPS is very clear that we do not wish to prescribe organisation designs for undertakings. However, we have set put the responsibilities of the various functions and point out in 4.4 that the internal model governance is part of the overall governance of the undertaking.

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			Clarify that no separate organizational unit is needed to support administrative and management bodies with the high-level governance tasks.	
647.	CRO Forum	4.47.	<p>On the high-level governance: Decisions at the high level should be taken for material changes to the model rather than any changes to the model.</p> <p>“Ensuring that outputs are aligned with use – i.e. that management information produced by the model assists in decisions made at board level”</p> <p>It is important to note that information produced by the internal model will, in practice, be used at a number of levels in an organisation and not limited to decision-making only at board level. We suggest the following wording:</p> <p>Ensuring that outputs are aligned with use – i.e. that management information produced by the model assists in decision-making, including where relevant at board level.</p>	<p>Please see our comment on 593</p> <p>Our point here is that CEIOPS expects that the internal model will be used at Board level, as well as at other levels of the undertaking.</p>
648.	EMB Consultancy LLP	4.47.	<p>We feel that the diagram will be of use to undertakings to help them think through the range of governance tasks and responsibilities.</p> <p>We welcome the presentation as a control cycle rather than simply setting out a rigid list of tasks.</p> <p>Arguably the diagram should set out some responsibilities regarding the scope of the model: we would suggest that the management agrees the scope of the model and the risk management function monitors how the model adheres to that scope.</p>	<p>Thank you.</p> <p>Yes, that is implicit in the approval of the application.</p>

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649.	FFSA	4.47.	CEIOPS describes here the required governance of an internal model. FFSA stresses that companies should not be required to create overly formal and uniform structural divisions.	Please see our comment on 646	
650.	German Insurance Association – Gesamtverband der D	4.47.	Companies should not be required to create overly formal structural divisions. In particular, it should be possible to run both high-level and detailed internal model governance from within risk management – with suitable separation between model developers and independent audit. (sentence I requires to “establish and maintain adequate risk management, compliance, internal audit and actuarial functions”). Clarify that no separate organizational unit is needed to support administrative and management bodies with the high-level governance tasks.	Please see our comment on 646	
651.	Groupe Consultatif	4.47.	See our comments on 4.10. and 4.16.	And our responses	
652.	Institut des actuaires	4.47.	The CEIOPS shall be more precise about the role and responsibilities of the actuarial function in the model governance. Resuming these by a communication loop seems inadequate regarding the i point of the 47th article of the Solvency 2 directory	Please see our comment on 595	

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			We advice the CEIOPS to clarify these points		
653.	Investment & Life Assurance Group (ILAG)	4.47.	<p>The table puts the risk management function responsible for the internal model governance.</p> <ul style="list-style-type: none"> o This creates a significant role for the risk function which may not have been there in the past. It may be difficult for firms to resource independent risk functions with suitable professionals. o For many firms the actuarial function would be the natural home of the internal model calculation engines ('calculation kernel'). Moving the responsibility for these models out of the actuarial function will create issues. o The requirement for a communication loop between risk and actuarial is welcomed. 	We consider that this reflects Article 43 about the risk management function	
654.	Pearl Group Limited	4.47.	In the diagram it isn't clear what the end of the last bullet point under Risk Management is trying to say.	CEIOPS considers that Article 43 and Article 47 set out the responsibilities of the risk management and actuarial functions in respect of the internal model, and that there hence needs to be a link between these two functions. The aim of the bullet is to ensure that this link is there.	
655.	Pricewaterho	4.47.	There is to be further Level 3 guidance on the responsibilities of	We have reflected the level 1 text	

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	useCoopers LLP		among others, the risk management function. We are concerned as to how the risks management function can properly be responsible for the "design and implementation of the internal model" as well as "testing and validation of the internal model" and "analysing the performance of the internal model". We feel there needs to be more clarity over how the typical lines of defence are expected to perform in this governance structure.	in our paper.	
656.	ROAM –	4.47.	CEIOPS describes here the required governance of an internal model. ROAM stresses that companies should not be required to create overly formal and uniform structural divisions.	Please see our comment on 646	
657.	Association of British Insurers	4.48.	We agree with the principle that key users of the model maintain a dialogue in order to increase understanding about the model but feel that the wording "all users" is too strong. It would for example capture junior members of staff carrying out routine technical work on the model – such users would not need to be engaged in such dialog. It could instead be replaced by "key users" or a similar term.	CEIOPS considers that all users need an understanding that is proportionate to their use. We have added a sentence to make this clear.	
658.	CEA, ECO-SLV-09-451	4.48.	The requirement for formal dialogues with all users might lead to unnecessary processes; however it should be ensured that all users understand the outputs of the models and their limitations. Requirements for formal dialogue between every user of the model, as well as requirements for discussions forming part of the feedback loop between high-level governance and the risk function seems onerous and unnecessary. Ensure that users have access to and understand the model outputs and its limitations. Encourage feedback from users.	Please see our comment on 657	

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659.	EMB Consultancy LLP	4.48.	<p>This is a useful point to show the degree to which governance should be in place.</p> <p>If the governance encourages healthy internal debate and objective challenge then it is clear to see that there will be business benefits through continual learning and deepening understanding.</p> <p>If the governance in place were so rigid or stringent as to be a burden on everyday business activity and to discourage wider thinking then the situation would become unworkable and any attempt at using the model would likely result in failure.</p>	Thank you, this is very helpful and reflects our intention	
660.	German Insurance Association – Gesamtverb and der D	4.48.	<p>The requirement for formal dialogues with all users might lead to unnecessary processes; however it should be ensured that all users understand the outputs of the models and their limitations.</p> <p>Requirements for formal dialogue between every user of the model, as well as requirements for discussions forming part of the feedback loop between high-level governance and the risk function seems onerous and unnecessary.</p> <p>Ensure that users have access to and understand the model outputs and its limitations. Encourage feedback from users.</p>	Please see our comment on 657	
661.	Legal & General Group	4.48.	<p>We agree with the principle that key users of the model maintain a dialogue in order to increase understanding about the model but feel that the wording “all users” is too strong. It would for example capture junior members of staff carrying out routine technical work on the model – such users would not need to be engaged in such dialog. It could instead be replaced by “key users” or a similar term.</p>	Please see our comment on 657	

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662.	Association of British Insurers	4.49.	The list of responsibilities of the Board is quite significant. We therefore welcome the possibility for Senior management to delegate some of these tasks to an internal control committee.	Yes, and we make this suggestion in 4.12 and 4.49	
663.	CEA, ECO-SLV-09-451	4.49.	Agreed, but no separate committee should be needed for internal model control. The internal control committee mentioned in this paragraph should not result in a separate committee. It should be made clear that existing committees (e.g. Risk Committee) can fulfil those tasks. Clarify that no separate Internal Model Control Committee is required.	We consider that this is clear from the use of the word "may" rather than "shall".	
664.	German Insurance Association – Gesamtverb and der D	4.49.	Agreed, but no separate committee should be needed for internal model control. The internal control committee mentioned in this paragraph should not result in a separate committee. It should be made clear that existing committees (e.g. Risk Committee) can fulfil those tasks. Clarify that no separate Internal Model Control Committee is required.	Please see our comment on 663	
665.	KPMG ELLP	4.49.	It is unclear what the role of the 'Internal Control Committee' and what recommendations this committee is charged with. This should be clarified.	Please see our comment on 663. We may also give more guidance in level 3.	
666.	Llody's	4.49.	"Advice" has been capitalised. Please clarify whether "Advice" has a specific meaning here and, if so, what.	Thank you, we have "lower-cased" it	
667.	Pearl Group	4.49.	The list of responsibilities of the Board is quite significant. So we	Thank you	

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	Limited		appreciate the scope for Senior management to delegate some of these tasks to an internal control committee.		
668.	Association of British Insurers	4.51.	We believe the responsibilities of Senior management and the risk management function to be already sufficiently comprehensive at level 2 and do not think it is therefore necessary to prescribe more at level 3.	We have noted this point. However, comments are mixed on this.	
669.			Confidential comment deleted.		
670.	CEA, ECO-SLV-09-451	4.51.	Details should be provided under level 2.	Please see our comment on 589	
671.	CRO Forum	4.51.	The guidance given here is quite detailed – it is difficult to see what remains to be defined further in level 3 guidance.	Please see our comment on 589	
672.	German Insurance Association – Gesamtverb and der D	4.51.	Details should be provided under level 2.	Please see our comment on 589	
673.	Llody's	4.51.	There has already been a great deal of detail provided. We are concerned that more detail may result in being over-prescriptive.	We will bear this in mind	
674.	Pearl Group Limited	4.51.	The responsibilities of Senior management and the risk management function are already sufficiently comprehensive at level 2 that it is not necessary to provide more detail at level 3.	Please see our comment on 589	
675.	PricewaterhouseCoopers LLP	4.51.	See comments on paragraph 4.47	And our response	

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676.	Association of British Insurers	4.52.	<p>First and third bullets</p> <p>We are concerned that these requirements might be interpreted too narrowly and are applied at the lowest entity level. We believe that the degree of granularity for the definitions of entities and undertakings should be agreed between the regulator and the firm.</p>	We may provide more guidance about the assessment of group internal models that should clarify these points.	
677.	CEA, ECO-SLV-09-451	4.52.	<p>(Group model governance)</p> <p>Agreed, but there seems to be a risk for a very narrow interpretation of this paragraph which could result in excessive effort on group level, e.g. trying to fully align model inputs and outputs on group and solo levels.</p>	Please see our comment on 676	
678.	CRO Forum	4.52.	<p>3rd and 6th bullet: There may not be an internal model for the subsidiary and an internal model for the Group. In most cases there will be only one model, which will be applied at the subsidiary level and at the Group level. Subsidiaries may report results of their internal model to the Group, or they may submit data and parameters to the Group model, which will then produce results at the subsidiary level. The exact approach differs per company.</p>	Please see our comment on 676	
679.	EMB Consultancy LLP	4.52.	<p>The suggestions regarding group governance are sensible.</p> <p>We see the logic for the parent undertaking having responsibility for putting the governance in place, and understand that this fits well with group supervision. However, we would point out that in some groups there may be specific business units that are particularly prominent when it comes to the internal model, and because of their expertise it makes sense for that business unit to take on a lot of the detailed governance responsibilities for the</p>	Thank you, and please see our comment on 676	

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			<p>whole group. We have seen this working in practice in a number of instances.</p> <p>Some clarification should be provided as to how the situation would be dealt with where the parent sits outside Europe.</p>	
680.	German Insurance Association – Gesamtverb and der D	4.52.	<p>(Group model governance)</p> <p>Agreed, but there seems to be a risk for a very narrow interpretation of this paragraph which could result in excessive effort on group level, e.g. trying to fully align model inputs and outputs on group and solo levels.</p>	Please see our comment on 676
681.	Legal & General Group	4.52.	The definitions of entities and undertakings may be too granular and we believe that the degree of granularity should be agreed between the regulator and the firm.	Please see our comment on 676
682.	Pearl Group Limited	4.52.	<p>First and third bullets</p> <p>We are concerned that these requirements might be interpreted too narrowly and are applied at the lowest entity level.</p>	Please see our comment on 676
683.	Association of British Insurers	4.53.	This will need to be adapted to reflect the specificities for groups based outside the EU. The text seems to assume the parent will be within the EU. Non EU groups should not be required to create an EU subgroup in order to meet model requirements	Please see our comment on 676
684.	CEA, ECO-SLV-09-451	4.53.	<p>This will need to be adapted to reflect the specificities for groups based outside the EU.</p> <p>Furthermore, this provision seems to be implying all groups have a</p>	Please see our comment on 676

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			<p>centralised governance model, where the parent undertaking decides and defines standards. As a consequence, this sentence could exclude other organisational model.</p> <p>We suggest the following rewording for §4.53: "A group formalisation and information about the internal model criteria used to identify, measure, manage and control risks at group and affiliates level has to be defined. This information has to be sent to the related undertakings and entities within the group that are covered by the group internal model."</p>	
685.	FFSA	4.53.	<p>CEIOPS writes that the parent undertaking will formalise and inform all the related undertakings and entities within the group that are covered by the group internal model about the internal model criteria used...</p> <p>FFSA believes that this sentence would conduct groups to a centralised governance model, where the parent undertaking decides and defines standards. As a consequence, this sentence could exclude other organisational model.</p> <p>FFSA suggests the following rewording for §4.53: "A group formalisation and information about the internal model criteria used to identify, measure, manage and control risks at group and affiliates level has to be defined. This information has to be sent to the related undertakings and entities within the group that are covered by the group internal model."</p>	Please see our comment on 632
686.	German Insurance Association	4.53.	This will need to be adapted to reflect the specificities for groups based outside the EU.	Please see our comment on 685

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	- Gesamtverb and der D		<p>Furthermore, this provision seems to be implying all groups have a centralised governance model, where the parent undertaking decides and defines standards. As a consequence, this sentence could exclude other organisational model.</p> <p>We suggest the following rewording for §4.53: "A group formalisation and information about the internal model criteria used to identify, measure, manage and control risks at group and affiliates level has to be defined. This information has to be sent to the related undertakings and entities within the group that are covered by the group internal model."</p>	
687.	Groupe Consultatif	4.53.	See our comments on 4.45.	And our response
688.	ROAM –	4.53.	<p>CEIOPS writes that the parent undertaking will formalise and inform all the related undertakings and entities within the group that are covered by the group internal model about the internal model criteria used...</p> <p>ROAM believes that this sentence would conduct groups to a centralised governance model, where the parent undertaking decides and defines standards. As a consequence, this sentence could exclude other organisational model.</p> <p>ROAM suggests the following rewording for §4.53: "A group formalisation and information about the internal model criteria used to identify, measure, manage and control risks at group and affiliates level has to be defined. This information has to be sent to the related undertakings and entities within the group that are</p>	Please see our comment on 685

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			covered by the group internal model."
689.	CRO Forum	5.	<p>5A; Overly onerous process and documentation requirements (priority: high)</p> <p>In a number of areas the requirements on processes and documentation are overly onerous, especially in comparison to the requirements for standard models. For example with respect to the use of expert judgment.</p> <p>We disagree with the implicit assumption that approaches and assumptions of Basle II are correct and a standard to rely on when formulating advice on "Statistical Quality Standards". For instance, the importance of having "complete data" is mentioned (e.g. 5.123) but this ignores the fact that one of the main tasks of insurance modellers is to overcome missing data, as exemplified with IBNR and other reserving methods. Equally, one can get the impression that the implicit assumption of CEIOPS' authors is that this "complete set of data" allows to design models which can predict the future. Quite contrarily, actuarial methods deal with the question to what extent such an assumption can be trusted and which professional judgement has to be applied to arrive at credible predictions.</p> <p>5B; Unclear use of 'validate' through this section (priority: high)</p> <p>Section 5 makes a reference a reference several references to "validation" in various different context as a result of which the definition of validation is unclear.</p> <p>Interpretation of validation can include;</p> <p><input type="checkbox"/> Benchmarking against censuses view,</p>

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			<input type="checkbox"/> Testing against historical data, <input type="checkbox"/> Testing relevance (of an assumption) against consensus view, <input type="checkbox"/> Oversight by an independent knowledgeable reviewer We propose that the paper should adopt a proportionality based approach and allow for the most appropriate validation method applicable for a given data set or situation. A similar argument can be extrapolated for “demonstrate” which is also used without much consideration to the context it being discussed in this paper. We propose that principles of proportionality are also applied when there is a requirement to demonstrate something.	
690.	Dutch Actuarial Society – Actuarieel Genootschap (	5.	Although we agree with the principles of the Statistical Quality Test we would like to stress that it is important to keep following the principle based basic assumptions. Not only defining and building the model with all its aspect is important, but also, and even more, the plausibility and the predictive power of the results,	Noted
691.	German Insurance Association – Gesamtverband der D	5.	(Statistical quality standards) Reviews of statistical quality standards shall be harmonized. The features of statistical quality standards, which are difficult to measure, cannot be fixed in a set of rules so that the application of these rules automatically leads to similar quality results in different	A principle-based approach by its nature requires more effort to achieve harmonization and leaves more discretion to individual supervisors while providing less legal certainty. One important tool to enhance harmonization and increase legal certainty are the Level 3 measures.

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			<p>undertakings. Therefore, there might be difficulties in practice with respect to the comparability of the results achieved within the scope of certification reviews and reviews of model changes.</p> <p>Therefore, harmonization of the supervisory review practice of calculation kernels of internal models at European level seems necessary in order to guarantee convergence with respect to the approval of internal models at national as well as at international level. Regular exchange within the national supervisory authority but also at international level could facilitate harmonization of the perspectives and thus may result in the fact that undertakings and their customers are able to compare the standards applied.</p> <p>Some requirements are not specific enough to ensure legal certainty for the undertakings. There is a danger that the undertaking does not know how to fulfil the statistical quality test.</p>	
692.	Groupe Consultatif	5.	<p>Very important for the quality of an internal model is that the undertaking and the supervisor know the limitations of the model. There is no such a thing as a perfect model.</p> <p>Paragraphs 5.3.6-5.3.8 contain numerous references to issues affecting technical provisions rather than the SCR and CEIOPS should ensure that these comments remain consistent with those made in other CPs.</p>	Noted
693.	Llody's	5.	<p>The CP makes numerous references to "expert judgement". Interpreted widely, we feel the expert judgement has to enter at all stages of an internal model, from design (what risks are modelled</p>	In CP56, expert judgement is discussed in section 5.3.3 Data, and therefore is discussed solely

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			and how), through statistical analysis (what data is used, how it is analysed and what conclusions are drawn), to model parameterisation and summary. Perhaps CEIOPS are using the term in a narrower sense to mean over-riding analysis or setting assumptions judgementally. We have left the individual comments in but would welcome clarification.	as a complement to existing data or a substitute for missing data. Model assumptions are discussed in section 5.3.2 Calculation methodology and assumptions.
694.	CEA, ECO-SLV-09-451	5.8.	The level of granularity for the group level might be less detailed in proportion to the risks relevant at the group level.	Noted
695.	EMB Consultancy LLP	5.8.	In the case where a subsidiary is a third country under a regime deemed equivalent, would the standards be deemed to be met for the subsidiary model (if approved by the subsidiary's local regulator), or would they have to be separately verified for Solvency II purposes?	Please refer to CP 60 Assessment of Group Solvency.
696.	German Insurance Association – Gesamtverb and der D	5.8.	The level of granularity for the group level might be less detailed in proportion to the risks relevant at the group level.	Please see reply to comment no. 694.
697.	XL Capital Ltd	5.8.	See comment on para 4.44	Please see reply to comment no. 4.44. and cf. CP 60 Assessment of Group Solvency.
698.	Institut des actuares	5.10.	It is true that the definition allows many ways of interpretation. This could prejudice the quality and comparability of results. It would be gainful if the definition would be more précised.	Noted In its Level 2 Advice CEIOPS did provide much additional information on the probability distribution forecast (Please see

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				5.47 – 5.57)
699.	Institut des actuaires	5.12.	In of fact, statistical quality standards should not be limited to the calculation of a probability distribution forecast because the internal model is not limited to it. The quality of results concerning the economic loss is also important.	Noted
700.	Institut des actuaires	5.14.	It seems to be not always possible to distinguish the risk-factor distribution forecast from the economic loss distribution forecast. In fact, in a Monte-Carlo simulation context, the distribution of risk factors is inherent to the model and it is therefore not obvious to put forward. This confirms the fact that it is not appropriate to restrict the statistical quality requirements to the projection step.	Noted CEIOPS stated that the two-step process to calculate economic capital is a kind of idealisation. In agreement to CEIOPS conclusion in paragraph 5.20.
701.	KPMG ELLP	5.20.	CEIOPS has taken the position that statistical quality standards should not only apply to the risk model, but also to the valuation model used to evaluate the financial impact of modelled risks. We agree to this advice excluding the valuation model, especially for life business, would fail to achieve the desired objectives of high quality modelling results.	Noted
702.	German Insurance Association – Gesamtverband der D	5.27.	Whilst we see this point, there is a danger that the undertaking does not know how to fulfil the statistical quality test.	Not agreed The undertaking should oversee all quantitative methods and techniques that are associated with the calculation of the probability distribution forecast. Examples are given in paragraph 5.24.
703.	Munich RE	5.27.	Whilst we see this point, there is a danger that the undertaking does not know how to fulfil the statistical quality test.	Please see reply to comment no. 702.

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704.	KPMG ELLP	5.28.	We are supportive of the view that a 'risk distribution' provides more information than single numbers.	Noted	
705.	Association of British Insurers	5.33.	We agree less rich probability distribution forecast should be allowed for and we therefore welcome the flexible approach taken by CEIOPS.	Noted	
706.	CRO Forum	5.33.	"... Supervisory authority should always have the opportunity to also approve internal models that generate a less-rich probability distribution forecast." We welcome the flexible approach taken by CEIOPS on recognition of the value provided by a less-rich probability distribution forecasts.	Noted	
707.	Groupe Consultatif	5.33.	We welcome that CEIOPS advocates some flexibility in this matter. For the purpose of calculating solvency capital, putting a lot of effort in a full distribution can be excessive and can impair the communication of the results.	Noted Cf. also the criteria to assess the adequacy of the techniques used to calculate the probability distribution forecast in chapter 5.3.2.1.	
708.	KPMG ELLP	5.33.	Given the technical difficulties that surround the modelling of many risks we are supportive of the flexibility proposed by CEIOPS to approve 'less rich' pdfs.	Noted	
709.	Pearl Group Limited	5.33.	We agree less rich probability distribution forecast should be allowed for and we therefore welcome the flexible approach taken by CEIOPS.	Please see reply to comment no. 705.	
710.	Groupe Consultatif	5.37.	A general problem of data availability over the whole distribution is that most data will be available around the mean, while we need to put as much effort as possible into estimating the tail. In most cases expert judgement is needed. This observation is relevant to	Noted In fact, expert judgement may be needed, especially in order to	

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			the whole of chapter 5.3.1.3.		come up with an estimate of the tail of the probability distribution forecast in the absence of data. Chapter 5.3.3.5. deals with the use of expert judgement as a complement to or substitute for data.
711.	Groupe Consultatif	5.39.	See also our comments on 5.37. Furthermore, the limitation recognised by CEIOPS in 5.39/40 is very common and the reliable, richer distribution forecast envisaged is relatively rare.		Noted CEIOPS agrees that a “full distribution” is not the common case. However, the situation may change with time due to innovations in internal modelling. Therefore, CEIOPS’ statement and preference for modelling approaches providing a richer distribution forecast does make sense.
712.	Institut des actuaires	5.41.	Considering the complexity of insurance activities, the process of determining the complete probability distribution forecast is extremely long and difficult. The control authorities will be confronted to partial distributions or approximated distributions made by simulation. It is necessary to define precisely supplementary approval measures in order to satisfy statistic quality standards.		In the paragraphs 5.42 – 5.46 or 5.54, respectively, the procedure that supervisory authorities will follow is described. CEIOPS envisages to provide further guidance in Level 3 measures.
713.	Association of British Insurers	5.42.	This criteria pushes you to follow leading developments as soon as is really practical. We think this paragraph needs to be measured against a cost-benefit analysis. The cost of any major development of the model should be balanced against other competing business		In paragraph 5.42 it is not said that any development in modelling must be implemented in the internal model.

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			<p>needs for the resource. We believe disclosure and market pressures would give enough commercial interest to develop models at an appropriate pace.</p> <p>Furthermore, reference is made to the proportionality principle. CEIOPS is also aware that undertakings are subject to constraints in resources. Therefore, CEIOPS has clarified its intention as follows: "This is to prevent undertakings from lagging behind what is technically and economically feasible for them in the long term." Accordingly, here and in the remaining of the paragraph reference is made to a cost-benefit-analysis taken into account by supervisory authorities in their assessment..</p>
714.	CRO Forum	5.42.	<p>We understand CEIOPS concerns about using outdated approaches however it is impractical for undertakings to determine (and supervisors to assess) instances where an approach is outdated. We propose that the undertaking be required to assess that the approach being used is still appropriate.</p> <p>Exactly this is required by the validation standards, Article 122. Supervisory authorities will take notice of new methods. If a new method seems to be practicable (e.g. it used by several undertakings successfully) as well as superior with respect to the richness of the probability distribution forecast, then supervisory authorities will assess whether the method used by the undertaking is still appropriate or</p>

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				has to be regarded as outdated.
715.			Confidential comment deleted.	
716.	German Insurance Association – Gesamtverb and der D	5.42.	It will be difficult to determine when an approach is outdated. It would be better to check when an approach becomes inappropriate to the risks in question.	Please see reply to comment no. 714.
717.	Groupe Consultatif	5.42.	It will be difficult to determine when an approach is outdated. It would be better to check when an approach becomes inappropriate to the risks in question.	Please see reply to comment no. 714.
718.			Confidential comment deleted.	
719.	Munich RE	5.42.	It will be difficult to determine when an approach is outdated. It would be better to check when an approach becomes inappropriate to the risks in question.	Please see reply to comment no. 714.
720.	CRO Forum	5.43.	See comment 5.42	Please see reply to comment no. 714.
721.			Confidential comment deleted.	
722.	Association of British Insurers	5.44.	We welcome that Generally Accepted Market Practice can be accepted but note that such a wide recognition of a market practice does not always exist, for example for capital allocation or tail correlation factors.	CEIOPS is well aware that a generally accepted market practice does not always exist. Accordingly, paragraph 5.44 says "When and where a generally accepted market practice has been established ...".
723.	CRO Forum	5.44.	Whilst we agree that generally accepted market practice may be a	Agreed. CEIOPS stresses that

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			good guide, we caution against an uncritical use of such market practices or an uncritical qualification of generally accepted market practices as "good practice". Market practices may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by CEIOPS).	"undertakings shall not be forced to follow exactly the generally accepted market practice" and points out that "undertakings may have to deviate" (Please see 5.44 and 5.55)
724.			Confidential comment deleted.	
725.	German Insurance Association – Gesamtverb and der D	5.44.	Whilst we agree that generally accepted market practice may be a good guide we caution against an uncritical use of such market practices or an uncritical qualification of generally accepted market practices as "good practice". Market practices may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by CEIOPS).	Please see reply to comment no. 723.
726.	Groupe Consultatif	5.44.	Generally accepted market practices may be a good guide, but there is a danger that undertakings are not critical enough and make the same mistake i.e. increasing systemic risks. Therefore finding the appropriate balance to promote own models with own thinking are important.	Please see reply to comment no. 723.
727.	KPMG ELLP	5.44.	It is unclear how this 'generally accepted market practice' will be agreed. This should be clarified by CEIOPS.	CEIOPS might develop guidance in Level 3 measures.
728.	Munich RE	5.44.	Whilst we agree that generally accepted market practice may be a good guide we caution against an uncritical use of such market	Please see reply to comment no. 723.

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			practices or an uncritical qualification of generally accepted market practices as "good practice". Market practices may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. section 5.166 b where this point is acknowledged by CEIOPS)	
729.	RBS Insurance	5.44.	We feel that this criterion could cause difficulties to companies in that it is difficult to know where a generally accepted market practice exists (e.g. how many companies must accept it for it to be market practice)	Please see reply to comment no. 727.
730.	Association of British Insurers	5.45.	Supervisors will need to evaluate the shortcoming of fewer data points. The resulting need by companies to make use of validation techniques (stress test, scenario etc.) for the supervisor could be extensive.	Noted
731.	CRO Forum	5.45.	In practice it will be impractical to identify "all" shortcomings. We propose that only the key/material shortcomings are identified that would likely to impact the internal model effective operation accompanied by an explanation why the undertaking believes that the model works appropriately for the purposes it was built for	Not agreed At first, all shortcomings have to be identified. In a second step, out of all shortcomings identified the material ones have to be determined.
732.			Confidential comment deleted.	
733.	German Insurance Association – Gesamtverb and der D	5.45.	In practice it will be impossible to identify "all" shortcomings. We would find it useful to explain why the undertaking believes that the model works appropriately for the purposes it was built for.	Please see reply to comment no. 731.

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734.	Groupe Consultatif	5.45.	We disagree. We would expect the same validation standard for all distribution forecasts. See also our comments on 5.39. In practice it will be impossible to address "all" shortcomings.	Please see also reply to comment no. 731. Agreed, the standards are the same. In order to comply, however, a more intensive validation process may be necessary in case of a model with key points as probability distribution forecast.
735.	Munich RE	5.45.	In practice it will be impossible to "all" shortcomings. We would find it useful to explain why the undertaking believes that the model works appropriately for the purposes it was built for.	Please see reply to comment no. 731.
736.	Association of British Insurers	5.47.	We find the definition of probability distribution forecast quite opaque. This could be taken to mean that future business projections could be subject to statistical quality standards, which we would not support. It would be clearer to have a table setting out the differences between it and an economic profit and loss distribution forecast.	Not agreed Assumptions or plans regarding future business ("future business projections") where used as an input for the internal model, may have a material impact on the probability distribution forecast and are therefore subject to the requirements of sections 5.3.2. and 5.3.3.
737.	CEA, ECO-SLV-09-451	5.47.	We believe that the reference to profits and losses is too restrictive, and not really consistent with the notion of probability distribution forecast, since: <input type="checkbox"/> The internal model projects cash flows and reserves which depends on risk factors;	Not agreed In paragraph 5.47 "profits and losses" is given just as an example for a quantity of monetary value that should underlie the probability

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			<div><div><div><input type="checkbox"/> It is this projection which constitutes the probability distribution forecast; and</div><div><input type="checkbox"/> The delta-NAV which is used for SCRs calculation is done with the difference among two different distribution forecasts, which is not exactly a profit or a loss.</div></div><div>29.</div><div>We suggest rewriting this sentence as follows: "The probability distribution forecast shall refer, among other things, to a quantity of monetary value."</div></div>	distribution forecast. Alternative quantities of monetary value are admissible.
738.	CRO Forum	5.47.	<div>"The probability distribution forecast shall refer, among other things, to a quantity of monetary value such as profits and losses. Accordingly, any methodology that values the financial impact of future events is also subject to statistical quality requirements."</div> <div>The definition of probability distribution forecast is vague. We interpret this as a principles based approach to defining probability distribution forecast and would welcome CEIOPS to confirm our interpretation.</div>	CEIOPS follows a principle-based approach and deliberately leaves the exact form of the probability distribution forecast open so that undertakings can choose a form which best corresponds to their individual needs.
739.	FFSA	5.47.	<div>CEIOPS writes that the probability distribution forecast shall refer, among other things, to a quantity of monetary value such as profits and losses.</div> <div>FFSA believes that the reference to profits and losses is too restrictive, and not really consistent with the notion of probability distribution forecast, since: (1) the internal model projects cash flows and reserves which depends on risk factors, (2) it is this projection which constitutes the probability distribution forecast, and (3) the delta-NAV which is used for SCRs calculation is done with the difference among two different distribution forecasts.</div>	Please see reply to comment no. 737.

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			<p>which is not exactly a profit or a loss.</p> <p>As a consequence, FFSA suggests rewriting this sentence as follows: "The probability distribution forecast shall refer, among other things, to a quantity of monetary value."</p>	
740.	German Insurance Association – Gesamtverb and der D	5.47.	<p>We believe that the reference to profits and losses is too restrictive, and not really consistent with the notion of probability distribution forecast, since:</p> <p>(1) the internal model projects cash flows and reserves which depends on risk factors,</p> <p>(2) it is this projection which constitutes the probability distribution forecast, and</p> <p>(3) the delta-NAV which is used for SCRs calculation is done with the difference among two different distribution forecasts, which is not exactly a profit or a loss.</p> <p>We suggest rewriting this sentence as follows: "The probability distribution forecast shall refer, among other things, to a quantity of monetary value."</p>	Please see reply to comment no. 737.
741.	Legal & General Group	5.47.	The probability distribution forecast is not a very clear definition. It would be clearer to have a table setting out the differences between it and an economic profit and loss distribution forecast	Please see reply to comment no. 736.
742.	Pearl Group Limited	5.47.	We find the definition of probability distribution forecast quite opaque. This could be taken to mean that future business projections could be subject to statistical quality standards, which we would not support.	Please see reply to comment no. 736.
743.	CRO Forum	5.48.	"The criteria set out in Article 119 paragraphs (2)–(9) apply to the	Not agreed

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			<p>calculation framework of the probability distribution forecast as well as to all quantitative methods and techniques associated with it.”</p> <p>There may be methods and techniques not fully justified by statistical data, as they include significant elements of judgement (e.g. operational risk modelling). We propose that this paragraph should be altered to accommodate for such instances and only be applicable “whenever possible”.</p>	The advice on 119(2)-(9) includes the issue of missing data and expert judgement (5.159-5.169 as well as 5.183-5.184) and also refers to “credible information” (5.77 ff).
744.	PricewaterhouseCoopers LLP	5.48.	<p>The paragraph sets out a desire for as full as possible a distribution of required capital by percentile – as full as the distribution of underlying risks. The reasoning for the necessity of such detailed output is quite briefly described. In practical terms the production of a full distribution of capital will be impeded by a) the underlying risk distributions being limited to a few single point estimates, b) the complexity that diversification parameters and non-linearity effects vary by percentile, c) partial model situations having only one estimate of capital – that at the standard calibration.</p> <p>We believe this requirement may lead to false accuracy being imputed to the model, to the detriment of the understanding by senior management of the model. We suggest a more balanced requirement would be to look for three estimates from the model, at the risk appetite of the firm, at the calibration of the standard formula, and at the level of typical business planning risk stresses, perhaps 1 in 20.</p>	<p>Not agreed</p> <p>The issue of false accuracy is addressed in 5.40 and 5.53 (unfounded richness of the probability distribution forecast).</p> <p>Your proposal is in contradiction to the Level 1 Text.</p>
745.	Association of British Insurers	5.49.	<p>We believe the heading should read “Probability distribution forecast” in the title</p> <p>We also believe that the level of application within a firm(i.e. the level where it is set) should capture the appropriate structure to</p>	<p>Agreed</p> <p>Heading to be changed accordingly.</p> <p>Aspects concerning</p>

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			asses the major risks of the firm as a whole. i.e. it should be proportionate for smaller firms within a group unless they contain risks that could have a material impact on the group.	proportionality are included in 5.54.
746.	Legal & General Group	5.49.	<p>We believe the heading should read "Probability distribution forecast" in the title</p> <p>We also believe that the level of application within a firm(i.e. the level where it is set) should capture the appropriate structure to asses the major risks of the firm as a whole. i.e. it should be proportionate for smaller firms within a group unless they contain risks that could have a material impact on the group.</p>	Please see reply to comment no. 745.
747.			Confidential comment deleted.	
748.	Association of British Insurers	5.50.	<p>This might be difficult to apply for group structures which are more flexible than heavily centralised groups. Groups may construct internal models in different ways that reflect the way they run their businesses and it is therefore not appropriate or desirable to impose a uniform probability distribution forecast across the business. Certain groups may have a single group internal model and, at the same time, not impose the same probability distribution forecast method to every entity. Whilst consistency should be ensured between undertakings within a group, we do not believe there should be a formal requirement to have a fully populated probability distribution forecast at the topmost level of the group.</p> <p>Further, we believe that whilst aggregation (and allocation) is desirable, it is not easy to achieve, especially when based on "few key points". Article 5.29 mentions that Solvency II "ultimately aims at an overall distribution forecast for the topmost level...", but how far the aim becomes mandatory is not fully clear.</p>	Paragraph 5.50 refers to probability distribution forecast (pdf) in the group context without further specification of the term. The following paragraphs deal with the nature of the pdf. In CEIOPS view it should be possible and reasonable to aggregate solo undertakings' results if consistency is ensured across the group. The pdf at group level may consist of only key points subject to the requirements set out in paragraph 5.54. Please cf. also chapter 5.3.5.3 "Aggregation of distributions with only key points known".
749.	CEA,	5.50.	(Overall probability distribution forecast at the topmost (i.e. group)	Please see reply to comment no.

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	ECO-SLV-09-451		<p>level)</p> <p>Effort to determine overall probability distribution forecast does not seem appropriate for all instances, especially for groups.</p> <p>Overall probability distribution should not be the required output (or intermediary output) of an internal model. Therefore, companies (especially groups) should not be required to put excessive effort into those probability distributions where not necessary.</p> <p>The methodology to sum up probability distribution forecast at a group level may be very complicated when, as §5.52 stresses, the exact nature of the probability distribution forecast may include a wide range of distribution from continuous distributions to ones with few data points. Relevant simplifications proportional to the risk profile at the group level should be taken into account.</p> <p>Soften the requirement for overall probability distributions, especially for groups.</p>	748.
750.	CRO Forum	5.50.	<p>" ... aim to arrive at a probability distribution forecast wherever the internal model is used at the level of individual solo undertakings of the group, ..."</p> <p>This advice might be difficult to apply for group structures which are more flexible than heavily centralised groups. Additionally, certain groups may have a single group internal model and, at the same time, not impose the same probability distribution forecast method to every entity.</p> <p>Whilst consistency should be ensured between undertakings within a group, we do not believe there should be a formal requirement to</p>	Please see reply to comment no. 748.

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			<p>have a fully populated probability distribution forecast at the topmost level of the group.</p> <p>This paragraph states that "groups shall aim to arrive at a probability distribution forecast whenever the internal model is used at the level of individual solo undertakings of the group". In practice, if the same internal model is used at a group and a solo undertaking level, it may be necessary to include some simplifications at the level of the solo undertaking to prevent the model becoming extremely complex and cumbersome at group level. This should be recognized by supervisory authorities.</p>	
751.	FFSA	5.50.	<p>CEIOPS says that the aim of Solvency II is for group internal model to arrive at a probability distribution forecast at the topmost (i.e. group) level.</p> <p>FFSA disagrees with this element, since what is expected throughout Solvency II is to define whether the solvency margin is to be calculated. Since a probability distribution forecast could be created for each subsidiary of a group and for each risk factor (e.g. central scenario + shocked scenario for a specific SCR such as mortality risk estimation), the consolidation of these elements would be unreasonable for Solvency II purposes, since it is not directly useful. Moreover, the methodology to sum up probability distribution forecast at a group level is to be defined, which could be very complicated when, as §5.52 stresses, the exact nature of the probability distribution forecast may include a wide range of distribution from continuous ones to ones with few data points.</p> <p>As a consequence, FFSA suggests this §5.50 to be deleted.</p>	<p>Not agreed</p> <p>CEIOPS believes that a probability distribution forecast (pdf) at the group model (and in accordance to the model scope) is useful, even if the pdf consists of a few points only.</p>
752.			Confidential comment deleted.	
753.			Confidential comment deleted.	

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754.	German Insurance Association – Gesamtverb and der D	5.50.	<p>(Overall probability distribution forecast at the topmost (i.e. group) level)</p> <p>Effort to determine overall probability distribution forecast does not seem appropriate for all instances, especially for groups.</p> <p>In principle, overall probability distributions are the desired output for groups, too. However, companies (especially groups) should not be required to put excessive effort into those probability distributions where not necessary.</p> <p>The methodology to sum up probability distribution forecast at a group level may be very complicated when, as §5.52 stresses, the exact nature of the probability distribution forecast may include a wide range of distribution from continuous distributions to ones with few data points. Relevant simplifications proportional to the risk profile at the group level should be taken into account.</p> <p>Soften the requirement for overall probability distributions, especially for groups.</p>	Please see reply to comment no. 749.
755.	Legal & General Group	5.50.	As the structures of firms are different, the approach taken by a regulator needs to reflect and capture this within the context of ensuring that all material risks are appropriately captured.	Noted
756.	Pearl Group Limited	5.50.	Whilst consistency should be ensured between undertakings within a group, we do not believe there should be a formal requirement to have a fully populated probability distribution forecast at the topmost level of the group.	Please see reply to comment no. 748.
757.	XL Capital	5.50.	See comment on para 4.44 about Group. Also, we question the	Please cf. paragraph 5.61.

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	Ltd		practicality of enforcing a single approach to distribution of profit and losses across all group subsidiaries.	
758.	Association of British Insurers	5.51.	It would be better to base this on a "fit for purpose" criteria rather than using "as much relevant information as possible".	Not agreed Please see also reply to comment no. 760.
759.			Confidential comment deleted.	
760.	CRO Forum	5.51.	It is unclear what the advice implies when it states that the forecast should be based on 'as much relevant information as possible'. This could be impractical. We propose that the undertaking documents why it believes that the data used for forecasts is appropriate.	Agreed Wording revised: "as much relevant information as possible" replaced by "all relevant information available"
761.	KPMG ELLP	5.51.	CEIOPS advises to use as much relevant information as possible for the probability distribution forecast. We suggest this information should be ranked in the order of preference, i.e. own data, group data, domestic industry data, global industry data, subject to credibility considerations.	Not agreed The suggested data ranking is impractical.
762.	EMB Consultancy LLP	5.52.	The text refers to "data points" but we believe this is misleading and should say "forecast points"	Not agreed What is meant here by data points should be obvious.
763.	Institut des actuaires	5.52.	The definition of the exact nature of the probability distribution forecast given by the CEIOPS is not more explicit than the one given by the directive ("a wide range of distribution", "few data"). It would be gainful if the notion would be defined with explicit quantitative aspects.	CEIOPS wants to avoid to restrict modelling freedom by providing a too precise definition in this respect. The nature of the probability distribution forecast varies for some good reasons.
764.	AAS BALTA	5.53.	We agree that more data points produce a stronger basis for risk	Noted

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			management.		
765.	AB Lietuvos draudimas	5.53.	We agree that more data points produce a stronger basis for risk management.		Noted
766.	Association of British Insurers	5.53.	We welcome the flexible and proportionate approach taken by CEIOPS which links the probability distribution forecast with decision-making processes. We are concerned however that the conditions laid out in 5.54 might only allow for full stochastic models and render deterministic approaches no longer acceptable. The fact that a stochastic method has been used to simulate a full distribution does not necessarily make the answer more robust.		Throughout the whole chapter 5.3.1.3 CEIOPS does not distinguish between (full) stochastic and deterministic approaches in the first place. Instead, the internal model is discussed solely from the perspective of its main output, the probability distribution forecast (pdf). As obvious from paragraph 5.54, the richness of the pdf will be one key aspect in the assessment of model compliance with the statistical quality standards. Models with a less rich pdf are subject to the requirements listed in 5.54. CEIOPS wants to point out that with the preference stated in 5.39 it has not been intended to contrast stochastic and deterministic modelling approaches in any way.
767.			Confidential comment deleted.		
768.	CEA, ECO-SLV-	5.53.	The paragraphs 5.53 and 5.56 seem to contradict each other regarding the use of fewer data points for a distribution.		Not agreed 5.53 and 5.56 cover different

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	09-451		<p>While 5.53 agrees that it is not necessary to introduce unfounded richness into the forecast when only few data points are available, 5.56 highlights that in this case intensive validation and stricter governance may be required.</p> <p>Align 5.56 with 5.53 or delete 5.56.</p>	<p>topics. 5.53 is about the introduction of unfounded richness to the probability distribution forecast (pdf) whilst 5.56 is about validation of models with only key points as pdf.</p> <p>It has to be noticed that validation is not restricted to quantitative techniques which require the availability of data. CEIOPS has a broad notion of validation (cf. chapter 8).</p>
769.	CODAN Forsikring A/S (10529638), Denmark	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
770.	CODAN Forsikring (Branch Norway) (991 502 491)	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
771.	CRO Forum	5.53.	We welcome this advice by CEIOPS. We understand that “unfounded richness” can be interpreted to mean a level of sophistication or detailed data used in the derivation of a distribution which produces dubious accuracy and a false sense of security in the results of al model. An undertaking may produce a higher quality result (and make better decisions) from a robust	Noted

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			method of choosing a few points on a distribution, compared to another undertaking which uses highly sophisticated methods but for which the underlying assumptions/parameters are not robust. `	
772.	EMB Consultancy LLP	5.53.	<p>Again the phrase "data points" is used and we believe this should say "forecast points".</p> <p>We would also point out that a larger number of forecast points does not necessarily indicate higher quality: for example a high number of simulations will not compensate for a poor distributional choice.</p>	<p>Please see reply to comment no. 762.</p> <p>Agreed</p>
773.			Confidential comment deleted.	
774.	German Insurance Association – Gesamtverb and der D	5.53.	<p>The paragraphs 5.53 and 5.56 seem to contradict each other regarding the use of fewer data points for a distribution.</p> <p>While 5.53 agrees that it is not necessary to introduce unfounded richness into the forecast when only few data points are available, 5.56 highlights that in this case intensive validation and stricter governance may be required.</p> <p>Align 5.56 with 5.53 or delete 5.56.</p>	Please see reply to comment no. 768.
775.	Link4 Towarzystw o Ubezpieczeń SA	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
776.	RSA Insurance Group PLC	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted

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777.	RSA Insurance Ireland Ltd	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
778.	RSA - Sun Insurance Office Ltd.	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
779.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.53.	We agree that more data points produce a stronger basis for risk management.	Noted
780.	AAS BALTA	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Agreed, as a generally accepted market practice does not establish instantaneously and will evolve over time. Please cp. paragraph 5.43. Please note that it is not the market practice itself that is expected to be present in the insurance undertakings, but rather the minimum quality standard that is associated with this practice.
781.	AB Lietuvos draudimas	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
782.	Association of British	5.54.	See comments under 5.53	Please see reply to your comment no. 766.

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	Insurers		We have a concern that the guidance here may mean they there is a presumption that stochastic methods will be used for all purposes. In practice depending upon the materiality and nature of the statistics it may be more appropriate to use a deterministic approach.	
783.	CEA, ECO-SLV-09-451	5.54.	Agreed, but this paragraph should not result in situations where stochastic approaches are generally preferred compared to deterministic ones in all cases. Some deterministic methods (e.g. calculation of technical provisions based on loss triangles) are appropriate and widely use and should therefore also form the basis for risk measurement.	Agreed. Paragraph 5.54 should not be interpreted as a general preference of stochastic approaches over deterministic ones, Please cf. reply to comment no. 766. [Your example is misleading as it is relates to the calculation of technical provisions.]
784.	CODAN Forsikring A/S (10529638), Denmark	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
785.	CODAN Forsikring (Branch Norway) (991 502 491)	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.

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786.	CRO Forum	5.54.	<p>We welcome the flexible and proportionate approach taken by CEIOPS which links the probability distribution forecast with decision-making processes.</p> <p>However, we are concerned that the conditions laid out in this paragraph might only allow for full stochastic models, rendering deterministic approaches to estimate points on the pdf unacceptable going forward.</p>	Please see reply to comment no. 766.	
787.	EMB Consultancy LLP	5.54.	<p>We recognise the need to allow for simple techniques such as aggregation of key points, but would warn that this is not conducive to understanding of the full risk profile. With such methods, in our view, there is too much focus on the “final number” rather than understanding the process of getting to the result.</p> <p>Proportionality is mentioned, but we would suggest that even simple undertakings should aim to have an idea of the full distribution of their risk profile, not just what a particular point in the upper tail looks like.</p>	<p>As stated in 5.40, the key points generated by the internal model should provide the undertaking with information about the shape and tail of the (potential full) distribution.</p> <p>Furthermore, models should never result in one “final number” only. Please cf. chapter 5.3.2.1, and the transparency criterion in particular.</p>	
788.	FFSA	5.54.	<p>Internal models typically generate a probability distribution forecast – either directly generating the entire distribution or through the fitting a curve where only specific points are run. Both approaches are based on a number of assumptions and the limitations of both should be recognised. The advice seems to imply that the latter approach is weaker.</p> <p>FFSA thinks that Level 2 should recognise that pragmatic approaches to estimating risks are accepted in internal models.</p>	Please see reply to comment no. 766.	

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789.	German Insurance Association – Gesamtverb and der D	5.54.	Agreed, but this paragraph should not result in situations where stochastic approaches are generally preferred compared to deterministic ones in all cases. Some deterministic methods (e.g. calculation of technical provisions based on loss triangles) are appropriate and widely use and should therefore also form the basis for risk measurement.	Please see reply to comment no. 783.	
790.	Investment & Life Assurance Group (ILAG)	5.54.	We welcome the recognition that certain risks may only have point estimates.	Noted	
791.	KPMG ELLP	5.54.	Among other measures for determining adequacy of a probability distribution forecast's richness, the CP suggests taking into account current industry developments in internal modelling. We suggest stipulating that these developments must be well-known in the industry and generally acceptable to the local actuarial professional body.	CEIOPS expects that generally accepted market practices are indeed well-known in the industry and also accepted by the actuarial community, and that views regarding these practices are exchanged between industry, actuarial community and supervisors. In CEIOPS view a formal requirement regarding the acceptance by actuarial bodies is not adequate.	
792.	Legal & General Group	5.54.	Whilst we use stochastic models for appropriate material risks we have a concern that the guidance here may mean they there is a presumption that they will be used for all purposes. In practice depending upon the materiality and nature of the statistics it may be more appropriate to use a deterministic approach.	Paragraph 5.54 exclusively refers to internal models that generate only key points of the probability distribution forecast. Taking into account the proportionality	

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				principle (cf. second bullet point in 5.54) it has to be assessed case-by-case if such a model can be approved.
793.	Link4 Towarzystwo Ubezpieczeń SA	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
794.	Pearl Group Limited	5.54.	We welcome the flexible and proportionate approach taken by CEIOPS which links the probability distribution forecast with decision-making processes. We are concerned however that the conditions laid out in 5.54 might only allow for full stochastic models and render deterministic approaches no longer acceptable. We do not believe that this is CEIOPS intention.	Please see reply to comment no. 766.
795.	ROAM –	5.54.	Internal models typically generate a probability distribution forecast – either directly generating the entire distribution or through the fitting a curve where only specific points are run. Both approaches are based on a number of assumptions and the limitations of both should be recognised. The advice seems to imply that the latter approach is weaker. ROAM thinks that Level 2 should recognise that pragmatic approaches to estimating risks are accepted in internal models.	Please see reply to comment no. 788.
796.	RSA Insurance Group PLC	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
797.	RSA	5.54.	There would need to be a time lag between when a method became	Please see reply to comment no.

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	Insurance Ireland Ltd		"generally accepted market practice" and when it would be expected to be present in all undertakings models.	780.
798.	RSA - Sun Insurance Office Ltd.	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
799.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.54.	There would need to be a time lag between when a method became "generally accepted market practice" and when it would be expected to be present in all undertakings models.	Please see reply to comment no. 780.
800.	CEA, ECO-SLV-09-451	5.55.	<p>We strongly support that the undertaking is not forced to follow the market practice but is able to consider its own risk profile. According to this and to para 5.54 the minimum standard should not gear to other undertakings' practice.</p> <p>Whilst we agree that generally accepted market practice may be a good guide we caution against an uncritical use of such market practices or an uncritical qualification of generally accepted market practices as "good practice". Market practices may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by Ceiops).</p>	Please see reply to comment no. 723.
801.	CRO Forum	5.55.	<p>"CEIOPS emphasizes that undertakings shall not be forced to follow exactly the generally accepted market practise"</p> <p>We welcome this advice as it does not force companies to adopt general accepted market practices to demonstrate robustness of</p>	<p>Noted</p> <p>The sentence "This supervisory approach avoids creating systemic risk and encourages</p>

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			<p>the probability distribution function and get regulatory approval. This principle based approach is in line with the principle based framework proposed by the directive.</p> <p>This sentence may be made much stronger. (Dynamic) model development should be encouraged and herding behaviour should be discouraged, this will increase model quality and decrease the systemic risk in the industry and thereby increase policyholder protection.</p>	reflection of existing alternative techniques and innovation” covers all aspects mentioned.
802.	EMB Consultancy LLP	5.55.	Market practice is not the same as best practice, and best practice is a concept that necessarily differs from undertaking to undertaking.	Noted
803.	European Union member firms of Deloitte Touche To	5.55.	<p>We suggest CEIOPS develops the definition of “certain minimum standard in model quality”, especially in case an undertaking decides to deviate from “generally accepted market practice”.</p> <p>Such minimum standard could be included in Level 3 measures.</p>	<p>Paragraph 5.55 refers to internal models that generate only the key points of the probability distribution forecast and especially to the third bullet point of 5.54, where the generally accepted market practice is mentioned. It is this market practice that determines the minimum standard in model quality. Please cf. paragraph 5.44 where this link is described in more detail.</p> <p>CEIOPS may develop further guidance in Level 3 measures.</p>
804.	German Insurance Association	5.55.	<p>We strongly support that the undertaking is not forced to follow the market practice but is able to consider its own risk profile.</p> <p>According to this and to para 5.54 the minimum standard should</p>	Please see reply to comment no. 723.

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	- Gesamtverb and der D		<p>not gear to other undertakings' practice.</p> <p>Whilst we agree that generally accepted market practice may be a good guide we caution against an uncritical use of such market practices or an uncritical qualification of generally accepted market practices as "good practice". Market practices may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by CEIOPS).</p> <p>35.</p>	
805.	Groupe Consultatif	5.55.	<p>See also our comments on 5.44.</p> <p>What does "certain minimum standards in model quality" mean exactly? Is it based on market practice?</p>	Yes, the generally accepted market practice defines the minimum quality standard for models with only key points as probability distribution forecast.
806.	Investment & Life Assurance Group (ILAG)	5.55.	We welcome the clarification that undertakings will not be forced to use a market practice where that is not proportionate, or fitting the risk profile.	
807.	KPMG ELLP	5.55.	The CP suggests that (re) insurance undertakings may deviate from generally established market practice and choose a modelling technique which is more appropriate to its own risk profile. We agree to the proposed flexibility.	Please see reply to comment no. 723.
808.	Association of British Insurers	5.56.	It is not clear why models which only generate a few points on the distribution may need more governance and validation. Indeed, introducing a model which tries to map the full distribution	This statement is to be understood given that model validation is often more

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			necessarily becomes a much more complex model which in turn increases the risks or error or maladministration.	challenging in those cases.
809.	CEA, ECO-SLV-09-451	5.56.	<p>A pragmatic approach is needed to estimating probability distributions. Fewer data points do not coincide with less accuracy.</p> <p>Internal models typically generate a probability distribution forecast – either directly generating the entire distribution or through the fitting a curve where only specific points are run. Both approaches are based on a number of assumptions and the limitations of both should be recognized. The advice seems to imply that the latter approach is weaker which in many situations is incorrect. It therefore needs to be made clear that the quality criterion should not be “model sophistication”, but the extent to which decisions become better (better aligned with risk appetite and the desire to protect solvency) by having better model (statistical) quality. It needs to be noted that more sophisticated models often decrease the quality of decisions, as they obscure common sense and prudence.</p> <p>Delete paragraph or align with 5.53.</p>	Please see reply to comment no. 788.
810.	CRO Forum	5.56.	<p>“CEIOPS emphasizes that undertakings shall not be forced to follow exactly the generally accepted market practise”</p> <p>We welcome this advice as it does not force companies to adopt general accepted market practices to demonstrate robustness of the probability distribution function and get regulatory approval. This principle based approach is in line with the principle based framework proposed by the directive.</p> <p>This sentence may be made much stronger. (Dynamic) model development should be encouraged and herding behaviour should</p>	Please see reply to comment no. 801.

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			be discouraged, this will increase model quality and decrease the systemic risk in the industry and thereby increase policyholder protection.	
811.	EMB Consultancy LLP	5.56.	Again the phrase "data points" is used and we believe this should say "forecast points".	Please see reply to comment no. 762.
812.	German Insurance Association – Gesamtverband der D	5.56.	<p>A pragmatic approach is needed to estimating probability distributions. Fewer data points do not coincide with less accuracy.</p> <p>Internal models typically generate a probability distribution forecast – either directly generating the entire distribution or through the fitting a curve where only specific points are run. Both approaches are based on a number of assumptions and the limitations of both should be recognized. The advice seems to imply that the latter approach is weaker which in many situations is incorrect. It therefore needs to be made clear that the quality criterion should not be "model sophistication", but the extent to which decisions become better (better aligned with risk appetite and the desire to protect solvency) by having better model (statistical) quality. It needs to be noted that more sophisticated models often decrease the quality of decisions, as they obscure common sense and prudence.</p> <p>Delete paragraph or align with 5.53.</p>	Please see reply to comment no. 809.
813.	Groupe Consultatif	5.56.	<p>The use of fewer data points may be sufficient to calculate the SCR, but more data points may be appropriate for risk management purposes.</p> <p>See also our comments on 5.45.</p>	<p>Agreed</p> <p>It has to be noticed that an internal model nevertheless has to comply with the requirements of the other Articles 118-124. As</p>

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				stated in the last bullet point in 5.54, any corresponding limitations have to be compensated by additional measures. Your comment links primarily to the Article 119 Use Test.
814.	KPMG ELLP	5.56.	The CP suggests that probability distribution forecasts with fewer data point may require validation via stress testing, scenario analysis and strict governance. While we appreciate the intent of this advice, it should be recognised that some risks (mortality, catastrophe) inherently produce fewer data points compared to some other risks (motor, fire, temporary disability) and are also therefore harder to validate.	Agreed
815.	Llody's	5.56.	The logic that internal models that generate fewer data points may need more intensive validation and stricter governance is dubious. It could equally well be claimed that internal models that generate a full probability distribution forecast require more intensive validation and stricter governance because of the risk that they are attaching a spurious level of credibility to the data they are based on. In practice, the extent of validation and degree of governance should reflect both the sophistication of the model and the appropriateness of the data to support that level of sophistication. Further, the principle of proportionality should apply.	Please see also reply to comment no. 808. The proportionality principle holds also in this respect. However, CEIOPS does not see any need to mention it explicitly here again.
816.	Pearl Group Limited	5.56.	It isn't clear whether the use of correlations to add together results of different risks is allowed. It implies that extra validation would be required for this to be allowed.	Please cf. section 5.3.5.3 on the aggregation of distributions with only key points known.
817.	AAS BALTA	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number	Please cf. paragraph 5.61.

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			(which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	
818.	AB Lietuvos draudimas	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
819.			Confidential comment deleted.	
820.	CODAN Forsikring A/S (10529638), Denmark	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	See reply to comment no. 817.
821.	CODAN Forsikring (Branch Norway) (991 502 491)	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
822.	CRO Forum	5.57.	The use of the word 'compensated for' in the advice is unclear. Our interpretation of this advice is that limitations in the modelling of individual risks should be understood at top level results. We propose that the advice is re-drafted to clarify that through replacing 'compensate for' by 'recognise'.	Not agreed The identification of the resulting model limitations is only the first step. Undertakings should take measures to compensate for these limitations. This holds for the solo level as well as for the group level. Additional measures here should not be misunderstood as "being more prudent" or

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				"raising risk capital."
823.	Link4 Towarzystwo Ubezpieczeń SA	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
824.	RSA Insurance Group PLC	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
825.	RSA Insurance Ireland Ltd	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
826.	RSA - Sun Insurance Office Ltd.	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
827.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.57.	Surely this is subject to the proportionality argument. So a small solo may have a simplified approach whilst the Group number (which is not overly affected by that Solo's numbers) can have a more complex approach at the same time.	Please see reply to comment no. 817.
828.	Association of British Insurers	5.59.	We think that the requirement to provide documentation of the historical development of the internal model including methodologies, assumptions and data should be applied proportionately. This should not mean an exhaustive library for all times.	Your comment seems to address paragraph 9.25 in the chapter on documentation. The proportionality principle in this respect is addressed by

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					paragraph 9.34: "the documentation requirement for minor changes is narrower than for major changes", however, the documentation of the historical performance of the model (changes in methodology, assumptions and data and their rationale) is essential both for the undertaking itself and supervisory authorities.
829.	AAS BALTA	5.60.	Agreed		Noted
830.	AB Lietuvos draudimas	5.60.	Agreed		Noted
831.	CODAN Forsikring A/S (10529638), Denmark	5.60.	Agreed		Noted
832.	CODAN Forsikring (Branch Norway) (991 502 491)	5.60.	Agreed		Noted
833.	Link4 Towarzystw o Ubezpieczeń	5.60.	Agreed		Noted

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	SA			
834.	RSA Insurance Group PLC	5.60.	Agreed	Noted
835.	RSA Insurance Ireland Ltd	5.60.	Agreed	Noted
836.	RSA - Sun Insurance Office Ltd.	5.60.	Agreed	Noted
837.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.60.	Agreed	Noted
838.	European Union member firms of Deloitte Touche To	5.62.	<p>CEIOPS suggests onerous requirements for “adequate” techniques. In our view, many techniques currently in use would fail these criteria. Data sources vary from the solidly reliable to anecdotes and hearsay. Models range from the solidly statistically based to those based on expert guesswork where relevant data does not yet exist. In many cases, there is no truly satisfactory method of modelling difficult effects and firms do the best they can. Management decisions take account of many inputs, giving more weight to the sources considered most credible.</p> <p>CEIOPS aim in setting thresholds for adequate techniques is surely to raise the standard of data collection and statistical analysis – which is a good thing. An unintended consequence could be to exclude from an internal model any information which does not</p>	<p>Please note that the section refers to methodology and assumptions as opposed to data. The criteria given are abstract and therefore flexible. Their intention is to provide the undertakings with a framework to assess whether the methods and assumptions applied are adequate.</p>

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			clear the hurdle. This would mean that less information, in total, is available to management for decision making, resulting in worse decisions.	
839.	CRO Forum	5.63.	Detailed and parsimonious: We welcome the remark that the most complex model is not always the best.	Noted
840.	DIMA (Dublin International Insurance & Management	5.63.	'Up to date': the undertaking is aware of the current state of knowledge in internal modelling, taking account of the latest developments and trends'. This could be quite onerous. How up to date in terms of new techniques does the model need to be? Is there a time window given to companies by the regulator within which no capital add on is imposed while the models are updated to reflect latest techniques? We would expect that the requirement is to be fit for purpose.	It seems that there is a misunderstanding. CEIOPS does not require undertakings to implement the latest techniques immediately after their introduction.. However, the undertaking shall be aware of developments and trends in modelling. Based on this insight, the undertaking must decide whether it could benefit from these innovations and the model should be changed accordingly. This is part of validation process typically carried out once a year (cf. paragraph 8.38).
841.	German Insurance Association – Gesamtverb and der D	5.63.	Last sentence: We do not understand the phrase "... indicate changing conditions in the surrounding world" and recommend dropping it. Otherwise, CEIOPS should clarify this issue.	The phrase expands on the balance between seemingly conflicting model characteristics, robustness and sensitivity of the model. The change in conditions of the surrounding world, e.g. a change in economic model input

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				parameters, should be visible in the model output.
842.	Groupe Consultatif	5.63.	<p>There is always a conflict between accuracy and transparency. There should be a balance between how far complexity should go and an undertaking should evaluate any additional complication by asking what does it add to the model and what is the impact on the transparency?</p> <p>An important issue in stochastic models using simulation approaches, is that the more complex a model is the more computer time will be needed to derive the scenario results. That in practice can lead to less simulations being run which in turn will result in less accurate results being produced.</p>	<p>See subparagraph on the criterion transparency.</p> <p>Noted</p>
843.	KPMG ELLP	5.63.	We welcome these further explanations of the terms.	Noted
844.	Munich RE	5.63.	We do not understand the phrase "... indicate changing conditions in the surrounding world" and would encourage CEIOPS to clarify.	Please see reply to comment No.841
845.	Groupe Consultatif	5.67.	It would be helpful for CEIOPS to further elaborate on what is meant by consistency in this context. For example, the risk neutral model of equity returns used to calculate the technical provisions will not be consistent with the real world model of equity returns used to calculate the 99.5% quantile.	In 5.105 and in 5.106 is mentioned that differences are possible but must be justified and the example can be good justification. Additionally, CEIOPS recommends individual consistency criteria in 5.69.
846.	KPMG ELLP	5.67.	We support the requirement that the calculation of the technical provisions and the SCR should be consistent.	Noted
847.	KPMG ELLP	5.85.	The CP requires that (re) insurance undertakings must keep track of latest developments and trends in internal modelling and shall	CEIOPS encourages undertakings to benefit from innovative

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			refer to relevant publications and peer discussions. While the approach may ensure that no (re) insurance undertakings is lagging behind in model sophistication, there is also a risk of adoption of techniques which have not been tested and might contain flaws. As such, we suggest any material upgrading of modelling technique shall consider the current market practice and whether the new technique has been appropriately evaluated.	<p>solutions which better fit to their risk profile. However, undertakings must test their implementation and assess the model risk associated.</p> <p>The current market practice may serve as a benchmark, but undertakings should not adopt it blindly. Such a behaviour may create systemic risk (cp. 5.44).</p>
848.	CEA, ECO-SLV-09-451	5.89.	Objectivity: The requirement of "independence from the undertaking" should not exclude methods and techniques developed by the undertaking itself if these can be justified. In particular, proprietary knowledge developed and built up within the undertaking should not be precluded.	<p>Agreed</p> <p>However, the information basis underlying the methodology of the internal model should not be restricted to in-house knowledge only provided that there are other information sources available. As stated in 5.89, the information basis should rely on a sufficiently large set of different information sources in order to ensure objectivity.</p>
849.	CRO Forum	5.89.	<p>Objectivity:</p> <p>The requirement of "independence from the undertaking" should not exclude in-house methods and techniques developed by the undertaking itself if these can be justified. In particular, proprietary knowledge developed and built up within the undertaking should not be precluded.</p>	Please see reply to comment No.848.

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850.	German Insurance Association – Gesamtverb and der D	5.89.	Objectivity: The requirement of “independence from the undertaking” should not exclude methods and techniques developed by the undertaking itself if these can be justified. In particular, proprietary knowledge developed and built up within the undertaking should not be precluded.	Please see reply to comment No. 848.	
851.	Groupe Consultatif	5.89.	The requirement for a “high degree of independence from the undertaking” could be quite restrictive and should not exclude methods and techniques developed by the undertaking itself if these can be justified. In particular, proprietary knowledge developed and built up within the undertaking should not be precluded. Furthermore we do not understand how the standard will be applied in context of own data e.g. own claims experience. Who would CEIOPS expect to be carrying out the peer review of the quality of the information underlying the methodology?	Please see reply to comment No. 848. It is the responsibility of the undertaking to verify the quality of the information. Peer review is given as an example.	
852.	Institut des actuaires	5.89.	When defining objectivity, the issue is about a high degree of independence between the source of information and the insurance undertaking. Some data produced by the model is issued by the undertaking (for example database concerning contracts). How can we use this information in such a case? Nevertheless, it seems that information can be objective. The objectivity of those data would be assumed by an identified function in the company, like the actuarial function.	Please see reply to comment no. 848 and no. 851.	
853.	Munich RE	5.89.	The requirement of “independence from the undertaking” should not exclude methods and techniques developed by the undertaking	Please see reply to comment no. 848.	

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			itself if these can be justified. In particular, proprietary knowledge developed and built up within the undertaking should not be precluded.	
854.	KPMG ELLP	5.91.	We agree with the principal that there is no 'right' assumption and that (re)insurance undertakings should document clearly their rationale for decisions.	Noted
855.	Groupe Consultatif	5.92.	We do not see the need for the wording "at any time".	If model assumptions cannot be justified at any time, either the undertaking has lost track of the model development or the assumptions cease being appropriate. In the latter case, model changes are necessary. In practice, the justification of model assumptions to supervisory authorities will be on demand only.
856.	Association of British Insurers	5.93.	We note that it may not be clear what the market standard approach is.	The comment is not clear as 5.93 does not refer to any market standard approach. The comment likely belongs to paragraph 5.98. Please see reply to comment no. ???
857.	Groupe Consultatif	5.93.	Another point would also be "source".	The responsibility for model assumptions always retains with the undertaking, even if the model is externally developed (cf.

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					chapter 10 External models and data).
858.	Legal & General Group	5.93.	We note that it may not be clear what the market standard approach is.		Please see reply to comment no. 856.
859.	Llody's	5.93.	The range of "possible alternative assumptions" is potentially infinite, and some qualification is needed. Perhaps "appropriate alternative assumptions"? An alternative would be to change the emphasis requiring the Undertaking to have considered and documented their deliberations in arriving at the selected assumptions.		In CEIOPS' understanding an alternative assumption is possible only if the assumption is appropriate, suited etc with respect to the modelling goal under consideration.
860.	CRO Forum	5.97.	Whilst we agree that current market standards may be a good guide we caution against an uncritical use of such market standards or an uncritical qualification of current market standards as "good practice". Market standards may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by CEIOPS).		Agreed CEIOPS does not intend to promote herding behaviour. This statement should make clear that in the case of uncommon assumptions deviating widely from the current market standard more information on the rationale behind may be required. By providing in-depth justification, the undertaking facilitates the assessment to be conducted by supervisory authorities.
861.	Groupe Consultatif	5.97.	How would qualitative materiality be assessed?		A qualitative assessment is less precise than a quantitative assessment and may refer to expert judgment or approximation. The onus is on the

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					undertaking to convince the supervisory authority that its assessment is valid.
862.	KPMG ELLP	5.97.	The CP requires all (re) insurance undertakings to carry out qualitative assessment of materiality of model assumptions, though it favours quantitative assessment over qualitative ones. However, the CP lacks guidelines on carrying out the qualitative assessment.		Please see reply to comment no. 862.
863.	CEA, ECO-SLV-09-451	5.98.	<p>Whilst we agree that current market standards may be a good guide we caution against an uncritical use of such market standards or an uncritical qualification of current market standards as "good practice".</p> <p>Market standards may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by Ceiops).</p>		Please see reply to comment no. 860.
864.	German Insurance Association – Gesamtverb and der D	5.98.	<p>Whilst we agree that current market standards may be a good guide we caution against an uncritical use of such market standards or an uncritical qualification of current market standards as "good practice".</p> <p>Market standards may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. para 5.166 b where this point is acknowledged by CEIOPS).</p>		Please see reply to comment no. 860.
865.	Groupe Consultatif	5.98.	This requirement has the danger of increasing model convergence and thus systemic risk.		Please see reply to comment no. 860 and no. 847
866.	Munich RE	5.98.	Whilst we agree that current market standards may be a good		Please see reply to comment no.

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			guide we caution against an uncritical use of such market standards or an uncritical qualification of current market standards as "good practice". Market standards may evolve which do not adequately capture the risks – the 2008 financial crisis may be a case in point – and undertakings should not be punished for seeking to avoid such trends ("herding") by justifiably deviating from those practices (cf. section 5.166 b where this point is acknowledged by CEIOPS)	860.
867.	Groupe Consultatif	5.99.	What is meant by "in detail" should be made clearer and we would caution that the level of detail should not be unduly burdensome.	CEIOPS may develop further guidance in this respect as Level 3 measures.
868.			Confidential comment deleted.	
869.			Confidential comment deleted.	
870.	Association of British Insurers	5.101.	<p>We agree that the undertaking should find actuarial and statistical methods that provide an adequate description of the financial implications for the specific risk modelled in the context of a 1:200 world. However, providing the evidence detailed for all such methods may be impossible. We therefore propose the "where possible" is included at the start of the paragraph or that "provide evidence" is replaced with document.</p> <p>Bullet point 6 refers to "detailed and parsimonious" - we propose that this should only be "parsimonious" since detailed would imply the opposite of parsimonious.</p> <p>We would consider the criteria proposed by CEIOPS should be appropriate and achievable. The criteria should avoid prescribing an ideal that is unachievable.</p>	<p>If evidences can not be provided, both the undertaking and the supervisor cannot be convinced that the methods are adequate?</p> <p>Not agreed CEIOPS wants to address the trade-off between the two characteristics (cp. 5.63).</p> <p>Noted</p> <p>The proposed criteria taken as a whole may appear at first sight to describe an ideal situation.</p>

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					However, it has to be noticed that undertakings are not required to apply every criterion listed. Moreover, undertakings may apply a set of own criteria.
871.	CEA, ECO-SLV-09-451	5.101.	We would consider the criteria proposed by Ceiops should be appropriate and achievable. The criteria should avoid prescribing an ideal that is unachievable.		Please see the third comment of the reply to comment no. 870
872.	CRO Forum	5.101.	<p>"... set of defined criteria that may include the following: applicable, relevant, appropriate, transparent, Up to date, detailed and parsimonious; and robust and sensitive."</p> <p>We welcome the criteria proposed by CEIOPS which we consider appropriate for a principle based approach. However we recommend that the criteria should avoid prescribing an ideal that is unachievable.</p>		Please see the third comment of the reply to comment no. 870
873.	EMB Consultancy LLP	5.101.	The criteria given seem sensible, taking account of proportionality.		In 5.102 CEIOPS has stated explicitly that the assessment is subject to the proportionality principle.
874.			Confidential comment deleted.		
875.	German Insurance Association – Gesamtverb and der D	5.101.	We would consider the criteria proposed by CEIOPS should be appropriate and achievable. The criteria should avoid prescribing an ideal that is unachievable.		Please see the third comment of the reply to comment no. 870

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876.	Groupe Consultatif	5.101.	Care should be taken not to describe an ideal which is impossible to achieve.	Please see the third comment of the reply to comment no. 870
877.	KPMG ELLP	5.101.	The Level 1 text gave freedom of choice as regards modeling technique, as long as it is based on adequate, applicable and relevant actuarial and statistical techniques. The CP has elaborated on the criteria, adding to it "appropriate, up to date, detailed/parsimonious, transparent, robust & sensitive". We agree to the refinement/ clarification.	Noted
878.	Legal & General Group	5.101.	<p>We agree that the undertaking should find actuarial and statistical methods that provide an adequate description of the financial implications for the specific risk modelled in the context of a 1:200 world. However, providing the evidence detailed for all such methods may be impossible. We therefore propose the "where possible" is included at the start of the paragraph or that "provide evidence" is replaced with document.</p> <p>Bullet point 6 refers to "detail and parsimonious" - we propose that this should only be "parsimonious" since detailed would imply the opposite of parsimonious.</p>	Please see the first and second comment of the reply to comment no. 870
879.	Pearl Group Limited	5.101.	<p>We would consider the criteria proposed by CEIOPS should be appropriate and achievable. The criteria needs to avoid prescribing a set of criteria that individually are reasonable but when considered as a whole produce an ideal that is unachievable.</p> <p>What does detailed and parsimonious mean? As parsimonious is almost the opposite of detailed.</p>	<p>Please see the third comment of the reply to comment no. 870</p> <p>Please see the second comment of the reply to comment no. 870</p>
880.	CRO Forum	5.103.	"... the methods used to calculate the probability distribution	

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		<p>forecast are consistent with the methods used to calculate technical provisions. ..."</p> <p>In practice, there may be differences between the calculation methods used for the probability distribution forecast and technical provisions. We recommend that the word "are consistent" should be replaced by "should not be inconsistent".</p> <p>It should also be clarified here that the reference to consistency with technical provisions is to the calculation of best-estimate because technical provision is defined in the directive as best-estimate plus risk margin and the concept of probability distribution forecasts is primarily applicable to best-estimate calculation. "... different risk profiles and portfolios of the undertakings within the group may necessitate adaptations of assumptions and methods to the specific requirements of the individual portfolio. Such differences between portfolios of the same group shall not exist to such an extent that results are conflicting, leading to negative implications for risk management at group level"</p> <p>We welcome CEIOPS recognition that the risk profile at group level may not reflect the required risk profile at business unit level. However, it is important to highlight the principle of proportionality in this paragraph for consistency with the level I text. We propose that the word "conflicting" be replaced by "materially inconsistent".</p> <p>It is unclear what is meant by "negative implications for risk management".</p> <p>It is important to explain what is meant by consistency here. In practice, assumptions and parameters will be different for every undertaking within a group, especially with respect to areas where models need to be calibrated to local portfolio characteristics. In our view, consistency in this case would be applied to the practices</p>	<p>Not agreed</p> <p>For CEIOPS there is no benefit to express the requirement in a negative way.</p> <p>A more specific framework for consistency may be developed as a level 3 measure. CEIOPS does not see the need to exclude the risk margin from the consistency requirement. According to 5.107, undertakings shall assess the materiality of the deviations identified.</p> <p>As the proportionality principle is the basic to Solvency II, we do not see the reason to refer to it especially in this case.</p> <p>In general terms, "negative implications" refers to the situation that – due to inconsistencies regarding assumptions and methods - the results at group level do not form a sound basis for decision-</p>

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			used to derive the assumptions and parameters. Consistency in methodology is more straightforward but differences may also arise due to proportionality and/or materiality.	making. The onus is on the undertaking to establish consistency criteria. Regarding data and parameter settings (the comment refers to calibration) cf. chapter 5.3.3.
881.	EMB Consultancy LLP	5.103.	This is an important point. Consistency should be enforced by the group for things that are common across the business units (for example global economic scenarios). But it is recognised that individual entities will require the flexibility to tailor some aspects to better reflect their individual risk profiles.	Agreed
882.			Confidential comment deleted.	
883.	Association of British Insurers	5.104.	In practice, there may be differences between the calculation methods used for the probability distribution forecast and technical provisions but we would take this requirement to mean that they should not be inconsistent. It should also be clarified here that the reference to technical provisions concern technical provisions calculated for Solvency II purposes, not for accounting purposes which are not covered by the Solvency II framework.	Please see reply to comment no. 880. Agreed Revised wording for the sake of clarification: "... technical provisions as defined within Solvency II."
884.			Confidential comment deleted.	
885.	CEA, ECO-SLV-09-451	5.104.	(Consistency for probability distribution forecast and technical provisions)	

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			<p>It should be made clear that consistency of methods for calculating provisions with the methods used to calculate the probability distribution forecasts is not be interpreted too strictly.</p> <p>Different valuation methods are used for different purposes (balance sheet, solvency requirements) which required different valuation approaches (local GAAP, IFRS), which may require the use of different assumptions and methods.</p> <p>It is questionable what insight will be gained from this requirement if it was to be interpreted too strictly.</p>	<p>The undertaking itself is required to develop individual consistency criteria (cf. 5.69 and 5.107). Please see also reply to comment no 880.</p> <p>Noted</p>
886.	CRO Forum	5.104.	<p>"... the methods used to calculate the probability distribution forecast are consistent with the methods used to calculate technical provisions. ..."</p> <p>In practice, there may be differences between the calculation methods used for the probability distribution forecast and technical provisions. We recommend that the word "are consistent" should be replaced by "should not be inconsistent".</p> <p>It should also be clarified here that the reference to consistency with technical provisions is to the calculation of best-estimate because technical provision is defined in the directive as best-estimate plus risk margin and the concept of probability distribution forecasts is primarily applicable to best-estimate calculation.</p>	Please see reply to comments no. 880.
887.	EMB Consultancy LLP	5.104.	<p>These requirements are very important to make sure that the internal model is aligned to the business, and the approach taken is measured in that deviations are allowed if documented and justified. One area of concern is that consistency may be hard to maintain with quantities that are updated very frequently.</p>	<p>Noted</p> <p>In regard to consistency of data and parameter settings please cf. chapter 5.3.3.</p>

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888.	FFSA	5.104.	<p>CEIOPS says that the undertaking shall demonstrate that the methods used to calculate the probability distribution forecast are consistent with the methods used to calculate technical provisions.</p> <p>FFSA stresses that regulatory technical provisions are not always calculated on a probability distribution forecast. As a consequence, FFSA suggests the following rewriting: "the undertaking shall demonstrate that the methods used to calculate the probability distribution forecast are consistent with the methods used to calculate technical provisions in the context of the Solvency II calculations ("TP")."</p>	Please see reply to comment no. 883.	
889.			Confidential comment deleted.		
890.	German Insurance Association – Gesamtverb and der D	5.104.	<p>(Consistency for probability distribution forecast and technical provisions)</p> <p>It should be made clear that consistency of methods for calculating provisions with the methods used to calculate the probability distribution forecasts is not be interpreted too strictly.</p> <p>Different valuation methods are used for different purposes (balance sheet, solvency requirements) which required different valuation approaches (local GAAP, IFRS), which may require the use of different assumptions and methods.</p> <p>It is questionable what insight will be gained from this requirement if it was to be interpreted too strictly.</p> <p>For example, the aggregation level may be different for purposes of</p>	Please see reply to comment no. 885.	

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			the internal model and for calculating technical provisions which might result in different methods feasible. Thus, there may be a trade-off between consistency and accuracy of fit of the different methods for the different purposes.	
891.	Groupe Consultatif	5.104.	See our comments on 5.67.	Please see reply to comment no. 845
892.	Legal & General Group	5.104.	Replace "consistent" with "not inconsistent" also applies to 5.105 to 5.108	Please see reply to comment no. 880.
893.	Munich RE	5.104.	In practice, there may be differences between the calculation methods used for the probability distribution forecast and technical provisions. We recommend that the word "are consistent" should be replaced by "should not be inconsistent".	Please see reply to comment no. 880.
894.	PricewaterhouseCoopers LLP	5.104.	Consistency at a broad level between the calculation kernel and the valuation of the technical provisions is very sensible. However, in practical terms there would be a high price to pay, in complexity of technical provision valuation, if this was to be construed as a requirement for use of the same factors so the 99.5% scenario out of the TPs should equal the capital. In practical terms the technical provisions a) may not be on a stochastic basis where this is not called for, b) will often be subject to Monte Carlo simulation with varying accuracy and variability depending on the number of runs, c) will often be programmed with risk models that are fitted mainly to the body of future plausible events to gain the most accuracy – rather than contain complex modelling of varying diversification assumptions by extremity of stress which, in TP terms, would add little to the result of averaging the large number of scenarios projected.	Noted Please note that consistency does not exclude deviations, where justified. Please see also replies to comments no 880 and 885.

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895.	ROAM –	5.104.	CEIOPS says that the undertaking shall demonstrate that the methods used to calculate the probability distribution forecast are consistent with the methods used to calculate technical provisions. ROAM stresses that regulatory technical provisions are not always calculated on a probability distribution forecast. As a consequence, ROAM suggests the following rewriting: “the undertaking shall demonstrate that the methods used to calculate the probability distribution forecast are consistent with the methods used to calculate technical provisions in the context of the Solvency II calculations (“TP”).”	Please see reply to comment no. 888.	
896.	Association of British Insurers	5.105.	See comments under 5.104	Please see reply to comment no. 883.	
897.	FFSA	5.105.	CEIOPS says that the undertaking shall identify and document any differences in the actuarial and statistical techniques used and the underlying assumptions made to calculate the probability distribution forecast and technical provisions, respectively. For the same reasons as for §5.105, FFSA suggests the following rewriting: “[...] the undertaking shall identify and document any differences in the actuarial and statistical techniques used and the underlying assumptions made to calculate the probability distribution forecast and technical provisions as defined in the context of the Solvency II calculations (“TP”), respectively.”	Please see reply to comment no. 900.	
898.	Legal & General Group	5.105.	See 5.104	Please see reply to comment no. 892.	
899.	Pearl Group Limited	5.105.	In practice, there are likely to be differences between the calculation methods used for the probability distribution forecast	Please see reply to comment no. 883.	

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			<p>and the technical provisions but we would take this requirement to mean that they should not be inconsistent.</p> <p>It should also be clarified here that the reference to technical provisions concern technical provisions calculated for Solvency II purposes, not for accounting purposes which are not covered by the Solvency II framework.</p>	
900.	ROAM –	5.105.	<p>CEIOPS says that the undertaking shall identify and document any differences in the actuarial and statistical techniques used and the underlying assumptions made to calculate the probability distribution forecast and technical provisions, respectively.</p> <p>For the same reasons as for §5.105, ROAM suggests the following rewriting: “[...] the undertaking shall identify and document any differences in the actuarial and statistical techniques used and the underlying assumptions made to calculate the probability distribution forecast and technical provisions as defined in the context of the Solvency II calculations (“TP”), respectively.”</p>	Please see reply to comment no. 883.
901.	Association of British Insurers	5.106.	See comments under 5.104	Please see reply to comment no. 883.
902.	CRO Forum	5.106.	<p>“The undertaking shall explain and justify all deviations concerning methodology and assumptions.”</p> <p>The paragraph states that the deviations of methodology and assumptions are explained and justified but it is unclear what the deviations are from. We would welcome additional clarification.</p> <p>Furthermore, documenting immaterial deviations can be impractical for the undertakings and onerous for the supervisory authorities to</p>	<p>Deviations refer to differences between methods and assumptions used in the valuation of technical provisions and their counterparts in calculation of the probability distribution forecast (cf. 5.66).</p> <p>Not agreed</p>

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			review additional documentation that adds little value to the supervisory process. We propose that the concept of proportionality is introduced to this advice and only material deviations are documented. paragraph, by adding the word "material" after all; "... and justify all material deviations ..."	In CEIOPS' view it is essential that undertakings are aware of every deviation. The proportionality principle is introduced in 5.108.	
903.	FFSA	5.106.	CEIOPS says that the undertaking shall explain and justify all deviations concerning methodology and assumptions. FFSA suggests the following rewriting: "The undertaking shall explain, document and justify all deviations concerning methodology and assumptions."	Agreed Revised Text "The undertaking shall explain, document and justify all deviations concerning methodology and assumptions."	
904.	Groupe Consultatif	5.106.	Deviations from what? Perhaps this should be clarified.	Please see reply to comment no. 902.	
905.	Legal & General Group	5.106.	See 5.104	Please see reply to comment no.880.	
906.	Association of British Insurers	5.107.	See comments under 5.104	Please see reply to comment no. 883.	
907.	CEA, ECO-SLV-09-451	5.107.	We welcome that the undertakings' assessment shall be based on own criteria.	Noted	
908.	CRO Forum	5.107.	Again, a reference to consistency with technical provision is made in this paragraph. We propose it should be clarified that by technical provision refers to best-estimate calculation.	Please see reply to comment no. 883.	

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			See comments on paragraph 5.104.		
909.	FFSA	5.107.	<p>CEIOPS says that the undertaking shall assess the consistency between the calculation methods used for the probability distribution forecast and technical provisions [...].</p> <p>For the same reasons as for §5.105, FFSA suggests the following rewriting: "the undertaking shall assess the consistency between the calculation methods used for the probability distribution forecast and technical provisions as defined in the context of the Solvency II calculations ("TP") [...]."</p>	Please see reply to comment no. 900.	
910.	German Insurance Association – Gesamtverb and der D	5.107.	We welcome that the undertakings' assessment shall be based on own criteria.	Noted	
911.	Legal & General Group	5.107.	See 5.104	Please see reply to comment no. 892.	
912.	PricewaterhouseCoopers LLP	5.107.	We support the sensible comment that an assessment of consistency between technical provisions and capital model should be subject to being both possible and proportionate.	Noted	
913.	ROAM –	5.107.	<p>CEIOPS says that the undertaking shall assess the consistency between the calculation methods used for the probability distribution forecast and technical provisions [...].</p> <p>For the same reasons as for §5.105, ROAM suggests the following rewriting: "the undertaking shall assess the consistency between the calculation methods used for the probability distribution</p>	Please see reply to comment no. 900.	

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			forecast and technical provisions as defined in the context of the Solvency II calculations ("TP") [...]."		
914.	Association of British Insurers	5.108.	See comments under 5.104		Please see reply to comment No. 883.
915.	CEA, ECO-SLV-09-451	5.108.	We support the emphasis on the proportionality principle.		Noted
916.	CRO Forum	5.108.	We support the emphasis on the proportionality principle. Again, a reference to consistency with technical provision is made in this paragraph. We propose it should be clarified that by technical provision refers to best-estimate calculation. See comments on paragraph 5.104.		Noted Please see reply to comment no. 883.
917.	EMB Consultancy LLP	5.108.	This could lead to a burden on both firms and supervisors if it has to be done very frequently.		Noted The frequency of the consistency assessment may be linked to the frequency of model validation.
918.	German Insurance Association – Gesamtverb and der D	5.108.	We support the emphasis on the proportionality principle.		Noted
919.	Legal & General Group	5.108.	See 5.104		Please see reply to comment no. 892.

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920.	Association of British Insurers	5.109.	<p>We would suggest an alternative wording for this paragraph: 'the onus is on the undertaking to demonstrate ensure that the methods used to calculate the probability distribution forecast are based upon current and available information, where available.'</p>	<p>Not agreed</p> <p>In CEIOPS view the wording is not improved substantially. Demonstration of compliance may include reporting on the efforts taken to ensure that methodology is based upon current and credible information.</p> <p>CEIOPS is aware the choice of methods is always to a certain extent based on expert judgement. The less information is available, the more expert judgement is usually needed.</p>
921.	CRO Forum	5.109.	<p>"The onus is on the undertaking to demonstrate that the methods used to calculate the probability distribution forecast are based upon current and credible information."</p> <p>While we welcome this advice which ensures a market consistent probability distribution forecast and support the emphasis on the proportionality principle, it is important to highlight that current and credible information may not always be readily available for all risk categories. We propose that "where available" be added to the end of the paragraph.</p> <p>Moreover, the only way to demonstrate that a given probability distribution forecast is based on current information is by preparing one as comparative. This appears to be too prescriptive and not inline with the principle based approach. We propose that the word "demonstrate" be replace with "ensure".</p>	<p>Please see also reply to comment no. no. 920.</p> <p>This comment is unclear. Paragraph 5.109 refers to the information basis underlying the methodology of the internal model.</p>

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922.	Legal & General Group	5.109.	<p>We feel that the focus should be on ensuring that the undertaking uses appropriate methods and therefore propose that this is amended to:</p> <p>"The onus is on the undertaking to ensure that the methods used to calculate the probability distribution forecast are based upon current and credible information."</p>	Please see reply to comment No. 920.	
923.	Pearl Group Limited	5.109.	<p>The onus should be on the undertaking to use methods to calculate the probability forecast that are based upon current and available information. It is not clear what would be required to demonstrate this and we have a concern that this would require a significant amount of additional work.</p> <p>We would suggest an alternative wording for this paragraph: 'the onus is on the undertaking to demonstrate ensure that the methods used to calculate the probability distribution forecast are based upon current and available information where available.'</p>	<p>Please cf. section 5.3.2.3.</p> <p>Please see reply to comment No. 920.</p>	
924.	Association of British Insurers	5.110.	'Alternative methods / assumptions': what is most important here is to demonstrate awareness of alternative methods and assumptions.	<p>Agreed</p> <p>Cf. also paragraphs 5.85 and 5.112.</p>	
925.	CEA, ECO-SLV-09-451	5.110.	<p>(Current and credible information)</p> <p>Give more guidance on a suitable frequency of methodological reviews.</p> <p>More guidance on timing of regular methodological reviews needed. Ideally this paragraph should refer to 5.113 where the model validation process can trigger the review if doubts on the model</p>	<p>Agreed</p> <p>As noticed, paragraph 5.113 provides additional information in this respect. It is said: "A natural trigger for methodological reviews are any findings from the model validation process that may cast doubt on the adequacy of the</p>	

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			adequacy arise from it. This would also imply that the frequency is unlikely to be more than once per year. Refer to 5.113. Also regarding 'Alternative methods / assumptions', we believe that what is most important here is to demonstrate awareness of alternative methods and assumptions.	methods used.", i.e. the frequency of methodological reviews is linked to the frequency of model validation. Further guidance may be provided by CEIOPS in Level 3 measures. Please see reply to comment no. 924.
926.	FFSA	5.110.	CEIOPS says that the undertaking should perform regular methodological reviews. FFSA thinks that more guidance on timing of regular methodological reviews is needed.	Please see reply to comment no. 925.
927.	German Insurance Association – Gesamtverb and der D	5.110.	(Current and credible information) Give more guidance on a suitable frequency of methodological reviews. More guidance on timing of regular methodological reviews needed. Ideally this paragraph should refer to 5.113 where the model validation process can trigger the review if doubts on the model adequacy arise from it. This would also imply that the frequency is unlikely to be more than once per year. Refer to 5.113. Also regarding 'Alternative methods / assumptions', we believe that what is most important here is to demonstrate awareness of alternative methods and assumptions.	Please see reply to comment no. 925.

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928.	Pearl Group Limited	5.110.	We believe that what is important is to demonstrate awareness of the alternative methods/assumptions.	Please see reply to comment No. 924.	
929.	Association of British Insurers	5.111.	We agree with the suggestion that the data used to determine the methodological basis would not be updated for every set of model runs. However, it may be the case that many model runs may be carried out using the same base date, e.g. policies in force at a particular financial year end may be used for calculating regulatory reporting figures. Projections from this same base data may also be used again later in the year for planning calculations using the model.	The comment is unclear. Here, the frequency of data updates is related to the data affecting the methodological basis of the model and its assumptions. It does not refer to data other than that, e.g. data used as model input. Cp. section 5.3.3.4.	
930.	EMB Consultancy LLP	5.111.	For efficiency it could be argued that there should be a process to transfer the data to the appropriate place, ready to be incorporated in the internal model, and this process would operate in line with the frequency of the data update rather than the validation timetable. The review of the data update could then operate in line with the validation timescales.	Noted	
931.	Legal & General Group	5.111.	We agree with the suggestion that the data used to determine the methodological basis would not be updated for every set of model runs. However, it may be the case that many model runs may be carried out using the same base date, e.g. policies in force at a particular financial year end may be used for calculating regulatory reporting figures. Projections from this same base data may also be used again later in the year for planning calculations using the model.	Please see reply to comment no. 929.	
932.	PricewaterhouseCoopers LLP	5.111.	The collection of data, other than data altering with the frequency of model usage, is required to be "with a frequency in line with that of the model validation process". As this later process is to be	Agreed However, the undertaking must regularly check whether the data	

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			annual that imposes an annual update to parameters and assumptions used elsewhere in the model. This requirement needs to be proportionate as some data gathering exercises are expensive and stable – such as purchasing long run averages of actual credit default data - , so repeated purchase is wasteful and uninformative.	affecting the methodological basis of the model and its assumptions continues to be up-to-date or whether additional data is needed (5.84 gives an example for such a case.).
933.	RBS Insurance	5.111.	We propose that other data is updated “where practical”. For example some data sets (e.g. external) may not update as frequently as the validation process.	Not agreed Please see reply to comment no.932.
934.	CEA, ECO-SLV-09-451	5.112.	We disagree with this requirement, to the extent it is not specified how it is possible to keep track of recent progress in the development of methods.	Please see reply to comment No. 935.
935.	FFSA	5.112.	CEIOPS says that the onus is on the undertaking to demonstrate that it keeps track of recent progress in the development of methods and that it takes these insights into account in the assessment. FFSA disagrees with this requirement, since it is not specified how it is possible to keep track of recent progress in the development of methods. How a small undertaking could be equally treated if it is not aware one day after its publication of a new scientific paper? Moreover, FFSA wonders to what extent the definition of “recent progress” will be set, and if some inequalities among supervisory authorities will not appear. As a consequence, FFSA thinks this article 5.112 should be deleted.	Not agreed 5.85 mentions examples of how an undertaking can keep track of the latest developments and trends in internal modelling (literature survey, peer review). The advice will be interpreted in the light of the proportionality principle. Strong communication among supervisory authorities and the exchange with the actuarial profession will ensure that supervisory action will be

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				<p>harmonised.</p> <p>The example mentioned by FFSA is not reasonable. Please confer paragraph 5.43 in this context, where it is said that newly developed methods ("publication of a new scientific paper") need to mature until they are ready to be incorporated into undertakings' production environment. In other words, usually there will be time to become aware of new methods.</p>
936.	Groupe Consultatif	5.112.	<p>We would recommend deleting this paragraph. We believe it is impractical to keep track of all developments of methods and analyse the impact on the internal model each time. Only developments in parts of the model that may need improvement should be looked at.</p>	<p>Please see reply to comment No. 935.</p> <p>Your suggestion would imply that for the other parts of the model danger is high to lag behind.</p>
937.	ROAM –	5.112.	<p>CEIOPS says that the onus is on the undertaking to demonstrate that it keeps track of recent progress in the development of methods and that it takes these insights into account in the assessment.</p> <p>ROAM disagrees with this requirement, since it is not specified how it is possible to keep track of recent progress in the development of methods. How a small undertaking could be equally treated if it is not aware one day after its publication of a new scientific paper? Moreover, ROAM wonders to what extent the definition of "recent progress" will be set, and if some inequalities among supervisory authorities will not appear.</p>	<p>Please see reply to comment no. 935.</p>

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			As a consequence, ROAM thinks this article 5.112 should be deleted.	
938.	XL Capital Ltd	5.112.	It would be useful to expand on the method that is expected from an undertaking in order to satisfy "demonstrate that it keeps track of recent progress in the development of methods and that it takes these insights into account in the assessment."	Please see reply to comment No. 935. Further guidance may be provided by CEIOPS as Level 3 measures.
939.	EMB Consultancy LLP	5.113.	Independent methodological review is something that could be considered by firms in this situation.	Noted. Cf. also model validation, and in particular, paragraph 8.3.2.7.
940.	Association of British Insurers	5.114.	We agree with the aim to select methods based on credible data and where this is possible this should be encouraged. It should be noted that there are areas where such data is not available or it would not be economic to obtain it and therefore expert judgement will be needed in order to enable the model to be run.	Agreed Please see reply to comment no. 120.
941.	KPMG ELLP	5.114.	The criteria for evaluating information used to devise modelling methodology include consistency, objectivity, competence and transparency. We agree with these requirements, but recognise that where market information is used, it will be difficult to meet these criteria.	Noted
942.	Legal & General Group	5.114.	We agree with the aim to select methods based on credible data and where this is possible this should be encouraged. It should be noted that there are areas where such data is not available or it would not be economic to obtain it and therefore expert judgement will be needed in order to enable the model to be run.	Please see reply to comment no. 940.
943.	CEA, ECO-SLV-	5.115.	Replace "all assumptions" with "substantial assumptions". It is impossible to compile a complete list of all direct and indirect	Not agreed Please see the explanation given

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944.	CRO Forum	5.115.	<p>"The undertaking shall identify all assumptions inherent to the internal model."</p> <p>While we appreciate the decision to identify all assumptions inherent to the internal model we believe that the principle of proportionality needs to be introduced to this paragraph. CEIOPS recognises that identification of assumptions is not a simple task {Paragraph 5.95} and we are concerned that identification of all assumptions will be impractical for the undertakings and potentially for the supervisory authority in their review process.</p> <p>We propose that the concept of proportionality be introduced and instead all assumptions inherent to the material risks / components inherent to the internal model are identified.</p> <p>It is also important to note that assumptions will be derived, set and documented at different levels in an undertaking, in particular in relation to insurance groups. Therefore, it is important that this paragraph is interpreted to mean assumptions are identified at the relevant level.</p>	<p>Please see reply to comment No. 943.</p> <p>Agreed</p>

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945.	EMB Consultancy LLP	5.115.	This is a tough requirement and needs to be read with proportionality in mind. Perhaps "key assumptions" would be more manageable.	Please see reply to comment No. 943.
946.	German Insurance Association – Gesamtverb and der D	5.115.	(Justification of underlying assumptions) Replace "all assumptions" with "substantial assumptions". It is impossible to compile a complete list of all direct and indirect assumptions inherent to an internal model. This requirement has to be restricted to substantial assumptions.	Please see reply to comment No. 943.
947.	Llody's	5.115.	Paragraph 5.90 correctly identifies that models rely on "a multitude of model assumptions". Identification of "all assumptions" is not feasible, and the principle of proportionality should apply. There should be more recognition of the application of expert judgement in model design and parameterisation. Expert judgement does appear under data but it is absent under methodology/assumptions.	Please see reply to comment No. 943. CEIOPS is aware that expert judgement always comes into play in internal model design, as stated in 5.159. Although expert judgement is not explicitly mentioned in section 5.2, many requirements set out there (such as credibility of the information basis and justification of underlying assumptions) address decisions taken on the basis of expert judgement.

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948.	Munich RE	5.115.	While we appreciate the decision to identify all assumptions inherent to the internal model we believe that the principle of proportionality needs to be introduced to this paragraph.	Please see reply to comment No. 943.	
949.	Association of British Insurers	5.116.	See comments under 5.110	Please see reply to comment no. 924	
950.	CEA, ECO-SLV-09-451	5.116.	<p>(Justification of underlying assumptions)</p> <p>The extent of the assumption justifications need to be proportional, a detailed written justification of every assumption for every run is not implementable.</p> <p>Justification of underlying assumptions will be difficult in practice. There will be a large number of assumptions in any internal model and identification, justification and materiality at any point will be onerous – materiality and type of assumption should be considered.</p> <p>Clarify that no written justification of every assumption is needed per se. The requirement “at any time” is excessive and should be deleted.</p>	<p>Yes, justification of underlying assumptions might indeed be difficult and we expect that the process will entail a significant commitment of time and resources. However, the process is intended to ensure that the undertaking understands and is able to explain all assumptions in the internal model. As assumptions shall be documented there is no big additional effort for the undertaking to justify them (cf. documentation standards). If supervisors will not receive detailed information the approval process is likely to be complicated and may take longer.</p> <p>Please see also reply to your comment 855.</p>	

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951.	CRO Forum	5.116.	<p>"... undertaking shall take into account as a minimum ...{bullet4} possible alternative assumptions"</p> <p>Similar to the comments in paragraph 5.115, we feel that this paragraph is missing the proportionality principle and can results in an onerous requirement for both the undertaking and potentially the supervisory authority.</p>	<p>Not agreed</p> <p>The proportionality principle is introduced in paragraph 5.117.</p>
952.	FFSA	5.116.	<p>Assumption justification. CEIOPS says that the undertaking shall be able to explain and justify in detail assumptions to the supervisory authority.</p> <p>FFSA believes justification of underlying assumptions to be difficult in practice. There will be a large number of assumptions in any internal model and identification, justification and materiality at any point will be onerous. As a consequence, FFSA thinks that materiality and type of assumption should be considered.</p> <p>Assumption limitations. CEIOPS says that at any time the undertaking shall be able with assumptions to take into account as a minimum associated limitation to assumptions.</p> <p>FFSA wants to know how these associated limitations could be estimated by supervisory authorities. Does it mean that sensitivities will be required?</p>	<p>Please see reply to comments no. 950 and no. 951.</p> <p>Limitations:</p> <p>During the approval process (as well as after approval) insurance undertakings shall be able to present to supervisory authorities that they know and understand the limitations (e.g. with respect to model application or model performance) as well as their materiality (Please see paragraph 5.117). Material limitations should be documented. Sensitivity analysis, as mentioned, represents a possible technique to assess materiality. The results of the undertaking's assessment will serve the supervisory authority as a basis for its judgement..</p>
953.	German Insurance	5.116.	The extent of the assumption justifications need to be proportional, a detailed written justification of every assumption for every run is	Please see reply to comment No. 950.

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	Association – Gesamtverb and der D		<p>not implementable.</p> <p>Justification of underlying assumptions will be difficult in practice. There will be a large number of assumptions in any internal model and identification, justification and materiality at any point will be onerous – materiality and type of assumption should be considered.</p> <p>Clarify that no written justification of every assumption is needed per se.</p> <p>The requirement “at any time” is excessive and should be deleted</p> <p>The requirement that the undertaking shall be able to explain and justify those assumptions in detail at any time (e.g. at Christmas day) is excessive. There has to be a working risk management at any time, but it is not necessary to be able to explain why the details of the model have been chosen in one way and not in another way at any time. A general statement that “at any time” is excessive holds for most contexts where this wording might appear.</p>	
954.	Groupe Consultatif	5.116.	See also our comment on 5.92	Please see reply to comments no.950 and no. 855.
955.	Llody’s	5.116.	The range of “possible alternative assumptions” is potentially infinite, and some qualification is needed. An alternative is “appropriate alternative assumptions”.	Please see reply to comment no. 859.
956.			Confidential comment deleted.	
957.	Pearl Group Limited	5.116.	We believe that what is important is to demonstrate awareness of the alternative methods/assumptions.	Agreed. However, CEIOPS believes that a materiality assessment is essential.

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958.	ROAM –	5.116.	<p>Assumption justification. CEIOPS says that the undertaking shall be able to explain and justify in detail assumptions to the supervisory authority.</p> <p>ROAM believes justification of underlying assumptions to be difficult in practice. There will be a large number of assumptions in any internal model and identification, justification and materiality at any point will be onerous. As a consequence, ROAM thinks that materiality and type of assumption should be considered.</p> <p>Assumption limitations. CEIOPS says that at any time the undertaking shall be able with assumptions to take into account as a minimum associated limitation to assumptions.</p> <p>ROAM wants to know how these associated limitations could be estimated by supervisory authorities. Does it mean that sensitivities will be required?</p>	Please see reply to comment No. 952.
959.	Association of British Insurers	5.117.	We welcome the mention of the proportionality principle here.	Noted
960.	CEA, ECO-SLV-09-451	5.117.	<p>DITTO</p> <p>We welcome the mention of the proportionality principle here.</p>	Please see reply to comment No. 959.
961.	German Insurance Association – Gesamtverb and der D	5.117.	<p>DITTO</p> <p>We welcome the mention of the proportionality principle here.</p>	Please see reply to comment No. 959.

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962.	Groupe Consultatif	5.117.	We feel that there is no need to assess the materiality of possible alternative assumptions other than the assumptions chosen.	Not agreed In order to carry out an effective assessment of the application (and the on-going model compliance) supervisory authorities should have information about the chosen and possible alternative assumptions, especially with regard to their materiality. This information has to be made available to the supervisory authorities upon request.
963.	Llody's	5.117.	The materiality of an assumption cannot be assessed in isolation. "... and also possible" should be replaced by "against appropriate", as follows: "The undertaking shall assess the materiality of the assumptions chosen against appropriate alternative assumptions".	Agreed Please see also reply to comment No. 859.
964.	Pearl Group Limited	5.117.	We welcome the mention of the proportionality principle here.	Please see reply to comment no. 959.
965.			Confidential comment deleted.	
966.	CEA, ECO-SLV-09-451	5.118.	DITTO Replace "all internal model assumptions" by "main internal model assumptions".	Please see reply to comment No. 943 and No. 950.
967.	CRO Forum	5.118.	Similar comment as for 5.115. (all)	Please see reply to comment No. 943.
968.			Confidential comment deleted.	

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969.	German Insurance Association – Gesamtverb and der D	5.118.	DITTO Replace “all internal model assumptions” by “main internal model assumptions”.	Please see reply to comment No. 966.	
970.	Groupe Consultatif	5.118.	See also our comments on 5.99	Please see reply to comment No.867	
971.	Groupe Consultatif	5.119.	We would note that supervisory authorities can contribute to the availability and quality of data e.g. through sharing industry data.	Noted	
972.	German Insurance Association – Gesamtverb and der D	5.121.	The proportionality principle has to be taken into account in accordance to our comments above on the group specific topics.	Noted 5.121 is to be understood as a general comment that provides CEIOPS’ position in the discussion about data.	
973.	European Union member firms of Deloitte Touche To	5.124.	CEIOPS refers that data standards for technical provisions in CP43 should be applied to Internal Models on top of standards specific to internal models. This is not repeated in “regulatory proposal” in the “blue box”. We suggest this is included in the advice.	Agreed The following text is added as a first bullet point to the Blue Box: “Requirements form the Data quality Standards for Technical Provisions (CEIOPS Consultation Paper 43) shall apply, where applicable, to internal model data in addition to the requirements set out below.”	
974.	European	5.126.	We believe that CEIOPS should recognise that, in some instances,	Agreed	

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	Union member firms of Deloitte Touche To		data availability is scarce and companies have no other option than to apply expert judgement. In addition, the concept of proportionality should be specifically considered in this area. It is also important to recognise that there will always be circumstances where data quality could be compromised (e.g. by failure of IT processes), but this should not be considered a compliance failure if appropriate mechanisms are in place to allow for appropriate remedial actions (for example, adjusting the results accordingly or making contingent plans to address these issues).	<p>The introductory question in point 5 could be indeed misleading and has been revised.</p> <p>From 5.159 – 5.161 it is clear that CEIOPS shares your view.</p> <p>Text modified accordingly:</p> <p>“Under which conditions are undertakings allowed to supplement available data with expert judgement?” replaced with “What requirements should be set out to the use of expert judgement in relation to data?”</p>
975.	Llody's	5.126.	“Under which conditions are undertakings allowed to supplement available data with expert judgement?” Expert judgement is fundamental to any adequate internal model. Even basing model parameters directly on statistical fits to data requires expert judgment on the appropriateness and sufficiency of the data, and on the statistical model fitted to the data. We believe that any model that does not incorporate expert judgement is not fit for purpose.	<p>Noted</p> <p>Please see reply to comment no. 974.</p>
976.	German Insurance Association – Gesamtverb and der D	5.131.	<p>The quality assessment of data should consider existing data quality procedures and be restricted on the data which are actually part of the internal model.</p> <p>For example, in non-life actuarial results (rate making, corporate planning, etc.) should be used for validation purposes. A</p>	<p>Not agreed</p> <p>CEIOPS still prefers a comprehensive scope of data quality standards for the reasons given in the CP.</p>

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			comprehensive interpretation of the data assessment scope would mean that these results and the data they use is related to the internal model – which will result in an enormous amount of time for the approval process. It is recommended to concentrate only on the results of these actuarial analyses. If these results are of fundamental importance to the undertaking besides internal modelling their wide use will guarantee their quality and the quality of the incorporated data.	For data resulting form actuarial analyses the undertaking can refer to those analyses and their quality so that there is no or little additional burden.
977.	Groupe Consultatif	5.131.	In cases where undertakings do not have data, expert opinion is often used (in internal models). When setting standards for this, CEIOPS should consider the question of how the quality of the “data” provided by the experts can be proved.	Noted This is exactly what CEIOPS has done. Please see chapter 5.3.3.5.
978.	European Union member firms of Deloitte Touche To	5.132.	This statement is unclear to us. We would welcome clarification.	Noted Minor change of the text for the sake of clarification: “..., i.e. data quality requirements shall apply to any data used to operate, validate and develop the internal model.”
979.			Confidential comment deleted.	
980.	CEA, ECO-SLV-09-451	5.134.	This could potentially require enormous efforts with limited gain, especially if a separate documentation just on data and its usage is required. Proportionality should also be applied here.	Noted
981.	German Insurance	5.134.	This could potentially require enormous efforts with limited gain, especially if a separate documentation just on data and its usage is	Please see reply to comment no. 980.

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	Association – Gesamtverb and der D		required. Proportionality should also be applied here.		
982.	Groupe Consultatif	5.134.	Proportionality should be applied here.		Please see reply to comment no. 980.
983.	Munich RE	5.134.	This could potentially require enormous efforts with limited gain, especially if a separate documentation just on data and its usage is required. Proportionality should also be applied here.		Please see reply to comment no. 980.
984.	AAS BALTA	5.136.	This statement is sensible.		Noted
985.	AB Lietuvos draudimas	5.136.	This statement is sensible.		Please see reply to comment no. 984.
986.	CODAN Forsikring A/S (10529638), Denmark	5.136.	This statement is sensible.		Please see reply to comment no. 984.
987.	CODAN Forsikring (Branch Norway) (991 502 491)	5.136.	This statement is sensible.		Please see reply to comment no. 984.
988.	CRO Forum	5.136.	We welcome CEIOPS recognition that data is seldom absolutely accurate, complete and appropriate.		Noted
989.	Link4 Towarzystw	5.136.	This statement is sensible.		Please see reply to comment no. 984.

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	o Ubezpieczeń SA				
990.	RSA Insurance Group PLC	5.136.	This statement is sensible.		Please see reply to comment no. 984.
991.	RSA Insurance Ireland Ltd	5.136.	This statement is sensible.		Please see reply to comment no. 984.
992.	RSA - Sun Insurance Office Ltd.	5.136.	This statement is sensible.		Please see reply to comment no. 984.
993.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.136.	This statement is sensible.		Please see reply to comment no. 984.
994.	CRO Forum	5.139.	We welcome CEIOPS principle based approach to data quality standards.		Noted
995.	KPMG ELLP	5.139.	CEIOPS advises a principle-based approach for data quality criteria of accuracy, completeness and appropriateness, though it draws further explanation of these terms from the banking sector. We agree that the precise application of these criteria will vary from one (re)insurance undertakings to another in light of their organisational structure and risk profile. This also applies to 5.177		Noted
996.	CEA,	5.141.	This could potentially require enormous efforts with limited gain,		In CEIOPS' view the definition of

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	ECO-SLV-09-451		especially if a separate documentation just on data and its usage is required. Proportionality should also be applied here.	objective characteristics that data should have in order to be qualified for use is essential for data quality assessment.
997.	German Insurance Association – Gesamtverb and der D	5.141.	This could potentially require enormous efforts with limited gain, especially if a separate documentation just on data and its usage is required. Proportionality should also be applied here.	Please see reply to comment no. 996.
998.	Groupe Consultatif	5.141.	Proportionality should be applied here.	Please see reply to comment no. 996.
999.	Munich RE	5.141.	This could potentially require enormous efforts with limited gain, especially if a separate documentation just on data and its usage is required. Proportionality should also be applied here.	Please see reply to comment no. 996.
1000.	Institut des actuaires	5.143.	The definition of accurate leads to some questions: the sufficiency criterion has to be precisely qualified.	Within the proposed principles-based approach to data quality undertakings have to fill the considerable freedom given to them. More precisely, the undertaking itself has to define case-by-case the sufficiency criterion. Exactly in that way, the undertaking comes up with tailored data quality standards.
1001.	European Union member firms of	5.147.	We consider that option 2 is realistic especially for SMEs but that options 3 and 4 should be considered for large enterprises – or at least as a market reference. Third parties typically have comparable basis while undertakings would rather tend to see only their own	Not agreed It has been the aim of CEIOPS to provide a consistent principles-

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	Deloitte Touche To		perspective. This would create different practices for different markets.		based approach that while allowing for the proportionality principle can be applied to all undertakings irrespective of their size.
1002.	Groupe Consultatif	5.147.	From a practical point of view we agree with CEIOPS preference for Option 2. Option 4 states that "Expert judgment should be kept to a minimum". We are strongly of the view that this is represents an inappropriate bias against the use of expert judgment and also unnecessary given the overriding requirement for data to be appropriate.		Noted
1003.	Llody's	5.147.	We agree with option 2. The other options are not 'principles-based' and would be too detailed and costly.		Noted
1004.	Association of British Insurers	5.149.	Data quality / control: CEIOPS suggest that firms and supervisors agree on a common basis for data quality assessment: a comprehensive policy on data quality established by the undertaking and approved by the supervisory authorities. We strongly support option 2 over the three alternative options. Option 4, in particular, would only allow expert judgement by exception, which would be too onerous and unrealistic to operate in practice.		Noted
1005.	CEA, ECO-SLV-09-451	5.149.	Agreed. With regards to data quality control, option 2 is preferred. However the comprehensiveness of the data policy will make this exercise extremely onerous and costly for limited value – principle of materiality should apply here.		Noted

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1006.	German Insurance Association – Gesamtverb and der D	5.149.	Agreed. With regards to data quality control, option 2 is preferred. However the comprehensiveness of the data policy will make this exercise extremely onerous and costly for limited value – principle of materiality should apply here.	Please see reply to comment no. 1005.	
1007.	Legal & General Group	5.149.	We agree with the option 2 approach	Noted	
1008.	AAS BALTA	5.150.	We agree that option 2 is the most sensible route to take.	Noted	
1009.	AB Lietuvos draudimas	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1010.	CODAN Forsikring A/S (10529638), Denmark	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1011.	CODAN Forsikring (Branch Norway) (991 502 491)	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1012.	Link4 Towarzystw o Ubezpieczeń SA	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	

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1013.	RSA Insurance Group PLC	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1014.	RSA Insurance Ireland Ltd	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1015.	RSA - Sun Insurance Office Ltd.	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1016.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.150.	We agree that option 2 is the most sensible route to take.	Please see reply to comment no. 1008.	
1017.	Groupe Consultatif	5.151.	<ul style="list-style-type: none"> - First bullet point (accuracy): It can never be proved that data is completely free from material mistakes. Perhaps a more appropriate standard would be to require undertakings "to have made reasonable efforts to ensure that the data is free from material mistakes". - Third bullet point (completeness): This is likely to be unattainable for a number of variables, e.g. correlations 	First bullet point: CEIOPS acknowledges that the criteria are not workable in practice if seen in absolute terms (cf. 5.136, 5.137). The proposed wording does not change significantly for the better. 5.151 should be understood as a additional interpretation of the three quality criteria. However, they still have to be put into practice. In fact, the undertaking has to document in the data policy the efforts it takes to ensure that particular data is accurate.	

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					Third bullet point: Agreed. Text modified: Insert "... and, where possible, all relevant model variables".
1018.	Llody's	5.151.	<p>The proposed requirement to "demonstrate" completeness and appropriateness is impossible in practice.</p> <p>Taking completeness first, Article 119(1) requires that the internal model calculates a probability distribution forecast, and Article 13(32) defines this as a "mathematical function that assigns to an exhaustive set of mutually exclusive future events a probability of realisation". In practice, there will almost never be sufficient data to confidently estimate the 99.5th percentile of the probability distribution forecast, let alone the entire probability distribution forecast. This is particular true for the more volatile variables in the internal model, which are the ones that ultimately drive the capital requirement.</p> <p>The concept of appropriateness is similarly elusive in practice. Data for an internal model is not sampled from stationary population distributions. External factors (changes in the economic or social environments, changes in the legal framework) and internal factors (changes in maximum line size, changes in underwriting personnel) mean that historical data is never entirely appropriate as a basis for predicting future events.</p> <p>We suggest that the requirement here should be that "undertakings shall demonstrate that they have considered the accuracy, completeness and appropriateness of their data and have taken due account in their internal model of any deficiencies identified".</p>	<p>Please see also reply to comment no. 1017.</p> <p>Noted</p> <p>Agreed</p> <p>The word "historical" might be misleading is therefore deleted. CEIOPS is aware of the need to apply expert judgement to historical data in order to account for the influences mentioned.</p>	

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1019.	AAS BALTA	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Indeed undertaking-specific, especially when its frequency is linked to the Use Test. The data update and its frequency is part of the data policy (cf. 5.185 e, f).
1020.	AB Lietuvos draudimas	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1021.	CEA, ECO-SLV-09-451	5.155.	In certain cases (e.g. quarterly updates) the set of updated data will be restricted to the most significant ones and / or approximations will be made (e.g. exposure update only). These cases should be allowed if the undertaking can demonstrate that the SCR calculation is still reliable.	Agreed No changes necessary.
1022.	CODAN Forsikring A/S (10529638), Denmark	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1023.	CODAN Forsikring (Branch Norway) (991 502 491)	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.

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1024.	CRO Forum	5.155.	<p>CEIOPS advice proposes that the frequency of updates of data used in the calculation of probability distribution forecasts should be consistent with the frequency of model use as outlined in use test.</p> <p>While we agree with this sentiment it is important to highlight in certain cases (e.g. quarterly updates) the set of updated data will be restricted due to tight reporting deadlines (as outlined in CP58 – Supervisory reporting). This would result in roll-forward/simplified approaches being employed to calculate the capital requirements.</p> <p>In light of that, we propose that similar simplifications/roll-forward procedures be allowed for data updates and pdf calculations.</p>	<p>Noted</p> <p>The issue raised may be covered in Level 3 measures.</p>
1025.	German Insurance Association – Gesamtverb and der D	5.155.	In certain cases (e.g. quarterly updates) the set of updated data will be restricted to the most significant ones and / or approximations will be made (e.g. exposure update only). These cases should be allowed if the undertaking can demonstrate that the SCR calculation is still reliable.	Please see reply to comment no. 1021.
1026.	Link4 Towarzystw o Ubezpieczeń SA	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1027.	Munich RE	5.155.	In certain cases (e.g. quarterly updates) the set of updated data will be restricted to the most significant ones and / or approximations will be made (e.g. exposure update only). These cases should be allowed if the undertaking can demonstrate that the SCR calculation is till reliable.	Please see reply to comment no. 1021.
1028.	RSA	5.155.	This is undertaking specific and should be part of the data policy.	Please see reply to comment no.

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	Insurance Group PLC		Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	1019.
1029.	RSA Insurance Ireland Ltd	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1030.	RSA - Sun Insurance Office Ltd.	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1031.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.155.	This is undertaking specific and should be part of the data policy. Some data may not need to be updated as often (even when there are special circumstances.) Other data would be updated each time the model is run.	Please see reply to comment no. 1019.
1032.	Llody's	5.157.	The requirement that "undertakings should define circumstances under which they regard a prompt recalculation of economic capital and (parts) of the SCR as necessary" is sensible, but is not clear in the draft Level 2 measures on Data Update (5.181-5.182).	Agreed Text of paragraph 5.185 e modified: "...circumstances that trigger unscheduled data updates or require a prompt recalculation of the SCR, respectively, and the timeliness of realisation." Insert to "In the case ..." "the undertaking specifies when the update – as opposed to the general rule (cf. 5. 582)– does

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				not ..."
1033.	European Union member firms of Deloitte Touche To	5.158.	We suggest that CEIOPS clarifies the definition of "normal" and "abnormal" market conditions to avoid differing views between undertakings and supervisors of what change is "normal". For example, this could be defined in reference to the shocks embedded in the standard formula.	Not agreed The undertaking itself must conduct this assessment and identify events that it considers severe enough to warrant non-regular data updates. (cf. 5.157, 5.185 e)
1034.	Llody's	5.159.	Expert judgment always comes into play in internal model design, operation and validation. We propose that the first sentence should be amended accordingly. Further on, the words "often or almost" should be removed form the sentence "CEIOPS is aware that in the practice of internal modelling data is often or almost always complemented to a certain degree by expert judgment". See 5.126	Agreed Minor change to wording: CEIOPS recognises that expert judgement always comes into play in model design, operation and validation. Agreed Minor change to wording: CEIOPS is aware that in the practice of internal modelling data is usually complemented to a certain degree by expert judgment (...).
1035.	Groupe Consultatif	5.160.	We would suggest adding the expert judgement needed in setting dependencies under extreme situations (tail correlations, copulas)	Not agreed The need for expert judgement in setting dependencies is pointed in chapter 5.3.5 (cf. 5.232a in particular).

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1036.	Llody’s	5.160.	We believe that to say “CEIOPS recognises that even the most comprehensive data does not preclude the need for expert judgment”, gives the wrong emphasis and implies that expert judgment may not always be necessary. A better alternative is “CEIOPS recognises that even the most comprehensive data requires the application of expert judgment”.	Agreed Minor change to wording: CEIOPS recognises that even the most comprehensive data requires the application of expert judgment
1037.	AAS BALTA	5.161.	We agree with this statement.	Noted
1038.	AB Lietuvos draudimas	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1039.	CODAN Forsikring A/S (10529638), Denmark	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1040.	CODAN Forsikring (Branch Norway) (991 502 491)	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1041.	Link4 Towarzystw o Ubezpieczeń SA	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1042.	Llody’s	5.161.	We believe that expert judgment is an inherent requirement for any adequate internal model. In this context, for CEIOPS to	Noted

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			"encourage" its use, seems a peculiar choice of word.	
1043.	RSA Insurance Group PLC	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1044.	RSA Insurance Ireland Ltd	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1045.	RSA - Sun Insurance Office Ltd.	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1046.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.161.	We agree with this statement.	Please see reply to comment no. 1037.
1047.	Llody's	5.162.	We believe that the statement that: "it should be made clear under which circumstances undertakings are in principle allowed to use expert judgment in relation to data" implies that expert judgment is in some way optional or undesirable. We believe that expert judgment is fundamental to any adequate internal model. Even basing model parameters directly on statistical fits to data requires expert judgment on the appropriateness and sufficiency of the data, and on the statistical model fitted to the data. In fact, any model that does not incorporate expert judgment is not fit for purpose. Compare 5.126	Agreed Minor change to wording: ... CEIOPS wishes to address this issue in Level 2 Implementing Measures and set out requirements to the proper use of expert judgement in relation to data.
1048.	European Union member	5.163.	We agree with the recommendation of option 2. However, it implicitly includes element of options 3 and 4: expert judgement should not be overly restricted but should be justified (not only	Noted

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	firms of Deloitte Touche To		<p>when specific data are not available but also in other cases, e.g. data is available but there is not enough quality, or too short a history or recently changed conditions ; these are very frequent situations when changes happen).</p> <p>Some independent external review may be good practice when materiality surrounding the expert judgement is high. Supervisory may not have enough expert knowledge in all cases.</p> <p>See also comment on para. 5.147.</p>	<p>Not agreed</p> <p>Undertakings may choose to have external reviews.</p> <p>It has to be noticed that supervisory authorities do not generate themselves expert judgement. However, they will be able to assess if expert judgement was derived by means of a scientific method and if it is used properly (cf. 5.184).</p>
1049.	Llody's	5.163.	<p>We feel that this paragraph and Annex C suggest that CEIOPS has an overly clinical perspective on data and expert judgment.</p> <p>Insurance data is almost always incomplete and inappropriate to some extent, and inaccuracies may not be readily apparent. Deriving competitive advantage from such data necessarily relies enormously on expert judgment. Insurance companies are using the data to support commercial decisions, rather than life or death decisions. They may often make such decisions with only weak support from the data or even in contradiction with the data, mindful of the lack of credibility inherent in incomplete and inappropriate data as a predictor of the future. The Level 2 measures on data and expert judgment need to reflect this real, commercial environment, rather than the laboratory environment</p>	Noted

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			that they seem to be predicated on at present.	
1050.	Llody's	5.164.	We believe that the statement that "undertakings should be allowed to make use of expert judgment" is misleading, implying as it does that expert judgment is in some way optional. Expert judgment is fundamental to any adequate internal model. Even basing model parameters directly on statistical fits to data requires expert judgment on the appropriateness and sufficiency of the data, and on the statistical model fitted to the data	Please see reply to comment no. 1047.
1051.	Groupe Consultatif	5.165.	The question is how the expert judgement can be "fully justified"? In reality, expert judgment is often used precisely because the true parameters are hard to measure or observe, for instance in the area of correlations. We believe that the requirements made in 5.165, 5.166 and 5.169 are sufficient and we would welcome CEIOPS deleting this part of the requirement.	In this context justify means to give reasons why expert judgement is relied on (as you did). One should not mistake the justification of expert judgement with the validation of expert judgement. Minor change of wording in order to avoid misunderstanding: Deletion of the word "fully".
1052.	Groupe Consultatif	5.166.	(d) may prove to be a difficult principle to satisfy. For example, how would a company compare expert judgement around correlations to emerging experience?	In the context of 5.166d emerging experience should not be restricted to the observation of realisations, i.e. a gain in available data. Also new findings and further insight into the risk under consideration can be used to challenge the expert judgement.
1053.	AAS BALTA	5.167.	a) How is falsifiable different from testable?	Ad a)

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			c) Difficult for expert judgement to have a known error rate.	<p>The term “testability” is more specific than the term “falsifiability”. A testable assertion can be falsified by experimentation/observation alone.</p> <p>To avoid confusion, CEIOPS wants to retain only the term “falsifiable” and delete “testable” and “refutable”.</p> <p>CEIOPS considers falsifiability as an important quality criterion of expert judgement. Falsification means that it must be in principle possible to show the expert judgement false. To be precise, only in exceptional cases it is possible to show the expert is false at the time of its judgement. What is referred to here, however, is that ex post falsification must be theoretically possible, i.e. at some point in time that is possibly very far in the future.</p> <p>ad c)</p> <p>The comments received suggest</p>

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				<p>that c) has been perceived as a purely quantitative requirement, but CEIOPS is well aware that in general it is hard to come up with a quantitative assessment of the reliability of the judgement of an expert. Probably the term "error rate" in this context was misleading.</p> <p>The requirement is to be understood as follows: The expert must always be able to provide the user of its judgement with an assessment of its reliability. This assessment can be of both quantitative and qualitative nature. For example, the expert may provide a limited scope of the judgement given, state any scenarios under which the judgement turns out to be wrong, provide a confidence level etc.</p> <p>Minor change to wording:</p> <p>"The expert must be able to make transparent the uncertainty surrounding the judgement."</p>
1054.	AB Lietuvos draudimas	5.167.	a) How is falsifiable different from testable?	Please see reply to comment no. 1053.

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			c) Difficult for expert judgement to have a known error rate.	
1055.	BARRIE & HIBBERT	5.167.	<p>We recognise that the definition, management and control of expert judgment is a particularly problematic area for CEIOPS. So far as we are aware, there is no consensus on expert judgment methodology. We would describe the exercise of expert judgment as a situation where an individual or expert group makes use of a number of sources of information including (but not limited to) quantitative/statistical models, mental models, heuristics, past experience, results in similar fields of analysis and then weights information to form subjective overall opinions. For certain questions, different experts may come to quite different conclusions i.e. there is genuine uncertainty about the 'true' model and parameters. As such, the idea that expert judgment must be 'derived using a scientific method' seems to suggest that, in reality, much expert judgment – as we would define it – cannot be used at all. Further, asking the expert to codify every decision could be viewed as being much like asking a tennis player to write down the rules they had used to calculate the position and speed of a moving tennis ball. Judgement, by its nature will not be easy to describe.</p> <p>We (a model and assumption provider) seek to codify as much of our modelling and model calibration practice as possible. Nevertheless, there are a number of judgments made by our analysts which are material to results but which we believe actually fall within a range of reasonable answers to difficult questions. This uncertainty may be reduced by careful analysis but it cannot be eliminated given that finance is not the same as hard science. As a result, models of social systems are exposed to a greater level of</p>	Noted

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			<p>model risk. It would be helpful if the 'soft' nature of expert judgment were recognized in some way in the level-2 text.</p> <p>As an aside, this genuine uncertainty surrounding key assumptions does create a real dilemma. Does a regulator allow different experts to reach different (reasonable) conclusions or impose consistency for the sake of comparability across firms?</p> <p>The requirement that expert judgment 'must have a known or potential error rate' cannot always be complied with. Consider the data used in an ESG supporting an internal model and calibrated to a 1-in-200 year market shock. The error rate in the expert judgment involved in this calibration cannot be known. There are not enough credible and reliable years of data to allow a calibration to be produced without using expert judgment. The same limitation in available data that require the expert judgment do not allow the error rate in the expert judgment to be calculated (other than many years into the future). In reality, if the error rate is known, we probably don't need to exercise expert judgment. This looks to us an awful lot like the classic 'Catch 22'.</p>	<p>Yes, supervisors will allow diversity in the conclusions taken by different experts. What is important is that expert judgement has been properly derived and used, following a scientific method.</p> <p>There is a misunderstanding due to the misleading word "error rate". The requirement in 5.167c) has been rephrased: "The expert must be able to make transparent the uncertainty surrounding the judgement." The reliability of expert judgement has not necessarily be quantified. This assessment can be (and will be in most cases) qualitative.</p> <p>Please see also reply to comment no. 1053.</p>
1056.	CODAN Forsikring	5.167.	a) How is falsifiable different from testable?	Please see reply to comment no. 1053.

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	A/S (10529638), Denmark		c) Difficult for expert judgement to have a known error rate.		
1057.	CODAN Forsikring (Branch Norway) (991 502 491)	5.167.	<p>a) How is falsifiable different from testable?</p> <p>c) Difficult for expert judgement to have a known error rate.</p>	Please see reply to comment no. 1053.	
1058.	CRO Forum	5.167.	It is unclear what CEIOPS means by the expression "scientific method". We would welcome CEIOPS' advice on what they consider qualifies as "scientific method".	<p>CEIOPS believes that expert judgement should be generated and used in a way that is analogous to the general methodology that is followed in science. This "scientific method/approach" to expert judgement, and in particular the associated documentation, review and validation processes are deemed to give satisfactory assurance about the appropriateness of expert judgement.</p> <p>The requirements set out in 5.167a-c should clarify what is to be understood by "scientific method" in this context. To allow for the comments received, they have been rephrased as follows:</p>	

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				<p>The expert judgement must be falsifiable.</p> <p>The expert must be able to make transparent the uncertainty surrounding the judgement.</p> <p>Standards concerning the operation of the methodology used must exist and be maintained.</p> <p>The expert judgement must be documented.</p> <p>The expert judgement must be validated. In particular, a track record must be available to assess its reliability.</p> <p>If all these requirements to the generation and use of expert judgement are met, one can say that a scientific method has been applied and expert judgement is admissible.</p>
1059.	European Union member firms of Deloitte	5.167.	We would welcome more details on the definition of a "scientific method" to derive an expert judgement or criteria to be met by this method to be deemed scientific. In particular, would the description in para. 5.168 be considered "scientific" if satisfied?	Para 5.167 provides the criteria the methodology to derive and use expert judgement has to meet. Please note that these criteria have been revised. Please

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	Touche To		<p>We would welcome examples of methods that CEIOPS considers appropriate for the testing, validation and error rate assessment for experts judgement. For example, would sensitivity analysis or peer review be considered appropriate to meet the requirements set in this paragraph?</p> <p>Lastly, we are concerned that the requirement for expert judgement to be "falsifiable, refutable and testable" is too restrictive. For example, risk management may consider possible future threats that have not occurred before. The lack of data forces a reliance on judgement. But the same lack of data makes falsification problematic. If the judgement says a threat exists, data showing that the event did not materialise does not falsify the judgement. An example is the effect of climate change on flood claims. Experts can be consulted, but there is limited value in trying to falsify the expert views using past data, as the climate changes are in part due to the cumulative effects of human activities which by definition are not reflected in historic climate data.</p>	<p>see reply to comment no 1058. These criteria are very much in accordance with what is said by GC in paragraph 5.168.</p> <p>Yes. In paragraph 5.166 peer review (cf. 5.166b) and sensitivity analysis (cf. 5.166e) are given as examples for approaches that may be used in the validation of expert judgement.</p> <p>Falsifiability: There is a misunderstanding. Ex post falsification must in principle be possible. Please see reply to comment no. 1053.</p>
1060.	German Insurance Association – Gesamtverb and der D	5.167.	<p>The expression "scientific method" requires more explanation to the extent what qualifies as a "scientific method" in this context.</p> <p>The requirements that must be met in order to use expert judgment seem unrealistically high. Para 5.167 states, among other points, that expert judgment must be "derived using a scientific method" and must be "falsifiable, refutable and testable". In reality, expert judgment is often used precisely because the true parameters are hard to measure or observe, for instance in the area of correlations. In these cases it is hard to see how the above criteria could be met.</p> <p>We believe that the requirements made in para 5.165, 5.166 and</p>	Please see reply to comments no 1053 and 1058 for the meaning of scientific method and falsifiability in this context.

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			5.169 are sufficient.	
1061.	Groupe Consultatif	5.167.	<p>Instead of using the term "scientific method" we would recommend using "professional skills of the experts". This is consistent with 5.168.</p> <p>We believe that bullet points a. and c. are unattainable. Under these requirements expert judgement seems impossible to be applied in internal models and so we recommend deleting these.</p>	<p>Noted</p> <p>Please see reply to comment no. 1053.</p>
1062.	KPMG ELLP	5.167.	The CP advises acceptance of expert judgment only if it also meets the empirical testing and error rate quantification requirements (among others). However, we believe that expert judgment mostly comes into play where there is limited empirical evidence or past experience available and hence see the requirements as too restrictive.	Please see reply to comment no. 1053.
1063.	Link4 Towarzystw o Ubezpieczeń SA	5.167.	<p>a) How is falsifiable different from testable?</p> <p>c) Difficult for expert judgement to have a known error rate.</p>	Please see reply to comment no. 1053.
1064.	Llody's	5.167.	<p>The requirement that "expert judgment must have a known or potential error rate..." needs clarification, as does the requirement that "expert judgment is only admissible if it was derived using a scientific method". What is a "scientific method" in this context? How can judgment have a known error rate?</p> <p>In the absence of a full definition, these requirements seem impossibly demanding. The fact is that expert judgment is required to reflect inevitable and unavoidable deficiencies in the historical data as a basis for forecasting future events. The measures have to</p>	Please see reply to comments no. 1053 and no. 1058.

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			be realistic regarding the expectations placed on expert judgment in this context	
1065.	Munich RE	5.167.	The expression "scientific method" requires more explanation to the extent what qualifies as a "scientific method" in this context.	Please see reply to comment no. 1058.
1066.	RSA Insurance Group PLC	5.167.	a) How is falsifiable different from testable? c) Difficult for expert judgement to have a known error rate.	Please see reply to comment no. 1053.
1067.	RSA Insurance Ireland Ltd	5.167.	a) How is falsifiable different from testable? c) Difficult for expert judgement to have a known error rate.	Please see reply to comment no. 1053.
1068.	RSA - Sun Insurance Office Ltd.	5.167.	a) How is falsifiable different from testable? c) Difficult for expert judgement to have a known error rate.	Please see reply to comment no. 1053.
1069.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.167.	a) How is falsifiable different from testable? c) Difficult for expert judgement to have a known error rate.	Please see reply to comment no. 1053.
1070.	Groupe Consultatif	5.170.	We believe that the criterion "up-to-date" is already included in the other three criteria and so is redundant.	True Here, however, "up-to-date" should merely give a hint that standards for the performance of data updates should be also laid down in the policy. Accordingly, the policy is throughout the

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					advice referred to as "policy on data quality and data update".
1071.	International Underwriting Association of London	5.170.	Will the establishment of a data quality policy by the undertaking, require approval from the supervisory authority, and if so will this be required in advance of the internal model approval process, or during the approval process (e.g. as part of the use test)?		The question is unclear. There will be no model approval without agreement on the data policy. Please cf. CP 37 Application Process.
1072.	Lloyd's	5.173.	The meaning of point (a) is unclear: "The undertaking specifies its own concept of data quality and the actual implementation". Point (c) implies that expert judgment is only used when data quality is poor. In practice, expert judgment is always used and is, in fact, a necessary component of assessing data quality. Suggested alternative wording is: "The undertaking documents the methodology which is followed in order to validate the application of expert judgment in assessing data quality and addressing any deficiencies so identified".		Please see the chapters 5.3.3.2 and 5.3.3.3. This implication is not intended. Minor change to wording: The undertaking documents the methodology which is followed in order to validate the use of expert judgment in relation to data, especially in the event that the quality of existing data is poor.
1073.	CEA, ECO-SLV-09-451	5.174.	The quality assessment of data should consider existing data quality procedures and be restricted on the data which are actually part of the internal model. For example, in non-life actuarial results (rate making, corporate planing, etc.) should be used for validation purposes. A comprehensive interpretation of the data assessment scope would mean that these results and the data they use is related to the internal model – which will result in an enormous amount of time for the approval process. It is recommended to concentrate only on		Please see reply to comment no. 976.

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			the results of these actuarial analyses. If these results are of fundamental importance to the undertaking beside internal modelling their wide use will guarantee their quality and the quality of the incorporated data.	
1074.	CRO Forum	5.174.	<p>"The data quality requirements apply to all data used in the internal model, i.e. any data used to operate, validate and develop the internal model, irrespective of whether it is internal or external."</p> <p>The commentary in paragraph 5.131 admits to how onerous and costly a comprehensive scope is for both the undertakings and supervisory authorities but fails to incorporate proportionality principle in their advice.</p> <p>We propose that the scope of the data quality standards be limited to data servicing the needs of material risks in the internal model.</p>	<p>Not agreed</p> <p>CEIOPS objects to restrict the scope of data quality standards.</p> <p>The discussion about the scope of the data quality standards in chapter 5.3.3.1 should be regarded as in connection to the discussion in the two following chapters about the interpretation of the quality criteria and data quality control / monitoring. Then it becomes clear that the proportionality principle is inherent to the overall principles-based approach proposed by CEIOPS. For instance, in the implementation of the data policy the undertaking is able to adapt the level of detail in the quality criteria / standards / processes etc. and their demands to the materiality of the individual data and the corresponding risks.</p>

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1075.	German Insurance Association – Gesamtverb and der D	5.174.	<p>The quality assessment of data should consider existing data quality procedures and be restricted on the data which are actually part of the internal model.</p> <p>For example, in non-life actuarial results (rate making, corporate planning, etc.) should be used for validation purposes. A comprehensive interpretation of the data assessment scope would mean that these results and the data they use are related to the internal model – which will result in an enormous amount of time for the approval process. It is recommended to concentrate only on the results of these actuarial analyses. If these results are of fundamental importance to the undertaking beside internal modelling their wide use will guarantee their quality and the quality of the incorporated data.</p>	Please see reply to comment no. 1073.
1076.	Investment & Life Assurance Group (ILAG)	5.174.	We welcome the advice on data quality standards.	Noted
1077.	KPMG ELLP	5.174.	The CP applies the same data quality requirements to both internal and external data. While we agree with the intent, we believe that it would be a challenge to meet these requirements for external data.	Noted. Please see reply to comment no. 979.
1078.	Llody's	5.174.	The requirement to apply the data quality standards to all external data is too onerous. The "quality" of the external data provider should be taken into account in assessing the quality of the external data. For example, FTSE-indices are clearly subject to rigorous quality checks, so the undertaking should be able to	The requirements apply to data irrespective of being internal or external. CEIOPS acknowledges that there will be differences in the type of assessment that can

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			accept that data without applying its own, entirely redundant quality checks. Perhaps regulators could consider “kite marking” commonly used external data that meets Solvency II data quality standards?	be made (cf. 5.133). However, undertakings are not necessarily required to literally “apply” their own standards to all external data. Referring to your example, it can be sufficient to have insight into the quality checks done by the data provider. If these can be considered to be in accordance to the undertaking’s own quality standards and ensure data quality to the same level, the data qualifies for being used. It is up to the undertaking to provide such evidence.
1079.	Munich RE	5.174.	Proportionality to the materiality of risks should be introduced.	Proportionality is inherently accounted for. Cf. reply to comment no. 1074.
1080.	PricewaterhouseCoopers LLP	5.174.	The scope of data quality is very broad, covering “all data used in the internal model....irrespective of whether it is internal or external”. We see the logic of this but interpret this as meaning the data quality standards apply to such areas as correlations – which elsewhere CEIOPS recognise as an area of intrinsically low confidence data. This requirement needs to be made explicitly subject to the application of 5.183 (Data and expert judgement).	Not agreed The need for expert judgement in setting dependencies is pointed out in chapter 5.3.5 (cf. 5.232a in particular).
1081.	CEA, ECO-SLV-09-451	5.175.	See comment to 5.174.	Please see reply to comment no. 1073.

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1082.	German Insurance Association – Gesamtverb and der D	5.175.	See comment to 5.174		Please see reply to comment no. 1075.
1083.	AAS BALTA	5.176.	This is a sensible interpretation of the legal text.		Noted
1084.	AB Lietuvos draudimas	5.176.	This is a sensible interpretation of the legal text.		Please see reply to comment no. 1083.
1085.			Confidential comment deleted.		
1086.	Association of British Insurers	5.176.	We are broadly comfortable with CEIOPS' definitions of 'accurate', 'complete' and 'appropriate' but are concerned that the detailed requirements, in particular for documentation purposes, might be too prescriptive and could therefore dissuade firms from modelling which is not the intention of Solvency II.		CEIOPS believes that the proposed approach regarding data and its quality is highly principles-based and allows for the proportionality principle.
1087.	CODAN Forsikring A/S (10529638), Denmark	5.176.	This is a sensible interpretation of the legal text.		Please see reply to comment no. 1083.
1088.	CODAN Forsikring (Branch Norway) (991 502 491)	5.176.	This is a sensible interpretation of the legal text.		Please see reply to comment no. 1083.
1089.			Confidential comment deleted.		

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1090.			Confidential comment deleted.	
1091.	Link4 Towarzystw o Ubezpieczeń SA	5.176.	This is a sensible interpretation of the legal text.	Noted
1092.	Pearl Group Limited	5.176.	We are broadly comfortable with CEIOPS' definitions of 'accurate', 'complete' and 'appropriate' but are concerned that the detailed requirements, in particular for documentation purposes, might be too prescriptive and could therefore dissuade firms from modelling which is not in the intention of Solvency II.	Please see reply to comment no. 1086.
1093.	RBS Insurance	5.176.	We feel consistency between the data definitions here and those in CP43 would be beneficial.	In 5.125 data is defined in total agreement to the definition given in CP 43.
1094.	RSA Insurance Group PLC	5.176.	This is a sensible interpretation of the legal text.	Please see reply to comment no. 1091.
1095.	RSA Insurance Ireland Ltd	5.176.	This is a sensible interpretation of the legal text.	Please see reply to comment no. 1091.
1096.	RSA - Sun Insurance Office Ltd.	5.176.	This is a sensible interpretation of the legal text.	Please see reply to comment no. 1091.
1097.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-	5.176.	This is a sensible interpretation of the legal text.	Please see reply to comment no. 1091.

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	7799)			
1098.	Association of British Insurers	5.177.	See comments under 5.176	Please see reply to comment no. 1086.
1099.	CRO Forum	5.177.	<p>"... Provided that undertaking-wide there is a common understanding of data quality, the undertaking shall also define the abstract concept of data quality in relation to the various types of data in use. ..."</p> <p>We are broadly comfortable with CEIOPS' definitions of 'accurate', 'complete' and 'appropriate'.</p>	Noted
1100.	EMB Consultancy LLP	5.177.	We welcome the idea of undertakings developing their own concept of data quality. Such a concept may vary widely between insurers: for example contrast a private motor insurer with a specialist marine writer.	Noted
1101.	Association of British Insurers	5.178.	<p>See comments under 5.176</p> <p>Since it is impossible to know for certain that all data is accurate, we propose the following amended wording for the first sentence:</p> <p>"The onus is on the undertaking to demonstrate an understanding of the data's accuracy, completeness and appropriateness".</p>	<p>Not agreed</p> <p>The proposed wording hardly changes for the better. The character of the criteria remains absolute.</p> <p>In 5.136 CEIOPS explicitly stated that "in reality data is seldom absolute accurate, complete and accurate." Cf. also 5.137.</p> <p>The demonstration of data quality gets workable if data quality is broken down to more specific quality criteria, as required in</p>

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				5.177.
1102.	CEA, ECO-SLV-09-451	5.178.	<p>(Data quality control / monitoring)</p> <p>Too much emphasis is put on accuracy of data inputs rather than the resulting effects on internal model outputs.</p> <p>It needs to be recognised that in practice, statistical bases for estimating parameters are limited (data quality is often of bad quality or data is not available at all). However, insurers have developed ways to live with those issues by using sensible approximation methods. It should therefore be sufficient to have data that allows a reasonable approximation of such parameters. The focus should be on ensuring that no bias to underestimating the SCR occurs.</p> <p>Focus more on ensuring that no bias to underestimating the SCR occurs.</p>	<p>Not agreed</p> <p>The “first” interpretation of the quality criteria given in 5.176, which serve as a starting point for the development of tailored data quality standards, does include the output perspective. Explicit reference is made to model output for “Accuracy”: “... sufficiently accurate to avoid material distortion of the model output.” Appropriate (implicit reference): “... data does not contain biases which make it unfit for purpose.”</p> <p>Furthermore, it has to be noticed that SCR estimation is one out of various applications of the internal model.</p>
1103.	FFSA	5.178.	<p>CEIOPS says that the onus is on the undertaking to demonstrate that data is accurate, complete and appropriate.</p> <p>FFSA thinks that in practice, statistical bases for parameters estimation are limited. It should be sufficient to have data that allows a reasonable approximation of such parameters. The focus should be on ensuring that no bias to underestimating the SCR occurs.</p>	<p>Please see reply to comment no. 1102.</p>

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1104.	German Insurance Association – Gesamtverb and der D	5.178.	<p>(Data quality control / monitoring)</p> <p>Too much emphasis is put on accuracy of data inputs rather than the resulting effects on internal model outputs.</p> <p>It needs to be recognised that in practice, statistical bases for estimating parameters are limited (data quality is often of bad quality or data is not available at all). However, insurers have developed ways to live with those issues by using sensible approximation methods. It should therefore be sufficient to have data that allows a reasonable approximation of such parameters. The focus should be on ensuring that no bias to underestimating the SCR occurs.</p> <p>Focus more on ensuring that no bias to underestimating the SCR occurs.</p>	Please see reply to comment no. 1102.	
1105.	Legal & General Group	5.178.	<p>Since it is impossible to know for certain that all data is accurate, we propose the following amended wording for the first sentence: "The onus is on the undertaking to demonstrate an understanding of the data's accuracy, completeness and appropriateness"</p>	Please see reply to comment no. 1101.	
1106.	AAS BALTA	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	<p>Agreed</p> <p>Correction: Wording in Blue Box aligned to the wording in 5.150: "Major changes only are subject to prior supervisory approval."</p>	
1107.	AB Lietuvos draudimas	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior	Please see reply to comment no. 1106.	

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			regulatory approval.	
1108.	Association of British Insurers	5.179.	See comments under 5.176	Please see reply to comment no. 1086.
1109.			Confidential comment deleted.	
1110.	CEA, ECO-SLV-09-451	5.179.	Data policy is introduced here, but only detailed later. This might cause confusion. Add reference to 5.185ff.	Agreed Reference added.
1111.	CODAN Forsikring A/S (10529638), Denmark	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.
1112.	CODAN Forsikring (Branch Norway) (991 502 491)	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.
1113.	EMB Consultancy LLP	5.179.	Requiring prior supervisory approval for changes to the data policy could cause practical issues. We would suggest at least mentioning materiality here.	Please see reply to comment no. 1106.
1114.	FFSA	5.179.	CEIOPS says that a policy on data quality and data update has to be established and agreed with the supervisory authorities, and that changes to the policy shall always be subject to prior supervisory approval.	There has been a mistake: As stated in 5.150, only major changes are subject to prior supervisory approval.

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			<p>FFSA believes that changes to policy on data quality and data update could be conducted by contextual reasons, which would need effective application in the shortest time possible, especially during crisis or market turmoil,i.e. during recent months. In this case, it will be hard for the supervisory authorities to respond and to validate the change within appropriate timescales.</p> <p>As a consequence, FFSA thinks that the sentence should be rewritten as: "Changes to the policy shall always be disclosed and communicated to supervisory authorities."</p>	<p>Cf. comment no. 1106.</p> <p>Not agreed</p>
1115.	German Insurance Association – Gesamtverb and der D	5.179.	<p>Data policy is introduced here, but only detailed later. This might cause confusion.</p> <p>Add reference to 5.185ff.</p>	Please see reply to comment no. 1110.
1116.	KPMG ELLP	5.179.	CEIOPS has carried out an analysis of several options for data quality control and monitoring. It recommends that the most feasible option would be to have a common basis of data quality assessment agreed between each (re)insurance undertakings and the regulator, along with a comprehensive policy designed by (re)insurance undertaking and approved by the supervisory authority. We agree with CEIOPS' view that this is the most feasible option, but recognise that would mean extremely onerous review responsibility for the supervisory authority involved.	Noted
1117.	Link4 Towarzystw o	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.

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	Ubezpieczeń SA			
1118.	Llody's	5.179.	Paragraph 5.150 states that "major changes to the data policy shall always be subject to prior supervisory approval". However, the word "major" has been omitted from the equivalent sentence in the draft Level 2 measures in this paragraph. It should be inserted so that the paragraph is consistent with 5.150. Major changes in this context should be defined within the model change policy.	Agreed Please see reply to comment no. 1106.
1119.	RBS Insurance	5.179.	We disagree with the last point in this paragraph which states that changes to the data policy shall always be subject to prior supervisory approval, we feel this would seriously hamper improvements in data collection and quality. Possibly the addition of the word "material" would help.	Please see reply to comment no. 1106.
1120.	ROAM –	5.179.	CEIOPS says that a policy on data quality and data update has to be established and agreed with the supervisory authorities, and that changes to the policy shall always be subject to prior supervisory approval. ROAM believes that changes to policy on data quality and data update could be conducted by contextual reasons, which would need effective application in the shortest time possible, especially during crisis or market turmoil, i.e. during recent months. In this case, it will be hard for the supervisory authorities to respond and to validate the change within appropriate timescales. As a consequence, ROAM thinks that the sentence should be rewritten as: "Changes to the policy shall always be disclosed and communicated to supervisory authorities."	Please see reply to comment no. 1114.
1121.	RSA	5.179.	Would be reasonable to notify the regulator of changes to the data	Please see reply to comment no.

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	Insurance Group PLC		policy. It is not reasonable for changes to be subject to prior regulatory approval.	1106.
1122.	RSA Insurance Ireland Ltd	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.
1123.	RSA - Sun Insurance Office Ltd.	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.
1124.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.179.	Would be reasonable to notify the regulator of changes to the data policy. It is not reasonable for changes to be subject to prior regulatory approval.	Please see reply to comment no. 1106.
1125.	AAS BALTA	5.180.	The last bullet should be removed. It is an assumption not a fact.	Not agreed According to 5.143, data is appropriate if it does not contain biases which make it unfit for purpose. Here, the focus is on a particular purpose, namely projection into the future. The undertaking must provide evidence that the data is appropriate with respect to this purpose. In other words, it must demonstrate that the assumption that the data is a good guide to the future is valid. Please not that the potentially

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				misleading word “historical” will be deleted (cf. reply to comment no. 1018).
1126.	AB Lietuvos draudimas	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.
1127.			Confidential comment deleted.	
1128.	Association of British Insurers	5.180.	See comments under 5.176 Bullet point 5 This will depend on the availability of data. Last bullet point We would point out that it might not be appropriate to put too much reliance on historic market data which is not always helpful for the future as recent events have shown. As recent events have demonstrated, it would be inappropriate to base forecasting solely on the basis of historical data. We would therefore recommend these requirements to be associated with expert judgement.	Noted Agreed The word “historical” is misleading in this context. Therefore, it will be deleted. Please see reply to comment no. 1018.
1129.			Confidential comment deleted.	
1130.	CODAN Forsikring A/S (10529638), Denmark	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.
1131.	CODAN Forsikring (Branch	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.

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	Norway) (991 502 491)			
1132.	CRO Forum	5.180.	Within its regular data quality review the undertaking shall demonstrate the fulfilment of the criteria of “accuracy”, “completeness” and “appropriateness”, ... ” We believe that it is impractical to demonstrate accuracy, completeness and appropriateness of data, to the level propose by this paragraph, for the undertaking.	Noted This paragraph should be understood as a additional interpretation of the three quality criteria. Still, the criteria in this general form are not workable in practice. The onus is on the undertaking to derive more specific criteria, i.e. criteria that apply to the particular data under consideration. To this end, undertakings are granted with the considerable freedom that is inherent to the principles-based approach proposed by CEIOPS. Only if the undertaking makes use of this freedom, it will implement data quality standards that are practicable as well as tailored to its needs.
1133.			Confidential comment deleted.	
1134.	Groupe Consultatif	5.180.	See also our comments on5.151	Please see reply to comment no. 1017.
1135.	Link4	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no.

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	Towarzystwo Ubezpieczeń SA			1125.
1136.	Llody's	5.180.	<p>The proposed requirement to "demonstrate" completeness and appropriateness is impossible in practice.</p> <p>Taking completeness first, Article 119(1) requires that the internal model calculates a probability distribution forecast, and Article 13(32) defines this as a "mathematical function that assigns to an exhaustive set of mutually exclusive future events a probability of realisation". In practice, there will almost never be sufficient data to confidently estimate the 99.5th percentile of the probability distribution forecast, let alone the entire probability distribution forecast. This is particular true for the more volatile variables in the internal model, which are the ones that ultimately drive the capital requirement.</p> <p>The concept of appropriateness is similarly elusive in practice. Data for an internal model is not sampled from stationary population distributions. External factors (changes in the economic or social environments, changes in the legal framework) and internal factors (changes in maximum line size, changes in underwriting personnel) mean that historical data is never entirely appropriate as a basis for predicting future events.</p> <p>We suggest that the requirement here should be that "undertakings shall demonstrate that they have considered the accuracy, completeness and appropriateness of their data and have taken due account in their internal model of any deficiencies identified".</p>	Please see reply to comment no. 1018.
1137.	Pearl Group Limited	5.180.	Bullet point 5	Please see reply to comment no. 1128.

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			<p>This will depend on the availability of data and the financial impact related to it.</p> <p>Last bullet point</p> <p>It might not be appropriate to put too much reliance on data which is not always helpful for the future as recent events have shown. We would therefore recommend these requirements be linked to expert judgement instead.</p>	
1138.	RBS Insurance	5.180.	In the first bullet point the word material is used. It would be useful for further guidance as to what constitutes material, and, explicitly, whether it is a definition that should be included in the data policy.	In the first bullet point of 5.180 another high-level interpretation of the accuracy criterion is given. Nevertheless the undertaking has to make the criterion workable in practice (Please see 5.177). Here, the undertaking has, among other things, to specify materiality, e.g. to come up with a level of tolerance specific to the data set under consideration. This specification must be documented in the data policy.
1139.	RSA Insurance Group PLC	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.
1140.	RSA Insurance Ireland Ltd	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.

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1141.	RSA - Sun Insurance Office Ltd.	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.	
1142.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.180.	The last bullet should be removed. It is an assumption not a fact.	Please see reply to comment no. 1125.	
1143.	AAS BALTA	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Agreed No changes necessary.	
1144.	AB Lietuvos draudimas	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Please see reply to comment no. 1143.	
1145.	CEA, ECO-SLV-09-451	5.181.	<p>Updates of assumptions and data may be very time-consuming, whereas they may result in only immaterial updates.</p> <p>Proportionality should be applied here. There might be no need to update data annually for some small lines of business.</p> <p>Also requiring more frequent updates in stressed circumstances may be unjustifiably burdensome and utilise resources which may be more usefully allocated to other tasks.</p>	<p>Noted</p> <p>The approach with respect to data quality inherently allows for proportionality.</p> <p>The undertaking specifies (in agreement with the supervisory authority) data and circumstances where it expects to benefit from</p>	

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					unscheduled data updates (s. data policy).
1146.	CODAN Forsikring A/S (10529638), Denmark	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.		Please see reply to comment no. 1143.
1147.	CODAN Forsikring (Branch Norway) (991 502 491)	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.		Please see reply to comment no. 1143.
1148.	EMB Consultancy LLP	5.181.	Is the intention of the "update at least once a year" minimum requirement that the data is fully up-to-date in time for the annual SCR run? Tying the update frequency to the use test is a sensible suggestion.		Yes
1149.	FFSA	5.181.	CEIOPS says that undertaking shall update the data sets used in the calculation of the probability distribution forecast at least once a year, and that as a general rule the update frequency should be linked to the frequency of model use as covered by the Use test. FFSA considers that update of assumptions and data is very time-consuming, whereas it is not always pertinent data for a tiny change in them and when it is only for intern use. FFSA thinks that the update could be categorised as: <input type="checkbox"/> Global and precise update, which it is normal to do when there is regulatory constraints to do that; and		Data used for the internal model must be accurate, complete and appropriate. In particular, appropriate means that data must be fit for purpose. Consequently, it is conceivable that a roll-forward-update is admissible, however, the undertaking must provide evidence that it is still appropriate.

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			<p><input type="checkbox"/> Roll-forward update, when internal model is used for internal reasons as disclosed in Use test part.</p> <p>As a consequence, FFSA thinks that the sentence should be rewritten as: "Undertaking shall update the data sets used in the calculation of the probability distribution forecast at least once a year. As a general rule, the update frequency should be linked to the frequency of the regulatory model use as covered by the Use test."</p>	<p>Please note that in CEIOPS view there is no regulatory model. There is only the internal model.</p>
1150.	German Insurance Association – Gesamtverb and der D	5.181.	<p>(Data update)</p> <p>Updates of assumptions and data may be very time-consuming, whereas they may result in only immaterial updates.</p> <p>Proportionality should be applied here. There might be no need to update data annually for some small lines of business.</p> <p>Also requiring more frequent updates in stressed circumstances may be unjustifiably burdensome and utilise resources which may be more usefully allocated to other tasks.</p>	<p>Please see reply to comment no. 1145.</p>
1151.	Link4 Towarzystw	5.181.	<p>The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more</p>	<p>Please see reply to comment no. 1143.</p>

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	o Ubezpieczeń SA		frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	
1152.	RSA Insurance Group PLC	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Please see reply to comment no. 1143.
1153.	RSA Insurance Ireland Ltd	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Please see reply to comment no. 1143.
1154.	RSA - Sun Insurance Office Ltd.	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Please see reply to comment no. 1143.
1155.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.181.	The data policy should set out how often data is updated. It may well be appropriate to only update a subset of the data more frequently. This would be undertaking specific and hence should be included in the data policy. Thus wording on at least annual is fine, but general rule... part should be removed and replaced with a reference to the data policy of the undertaking.	Please see reply to comment no. 1143.
1156.	Association	5.182.	This paragraph seems to imply data updates will lead to a full rerun	Agreed

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	of British Insurers		<p>of the model. It should be clarified this will not be the case: updates should not systematically lead to the recalculation of the model (including a full review of all assumptions and parameters).</p> <p>For the purposes of this paragraph, it would therefore be helpful to distinguish between updating exposures and updating assumptions.</p> <p>We believe that expert judgement is extremely important for the design and ongoing use of internal models. We feel that the requirements given in this paragraph are not practical and will be impossible to meet. Given this and the strict requirements on data credibility, we are concerned that it may be impossible to set up a model that meets these requirements.</p> <p>In order to make these proposals workable, we suggest the advice refers to the application of the proportionality principle to these requirements and effectively make them guidance for the use of expert judgment.</p>	<p>Text modified: "... and (parts of) the SCR ..." Change 5.185 accordingly.</p> <p>This part of the comment is not in connection to 5.182.</p>
1157.	CEA, ECO-SLV-09-451	5.182.	<p>(Data update)</p> <p>Agreed, as long as data updates do not automatically result in a full model rerun.</p> <p>This paragraph seems to imply data updates will lead to a full rerun of the model. It should be clarified this will not be the case: updates should not systematically lead to the recalculation of the model (including a full review of all assumptions and parameters).</p>	Please see reply to comment no. 1156.

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1158.	German Insurance Association – Gesamtverb and der D	5.182.	<p>Agreed, as long as data updates do not automatically result in a full model rerun.</p> <p>This paragraph seems to imply data updates will lead to a full rerun of the model. It should be clarified this will not be the case: updates should not systematically lead to the recalculation of the model (including a full review of all assumptions and parameters).</p>	Please see reply to comment no. 1157.
1159.	Legal & General Group	5.182.	<p>For the purposes of this paragraph, it would be helpful to distinguish between updating exposures and updating assumptions.</p> <p>We believe that expert judgement is extremely important for the design and ongoing use of internal models. We feel that the requirements given in this paragraph are not practical and will be impossible to meet. Given this and the strict requirements on data credibility, we are concerned that it may be impossible to set up a model that meets these requirements.</p> <p>In order to make these proposals workable, we suggest the advice refers to the application of the proportionality principle to these requirements and effectively make them guidance for the use of expert judgment.</p>	Please see reply to comment no. 1156.
1160.	Pearl Group Limited	5.182.	<p>This paragraph seems to imply data updates will lead to a full rerun of the model. It should be clarified this will not be the case: updates should not systematically lead to the recalculation of the model (including a full review of all assumptions and parameters).</p>	Please see reply to comment no. 1156.

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1161.			Confidential comment deleted.	
1162.	Association of British Insurers	5.183.	<p>We are concerned that the requirements around the use of expert judgement might be too constraining:</p> <p><input type="checkbox"/> We would emphasise the importance of expert judgment and would again insist that firms should not solely rely on market data;</p> <p><input type="checkbox"/> Making the use of expert judgement too challenging for firms might prevent them from being able to predict high-impact, rare events beyond normal expectations ('black swan' situations) or to move to other markets;</p> <p><input type="checkbox"/> If the requirements around expert judgement are too strong, this could run the risk of becoming a mere number crunching exercise which could be dangerous and would fail to meet the use test;</p> <p><input type="checkbox"/> Expert judgment is not only a quantitative exercise, it also involves a qualitative dimension for which it will be difficult to measure an 'error rate'.</p> <p>Therefore we propose the following changes:</p> <p><input type="checkbox"/> Line 1, insert "appropriate" between the words all and instances.</p> <p><input type="checkbox"/> In the second from last sentence, almost by definition, if expert judgement is being used there will be poor or non existent data available. Hence validated is not appropriate. We propose to delete "well founded, explained and validated"</p> <p><input type="checkbox"/> In the sentence "In particular, when data is available, expert judgement shall be reconciled with the data.", we would suggest inserting "have reference to any relevant data, be justified and</p>	<p>Noted</p> <p>Emphasis has been put on the need for expert judgement. Cf. 5.159 and 5.160.</p> <p>Agreed</p> <p>CEIOPS is aware of the qualitative dimension. Please see reply to comment no. 1053.</p> <p>Not agreed</p> <p>The proposed word does not fit.</p> <p>Not agreed. The term "validation" does fit as CEIOPS has a broader understanding of this term. Validation is not restricted to quantitative techniques like back-testing that require the</p>

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			documented".	availability of historical data.
1163.	CEA, ECO-SLV-09-451	5.183.	<p>(Data and expert judgement)</p> <p>We are concerned that the requirements around the use of expert judgement might be too constraining:</p> <ul style="list-style-type: none"> <input type="checkbox"/> We would emphasise the importance of expert judgment and would again insist that firms should not solely rely on market data; <input type="checkbox"/> Making the use of expert judgement too challenging for firms might prevent them from being able to predict high-impact, rare events beyond normal expectations ('black swan' situations) or to move to other markets; <input type="checkbox"/> If the requirements around expert judgement are too strong, this could run the risk of becoming a mere number crunching exercise which could be dangerous and would fail to meet the use test; <input type="checkbox"/> Expert judgment is not only a quantitative exercise, it also involves a qualitative dimension for which it will be difficult to measure an 'error rate'; <input type="checkbox"/> Expert judgement should be 'explainable and documented' rather than validated. <p>A detailed documentation of potentially compromised data quality seems to go too far. Key should be to clearly document actual data versus expert judgment and explaining any potential inconsistencies between them.</p> <p>Documentation of all instances in which data quality may be</p>	Please see reply to comment no. 1162.

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			<p>compromised and implications is highly onerous and unrealistic.</p> <p>"Undertakings shall document key all instances in which data quality may be compromised as well as its implications. ...".</p>	
1164.	CRO Forum	5.183.	<p>"Undertakings shall document all instances in which data quality may be compromised as well as its implications. In such cases in particular, the undertaking shall address the interrelationship between data and expert judgement. The use of expert judgement to complement or substitute data shall be well-founded, explained and validated. In particular, when data is available, expert judgement shall be reconciled with the data."</p> <p>Inline with the argument put forward for paragraph 5.174 we feel that the requirement by the undertaking to document all instances of data compromise will be onerous and costly for both the undertaking and supervisory authority.</p> <p>Expert judgement seems only allowed if justified by "scientific" methods, which is not in line with the purpose and use of expert judgement in practise. We propose to replace "validated" by "evaluated".</p> <p>We propose that the principle of proportionality be introduced and the paragraph should rephrased as follows; "Undertaking shall document, for material risks, all instances in which data quality may be compromised ..."</p>	<p>Not agreed</p> <p>CEIOPS believes that it is essential that an undertaking has an overview of all instances where data quality is compromised and keeps track of those. Please notice that this is only a documentation requirement as opposed to the requirements set out in paragraph 5.183.</p> <p>The word "validate" does fit also in this context as CEIOPS has a broader view on validation. Validation is not restricted to techniques like back-testing that</p>

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					<p>require data being available.</p> <p>Agreed. It is reasonable to introduce materiality to paragraph 5.184.</p> <p>Text modified accordingly:</p> <p>"Where expert judgement as addition to or substitute for data has a material impact, its use must be well-founded and is only admissible if its derivation and usage follows a scientific method, i.e.: ..."</p>
1165.	EMB Consultancy LLP	5.183.	We welcome the recognition of expert judgement as a very important part of internal models.		Noted
1166.	FFSA	5.183.	CEIOPS says that undertakings shall document all instances in which data quality may be compromised as well as its implications. FFSA thinks that documentation of all instances in which data quality may be compromised and implications is highly onerous and unrealistic. FFSA recommends the documentation of major schemes and material elements.		Please see reply to comment no. 1164.
1167.			Confidential comment deleted.		
1168.			Confidential comment deleted.		
1169.	German Insurance	5.183.	(Data and expert judgement) We are concerned that the requirements around the use of expert		Please see reply to comment no. 1162.

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Association – Gesamtverb and der D		<p>judgement might be too constraining:</p> <ul style="list-style-type: none"> <input type="checkbox"/> We would emphasise the importance of expert judgment and would again insist that firms should not solely rely on market data; <input type="checkbox"/> Making the use of expert judgement too challenging for firms might prevent them from being able to predict high-impact, rare events beyond normal expectations ('black swan' situations) or to move to other markets; <input type="checkbox"/> If the requirements around expert judgement are too strong, this could run the risk of becoming a mere number crunching exercise which could be dangerous and would fail to meet the use test; <input type="checkbox"/> Expert judgment is not only a quantitative exercise, it also involves a qualitative dimension for which it will be difficult to measure an 'error rate'; <input type="checkbox"/> Expert judgement should be 'explainable and documented' rather than validated. <p>A detailed documentation of potentially compromised data quality seems to go too far. Key should be to clearly document actual data versus expert judgment and explaining any potential inconsistencies between them.</p> <p>Documentation of all instances in which data quality may be compromised and implications is highly onerous and unrealistic.</p> <p>"Undertakings shall document key all instances in which data quality may be compromised as well as its implications. ..."</p>	

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1170.	Legal & General Group	5.183.	We believe that appropriate expert judgement plays an important roles and the requirement here does not reflect this. We propose changing line 1 by inserting "appropriate" between the words all and instances. In the second from last sentence, almost by definition, if expert judgement is being used there will be poor or non existent data available. Hence validated is an odd word to use. We propose to delete "well founded, explained and validated" and the sentence "In particular, when data is available, expert judgement shall be reconciled with the data." and insert "have reference to any relevant data, be justified and documented"	Please see reply to comment no. 1162.
1171.	Llody's	5.183.	Expert judgement is typically used where data is not available so validating expert judgement may be difficult. The requirements for expert judgement may make it difficult to use for smaller undertakings. For example expert judgement is used in the parameterisation of copulas, where there will not necessarily be sufficient data to validate tail dependency.	Lack of data is justification for the use of expert judgement. Cf. reply to comment no. 1161.
1172.	Munich RE	5.183.	Proportionality to the materiality of risks should be introduced.	Please see reply to comment no. 1164.
1173.	Pearl Group Limited	5.183.	We are concerned that the requirements around the use of expert judgement might be too constraining: <input type="checkbox"/> Expert judgment is very important and we would not rely on data without applying expert judgements at some point; <input type="checkbox"/> Making the use of expert judgement too challenging might push Pearl to use other solutions which would not cover the wide range of events that an expert would consider and could impact on our business plans;	Please see reply to comment no. 1162

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			<input type="checkbox"/> If the requirements around expert judgement are too strong, this could run the risk of becoming a mere number crunching exercise which could be dangerous and would fail to meet the use test; <input type="checkbox"/> Expert judgment is not only a quantitative exercise, it also involves a qualitative dimension for which it will be impossible to measure an "error rate" that has any significant meaning; <input type="checkbox"/> Expert judgement should be 'explainable and documented' rather than validated.	
1174.	ROAM –	5.183.	<p>CEIOPS says that undertakings shall document all instances in which data quality may be compromised as well as its implications.</p> <p>ROAM thinks that documentation of all instances in which data quality may be compromised and implications is highly onerous and unrealistic. ROAM recommends the documentation of major schemes and material elements.</p>	Please see reply to comment no. 1166.
1175.	AAS BALTA	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p> <p>c) Can expert judgement have a known error rate?</p>	Please see reply to comment no. 1053.
1176.	AB Lietuvos draudimas	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p> <p>c) Can expert judgement have a known error rate?</p>	Please see reply to comment no. 1175.
1177.	Association of British Insurers	5.184.	<p>Point a)</p> <p>Requiring that a suitably qualified person could understand the</p>	Please see reply to comments no. 1053 and 1058.

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			<p>model from the Internal Model documentation is reasonable, but it might be unrealistic to expect that any expert judgement on empirical testing should be refutable, testable and falsifiable.</p> <p>We would therefore to replace the wording with:</p> <p>Expert judgement shall be used by a firm where there is poor or non existent data. Its use will be made clear to the regulator who can use their judgement and data available to them across the market to determine its appropriateness. The judgement shall be documented and this will include the framework for the decision to use an expert judgement, the data considered, the reasons for the decision and a sensitivity test of its implications.</p>	
1178.			Confidential comment deleted.	
1179.	CEA, ECO-SLV-09-451	5.184.	<p>Expertise should be justified and later compared with experience. Meaningful error rates for expert judgment are usually unrealistic to provide.</p> <p>Expert judgment is a central ingredient of internal models, in particular for correlation and trend probabilities (e.g. mortality improvements). Expertise should be justified rather than requiring individual judgment to be tested. Furthermore, it is unrealistic to provide an error rate for most expert judgments.</p> <p>Reduce requirements for expert judgement: focus on justifying the use of the particular expert(s) and eliminate the requirement for an error rate.</p>	<p>CEIOPS considers the justification of expertise as being included in the requirements set out to the use of expert judgement.</p> <p>Concerning "error rate" cf. reply to comment no. 1053.</p>
1180.	CODAN Forsikring A/S	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p>	Please see reply to comment no. 1175.

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	(10529638), Denmark		c) Can expert judgement have a known error rate?	
1181.	CODAN Forsikring (Branch Norway) (991 502 491)	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p> <p>c) Can expert judgement have a known error rate?</p>	Please see reply to comment no. 1175.
1182.	CRO Forum	5.184.	<p>"Expert judgement is admissible only if it was derived using a scientific method and meets the following three requirements; Empirical testing, Validation and documentation, Error rate."</p> <p>While we appreciate the intention behind bringing discipline to the expert judgement aspect of the internal model we feel that the advice conflicts with the explanatory text presented in paragraphs 5.195 to 5.169.</p> <p>Paragraph 5.161 stated: "The use of expert judgement is actively encouraged by CEIOPS where there is a lack of data to quantify a known risk ... ". CEIOPS recognises that expert judgement is made in instances where the data quality is questionable however the advice proposes on validating the judgement using scientific methods which is in complete contrast.</p> <p>Similarly, we believe that the only way to demonstrate an error rate for expert judgement is through use of reliable data and in presence of reliable data there would be no need for expert judgement.</p> <p>The same argument can be extrapolated for other properties of expert judgement proposed by CEIOPS, namely falsifiable, refutable and testable.</p>	Please see reply to comments no. 1053 and 1058.

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			<p>We propose that the thought process and analysis performed to reach the judgement be clearly documented such that an independent reviewer with relevant expertise comes to a similar conclusion upon reviewing the documentation. This is consistent with what was described in paragraph 5.168. "Undertakings shall document all instances in which data quality may be compromised as well as its implications. In such cases in particular, the undertaking shall address the interrelationship between data and expert judgement. The use of expert judgement to complement or substitute data shall be well-founded, explained and validated. In particular, when data is available, expert judgement shall be reconciled with the data."</p> <p>Inline with the argument put forward for paragraph 5.174 we feel that the requirement by the undertaking to document all instances of data compromise will be onerous and costly for both the undertaking and supervisory authority.</p> <p>Expert judgement seems only allowed if justified by "scientific" methods, which is not in line with the purpose and use of expert judgement in practise. We propose to replace "validated" by "evaluated".</p> <p>We propose that the principle of proportionality be introduced and the paragraph should rephrased as follows; "Undertaking shall document, for material risks, all instances in which data quality may be compromised ..."</p>	
1183.	DIMA (Dublin International Insurance & Management	5.184.	It is not clear cut how to validate the use of expert judgement. The "validation" requirement should be deleted.	Not agreed CEIOPS believes that validation of expert judgement, although difficult in general, is very

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				important. In 5.166 CEIOPS listed several approaches that undertakings may follow.
1184.	EMB Consultancy LLP	5.184.	<p>We regard the standards set out for accepting expert judgement as unworkable.</p> <p>Materiality and sensitivity of results should be mentioned.</p> <p>Requiring that expert judgement is derived using a "scientific method" does not seem workable, for often expert judgement is required where there is no clear "scientific" approach available.</p> <p>For the criteria given, a) is unlikely to be possible in all cases, b) is sensible but care should be taken to be proportionate, and for c) consideration of the error rate is likely to be so approximate as to add little value.</p> <p>We feel that firms would benefit from more commentary as to what constitutes expert judgement. It is clear cut in the case of a manually selected number, but expert judgement is arguably also present in:</p> <ul style="list-style-type: none"> - exclusion or augmentation of data points e.g. for distribution fitting - selection of appropriate external data for benchmarking purposes - the technical workings of the calculation kernel 	<p>Please see reply to comments no. 1053 and 1058.</p> <p>Noted</p> <p>The last example is out of scope, as expert judgement in chapter 5.3.3. is related only to data.</p>
1185.	European Union member firms of Deloitte	5.184.	<p>See comment on para. 5.167.</p> <p>In addition, we suggest that when the standard expected on the three requirements may be adapted according to the availability of data: expert judgement should be admissible in the situation when</p>	<p>As stated clearly in 5.164 or 5.183, expert judgement may be used as a substitute to data.</p> <p>The assessment of the</p>

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	Touche To		no other sources of information are available, even though the requirement for a known / potential error rate may be difficult to meet in full in this case.	uncertainty around the expert judgement does not necessarily require the availability of data. Please see reply to comment no. 1053.	
1186.	Federation of European Accountants (FEE)	5.184.	To avoid potential misunderstanding we suggest the term "falsifiable" be replaced by "verifiable", in the section under (a) on empirical testing.	Not agreed Please see reply to comment no. 1053.	
1187.	FFSA	5.184.	Empirical testing. FFSA understands the word "falsifiable" should be changed to "changeable". Error rate. CEIOPS says that expert judgment needs to have a known or potential error rate. FFSA thinks that expert judgement is a central ingredient of internal models, in particular for correlation and trend probabilities. FFSA believes that expertise should be justified rather than requiring individual judgement to be tested FFSA believes point c. has to be deleted.	Please see reply to comments no. 1053 and 1179.	
1188.	German Insurance Association – Gesamtverb and der D	5.184.	Expertise should be justified and later compared with experience. Meaningful error rates for expert judgment are usually unrealistic to provide. Expert judgment is a central ingredient of internal models, in particular for correlation and trend probabilities (e.g. mortality improvements). Expertise should be justified rather than requiring individual judgment to be tested. Furthermore, it is unrealistic to provide an error rate for most expert judgments. Moreover, it is	Please see reply to comment no. 1179.	

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			<p>inappropriate to attach conditions on the use of expert judgement which would require a statistical test (error rate). This would result in expert judgement only admissible in such cases where it is not needed.</p> <p>Reduce requirements for expert judgement: focus on justifying the use of the particular expert(s) and eliminate the requirement for an error rate.</p>	
1189.	Groupe Consultatif	5.184.	See also our comments on 5.167	Please see reply to comment no. 1061.
1190.	International Underwriting Association of London	5.184.	We are concerned that "expert judgement" will need to be validated, as this essentially goes against what expert judgement is, and is potentially very onerous. It is possible that different experts may have different judgements, and thus might not be able to be completely validated. We would also oppose any "validation" which would require the signing off by other experts as this would add to the time, cost and resource required to obtain any such judgements. We would suggest that "verify" rather than "validate" might be a more appropriate term to use.	Not agreed as CEIOPS has a much broader view on validation. Cf. comment no. 1162 and please see 5. 166 for possible approaches that may be followed in validation.
1191.	Investment & Life Assurance Group (ILAG)	5.184.	The expert judgement admissibility requirement is too prescriptive and as currently worded difficult to achieve.	Noted
1192.	Legal & General Group	5.184.	We think this is not appropriately worded as by definition expert judgement is an art not a science. It is of course appropriate that the judgements is made within the context of available data and	Noted

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			<p>that it should be documented including the framework used and the conclusions reached although these will be on a balance of considerations rather than an absolute. It will also be within the materiality of the output and the 1:200 world.</p> <p>We would therefore replace the wording with :</p> <p>Expert judgement shall be used by a firm where there is poor or non existent data. Its use will be made clear to the regulator who can use their judgement and data available to them across the market to inform its appropriateness. The judgement shall be documented and this will include the framework of the decision to use an expert judgement, the data considered, the reasons for the decision and a sensitivity test of its implications.</p>	Please see reply to comment no. 1177.
1193.	Link4 Towarzystw o Ubezpieczeń SA	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p> <p>c) Can expert judgement have a known error rate?</p>	Please see reply to comment no. 1175.
1194.	Llody's	5.184.	<p>The requirement that "expert judgment must have a known or potential error rate..." needs clarification, as does the requirement that "expert judgment is only admissible if it was derived using a scientific method". What is a "scientific method" in this context? How can judgment have a known error rate?</p> <p>In the absence of a full definition, these requirements seem impossibly demanding. The fact is that expert judgment is required to reflect inevitable and unavoidable deficiencies in the historical data as a basis for forecasting future events. The measures have to be realistic regarding the expectations placed on expert judgment in this context.</p>	Please see reply to comment no. 1064.

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			The statement that "Expert judgement is admissible only if it was derived using a scientific method should be amended to "Expert judgement must be applied according to a clearly defined and documented process"	Not agreed Please note that para 5.184 has been revised (Please see reply to comment no. 1058).
1195.	PricewaterhouseCoopers LLP	5.184.	<p>A requirement for expert judgement to be subject to robust challenge has been recognised elsewhere. "Good practice does not exclude the use of expert opinion in internal models, but rather ensures that there is a proper process behind its usage" Actuarial Aspects of Internal Models for Solvency II, paper presented to the UK actuarial profession February 2009.</p> <p>Expert opinion is often used precisely where data is unreliable or, due to its heterogeneity, needs particularly careful interpretation. This is explicitly recognised in 5.255. It is therefore difficult to see that such expert judgement could always be "falsifiable, refutable and testable" given the lack of data through which to do this. A similar comment arises with error rate. If the judgement is essentially over the interpretation of the few, and often contradictory, data points for extreme or quite extreme events, then the expert choice of data that underpins a 1 in 200 year event is of necessity hardly capable of a "known or potential error rate".</p> <p>We believe the requirement for validation and documentation, added to by sensitivity analysis of the validation requirements, are a sound basis. The more exacting tests of 5.184 (a) and (c) should apply only where data exists to support such tests.</p>	<p>Noted</p> <p>Cf. also 5.160 and 5.162 besides 5.255.</p> <p>For the meaning of "falsifiability" and error rate please confer the reply to comment no. 1053.</p>

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1196.	RBS Insurance	5.184.	<p>We feel these requirements would constrain the use of expert judgement to the detriment of the quality of the internal model. There are qualitative elements to expert judgement for which an error rate would not be possible. The points made in point (a) seem out of place, and we feel make little sense within the context used here.</p> <p>We would recommend the use of the term "explainable" instead of "validated" in point (b).</p>	Please see reply to comments no. 1053, 1058 and 1162.
1197.	ROAM –	5.184.	<p>Empirical testing. ROAM understands the word "falsifiable" should be changed to "changeable".</p> <p>Error rate. CEIOPS says that expert judgment needs to have a known or potential error rate.</p> <p>ROAM thinks that expert judgement is a central ingredient of internal models, in particular for correlation and trend probabilities. ROAM believes that expertise should be justified rather than requiring individual judgement to be tested</p> <p>ROAM believes point c. has to be deleted.</p>	Please see reply to comment no. 1187.
1198.	RSA Insurance Group PLC	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p> <p>c) Can expert judgement have a known error rate?</p>	Please see reply to comment no. 1175.
1199.	RSA Insurance Ireland Ltd	5.184.	<p>There is a fair amount of latitude to what scientific may mean.</p> <p>a) Do falsifiable and testable not mean the same thing?</p>	Please see reply to comment no. 1175.

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			c) Can expert judgement have a known error rate?	
1200.	RSA - Sun Insurance Office Ltd.	5.184.	There is a fair amount of latitude to what scientific may mean. a) Do falsifiable and testable not mean the same thing? c) Can expert judgement have a known error rate?	Please see reply to comment no. 1175.
1201.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.184.	There is a fair amount of latitude to what scientific may mean. a) Do falsifiable and testable not mean the same thing? c) Can expert judgement have a known error rate?	Please see reply to comment no. 1175.
1202.	XL Capital Ltd	5.184.	It is sometimes necessary to use expert judgement when there is an absence of sufficient underlying data. We agree that the thought process for these judgements should be documented, however the use of scientific methods, empirical testing validation and error rates would be impossible in such cases. With the wording that is presently used it seems almost impossible to implement an expert judgement when underlying data is not available.	Please see reply to comments 1053, 1058 and 1162.
1203.	Association of British Insurers	5.185.	This paragraph seems to imply that expert judgement should be external and we would disagree with this. Although expert judgement should be subject to appropriate challenge, it should be possible to use internal expertise. Bullet points b) and d) We believe policies and principles are more relevant here than 'processes'. Bullet point c) Again, we would disagree with the use of the word 'validate' when	There is no such implication. Undertakings may rely on judgement by in-house experts. As a part of the data policy the processes for data quality checks and the use of expert judgement are to be described. Please see reply to comment no.

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			applied to expert judgment. We believe it is more relevant to be able to explain and document instead.	1162.
1204.	CEA, ECO-SLV-09-451	5.185.	<p>This paragraph seems to imply that expert judgement should be external and we would disagree with this postulation.</p> <p>Although expert judgement should be subject to appropriate challenge, it should be possible to use internal expertise.</p> <p>Bullet points b) and d)</p> <p>We believe policies and principles are more relevant here than ‘processes’.</p> <p>Bullet point c)</p> <p>Again, we would disagree with the use of the word ‘validate’ when applied to expert judgment. We believe it is more relevant to be able to explain and document instead.</p>	Please see reply to comment no. 1203.
1205.	CRO Forum	5.185.	<p>“The policy on data quality and data update shall, as a minimum, cover the following subject areas: ...</p> <p>c. The undertaking documents the methodology which is followed in order to validate the use of expert judgment in the event that data quality is poor.</p> <p>e. The undertaking sets standards regarding</p> <ul style="list-style-type: none">• the frequency of regular data updates; <p>f. The undertaking presents its plans for future work on the</p>	

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		<p>improvement of data quality and the data gathering process.”</p> <p>For our comments on point (c) refer to paragraph 5.184.</p> <p>(e) – The frequency of the regular data updates should be consistent with the frequency set under use test as discussed in paragraph 5.181 (above).</p> <p>(f) – Having read the advice it is our understanding that data quality will be a critical part of model validation so we fail to see how an internal model with underdeveloped data gathering process will be approved. In light of that it is not clear what future developments will be required if a sufficient data update process is in place. We propose that point f be removed.</p> <p>(b) and (d) – the detail required could be clarified but would interpret as “in sufficient detail to understand how complete, accurate and appropriate data is ensured”. “Expert judgement is admissible only if it was derived using a scientific method and meets the following three requirements; Empirical testing, Validation and documentation, Error rate.”</p> <p>While we appreciate the intention behind bringing discipline to the expert judgement aspect of the internal model we feel that the advice conflicts with the explanatory text presented in paragraphs 5.195 to 5.169.</p> <p>Paragraph 5.161 stated: “The use of expert judgement is actively encouraged by CEIOPS where there is a lack of data to quantify a known risk ... “. CEIOPS recognises that expert judgement is made in instances where the data quality is questionable however the advice proposes on validating the judgement using scientific methods which is in complete contrast.</p> <p>Similarly, we believe that the only way to demonstrate an error</p>	<p>Ad e) Possibly the undertaking deviates from this general rule and updates data on a more regular basis.</p> <p>Ad f) Agreed Text modified: Bullet point (f) is deleted.</p> <p>Ad b), d) Likely, there will be guidance on the level of detail in Level 3 implementing measures.</p> <p>Please see your comment no. 1182 and reply to comments no. 1053 and 1058.</p>

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			<p>rate for expert judgement is through use of reliable data and in presence of reliable data there would be no need for expert judgement.</p> <p>The same argument can be extrapolated for other properties of expert judgement proposed by CEIOPS, namely falsifiable, refutable and testable.</p> <p>We propose that the thought process and analysis performed to reach the judgement be clearly documented such that an independent reviewer with relevant expertise comes to a similar conclusion upon reviewing the documentation. This is consistent with what was described in paragraph 5.168.</p>	
1206.	EMB Consultancy LLP	5.185.	<p>The suggestions on data policy look sensible.</p> <p>Care should be take with e) because it may not be known at the outset when a re-run would be required (sensitivities to a parameter may only be approximately quantifiable)</p>	In fact, it is not known at the outset when a re-run would be required. Therefore, the general rule is that data updates imply the re-run of (parts) of the internal model.
1207.	European Union member firms of Deloitte Touche To	5.185.	<p>We suggest that 5.185 a) should be amended ("The undertaking specifies its own concept of data quality (...)"). There should be a common standard for data quality, including e.g. the following:</p> <ul style="list-style-type: none"> - standard reconciliations (triangles, technical accounts, various sources of accounting data), - standard for the quality of data used for derivation of model parameters, especially fitting probability distributions' parameters, - claims data organized in triangles with appropriate origin and development periods (paid and incurred), unfortunately still this is not a standard actuarial practice in EU; 	<p>Not agreed</p> <p>The prescription of minimum standards for the points is well beyond the scope of Level 2 Implementing Measures. Maybe some points will be picked up on Level 3.</p>

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			<ul style="list-style-type: none"> - allocation of data to business lines, in particular with respect to expenses; - standard for data used for derivation of economic assumptions, e.g. investment return. 	
1208.	German Insurance Association – Gesamtverb and der D	5.185.	<p>This paragraph seems to imply that expert judgement should be external and we would disagree with this postulation.</p> <p>Although expert judgement should be subject to appropriate challenge, it should be possible to use internal expertise.</p> <p>Bullet points b) and d)</p> <p>We believe policies and principles are more relevant here than 'processes'.</p> <p>Bullet point c)</p> <p>Again, we would disagree with the use of the word 'validate' when applied to expert judgment. We believe it is more relevant to be able to explain and document instead.</p>	Please see reply to comment no. 1204.
1209.	Groupe Consultatif	5.185.	We believe that the undertaking should determine economic capital and (at least parts of) the SCR.	<p>Exactly this is required in 5.182.</p> <p>However, there may be cases where undertakings are sure that the data update is immaterial and does not lead to a significant change in economic capital or SCR. Only in those cases a recalculation is not mandatory.</p>

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				This has been introduced in order to relive undertakings from unnecessary burden.
1210.	Legal & General Group	5.185.	Expert judgement can be either internal or external. This should be made clear in the first sentence. For (b) and (d) we think process should be replaced by principles. In (c) we would delete "validate" and replace with "justify and document".	Please see reply to comment no. 1203.
1211.	Llody's	5.185.	Point (a) states "The undertaking specifies its own concept of data quality and the actual implementation". Please could the meaning be clarified? Point (c) implies that expert judgment is only used when data quality is poor. In practice, expert judgment is always used and is, in fact, a necessary component of assessing data quality. A possible alternative is: "The undertaking documents the methodology which is followed in order to validate the application of expert judgment in assessing data quality and addressing any deficiencies so identified".	Please see reply to comment no. 1072.
1212.	Pearl Group Limited	5.185.	This paragraph seems to imply that expert judgement should be external and we would disagree with this postulation. Although expert judgement should be subject to appropriate challenge, it should be possible to use internal expertise. Bullet points b) and d) We believe policies and principles are more relevant here than 'processes'.	Please see reply to comment no. 1204.

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			<p>Bullet point c)</p> <p>Again, we would disagree with the use of the word 'validate' when applied to expert judgment. We believe it is more relevant to be able to explain and document instead.</p>		
1213.	RBS Insurance	5.185.	Again we would recommend use of the term "explain" instead of "validate" in point (c.)		Please see reply to comment no. 1203.
1214.	CEA, ECO-SLV-09-451	5.186.	The proportionality principle has to be applied here.		Please see reply to comment no. 1215.
1215.	German Insurance Association – Gesamtverb and der D	5.186.	Consistency cannot always be achieved with reasonable effort. The proportionality principle has to be applied here.		<p>Noted</p> <p>The approach proposed by CEIOPS in regard to data quality inherently allows for the principle of proportionality. However, consistency of data has to be ensured to such a level that there are no material negative implications for risk management at group level.</p>
1216.	Groupe Consultatif	5.191.	We would welcome a definition of "good risks" and "bad risks".		<p>Not agreed</p> <p>Making use of the ability of the internal model to rank risks, it is the undertaking that distinguishes "good risks" from "bad risks". However, such a division is</p>

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				largely undertaking-specific, taking into account many additional considerations by the undertaking.
1217.	Institut des actuaires	5.192.	Indeed, it is the way of managing risks that drives the risk ranking. However the amount of probable economic loss or the amount of capital charge is an essential criterion to evaluate the importance of risk. The more the risk exposure is important, the more capital charge providing cover against this risk is high. It also contributes to risk management.	Noted
1218.			Confidential comment deleted.	
1219.	CRO Forum	5.196.	We welcome CEIOPS principle based approach to risk ranking, in line with the directive.	Noted
1220.	CEA, ECO-SLV-09-451	5.201.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. Nevertheless, questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. We see the danger that the scope of the internal model is expanded to business questions.	Please see reply to comment no.1233.
1221.	German Insurance Association – Gesamtverb and der D	5.201.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. Although other questions may also be addressed with the internal model, this is the main purpose. Questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. We see the danger that the scope of the internal model is expanded to business questions.	Please see reply to comment no.1233.
1222.	Munich RE	5.201.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. This is	Please see reply to comment no.1233.

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			the main aspect. Other questions may also be addressed with the internal model. Nevertheless, questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. We see the danger that the scope of the internal model is expanded to business questions.	
1223.	CEA, ECO-SLV-09-451	5.206.	It is somewhat unclear what indicators Ceiops envisions here.	Please see reply to comment no.1225.
1224.	German Insurance Association – Gesamtverb and der D	5.206.	It is somewhat unclear what indicators CEIOPS envisions here.	Please see reply to comment no.1225.
1225.	Groupe Consultatif	5.206.	It is somewhat unclear what indicators CEIOPS envisions with the “minimum standard for the risk indicators”. More guidance would be useful.	Agreed Minor change to wording: “However, CEIOPS recommends a minimum standard for the risk indicators to be specified. This could be realized as described in the following: ...”.
1226.	Munich RE	5.206.	It is somewhat unclear what indicators CEIOPS envisions here.	Please see reply to comment no.1225.
1227.	CEA, ECO-SLV-09-451	5.207.	We take this requirement to be somewhat in contradiction to para 5.203.	Not agreed Even a simple methodology can give a conclusion about the level of policyholder protection.

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1228.	German Insurance Association – Gesamtverb and der D	5.207.	We take this requirement to be somewhat in contradiction to para 5.203.		Please see reply to comment no.1227.
1229.	Munich RE	5.207.	We take this requirement to be somewhat in contradiction to section 5.203.		Please see reply to comment no.1227.
1230.	CEA, ECO-SLV-09-451	5.217.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. Nevertheless, questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. We see the danger that the scope of the internal model is expanded to business questions.		Please see reply to comment no.1233.
1231.	CRO Forum	5.217.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. This is its main aspect. Other questions may also be addressed with the internal model. Nevertheless, questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. Reputational risk addresses future new business. We see the danger that the scope of the internal model is expanded to business strategies.		Please see reply to comment no.1233.
1232.	German Insurance Association – Gesamtverb	5.217.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. Although other questions may also be addressed with the internal model, this is the main purpose. Questions regarding future new business and thus the strategy are usually outside the scope of		Please see reply to comment no.1233.

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	and der D		solvency assessment. We see the danger that the scope of the internal model is expanded to business questions.	
1233.	Munich RE	5.217.	It needs to be recognized that the internal model under Pillar I is designed to provide an SCR over the one-year time-horizon. This is its main aspect. Other questions may also be addressed with the internal model. Nevertheless, questions regarding future new business and thus the strategy are usually outside the scope of solvency assessment. Reputational risk usually addresses future new business. We see the danger that the scope of the internal model is expanded to business questions.	Paragraph 5.217 is consistent with the advice set out in CP 60 on Assessment of Group Solvency (cf. CP 60 3.223) and should follow any changes made there.
1234.	CEA, ECO-SLV-09-451	5.219.	(Ability to rank risk) The general purpose of risk ranking (outside of the use test context) and its special mentioning in the level 2 text is still unclear. Specify the purpose of risk ranking and give examples.	Noted The main purpose of risk-ranking is within the Use Test. CEIOPS considers the current description of risk-ranking as sufficient.
1235.	CRO Forum	5.219.	"On the basis of the criteria given (coverage, resolution, congruence, consistency) the undertaking shall provide evidence that the ability of the internal model to rank risk is sufficient to ensure that it is widely used in and plays an important role in the system of governance, in particular the risk management system, decision-making processes and capital allocation as described in the Use test." A clearer definition of risk ranking across risk categories would be helpful, linked to previous paragraph.	Please see reply to comment no.1234.

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1236.	EMB Consultancy LLP	5.219.	<p>Being able to rank risks is important for the business use of the internal model as an aid to decision making. So we agree in principle that ranking of risks should be covered in the advice.</p> <p>However the approach taken is quite abstract and we feel that undertakings would benefit from a simplification of this section or a clarification through examples.</p>	Please see reply to comment no.1234.	
1237.	FFSA	5.219.	<p>CEIOPS says the the undertaking shall provide evidence that the ability of the internal model to rank risk is sufficient to ensure that it is widely used.</p> <p>FFSA thinks that requirements of risk-ranking (beyond the use test) are unnecessary.</p>	Please see reply to comment no.1234.	
1238.	German Insurance Association – Gesamtverb and der D	5.219.	<p>(Ability to rank risk)</p> <p>The general purpose of risk ranking (outside of the use test context) and its special mentioning in the level 2 text is still unclear.</p> <p>Specify the purpose of risk ranking and give examples.</p>	Please see reply to comment no. 1234.	
1239.	ROAM –	5.219.	<p>CEIOPS says the undertaking shall provide evidence that the ability of the internal model to rank risk is sufficient to ensure that it is widely used.</p> <p>ROAM thinks that requirements of risk-ranking (beyond the use test) are unnecessary.</p>	Please see reply to comment no.1237.	

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1240.	XL Capital Ltd	5.219.	It would be useful to expand upon or provide an example of how it is envisioned that an “undertaking shall provide evidence that the ability of the internal model to rank risk is sufficient to ensure that it is widely used...”	Please see reply to comment no.1237.
1241.	Association of British Insurers	5.220.	<p>We do not agree risks of a similar nature should be ranked equally. Where businesses are different, risks will be ranked differently. What is most important here is the process rather the outcome.</p> <p>Therefore, we believe the fourth bullet does not reflect reality. For example in a group, there may be two firms one conventional life business and one a unit linked business. Operational risk applies to both but for the conventional business it represents say 7.5% of the total capital but for the unit linked firm it would be as much as 90% (or even 100%. In this context whilst both will treat it seriously it is more important for the unit linked firm.</p> <p>For the 4th bullet we propose:</p> <p>Consistency – The overall approach to a given risk category (market, credit etc) should be consistent across the group taking into account the appropriateness, and proportionality and materiality of the risk for different parts of a group.</p>	<p>Not agreed</p> <p>The example is misleading. Here, operational risk in conventional life business is ranked lower than operational risk in unit linked business. This is a result of the fact that the risks – despite both being operational risks - obviously differ in nature (at least in the sense of 5.220).</p> <p>Please note that this is not only a group issue.</p>
1242.	CEA, ECO-SLV-09-451	5.220.	<p>We do not agree risks of a similar nature should be ranked equally. Where businesses are different, risks will be ranked differently. What is most important here is the process rather the outcome.</p>	Please see reply to comment no.1241.
1243.	CRO Forum	5.220.	<p>“The overall risk ranking is in line with capital allocation”</p> <p>Risk ranking relates to the measurement of risk not capital allocation, as the latter is a management/strategic decision not a</p>	<p>Agreed</p> <p>The requirement of consistency between risk-ranking and capital</p>

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			<p>feature of internal model.</p> <p>We welcome CEIOPS principles based approach to risk ranking however it's unclear how the risk ranking will be treated at group level. The section on model coverage makes a reference to undertakings having a risk-ranking infrastructure in place but the risks material at business unit level may not be material at group level. Moreover, there may be additional risks at group level that some of the business units are not exposed to.</p> <p>This is likely to result in multiple risk rankings and can potentially result in conflicts when performing use test.</p> <p>Similar concept can be extrapolated to risk categorization.</p>	<p>allocation might indeed be too strong. Therefore, the Text is modified as follows:</p> <p>"The overall risk-ranking should be reconciled with the capital allocation."</p> <p>The same four criteria listed in 5.220 are also to be applied at group level.</p> <p>In case of multiple risk-rankings the undertaking shall make transparent and justify which risk-ranking is used for which decision.</p>
1244.	German Insurance Association – Gesamtverb and der D	5.220.	<p>We do not agree risks of a similar nature should be ranked equally.</p> <p>Where businesses are different, risks will be ranked differently.</p> <p>What is most important here is the process rather the outcome.</p>	<p>Not agreed</p> <p>When businesses differ, then in general, the risks inherent to those businesses will differ too.</p> <p>Please see also reply to comment no.1241.</p>
1245.	Legal & General Group	5.220.	<p>The fourth bullet does not reflect reality. For example in a group, there may be two firms one conventional life business and one a unit linked business. Operational risk applies to both but for the conventional business it represents say 7.5% of the total capital but for the unit linked firm say 90%(or even 100%. In this context whilst both will treat it seriously it is more important for the unit linked firm.</p>	<p>Please see reply to comment no.1241.</p>

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			For the 4th bullet we propose: Consistency – The overall approach to a given risk category (market, credit etc) should be consistent across the group taking into account the appropriateness, and proportionality and materiality of the risk for different parts of a group.	
1246.	Llody's	5.220.	"Consistency" – we believe that there are cases when the capital allocation can differ from risk ranking. Therefore getting consistency is not possible. For example the risk appetite for events such as reputational damage might be very low even when the capital impact is small.	Please see reply to comment no.1243.
1247.	Munich RE	5.220.	Capital allocation can be done in various ways and be driven by aspects outside of the internal model framework; therefore the principle based approach is very important in this aspect	Noted
1248.	Pearl Group Limited	5.220.	We do not agree risks of a similar nature should be ranked equally. Where businesses are different, risks will be ranked differently. What is most important here is the process rather the outcome.	Please see reply to comment no.1241.
1249.	Association of British Insurers	5.221.	The wording here might have unintended consequences. Requiring that the internal model covers all 'material, quantifiable risks' could oblige firms to limit themselves to partial modelling. We propose replacing "all" with "the" and would add to the end of the sentence "to enable it to assess its capital to the 1:200 level."	Not agreed CEIOPS is convinced that all material risks within the model scope must be covered. If this is not provided, the undertaking will not be able to calculate meaningful economic capital figures. In this context it has to be noted that undertakings shall assess materiality by means of risk indicators that correspond to different levels of confidence

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				(Please see 5.222). To refer only to the "1:200 level" is not sufficient. Apart from that, CEIOPS expects that partial internal modelling will be more rule than exception.
1250.	CEA, ECO-SLV-09-451	5.221.	The wording here might have unintended consequences. Requiring that the internal model covers all 'material, quantifiable risks' could oblige firms to limit themselves to partial modelling.	Please see reply to comment no.1249.
1251.	CRO Forum	5.221.	"The undertaking shall demonstrate that the internal model covers all material, quantifiable risks within its scope by using a set of qualitative and quantitative risk indicators." Not all risks are quantifiable and the wording as it stands might have an unintended consequence, requiring internal model to cover only the quantifiable risks and limiting undertakings to partial internal models. It is also unclear from this paragraph how risks outside of internal model (in the case of partial internal models and ORSA) are expected to be covered.	Please see reply to comment no.1249. All material risks are covered in the internal model, taking account of its scope. Other risks are covered by the Standard Formula.
1252.	Legal & General Group	5.221.	"all risks" is not a sensible definition. We propose replacing "all" with "the" and would add to the end of the sentence "to enable it to assess its capital to the 1:200 level."	Please see reply to comment no.1249.
1253.	Llody's	5.221.	We would welcome clarification regarding 'quantitative risk indicator'	Not agreed

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			<p>The paragraph contains a non sequitur. Using a set of risk indicators cannot demonstrate that “the internal model covers all material, quantifiable risks within its scope”. Is this intended to state that risk indicators should be used for all material, quantifiable risks within the scope of the internal model?</p>	<p>For clarification regarding “quantitative risk indicators” please see sections 5.207, 5.208, 5.209.</p> <p>First the undertaking identifies the risks it faces and then it decides whether these risks are quantifiable and whether they can be covered by the internal model. In assessing the model coverage it relies on risk indicators that reveal the materiality of the risks concerned.</p>
1254.	Pearl Group Limited	5.221.	The wording here might have unintended consequences. Requiring that the internal model covers all ‘material, quantifiable risks’ could oblige firms to limit themselves to partial modelling.	Please see reply to comment no.1249.
1255.	XL Capital Ltd	5.221.	The wording of para 5.221 seems very broad. We would welcome additional guidance on what quantitative and qualitative risk indicators can be put in place to ensure adequate risk coverage by the internal models	<p>Noted</p> <p>Please see reply to comment no.1249.</p>
1256.	CRO Forum	5.222.	<p>“As a minimum, the undertaking shall use quantitative risk indicators which correspond to the level of policyholder protection as set out in Article 101 ...”</p> <p>As with preceding paragraph, this paragraph puts an emphasis on risks that can be quantified, ignoring non-quantifiable risks.</p>	<p>Not agreed</p> <p>CEIOPS expects undertakings to define the scope of their internal model in a manner such that all risks within the scope are quantifiable or made quantifiable.</p>

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1257.	Llody's	5.222.	This paragraph requires clarification. It seems to be saying that the undertaking should use the risk indicators that it uses. What is actually meant?	Noted The paragraphs 5.207 and 5.208 say that the undertaking should use quantitative risk indicators which correspond to the level of policyholder protection and other quantitative risk indicators used in its risk management.
1258.	XL Capital Ltd	5.222.	Expanding on or providing an example of the implementation of quantitative risk indicators would be useful. From this sentence it is not clear what form this should take.	Please see reply to comment no.1225.
1259.	CEA, ECO-SLV-09-451	5.223.	A priori, the amount of risks not explainable by the profit and loss attribution is random. Retrospectively, the amount changes over time dependent on the realization of particular risks.	Noted This example for a quantitative risk indicator is to be used only in addition to other quantitative risk indicators that correspond to 5.222 and it must be used continuously.
1260.	CRO Forum	5.223.	---	---
1261.	EMB Consultancy LLP	5.223.	The quantitative risk indicators could include allocated economic capital, which would reinforce the link to the use test.	Agreed Text modified accordingly: " the capital allocated to the risks under consideration; and"
1262.	German Insurance Association	5.223.	A priori, the amount of risks not explainable by the profit and loss attribution is random. Retrospectively, the amount changes over time dependent on the realization of particular risks.	Please see reply to comment no.1259.

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1263.	AAS BALTA	5.228.	<p>5.228 - 5.250 read very much as if a “silo” approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	<p>Noted</p> <p>It was not intended by CEIOPS to give this impression.</p> <p>CEIOPS would like to make clear that the “silo approach” is not preferred to the “integrated approach” or vice versa.</p> <p>In order to reflect this view, some explaining words have been included in paragraph 5.229:</p> <p>“During the aggregation process, the internal model will typically realise diversification effects. In this way, the aggregation mechanism of the internal model improves the reflection of the risk profile of the undertaking by the internal model and is vital for its usability for risk management. Basically, there are two different approaches to aggregation. As many internal models are composed of a multitude of risk modules and sub-modules, internal models often implement an aggregation mechanism which</p>

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		<p>approach to establish what advice should be given on diversification recognition and measurement when a holistic model has been produced.</p>	<p>is executed in several steps. Especially for such modular models with their multi-step aggregation mechanism, a natural link exists between the diversification benefits realised in the internal model and the structure and practice of risk management reflected in the Use test (Please see Article 118). In integrated models, however, aggregation usually takes place in a single step. Then, the link mentioned above is a priori not that evident. At this point, it should be noted that CEIOPS does not prefer one mechanism to the other. According Article 119 (4), undertakings are in principle not restricted in their choice of an appropriate aggregation mechanism as "no particular method for the calculation of the probability distribution forecast shall be prescribed" (cf. also the introduction in chapter 5.1). Therefore, the requirements to aggregation and the recognition of diversification effects set out in this chapter hold irrespective of</p>

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				the aggregation mechanism being a single-step or a multi-step approach."
1264.	AB Lietuvos draudimas	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1265.	CODAN Forsikring A/S (10529638), Denmark	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1266.	CODAN Forsikring (Branch Norway) (991 502 491)	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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			approach to establish what advice should be given on diversification recognition and measurement when a holistic model has been produced.	
1267.	Link4 Towarzystw o Ubezpieczeń SA	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1268.	RSA Insurance Group PLC	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1269.	RSA Insurance Ireland Ltd	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1270.	RSA - Sun Insurance Office Ltd.	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1271.	SWEDEN: Trygg-Hansa Försäkrings AB (516401- 7799)	5.228.	<p>5.228 - 5.250 read very much as if a "silo" approach to modelling different risk types has been taken. This may not be the case.</p> <p>1) There is a large disadvantage to the silo approach and that is how you aggregate the risks – especially as the diversification effect is not constant over the distributions. So you have a measure of diversification but no way of knowing if it is appropriate.</p> <p>2) The alternative is to model all risks together from the risk drivers. This removes much of the disadvantage associated with method 1 above. The disadvantage of this method is that it is then much more difficult to enumerate exactly what diversification has taken place.</p> <p>The problem with this whole section is that it reads as if it assumes the first approach has been taken and the diversification effects are thus between the separate models. Thus if you have used the second approach it is difficult to interpret what the comments actually mean.</p> <p>In our view the second approach produces the better overall model.</p> <p>CEIOPS should consult with firms who are using the second</p>	Please see reply to comment no. 1263.

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1272.	AAS BALTA	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.
1273.	AB Lietuvos draudimas	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.
1274.	CODAN Forsikring A/S (10529638), Denmark	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.
1275.	CODAN Forsikring (Branch Norway) (991 502 491)	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.
1276.	Link4 Towarzystwo Ubezpieczeń SA	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.
1277.	RSA Insurance Group PLC	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.

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1278.	RSA Insurance Ireland Ltd	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.	
1279.	RSA - Sun Insurance Office Ltd.	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.	
1280.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.229.	Diversification effects are realised well before aggregation of different risks. This sentence appears to relate only to a "silo" approach to modelling the different risk types.	Please see reply to comment no. 1263.	
1281.	CEA, ECO-SLV-09-451	5.230.	---	---	
1282.	German Insurance Association – Gesamtverband der D	5.230.	In our view, the requirements for the identification, valuation and – if material and quantifiable – quantification of risks also hold for groups. We do not see additional group specific risks in the scope of pillar I. Thus, no reduction of diversification effects has to be taken into account.	Agreed Not agreed. Please cf. CP 60 (Assessment of Group Solvency) section 3.5.2 on group-specific risks. Please see also 5.216, 5.217 and 5.227) of this paper.	
1283.	CEA, ECO-SLV-09-451	5.231.	Restricted transferability is relevant for the valuation of own funds, whereas diversification effects are part of the risk measurement. (See our comments to CP60).	Agreed However, restricted transferability of capital should not be taken into account in the internal model and be reflected in capital	

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				assessment. For the sake of clarity, the wording of 5.231 has been revised (cp. reply to comment no. 1285).
1284.	German Insurance Association – Gesamtverb and der D	5.231.	Restricted transferability is relevant for the valuation of own funds, whereas diversification effects are part of the risk measurement. (See our comments to CP60)	Please see reply to comment no. 1283.
1285.	Groupe Consultatif	5.231.	We do not agree with the statement that restrictions in fungibility and transferability affect the diversification. (We note also that the statement in paragraph 5,229 appears to conflict with the paragraph in 6.39) It can only affect the use of diversification effects.	<p>Agreed</p> <p>Text modified accordingly:</p> <p>“Restrictions in the availability of capital are dealt with in Chapter 6 (Calibration standards) and the CEIOPS Consultation Paper 60.”</p> <p>Please note that the internal model including the risk aggregation yielding the diversification effect is to reflect the business model of the undertaking (Use Test principle 2: 3.70 and 3.105).</p> <p>As fungibility restrictions impose limits on possible management actions, they are relevant to the business model and therefore it might be beneficial to implement</p>

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				them in the internal model. CEIOPS is not aware of a conflict concerning the mentioned paragraphs.
1286.	Llody's	5.232.	Is "expert knowledge" a synonym of "expert judgement"? Please clarify. Regardless, the comments in respect of 5.126 also apply here, but even more strongly; to base dependencies only on observed data is extremely dangerous and unreliable. Applying expert judgment is a necessity and does not necessarily give rise to a need for "extra efforts" in validation. CEIOPS might better observe that not applying expert judgment gives rise to a need for extra efforts in validation.	Agreed The term "expert knowledge" is replaced by "expert judgement".
1287.			Confidential comment deleted.	
1288.	CEA, ECO-SLV-09-451	5.233.	Broadly speaking VaR is not subadditive in case of extremely heavy-tailed distributions (Pareto-like). However, we do not think that these situations arise "often" in the case of insurance technical risks but only occasionally.	Not agreed Examples of non subadditive VaR due to heavy-tailed distributions and nonlinear dependencies in insurance internal models have been reported by the industry. Therefore, the point made in 5.233 is valid and of relevance.
1289.	German Insurance Association – Gesamtverband der D	5.233.	Broadly speaking VaR is not subadditive in case of extremely heavy-tailed distributions (Pareto-like). However, we do not think that these situations arise "often" in the case of insurance technical risks but only occasionally.	Please see reply to comment no. 1288.
1290.	Llody's	5.233.	We trust that CEIOPS also recognises that the converse of their	Noted

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			example is also true, i.e. square-root of sum-of-squares may be higher than the sum of the two VaR measures. Generally, the VaR risk measure can behave oddly when there is diversification, because it is not a coherent risk measure. Aggregation methods should be sensible, but it is hard to give hard and fast rules.	CEIOPS welcomes this interesting comment. Indeed, the example illustrates the possible behaviour of the VaR, where square root and simple sum are no real bounds in risk aggregation.
1291.	Munich RE	5.233.	Broadly speaking VaR violates subadditivity in case of extremely heavy-tailed distributions (Pareto-like). We do not think that these situations arise "often" in the case of insurance technical risks but only occasionally.	Please see reply to comment no. 1288.
1292.	CEA, ECO-SLV-09-451	5.234.	It constitutes an extensive intervention if the supervisory authority requires recalculations based on different aggregation assumptions. Such an intervention should be an exemption and has to be well justified by the supervisor. The alternatives prescribed by the supervisor should be subject to the same requirements as the assumptions chosen by the undertaking.	Not agreed Aggregation is not only challenging to model, it also has a major impact on the outcome of the internal model. Therefore, supervisory authorities need to have the opportunity to impose deviating assumptions that are regarded to be better suited. Moreover, such a request to undertakings will be well-considered and justified by supervisory authorities.
1293.	CRO Forum	5.234.	CRO Forum regards supervisory authorities requirements to re-perform the calculations based on different aggregation assumptions. Such interventions should be on exemption basis and has to be well justified by the supervisor.	Please see reply to comment no. 1292
1294.	German	5.234.	It constitutes an extensive intervention if the supervisory authority	Please see reply to comment no.

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	Insurance Association – Gesamtverb and der D		requires recalculations based on different aggregation assumptions. Such an intervention should be an exemption and has to be well justified by the supervisor. The alternatives prescribed by the supervisor should be subject to the same requirements as the assumptions chosen by the undertaking.	1292
1295.	CEA, ECO-SLV-09-451	5.235.	It is not clear how possible deficiencies should be determined.	Requirements for the recognition of diversification effects are set out in paragraph 5.237 ff and deficiencies originate from non-compliance with these requirements. CEIOPS intends to further specify requirements regarding the recognition of diversification effects as Level 3 measures.
1296.	CRO Forum	5.235.	It is not clear how possible deficiencies are expected to be determined.	Please see reply to comment no. 1292
1297.	German Insurance Association – Gesamtverb and der D	5.235.	It is not clear how possible deficiencies should be determined.	Please see reply to comment no. 1292
1298.	Groupe Consultatif	5.235.	Simply adding up capital requirements ignores one of the main tools of insurance: diversification of risk.	Noted Simple sum aggregation was just one example of a methodology to be imposed, and in some cases

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					simple sum aggregation might be adequate.
1299.	Munich RE	5.235.	It is not clear how possible deficiencies are expected to be determined.		Please see reply to comment no. 1292
1300.	CEA, ECO-SLV-09-451	5.242.	We support that there are no prescriptive rules for the measurement of diversification effects.		Noted
1301.	CRO Forum	5.242.	We welcome CEIOPS refraining from prescribing rules regarding the adequacy of the system to measure diversification effect, in line with the directive.		Noted
1302.	German Insurance Association – Gesamtverb and der D	5.242.	We support that there are no prescriptive rules for the measurement of diversification effects.		Please see reply to comment no. 1300.
1303.	DIMA (Dublin International Insurance & Management	5.244.	Statistical methods in general are not adapted for tail dependencies due to the lack of historical and/or up to date data and therefore could not be claimed as “meaningful support”.		Please see reply to comment no. 1304.
1304.	Groupe Consultatif	5.244.	<p>Doing a statistical analysis of dependencies (diversification) is not always possible. Implicit validation of dependencies should be allowed as part of the evidence for diversification.</p> <p>Not all model assumptions that give rise to diversification will be key assumptions, for example, the correlation between equity returns and cash returns will not be important if a company has a</p>		<p>Not agreed</p> <p>The high standards for expert judgement in 5.244 are motivated by the fact that in many cases sufficient historical data is not available.</p>

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			minimal amount of equities in its investment portfolio. The final part of this paragraph should be amended to reflect materiality.	In CEIOPS' view there is no need to explicitly refer to the materiality principle.
1305.	Llody's	5.244.	Doing statistical analysis for dependencies (diversification) is not always possible. Implicit validation of dependencies should be allowed as part of the evidence for diversification. Not all model assumptions that give rise to diversification will be key assumptions, for example the correlation between equity returns and cash returns will not be important if a company has a minimal amount of equities in its investment portfolio. The final part of this paragraph should be amended to reflect materiality.	Please see reply to comment no. 1304.
1306.	Groupe Consultatif	5.249.	As with 5.244, materiality is not mentioned here. There may be immaterial correlation assumptions being made that would not warrant particular scrutiny by supervisory authorities.	Agreed However, in CEIOPS' view there is no need to explicitly refer to the materiality principle here. Please note that the paragraph under consideration exclusively refers to the aggregation of distributions with only key points.
1307.	Llody's	5.249.	There is no mention of materiality here. Some aggregation assumptions (e.g. bond/equity link when a company does not hold material equity exposures) are not important.	Please see reply to comment no. 1306.
1308.	Association of British Insurers	5.251.	CEIOPS seems to be using risk 'indicators', 'drivers' and 'categories' interchangeably throughout the paper. If there is a difference between these terms, it would be helpful to get clarification. If there is a difference, it will be important to use these terms consistently.	Not agreed 'Risk indicators' is not used at all in the context of diversification effect (5.228-5.256) while 'risk categories' and 'risk factors' are

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					used in clearly distinguishable way to signify types of risk for the former and measurable causes of risk for the latter.
1309.	CEA, ECO-SLV-09-451	5.251.	Ceiops seems to be using risk 'indicators', 'drivers' and 'categories' interchangeably throughout the paper. If there is a difference between these terms, it would be helpful to get clarification. If there is a difference, it will be important to use these terms consistently.		Please see reply to comment no. 1308.
1310.	CRO Forum	5.251.	"... undertaking shall demonstrate its own risk categories while allowing for" The consultation paper seems to be using risk 'indicators', 'drivers' and 'categories' interchangeably throughout the paper. If there is a difference between these terms, it would be helpful to get clarification.		Please see reply to comment no. 1308.
1311.	German Insurance Association – Gesamtverb and der D	5.251.	CEIOPS seems to be using risk 'indicators', 'drivers' and 'categories' interchangeably throughout the paper. If there is a difference between these terms, it would be helpful to get clarification. If there is a difference, it will be important to use these terms consistently.		Please see reply to comment no. 1308.
1312.	Pearl Group Limited	5.251.	CEIOPS seems to be using risk 'indicators', 'drivers' and 'categories' interchangeably throughout the paper. If there is a difference between these terms, it would be helpful to get clarification. If there is a difference, it will be important to use these terms consistently.		Please see reply to comment no. 1308.

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1313.	AAS BALTA	5.252.	Replace the word “fully” with “appropriately” Last bullet should be removed or ended with “where appropriate”	Agreed The word “fully” is deleted from the third bullet point. Not agreed
1314.	AB Lietuvos draudimas	5.252.	Replace the word “fully” with “appropriately” Last bullet should be removed or ended with “where appropriate”	See reply to comment no. 1313.
1315.	Association of British Insurers	5.252.	Bullet point 3 ‘Fully justifies’: this seems to us to be too strong. ‘Appropriately’ justifies might be more adequate. Last bullet point We would point out that diversification effects are not always identified at business unit level so this requirement might be irrelevant in certain cases.	On ‘fully justifies’ please see reply to comment no. 1316. On the link to the Use Test (last bullet point): Not agreed. Diversification effects whether measured by explicit or implicit aggregation are part of the internal model and the business model and can not be exempt from the use test. (Please see also comments 1263 and 1272 and the change proposed for 5.229)
1316.	CEA, ECO-SLV-09-451	5.252.	Third bullet point: ‘Fully justifies’: this seems to us to be too strong. ‘Appropriately’ justifies might be more adequate.	Please see reply to comment no. 1313.
1317.	CODAN Forsikring A/S	5.252.	Replace the word “fully” with “appropriately” Last bullet should be removed or ended with “where appropriate”	Please see reply to comment no. 1313

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	(10529638), Denmark				
1318.	CODAN Forsikring (Branch Norway) (991 502 491)	5.252.	Replace the word "fully" with "appropriately" Last bullet should be removed or ended with "where appropriate"	Please see reply to comment no. 1313	
1319.	CRO Forum	5.252.	<p>"Supervisory authorities shall be satisfied that the system for measuring and recognising diversification effects is adequate if, as a minimum, the undertaking: ... [Bullet 3] fully justify the assumptions ... [Bullet 5] has in place a regular cycle of testing model robustness with regards to diversification effect, ..."</p> <p>In bullet 3, we feel that fully justify is very strong and can lead to onerous requirements in justifying the underlying assumptions for modelling of dependencies. We propose that the word "fully" be replaced by "appropriately".</p> <p>Bullet 5, suggests a "regular cycle" of testing model robustness with regards to diversification effects however it is unclear what is meant by regular. We propose that the model robustness with respect to diversification effect be tested as part of the full model rerun.</p>	<p>On 'fully justifies' please see reply to comment no. 1316.</p> <p>On the regular cycle of testing: Agreed</p> <p>Text modified: "... tests the robustness of this system on a regular basis, e.g. as part of the model validation process."</p>	
1320.	EMB Consultancy LLP	5.252.	<p>The criteria set out are on the most part reasonable, and we welcome the emphasis on stress testing and understanding the implications of dependency assumptions. Requiring that assumptions are "fully justified" is onerous.</p> <p>This is a difficult area but often one that has a significant impact on</p>	<p>Noted</p> <p>Please cf. reply to comments no. 1316 and 1319.</p>	

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			<p>results, and often one where careful application of expert judgement is required.</p> <p>It should be noted that there is no single view of diversification effects: for example the marginal impact on economic capital of a proposed new risk will likely be quite different to the capital that would be allocated to that risk if it were already part of the risk profile.</p>	
1321.	German Insurance Association – Gesamtverband der D	5.252.	Third bullet point: 'Fully justifies': this seems to us to be too strong. 'Appropriately' justifies might be more adequate.	Please see reply to comment no. 1316.
1322.	Link4 Towarzystwo Ubezpieczeń SA	5.252.	<p>Replace the word "fully" with "appropriately"</p> <p>Last bullet should be removed or ended with "where appropriate"</p>	Please see reply to comment no. 1313.
1323.	Llody's	5.252.	<p>There are cases when diversification may not be included within the capital allocation process due to practical issues.</p> <p>In addition, "Supervisory authorities shall be satisfied that the system for measuring and recognising diversification effects is adequate if, as a minimum, the undertaking:</p> <ul style="list-style-type: none"> • fully justifies the assumptions underlying the modelling of dependencies;" is difficult to achieve given the lack of data and the level of judgement involved in deriving correlation assumptions. We suggest replacing "fully" with "adequately". 	<p>Noted</p> <p>Please see reply to comment no. 1315 and 1316.</p>
1324.	Pearl Group	5.252.	Bullet point 3	Please see reply to comment no.

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	Limited		'Fully justifies': this seems to us to be too strong. 'Appropriately' justifies might be more adequate.	1316.
1325.	PricewaterhouseCoopers LLP	5.252.	For diversification this paragraph requires the undertaking "fully justifies the assumptions underlying the modelling of dependencies". Given the requirements of 5.174 and 5.184 is that wording implying further justification is required than that provided by the two paragraphs cited?	The requirements of 5.184 refer to the use of expert judgement as complement to or substitute for data where it has a material impact. This may be the case in the modelling of dependencies.
1326.	RBS Insurance	5.252.	We would recommend replacing the word "fully" with "appropriately". And removing the word "actively" from the last bullet point, or adding "where appropriate" at the end.	Please see reply to comment no. 1315 and 1316.
1327.	RSA Insurance Group PLC	5.252.	Replace the word "fully" with "appropriately" Last bullet should be removed or ended with "where appropriate"	Please see reply to comment no. 1313.
1328.	RSA Insurance Ireland Ltd	5.252.	Replace the word "fully" with "appropriately" Last bullet should be removed or ended with "where appropriate"	Please see reply to comment no. 1313.
1329.	RSA - Sun Insurance Office Ltd.	5.252.	Replace the word "fully" with "appropriately" Last bullet should be removed or ended with "where appropriate"	Please see reply to comment no. 1313.
1330.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	5.252.	Replace the word "fully" with "appropriately" Last bullet should be removed or ended with "where appropriate"	Please see reply to comment no. 1313.
1331.	Association of British	5.253.	We agree it should be up to the firm to decide how it should aggregate its risks.	Agreed Please see reply to comment no.

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	Insurers		It is unclear to us why risks that arise as a result of group activity should be accounted for through a reduction in diversification benefits rather than an increase in capital requirements. We would expect that risk at a group level would, where appropriate, result in extra capital and aggregation would only have the effect of reducing capital.	1283 and 1285.	
1332.	CEA, ECO-SLV-09-451	5.253.	In our view, the requirements for the identification, valuation and – if material and quantifiable – quantification of risks also hold for groups. We do not see additional group specific risks in the scope of pillar I. Thus, no reduction of diversification effects is to be taken into account.	Please see reply to comment no. 1282.	
1333.	CRO Forum	5.253.	In our view, the requirements for the identification, valuation and – if material and quantifiable – quantification of risks also hold for groups. We do not see additional group specific risks in the scope of pillar I. Thus, no reduction of diversification effects has to be taken into account apart from restrictions of the fungibility of capital.	Please see reply to comment no. 1332	
1334.	German Insurance Association – Gesamtverb and der D	5.253.	In our view, the requirements for the identification, valuation and – if material and quantifiable – quantification of risks also hold for groups. We do not see additional group specific risks in the scope of pillar I. Thus, no reduction of diversification effects is to be taken into account.	Please see reply to comment no. 1332.	
1335.	Legal & General Group	5.253.	We would expect that risk at a group level would, where appropriate, result in extra capital and aggregation would only have the effect of reducing capital.	Please see reply to comment no. 1332.	
1336.	Munich RE	5.253.	We do not see additional group specific risks in the scope of pillar I.	Please see reply to comment no.	

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			Thus, no reduction of diversification effects has to be taken into account apart from restrictions of the fungibility of capital.	1332.
1337.	Pearl Group Limited	5.253.	<p>We agree it should be up to the firm to decide how it should aggregate its risks.</p> <p>It is unclear to us why risks that arise as a result of group activity should be accounted for through a reduction in diversification benefits rather than an increase in capital requirements.</p>	Please see reply to comment no. 1331.
1338.	Association of British Insurers	5.254.	<p>We are concerned that requirements relating to aggregation of risk within internal models could be impossible to meet in practice and so discourage the use of internal models in the management of the business. The onerous requirements relating to the aggregation of risks where only some key points of the distribution are known could lead undertakings to develop fully stochastic models. This could introduce unfounded richness into the model which 5.53 suggests should be avoided. It could also result in disproportionate costs. This seems like a "Catch 22" situation. Furthermore, These requirements might lead to every undertaking implementing the same aggregation approach and therefore possibly having the same result in systemic risk.</p> <p>We propose replacing the words with:</p> <p>The establishment of distribution and modelling assumptions can be difficult especially where data is sparse. This can lead to a greater uncertainty over the accuracy of the outcomes.</p> <p>Expert judgement has been used for the standard formula on a pragmatic basis and this may also be necessary for firms when building their internal model. CEIOPS should consider carefully how reasonable it is to ask for higher standards from firms.</p>	<p>CEIOPS do not believe that requirements relating to aggregation of risk within internal models are impossible to meet in practice, in particular because they are principles-based and provide the undertaking with much leeway. The same is true for the aggregation of distributions with only key points known. The reasons which restrict the undertaking to model distributions with only key points will not be affected and therefore it seems implausible that solely due to regulatory requirements a fully stochastic model will be developed as a substitute for a key point distribution.</p> <p>Not agreed</p>

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1339.	CEA, ECO-SLV-09-451	5.254.	<p>We are concerned that requirements relating to aggregation of risk within internal models could be impossible to meet in practice and so discourage the use of internal models in the management of the business. The onerous requirements relating to the aggregation of risks where only some key points of the distribution are known could lead undertakings to develop fully stochastic models. This could introduce unfounded richness into the model which 5.53 suggests should be avoided. It could also result in disproportionate costs. This seems like a "Catch 22" situation. Furthermore, these requirements might lead to every undertaking implementing the same aggregation approach and therefore result in systemic risk.</p> <p>Expert judgement has been used for the standard formula on a pragmatic basis and this may also be necessary for firms when building their internal model. Ceiops should consider carefully how reasonable it is to ask for higher standards from firms.</p>	Please see reply to comment no. 1338.
1340.	EMB Consultancy LLP	5.254.	We agree with this statement and ideally undertakings should be able to demonstrate that they understand and challenge the theory, mechanism, limitations and assumptions underlying some of the "standard" techniques such as aggregation via a correlation matrix (which for example assumes a symmetric dependency).	Noted
1341.	FFSA	5.254.	CEIOPS indicates that "implementing an aggregation mechanism for an internal model undertakings face a number of challenges" (see 5.232) but does not give common practice concerning the modeling of diversification effects (see 5.242).	<p>Not agreed</p> <p>It is an internal model, which means modelling has to be done by the undertaking, not CEIOPS. Moreover, in 5.254 CEIOPS points out that a common practice has</p>

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			FFSA suggests a harmonized process and standard has to be given.	not established so far.
1342.	German Insurance Association – Gesamtverb and der D	5.254.	<p>We are concerned that requirements relating to aggregation of risk within internal models could be impossible to meet in practice and so discourage the use of internal models in the management of the business. The onerous requirements relating to the aggregation of risks where only some key points of the distribution are known could lead undertakings to develop fully stochastic models. This could introduce unfounded richness into the model which para 5.53 suggests should be avoided. It could also result in disproportionate costs. This seems like a “Catch 22” situation. Furthermore, these requirements might lead to every undertaking implementing the same aggregation approach and therefore result in systemic risk.</p> <p>Expert judgement has been used for the standard formula on a pragmatic basis and this may also be necessary for firms when building their internal model. CEIOPS should consider carefully how reasonable it is to ask for higher standards from firms.</p>	Please see reply to comment no. 1338.
1343.	Investment & Life Assurance Group (ILAG)	5.254.	We welcome the recognition that the aggregating of risks where only a few points of the distribution are known is challenging. More advice in this area would be welcomed.	Noted CEIOPS may develop further guidance as Level 3 measures..
1344.	Legal & General Group	5.254.	This section could be impossible to deliver and hence nullify any aggregation benefits. If this is the aim is should be stated and justified. We would challenge very strongly that aggregation	Please see reply to comment no. 1338.

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			<p>benefits don't exist and there is a body of work that would support our view. This would apply equally where the data may be sparse. If CEIOPS is trying to prevent "numbers being made up" then we have some sympathy.</p> <p>We propose replacing the words with;</p> <p>The establishment of distribution and modelling assumptions can be difficult especially where data is sparse. This can lead to a greater uncertainty over the accuracy of the outcomes.</p>	
1345.	Pearl Group Limited	5.254.	<p>We are concerned that requirements relating to aggregation of risk within internal models could be impossible to meet in practice and so discourage the use of internal models in the management of the business. The onerous requirements relating to the aggregation of risks where only some key points of the distribution are known could lead undertakings to develop fully stochastic models. This could introduce unfounded richness into the model which 5.53 suggests should be avoided. It could also result in disproportionate costs. This seems like a "Catch 22" situation. Furthermore, Tthese requirements might lead to every undertaking implementing the same aggregation approach and therefore possibly having the same result in systemic risk.</p> <p>Expert judgement has been used for the standard formula on a pragmatic basis and this may also be necessary for firms when building their internal model. CEIOPS should consider carefully how reasonable it is to ask for higher standards from firms.</p>	Please see reply to comment no. 1338.
1346.	Association of British Insurers	5.255.	<p>See comments under 5.254</p> <p>Delete and replace with:</p> <p>A Firm should document fully their assumptions and justifications for both the distributions and the aggregation approach. The</p>	<p>Not agreed</p> <p>Please see reply to comment 1338.</p>

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			regulator should pay close attention to these and also take into account its knowledge of common practices and assumptions used in the market.	
1347.	CEA, ECO-SLV-09-451	5.255.	<p>(Aggregation of distributions with only key points known)</p> <p>Undertakings should keep the freedom to determine their own aggregation mechanisms.</p> <p>The impact of regulators on the aggregation techniques should be limited. Undertakings need to be free in determining those themselves, providing the regulator with appropriate documentation.</p> <p>Limit impact of regulators on aggregation mechanisms.</p>	Please note that the onus is still on the undertaking to determine an adequate aggregation mechanism. No methodology is prescribed at the outset, in accordance to Article 119 (4) of the Level 1 Text.
1348.	CRO Forum	5.255.	<p>"The aggregation mechanism may require information or data which may not be available, because the underlying probability distributions are unknown, and could be based to a large extent on expert judgement ... Any assumptions and parameters for this aggregation mechanism shall be subject to the particular scrutiny of supervisory authorities, and the resulting model uncertainty shall be compensated with additional measures such as higher Validation standards ... The undertakings shall provide the supervisory authorities with a detailed description of the methodology used in these additional measures."</p> <p>This paragraph recognises instances of lack of data availability for aggregation mechanism and proposes that the aggregation can be based on expert judgement. However, the paragraph goes on to propose higher validation standards in such cases. We feel that</p>	<p>Not agreed</p> <p>The scrutiny of the supervisor is not meant to do the undertakings' job of validating with extra scrutiny where necessary.</p>

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			<p>validating expert judgement in cases where it is being used to address the lack of data availability can be very onerous.</p> <p>We propose that reference to “higher validation standards” will be deleted because we believe the additional scrutiny of the supervisory authority coupled with detailed description of the methodology, as described in the paragraph, should be sufficient to demonstrate and support the expert judgement.</p>	
1349.	EMB Consultancy LLP	5.255.	<p>As mentioned elsewhere, we feel the criteria set out for expert judgement are too stringent to be practical, and this particularly applies to this area.</p> <p>It will be interesting to see what level of justification CEIOPS provides for the final standard formula parameters, and how this compares with what is being asked of the undertakings.</p>	<p>Noted</p> <p>Please note that the paragraphs 5.183 and 5.184 have been revised.</p>
1350.	German Insurance Association – Gesamtverb and der D	5.255.	<p>(Aggregation of distributions with only key points known)</p> <p>Undertakings should keep the freedom to determine their own aggregation mechanisms.</p> <p>The impact of regulators on the aggregation techniques should be limited. Undertakings need to be free in determining those themselves, providing the regulator with appropriate documentation.</p> <p>Limit impact of regulators on aggregation mechanisms.</p>	<p>Please see reply to comment no. 1347.</p>
1351.	KPMG ELLP	5.255.	<p>While we think it is adequate to impose higher validation standards when aggregating distributions with only key points known, we recognize that there are obvious barriers to applying these</p>	<p>Agreed</p> <p>As this is an area of particular uncertainty, more resources</p>

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			standards given the scarcity of data. We believe that the (re)insurance undertaking has to clearly identify those assumptions and parameters in their model where expert judgement is particularly significant, which will include the diversification benefit discussed here. Governance requirements and external reporting requirements should be imposed to ensure management and the public fully understand the impact of such key judgemental decisions. Focus in the validation should be on the robustness of the approach taken through sensitivity and stress testing, comparison to alternative models, benchmarking etc.	should spend on the validation of this area than into a less uncertain area of similar materiality. However, please note that CEIOPS has a broader view on validation. Validation is not restricted to techniques that imply the availability of data (cp. replies to comments on the validation of expert judgement in 5.184).
1352.	Legal & General Group	5.255.	Delete and replace with: A Firm should document fully their assumptions and justifications for both the distributions and the aggregation approach. The regulator should pay close attention to these and also take into account its knowledge of common practices and assumptions used in the market.	Please see reply to comment no. 1346.
1353.	Association of British Insurers	5.256.	See comments under 5.255 and 5.254	Please see reply to comments no. 1346 and 1388.
1354.	EMB Consultancy LLP	5.256.	Care should be taken to understand the implications of measures taken with the aim of increasing the level of policyholder protection. To take a simple example, we would not like to see regulators routinely putting upwards pressure on correlation assumptions: since in some circumstances increasing correlations can actually reduce capital set using a VaR based approach.	Noted CEIOPS understands that increasing correlations can lead to reduced capital because offsetting positions can then result in a higher risk reduction (better hedge effect). CEIOPS does not

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				intend to routinely increase correlations in aggregation mechanisms.
1355.	International Underwriting Association of London	5.256.	We note that an equivalent level of policyholder protection needs to be demonstrated. We wish to be clear that this means that there must be at least an equivalent amount of policy holder protection under a deviating methodology.	Noted
1356.	Legal & General Group	5.256.	See 5.24 and 5.25.	Noted
1357.	PricewaterhouseCoopers LLP	5.256.	<p>While we recognise that uncertainty may sometimes require additional measures such as an increased capital assessment there is a danger that too high an implied level of compliance may either mean few models could be approved for use, or supervisors press for additional capital margins of prudence in many of the models. This would seem inconsistent compared to the standard formula calibration and also inconsistent with the necessarily uncertain business of insurance. If risks were well defined and determinable insurance would have less relevant.</p> <p>We feel this paragraph needs rewording to make clear it does not authorise a form of widespread capital add-on.</p>	<p>Not agreed</p> <p>If the model does not reliably deliver results complying with Articles 118 to 124, the undertaking should be allowed to take whatever measures appropriate to demonstrate compliance.</p> <p>The paragraph is clearly not written with the intention to authorise supervisory authorities to set a form of widespread capital add-on.</p>
1358.	CRO Forum	5.257.	Section 5.3.6 seems to focus on risk transfer (re-insurance, hedges) instead of risk mitigation which can also be realized qualitatively as outlined for secondary risks in 5.260. Clarification would be helpful as well as recognition of (operational) risk	<p>Agreed</p> <p>While paragraphs 5.259 and 5.260(a) state explicitly that</p>

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			mitigation through processes and controls.	CEIOPS does not prescribe or privilege certain techniques for risk mitigation an additional sentence for the purpose of clarification has been introduced.
1359.	CRO Forum	5.259.	We welcome CEIOPS refraining from prescribing a set of acceptable risk mitigation techniques along with their secondary risks and how they should be reflected in the model and adopting a principles-based approach instead, in line with the directive.	Noted
1360.	CRO Forum	5.260.	See paragraph 5.259 for comments Point e. We agree with CEIOPS that recognition of risk mitigations should reflect these issues but the use of 'fully' is at best superfluous and could be read to impose an onerous standard. CROF should propose that fully is simply deleted or replaced with appropriately.	Agreed The word "fully" is deleted.
1361.	Llody's	5.260.	(e) Disputes do occur; therefore we believe that the market place will never satisfy the explicit feature in practice.	Noted CEIOPS acknowledges that disputes are possible. However, it should be in the interests of the undertaking itself to take all necessary steps in order to achieve a high level of comfort in regard to the elements of legal certainty of its risk mitigation instruments.
1362.	Association of British Insurers	5.263.	CP 31 on Financial Mitigation Techniques provided 5 principles to be followed for the recognition of financial mitigation techniques were:	

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		<input type="checkbox"/> Principle 1: Economic effect over legal form <input type="checkbox"/> Principle 2: Legal certainty, effectiveness and enforceability <input type="checkbox"/> Principle 3: Liquidity and ascertainability of value <input type="checkbox"/> Principle 4: Credit quality of the provider of the financial mitigation instrument <input type="checkbox"/> Principle 5: Direct, explicit, irrevocable and unconditional features <p>This adds an additional requirement: 'Identification and assessment of secondary risks'. Whilst we support this change, we believe this should properly take into account the time horizon.</p> <p>In addition, companies operating in the Creditor Insurance sector rely strongly on the Profit Share mechanism as a Risk Mitigant. This is a feature widely used in this particular market. The tool is an automatic mechanism to transfer an insurance risk to the customer, whose primary activity is often unrelated to the underlying insurance risk (i.e. mortality). Whilst we appreciate the assessment of the "secondary risk", we are concerned that the detailed requirements, including analysis of extreme scenario (per paragraph 5.260) may be too severe; and at the extreme, all non rated companies might not pass the test, therefore limiting the recognition of this efficient mitigant tool.</p>	<p>This comment is unclear.</p> <p>What exactly is meant by "take into account the time horizon"? Does it refer to different time horizons between the original risk and the secondary risks? Or is it the time needed by undertakings to implement secondary risks into their internal models (e.g. see reply to comment no. 1363)?</p> <p>CEIOPS does not intend to discriminate certain forms of risk mitigation techniques as long as they are in line with the high level principles, taking into account the principle of proportionality.</p>
1363.	CEA,	5.263.	(Definition of risk mitigation techniques)

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	ECO-SLV-09-451		<p>"Identification and assessment of secondary risks" implicitly adds a criterion to the financial mitigation techniques defined in CP 31.</p> <p>A realistic time horizon should be envisaged for the implementation of this additional criterion.</p> <p>We understand that the effect of risk mitigation techniques needs to be evaluated. However, we believe that the assessment of exposure gross and net of risk mitigation techniques has to be conducted only during their introduction in the internal models. We agree that this assessment could be regularly reviewed and reassessed, but we do not agree with the requirement of having to conduct gross and net calculations.</p>	<p>Noted</p> <p>However, the scope here is slightly different from CP 31 (cf. reply to comment no. 1362).</p> <p>Not agreed</p> <p>CEIOPS considers it as valuable information to have a gross and net view on risk exposures before and after risk mitigation wherever this is possible (as always taking into account the proportionality principle).</p> <p>An assessment only in the introduction phase is not enough as the risk profile of the undertaking – including risk mitigation effects – is likely to change over time.</p> <p>As experienced during the financial crisis certain risk mitigation instruments did not prove to be successful in actually transferring risks leaving companies behind with high gross</p>

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					<p>risk exposures.</p> <p>Additionally:</p> <p>Rephrased the White Text (5.260 f, second bullet point) in order to align it with the Blue Box text.</p>
1364.	FFSA	5.263.	<p>CEIOPS says that supervisory authorities may allow the undertaking to take full account of the effect of risk mitigation techniques if their reflection in the internal model meets the criteria: assessment of exposure gross and net of risk mitigation techniques.</p> <p>FFSA understands that the introduction of risk mitigation techniques needs to be evaluated. However, FFSA thinks that assessment of exposure gross and net of risk mitigation techniques has to be conducted only during their introduction in the internal models. FFSA agrees that this assessment could be regularly reviewed and reassessed, but FFSA suggests this element to be explicitly written in order to avoid running the model twice each time (with and without mitigation techniques).</p> <p>As a consequence, FFSA suggests to conclude §5.263 with the following sentence: "Assessment of exposure gross and net has to be done during introduction of mitigation techniques. It could be conducted thereafter."</p>	<p>Not agreed</p> <p>See reply to comment no. 1363.</p> <p>It is up to the undertaking to analyse the effects of risk mitigation techniques in an appropriate way. Whether this is done by running the model twice or by different means is up to the undertaking</p> <p>Not accepted because of the aforementioned reasons.</p>	

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1365.			Confidential comment deleted.	
1366.	German Insurance Association – Gesamtverb and der D	5.263.	<p>(Definition of risk mitigation techniques)</p> <p>“Identification and assessment of secondary risks” implicitly adds a criterion to the financial mitigation techniques defined in CP 31.</p> <p>A realistic time horizon should be envisaged for the implementation of this additional criterion.</p> <p>We understand that the effect of risk mitigation techniques needs to be evaluated. However, we believe that the assessment of exposure gross and net of risk mitigation techniques has to be conducted only during their introduction in the internal models. We agree that this assessment could be regularly reviewed and reassessed, but we do not agree with the requirement of having to conduct gross and net calculations.</p>	Please see reply to comment no. 1363.
1367.	Llody’s	5.263.	<p>“Supervisory authorities may allow the undertaking to take full account of the effect of risk mitigation techniques if their reflection in the internal model meets the following criteria:</p> <ul style="list-style-type: none"> • Direct claim on the protection provider, explicit reference to specific exposures or a pool of exposures, reflection of clauses outside the direct control of the undertaking (irrevocable and unconditional features);” <p>Can CEIOPS clarify whether this will then include or exclude risk</p>	

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			mitigation policies involving parametric triggers (e.g. ILWs and cat bonds)?	At this point of Level 2 consultations CEIOPS does not intend to give concrete advice on specific risk transfer instruments. However, CEIOPS sees no reason why the principles should not be applicable to the mentioned examples.
1368.	Pearl Group Limited	5.263.	This appears to add an additional requirement compared to CP 31 on Financial Mitigation Techniques. CP 31 provided 5 principles to be followed for the recognition of financial mitigation techniques. This adds an additional requirement: 'Identification and assessment of secondary risks'. While this feels reasonable this CP shouldn't be the place to add it as this would mean anyone not using an Internal Model wouldn't actually be required to assess these secondary risks.	Not agreed While it is true that an additional principle has been added CEIOPS disagrees that CP 56 is the wrong place to do so. In contrast to CP 31 the focus of CP 56 is on internal models. I.e. undertakings are given large degrees of freedom regarding modelling and risk mitigation techniques. In return the internal model should reflect the specific risk profile of the undertaking and this may or may not include the secondary risks evolving from risk mitigation techniques.
1369.	Association of British Insurers	5.264.	We propose the following addition for clarity: "Undertakings shall make sure that the use of risk mitigation techniques actually causes a reduction in net risk."	Agreed The word "net" is included (also in 5.257).

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1370.	CRO Forum	5.264.	<p>"Undertakings shall make sure that the use of risk mitigation techniques actually causes a reduction in risk."</p> <p>It is unclear how risk reduction can be demonstrated. The word "actually" seems to imply that there would be an expectation to quantitatively demonstrate a reduction in risk. Where we agree with the principle of the paragraph it should be noted that there are instances where risk mitigation techniques, and associated secondary risks, can only be shown to reduce risk qualitatively as recognised in the paragraph 5.260(d – bullet 3).</p>	<p>Noted</p> <p>CEIOPS does not intend to restrict the demonstration to a purely quantitative exercise.</p>
1371.	Groupe Consultatif	5.264.	<p>It is not clear that the undertakings can and should always make sure that the use of risk mitigation techniques will reduce the risk (alternatively risk mitigation techniques may focus on risk transformation or risk as defined by reference to a metric other than extreme percentiles of own funds). This requirement seems artificial and not consistent with the economic principles of Solvency II.</p>	<p>Noted</p> <p>As noted in 5.257, this section primarily focuses on those undertakings claiming a reduction of their SCR due to risk mitigation techniques.</p> <p>Obviously undertakings are not restricted to using exclusively risk mitigation techniques with that focus.</p>
1372.	Legal & General Group	5.264.	<p>We propose the following addition for clarity:</p> <p>"Undertakings shall make sure that the use of risk mitigation techniques actually causes a reduction in net risk."</p>	<p>Please see reply to comment no. 1369.</p>
1373.	Lloyd's	5.264.	<p>It is generally not possible for risk mitigation techniques to reduce risk across the entire probability distribution forecast. For example, buying substantial, expensive reinsurance may reduce risk at the 99.5th percentile, but increase the risk of the undertaking falling short of its target level of profitability. "... of the size and scope</p>	<p>Agreed. Please see also reply to comment no. 1371.</p>

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			they intended” should be added at the end of the sentence.	
1374.	European Union member firms of Deloitte Touche To	5.267.	This definition of nonlinearity is technically incorrect. If a small change in input has a large effect on an option value, then the option has a large Delta but this is not the same as nonlinearity. Nonlinearity occurs when the effect of a large parameter change is not proportional to the effect of a smaller parameter change.	Agreed Text modified: “... where nonlinearity refers to the fact that sensitivities of their value to changes in input parameters vary strongly within the parameter range.”
1375.	KPMG ELLP	5.267.	The definition of non-linear exposures includes standard non-proportional reinsurance contracts written by the (re)insurance undertaking. While these contracts may indeed contain significant risk for an undertaking (eg if significant accumulation risk is carried with respect to specific loss scenarios) it would be worth clarifying under which conditions any type of non-linear exposure should be subject to the requirements of section 5.3.7	Clarification may be provided by CEIOPS in Level 3 measures.
1376.	KPMG ELLP	5.268.	There is little guidance on selecting the right risk factors. In line with 5.269, we consider an inventory of the risk factors that are relevant to the (re)insurance undertaking should be the key starting point. We would then suggest that the (re)insurance undertaking assesses which risk factors require separate analysis because of the size of the cumulative exposure it has in respect of these factors. The demonstration under 5.269 should be required for risk factors which entail a significant concentration risk for the undertaking.	Agreed Preparing an inventory of risk factors is the first step that the undertaking should take (risk identification, mapping).
1377.	KPMG ELLP	5.269.	See 5.268	Please see reply to comment no.1376.
1378.	Institut des actuaires	5.271.	We must consider every change in the environment that can impact the valuation or exercise of options. Now, in certain cases this can	Noted

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			imply significant divergences with methods used in the valuation of technical provisions.	
1379.	Association of British Insurers	5.272.	We would propose an alternative wording to the last sentence of this paragraph: 'Mere expert judgement alone does not qualify as an accurate assessment'. What is important here is to have data and evidence to corroborate expert judgement.	Agreed Wording changed: 'Mere expert judgement alone does not qualify as an accurate assessment'.
1380.	CEA, ECO-SLV-09-451	5.272.	<p>The proportionality principle has to be applied here.</p> <p>Re-draft: "The undertaking needs to identify, collect and model the risk of all relevant financial guarantees and contractual options whilst considering the proportionality principle. The key features these guarantees and option possess have to be taken into account."</p> <p>Furthermore, we would propose an alternative wording to the last sentence of this paragraph: 'Mere expert judgement alone does not qualify as an accurate assessment'. What is important here is to have data and evidence to corroborate expert judgement.</p>	<p>Not agreed</p> <p>The proportionality principle does also apply here. There is no explicit reference necessary. In addition, the requirement is restricted to the relevant options and guarantees.</p> <p>Please see reply to comment no. 1379.</p>
1381.	FFSA	5.272.	<p>CEIOPS says that the undertaking needs to identify, collect and model the risk of all relevant financial guarantees and contractual options, taking into account the key features these guarantees and option possess.</p> <p>FFSA thinks proportionality principle has to be considered for financial guarantees and contractual options modelling. As a consequence, FFSA suggests the sentence to be rewritten as</p>	Please see reply to comment no. 1380.

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			follows: The undertaking needs to identify, collect and model the risk of all relevant financial guarantees and contractual options whilst considering the proportionality principle. The key features these guarantees and option possess have to be taken into account."	
1382.	German Insurance Association – Gesamtverb and der D	5.272.	<p>The proportionality principle has to be applied here.</p> <p>Re-draft: "The undertaking needs to identify, collect and model the risk of all relevant financial guarantees and contractual options whilst considering the proportionality principle. The key features these guarantees and option possess have to be taken into account."</p> <p>Furthermore, we would propose an alternative wording to the last sentence of this paragraph: 'Mere expert judgement alone does not qualify as an accurate assessment'. What is important here is to have data and evidence to corroborate expert judgement.</p>	Please see reply to comment no. 1380.
1383.	Pearl Group Limited	5.272.	We would propose an alternative wording to the last sentence of this paragraph: 'Mere expert judgement alone does not qualify as an accurate assessment'. What is important here is to have data and evidence to corroborate expert judgement.	Please see reply to comment no. 1379.
1384.	FFSA	5.273.	<p>CEIOPS says that the undertaking shall take into account the impact that future changes in non-financial conditions may have on the option exercise.</p> <p>FFSA agrees that future probable or known changes have to be taken into account. As a consequence, FFSA suggest the following</p>	<p>Not agreed</p> <p>The wording is almost identical to that in the Level 1 Text. The proposed wording does not introduce important additional aspects.</p>

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			rewording of §5.273: "The undertaking shall take into account of the impact that future changes in financial and reasonable non-financial expected conditions may have on the option exercise."	
1385.	FFSA	5.274.	<p>CEIOPS says that the accurate assessment of the particular risks of financial guarantees and options within the internal model must be carried out in a manner consistent with the methods used to calculate technical provisions.</p> <p>FFSA wants the term technical provisions to be précised, since these elements are determined in the Solvency II context. As a consequence, FFSA suggests the following rewording: "The accurate assessment of the particular risks of financial guarantees and options within the internal model must be carried out in a manner consistent with the methods used to calculate technical provisions as defined in Solvency II context ("TP")."</p>	<p>Agreed</p> <p>Text modified as follows:</p> <p>"The accurate assessment of the particular risks of financial guarantees and options within the internal model must be carried out in a manner consistent with the methods used to calculate technical provisions as defined in the context of Solvency II calculations."</p>
1386.	Institut des actuaires	5.274.	We have to establish clearly the elements that are involved in the calculation of technical provisions in order to make sure that the consideration of financial guarantees and contractual options is compatible with the methods used in the calculation of technical provisions.	Noted
1387.			Confidential comment deleted.	
1388.	Institut des actuaires	5.275.	The fact of considering only futures management actions on the next one-year period does not give a complete vision of the situation of the undertaking. We should not exclude futures decisions after one year that can impact the calculation of technical provisions over a one-year period and therefore, that can also	This introductory paragraph is indeed slightly misleading as the projection period was mixed up with the forecast period. CEIOPS states clearly that future

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			<p>impact the economic loss distribution forecast.</p> <p>However, this issue is perhaps out of the scope of statistic quality standards related to the internal model and is included in standards related to the valuation of technical provisions. Nevertheless, this does not seem to be mentioned in the paragraph when comparing to other elements of the CP. A reading in conjunction with CP 39 should be mentioned.</p>	<p>management actions after one year are not excluded. The Text has been modified as follows:</p> <p>"Over the internal model projection period, predictable decisions by the administrative and management bodies and senior management of the undertaking in response to future events can have a significant impact. That internal model results referring to the end of the forecast period, and the probability distribution forecast in particular, are meaningful and useful in risk management may be attributed to a large part to the implementation of future management actions."</p>
1389.	Llody's	5.285.	<p>Buying next year's reinsurance programme is a "future management action". Clearly, for most non-life insurance undertakings this is a very material future management action. Quantifying its impact, as suggested in this paragraph, would be both onerous and pointless, however. On a going concern basis, it should be reasonable to assume reinsurance can be bought. If reinsurance is restricted or unavailable in certain areas, the business plan for inwards premium will be amended to reflect the reinsurance available. Calculating the SCR without future reinsurance would require changes to all key inwards business</p>	<p>Paragraph 5.285 as drafted explains that the effect on the SCR shall be calculated where practicable. CEIOPS expects that when assessing future reinsurance programmes, insurers would assess the relative costs and benefits in terms of the effect on required economic capital. If the effect on the SCR is</p>

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			assumptions and would reflect an unreal scenario. Future management actions relating to purchase of future reinsurance programmes should be exempted from this measure.	practicable to calculate, then this can also be done.
1390.	Association of British Insurers	5.286.	This should be widened to include decisions taken based on delegated authority or according to Company Policy.	Delegated authorities and company policy (if documented) will form part of the governance structure as described in paragraph 5.286.
1391.	European Union member firms of Deloitte Touche To	5.286.	We suggest rephrasing the last sentence: "Deviation from such management actions shall be approved by the board beforehand and taken into the account in the internal model".	Not agreed In CEIOPS' view it is self-evident that one consequence of a deviation from planned management actions may be to change the implementation in the internal model (model change). Please cf. 5.287 and 5.290 ("... supervisory authorities [...] approving a new or changed set of future management actions").
1392.	CEA, ECO-SLV-09-451	5.290.	This may be difficult to assess, as the history of running internal models is usually not more than 5-10 years and the requirements of Solvency II only become known in detail with these CPs. Therefore this assessment should extend mainly to changes once the model is in use for solvency purposes.	Not agreed CEIOPS expects undertaking to make existing information (on historical deviations from planned management actions) available to supervisory authorities.
1393.	German Insurance Association	5.290.	102. This may be difficult to assess, as the history of running internal models is usually not more than 5-10 years and the requirements of Solvency II only become known in detail with these	Please see reply to comment no. 1392.

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	- Gesamtverb and der D		CPs. Therefore this assessment should extend mainly to changes once the model is in use for solvency purposes. 103.	
1394.	Groupe Consultatif	5.290.	This may be difficult to assess, as the history of running internal models in their current format is usually not longer than 5-10 years and the requirements of Solvency II have only become known in detail with the release of these CPs. Therefore this assessment should extend mainly to changes once the model is in use for solvency purposes.	Please see reply to comment no. 1392.
1395.	Munich RE	5.290.	This may be difficult to assess, as the history of running internal models is usual not more than 5-10 years and the requirements of Solvency II only become known in detail with these CPs. Therefore this assessment should extend mainly to changes once the model is in use for solvency purposes.	Please see reply to comment no. 1392.
1396.	Association of British Insurers	5.293.	The Board of some undertakings may agree in advance a series of actions to be taken in future on the occurrence of certain trigger events. It is not clear to us from the definitions given whether the future exercise of such an action would constitute a future management action or implementation of a risk mitigation measure (by virtue of the action having been agreed in the past).	This would be a future management action.
1397.	EMB Consultancy LLP	5.293.	The definition of management action appears to be very wide and potentially a great number of the assumptions in an internal model (e.g. the level of new business) are subject to influence by management actions.	Noted
1398.	FFSA	5.293.	CEIOPS says that future management actions are the currently anticipated exercise of any decision the undertaking has the right to make.	Noted

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			FFSA stresses that management action could only be defined here on a theoretical way, since projections conducted here are not done on a on-going basis (no future business allowed).	
1399.	Pearl Group Limited	5.293.	The Board of some undertakings may agree in advance a series of actions to be taken in future on the occurrence of certain trigger events. It is not clear to us from the definitions given whether the future exercise of such an action would constitute a future management action or implementation of a risk mitigation measure (by virtue of the action having been agreed in the past).	Please see reply to comment no. 1396.
1400.			Confidential comment deleted.	
1401.	FFSA	5.294.	CEIOPS says that risk mitigation techniques that are currently in place are clearly not future management actions. FFSA strongly disagrees with this assertion, since it is a general opinion which considers all risk mitigation techniques or management actions modelled as same-level modelling and depreciate the effort conducted by undertakings.	This sentence serves only to contrast risk management actions to risk mitigation techniques.
1402.			Confidential comment deleted.	
1403.	ROAM –	5.294.	CEIOPS says that risk mitigation techniques that are currently in place are clearly not future management actions. ROAM strongly disagrees with this assertion, since it is a general opinion which considers all risk mitigation techniques or management actions modelled as same-level modelling and depreciate the effort conducted by undertakings.	Please see reply to comment no. 1401

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1404.	CEA, ECO-SLV-09-451	5.296.	<p>It should be recognised that the requirement to assess the materiality of future management actions is impracticable or disproportionately burdensome in most cases.</p> <p>In some areas it is inevitable to take a management action. For instance re-investing capital which has been invested in capital instruments which do not longer exist is an inevitable action that the management will have to take at some point in time. It is therefore impossible to compare with the impact of a “non-action” would have as this is not a possible option.</p> <p>Furthermore, with respect to future policyholder discretionary bonuses, it would be very burdensome in most cases to ask undertakings to perform calculations assuming no bonuses are taken as models have not been developed to provide for this kind of output which is artificial and of no use for the company.</p>	<p>Not agreed</p> <p>At first, paragraph 5.296 restricts the assessment of the materiality of future management actions to instances where this is practicable. Second, CEIOPS is aware that the simplest way, i.e. the consideration of “no action”, does not always lead to reasonable results. In paragraph 5.285 CEIOPS provides one example.</p>
1405.	German Insurance Association – Gesamtverb and der D	5.296.	<p>It should be recognised that the requirement to assess the materiality of future management actions is impracticable or disproportionately burdensome in most cases.</p> <p>In some areas it is inevitable to take a management action. For instance re-investing capital which has been invested in capital instruments which do not longer exist is an inevitable action that the management will have to take at some point in time. It is therefore impossible to compare with the impact of a “non-action” would have as this is not a possible option (no reasonable default management action).</p> <p>Furthermore, with respect to future policyholder discretionary bonuses, it would be very burdensome in most cases to ask undertakings to perform calculations assuming no bonuses are</p>	<p>Please see reply to comment no. 1404</p>

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			<p>taken as models have not been developed to provide for this kind of output which is artificial and of no use for the company.</p> <p>Thus, delete this paragraph.</p>	
1406.	Llody's	5.296.	<p>Buying next year's reinsurance programme is a "future management action". Clearly, for most non-life insurance undertakings this is a very material future management action. Quantifying its impact, as suggested in this paragraph, would be both onerous and pointless, however. On a going concern basis, it should be reasonable to assume reinsurance can be bought. If reinsurance is restricted or unavailable in certain areas, the business plan for inwards premium will be amended to reflect the reinsurance available. Calculating the SCR without future reinsurance would require changes to all key inwards business assumptions and would reflect an unreal scenario. Future management actions relating to purchase of future reinsurance programmes should be exempted from this measure.</p>	Please see reply to comment no. 1389
1407.	Association of British Insurers	5.298.	<p>We believe these requirements could result in unnecessary constraints on the exercise of discretion. This could potentially damage the interests of policyholders. In effect, the guidance requires firms to express the exercise of future discretion in the form of management actions as a set of rules which can be pre-programmed into a model. Failure to exercise discretion as programmed into the model, if significant, should be referred to supervisory authorities. It is important that the firm should be able to take action rapidly in stressed conditions and should not be too much dependent on supervisors to do so and be stalled by discussions with them</p> <p>Models can never perfectly replicate every conceivable scenario.</p>	<p>Agreed</p> <p>It is necessary to clarify the term "refer" in paragraph 5.298 which seems to be confusing. Strictly speaking, "refer sth. to sb." in this context means "to send sth. to sb. for help, advice or a decision". This would indeed entail that undertakings wait for the supervisory authority to take a decision on the implications before they could go and take the</p>

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			<p>Any rules or triggers incorporated into a model may therefore not necessarily provide an exhaustive representation of the extent of management discretion. We therefore suggest that this paragraph should be linked more widely to the model change policy. The important restrictions associated with the recognition of deviations (capital add-ons, rejection of the model), should only apply if the firm fails to update its model following a significant deviation from planned management actions assumed in the model.</p>	<p>(deviating) management action.</p> <p>This is not what was intended by CEIOPS here. Therefore, the Text is modified as follows.</p> <p>"Significant deviations from planned management actions shall be reported to the supervisory authorities together with an analysis which contains the reasons for the deviation and its consequences, in particular with regard to the undertaking's Solvency Capital Requirement as calculated in advance."</p> <p>In general, one has to distinguish between two possible situations:</p> <ul style="list-style-type: none"> • at some point in time the (re-)insurance undertaking deviates from the management actions it has planned to take in before, i.e. it takes a deviating action. According to 5.298 the (re-)insurance undertaking then - afterwards - has to report this deviation in a timely manner to the supervisory

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				<p>authorities which then decide on an action according to 5.298.</p> <ul style="list-style-type: none"> the (re-)insurance undertaking does not actually deviate from any planned management action but wants to change its planned management actions (without conducting a deviating action immediately). This should simply be treated as a model change (cf. also paragraph 5.290). <p>Moreover, please note that the paragraph refers only to deviations that are significant.</p>
1408.	CEA, ECO-SLV-09-451	5.298.	<p>(Reflection of future management actions in the model)</p> <p>We believe these requirements could result in unnecessary constraints on the exercise of discretion. This could potentially damage the interests of policyholders. In effect, the guidance requires firms to express the exercise of future discretion in the form of management actions as a set of rules which can be pre-programmed into a model. Failure to exercise discretion as programmed into the model, if significant, should be referred to supervisory authorities. It is important that the firm should be able</p>	See reply to comment no. 1407.

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			<p>to take action rapidly in stressed conditions and should not be too much dependent on supervisors to do so and be stalled by discussions with them</p> <p>Models can never perfectly replicate every conceivable scenario. Any rules or triggers incorporated into a model may therefore not necessarily provide an exhaustive representation of the extent of management discretion. We therefore suggest that this paragraph should be linked more widely to the model change policy. The important restrictions associated with the recognition of deviations (capital add-ons, rejection of the model), should only apply if the firm fails to update its model following a significant deviation from management actions assumed in the model.</p>	
1409.	CRO Forum	5.298.	<p>"Significant deviations from planned management actions shall be referred to the supervisory authorities ... supervisory authority may determine that the model no longer complies with the requirements of Article 116 ..."</p> <p>We agree with the principle of informing the supervisors of significant deviations from the planned management action. However, we are concerned that when planned management actions, based on projected outcomes, require corrections in volatile markets a requirement to process the deviations through supervisors may reduce the response time for the undertaking.</p> <p>It is important that the firms are given room to amend their management actions to manage their risk in a timely manner. We feel that the paragraph should be linked more widely to the model change policy and the important restrictions associated with the recognition of deviations (capital add-ons, rejection of the model) should be incorporated as part of the model change process.</p>	Please see reply to comment no. 1407.

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			Models describe reality in simplified form. This also holds true for approved internal models. In our view, the consideration of management actions in the model is sensible and justified; however, modelled actions have to be seen in their simplified context. Thus, it is always possible that in a particular situation the management – considering and weighting all available information – takes different actions than supposed in a former model version. In this context, the supervisory authority should only be allowed to claim non-compliance of the model according to Article 116 in very special and justified exceptional cases. The requirement of capital add-ons should also be modest and constitute an exception.	
1410.	German Insurance Association – Gesamtverb and der D	5.298.	<p>(Reflection of future management actions in the model)</p> <p>We believe these requirements could result in unnecessary constraints on the exercise of discretion. This could potentially damage the interests of policyholders. In effect, the guidance requires firms to express the exercise of future discretion in the form of management actions as a set of rules which can be pre-programmed into a model. Failure to exercise discretion as programmed into the model, if significant, should be referred to supervisory authorities. It is important that the firm should be able to take action rapidly in stressed conditions and should not be too much dependent on supervisors to do so and be stalled by discussions with them</p> <p>Models can never perfectly replicate every conceivable scenario. Any rules or triggers incorporated into a model may therefore not necessarily provide an exhaustive representation of the extent of management discretion. We therefore suggest that this paragraph should be linked more widely to the model change policy. The</p>	Please see reply to comment no. 1407.

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			<p>important restrictions associated with the recognition of deviations (capital add-ons, rejection of the model), should only apply if the firm fails to update its model following a significant deviation from management actions assumed in the model.</p> <p>Models describe reality in simplified form. This also holds for approved internal models. In our view, the consideration of management actions in the model is sensible and justified; however, modelled actions have to be seen in their simplified context. Thus, it is always possible that in a particular situation the management – considering and weighting all available information – takes different actions than supposed in a former model version. In this context, the supervisory authority should only be allowed to claim non-compliance of the model according to Article 116 in very special and justified exceptional cases. The requirement of capital add-ons should also be modest and constitute an exception.</p>	
1411.	Groupe Consultatif	5.298.	<p>We are concerned that this paragraph gives the impression that capital add ons, or the removal of internal model approval, would be a common response to the deviation from planned management actions. Instead we would expect that any necessary modifications could easily be made to the internal model following discussion with the supervisor.</p>	Please see reply to comment no. 1407.
1412.	Legal & General Group	5.298.	<p>In the context of materiality and proportionality we support the aim behind this section. However we believe that as worded it may become difficult to operate and act as an unnecessary restraint in some circumstances to the use of an internal model.</p> <p>Models can never capture all the known unknowns and the</p>	Please see reply to comment no. 1407.

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			unknown unknowns (to quote a phrase). This section should really be linked or even replaced by the ones tackling material model change as in essence this only occurs where a model does not reflect the risk accurately enough to meet the 1:200 approach.	
1413.	Munich RE	5.298.	It is important that the firms are given room to amend their management actions to manage their risk in a timely manner. Models describe reality in simplified form. This also holds true for approved internal models. In our view, the consideration of management actions in the model is sensible and justified; however, modelled actions have to be seen in their simplified context. Thus, it is always possible that in a particular situation the management – considering and weighting all available information – takes different actions than supposed in a former model version.	Please see reply to comment no. 1407.
1414.	Pearl Group Limited	5.298.	<p>This requires rewording as it is essential that we should be able to take action rapidly in stressed conditions and should not be expected to inform the supervisors before we do so and be stalled by discussions with them. In an extreme scenario our Solvency could be threatened while we wait on the supervisors to approve what we are doing as they are overloaded with most undertakings making similar requests.</p> <p>This should be linked more widely to the model change policy. The important restrictions associated with the recognition of deviations (capital add-ons, rejection of the model), should only apply if we fails to update our model, in a reasonable timeframe, following a significant deviation from planned management actions.</p>	Please see reply to comment no. 1407.
1415.	PricewaterhouseCoopers LLP	5.298.	We can see the attraction of requiring a report back to the supervisor where the undertaking does not apply the management actions it modelled within the capital model. However, we believe	Agreed Please see reply to comment no.

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			<p>that in the level 3 text it would be appropriate to highlight that</p> <ul style="list-style-type: none"> – as management actions depend heavily on the path of events that lead up to the action – and more than one action may be capable of use at that time – and the model “rules” for actions will necessarily be simplified from what is a vast range of events and actions – then the supervisory response should have regard to whether the capital assessment has been materially altered by the undertaking taking an alternative management action (or no action) rather than whether the undertaking took the modelled action. 	1407.
1416.	KPMG ELLP	5.299.	The advice may be read as if planned management actions require separate supervisory approval. We suggest CEIOPS should clarify that approval of planned management actions is part of overall model approval, rather than a separate approval.	<p>Agreed</p> <p>Future management actions and their approval is part of the overall model approval and they are subject to the model change policy (cp. paragraph 5.290). Please see also reply to comment no. 1407.</p>
1417.	Association of British Insurers	5.301.	By nature, management actions are not usually ‘verifiable’ so we would disagree with this requirement.	<p>Not agreed</p> <p>Please cf. CP 32.</p>
1418.	CRO Forum	5.301.	<p>“The undertaking shall ensure that the assumptions for future management actions in the internal model are objective, realistic and verifiable...”</p> <p>By nature, future management actions are not always ‘verifiable’.</p>	Please see reply to comment no. 1417.

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			<p>However it can be demonstrated to the supervisory authority the circumstances in which the undertaking deems the future management action reasonable and why. We believe this is covered as part of "realistic" as defined in para 5.292.</p> <p>Therefore, we propose that the word "verifiable" be removed from the paragraph.</p>	
1419.	Legal & General Group	5.301.	By definition management actions can't be verifiable but can be justified and documented.	Please see reply to comment no. 1417.
1420.	Pearl Group Limited	5.301.	By nature, management actions are not always "verifiable" , especially if the scenario has never arisen, so we would disagree with this requirement.	Please see reply to comment no. 1417.
1421.	CRO Forum	5.303.	Along with our comments on CP-30 we want to express that all future cash flows should be considered.	CEIOPS interprets the term cash-flows to comprise cash in-flows and cash out-flows. The Level 1 Text requires cash out-flows to be taken into account in the internal model. Cash in-flows may have to be taken into account to ensure consistency with technical provisions.
1422.	German Insurance Association – Gesamtverb and der D	5.303.	Along with our comments on CP 30 we want to express that all future cash flows should be considered.	Please see reply to comment no. 1421.
1423.	Munich RE	5.303.	Along with our comments on CP30 we want to express that all	Please see reply to comment no.

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			future cash flows should be considered.		1421.
1424.	CEA, ECO-SLV-09-451	5.304.	The proportionality principle has to be applied here.	Not agreed The proportionality principle also holds in this respect, however, CEIOPS prefers not to refer to it explicitly here.	
1425.	CRO Forum	5.304.	"The internal model shall take account of all expected payments, whether or not contractually agreed." This should equally apply to cash flows to as well as from policy holders.	Please see reply to comment no. 1421.	
1426.	EMB Consultancy LLP	5.304.	We would suggest focusing on the "potential range of payments" rather than "expected payments". The internal model may well make a stochastic assessment of future cashflows.	Not agreed CEIOPS prefers to refer closely to the Level 1 Text. Noted	
1427.	German Insurance Association – Gesamtverb and der D	5.304.	The proportionality principle has to be applied here.	Please see reply to comment no. 1424.	
1428.			Confidential comment deleted.		
1429.	CRO Forum	6	In general we think that many requirements on the 'internal use' of the model are very far reaching and may be overly burdensome. For internal uses the choice of the time-horizon and the confidence level shall be entirely up to the undertaking and do not have to be justified to the regulator.	Please see more detailed remarks below	

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			In this chapter we believe it is appropriate that in the advice paragraphs or titles that it be specifically mentioned that the advice relates to calibration standards only, otherwise some of the statements may be open for (mis)interpretation.	
1430.	GDV	6.	An internal model shall also provide the Solvency Capital Requirement at the stipulated safety level (in accordance with the standard formula). The supervisory authority may allow reconciliation statements or approximate calculations (calibration) for this purpose in exceptional cases if the Solvency Capital Requirement cannot be deduced directly from the overall distribution which has been calculated by means of the internal model. Using benchmark portfolios should be handled with care with respect to actuarial issues, in particular, and it can only serve as a tool supporting the decision-making process within the scope of approval.	Please see more detailed remarks below
1431.	Groupe Consultatif	6.	Care will need to be taken by CEIOPS to ensure that all SCRs clearly meet the calibration standard of 1 year 99.5% VaR, but that this does not constrain the use of models calibrated in different ways for other purposes to manage risk.	Noted
1432.	Llody's	6.	Overall we welcome the calibration section. It allows for flexibility in use of different risk measures and/ or time periods within the model although the norm is expected to be calibrated so that it covers the 1-year time horizon and the output provides 99.5% VaR. If a different time period and/or risk measure is used there will be a need to demonstrate that the SCR calculated gives a level of protection equivalent to that set out in Article 101 i.e. the outputs will need to be reconciled to the 99.5% VaR over a one year period. If a group model is used, then it needs to meet these calibration	Noted

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			<p>requirements at a solo level too. Emphasis is made that when the group model is used to assess the solo SCR the calculation should not take into account any group diversification.</p> <p>The main area of concern surrounds the ability of supervisory authorities to require undertakings to run their internal model for benchmark portfolios in order to verify its calibration. The timing of this benchmarking could occur at the following times:</p> <ul style="list-style-type: none"> · During each approval process · After the model approval as part of the Supervisory Review Process · At any other time that the regulator has concerns over the calibration <p>Our main concern is firstly over the appropriateness of the benchmark data but, more importantly, whether the internal models have the flexibility to allow for benchmark data to be run.</p>	
1433.	Groupe Consultatif	6.2.	We support these two objectives.	Noted
1434.	Llody's	6.3.	This article talks about time horizon (measurement period), rather than how much new business is included. It states that firms used up to 25yrs – many non-life companies use a run-off approach, i.e. indefinite time horizon.	The main idea is that the SCR shall be calibrated on the basis of the variation of basic own funds. Therefore, undertakings may consider new business for economic capital purposes, but when it comes to the SCR, they shall adjust these figures to be consistent with the assumptions

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				underlying the calculation of the basic own funds (and therefore of assets and liabilities in the Solvency II regime).
1435.	KPMG ELLP	6.5.	The recommendation that a (re)insurance undertaking should be able to pass the use test by using a 'different calibration' is sensible.	Noted
1436.	Groupe Consultatif	6.6.	As is touched on in 6.7, we would advise caution when using different time horizons, confidence levels across different risks if these risks are to be aggregated and measured holistically (as might be required in considering the total risk appetite). Nonetheless, we acknowledge that the use of a range of measures may provide useful additional info	A range of measures will however be needed to fulfil the ORSA requirements.
1437.	Institut des actuaires	6.6.	According to article 120 of the directive, it is possible to use calibration standards different from those defined in article 101 (3) and it is therefore possible to get different results. This should still allow the calculation of a requirement of capital that gives a level of protection equivalent to the one defined in article 101 (3). Could this lead to calculating a higher capital requirement that would conflict the one issued in paragraph 6.6? The outputs would not allow the reconstitution of the SCR with the standard calibration but could allow a higher or equal amount. If so, we suggest modify the last sentence in "Thus, the calibration of the internal model has a larger degree of freedom and may differ from the calibration underlying the calculation of the SCR, as long as the outputs of it can be used to calculate a capital requirement higher or equal to the SCR with the standard calibration."	To ensure comparability between figures from different undertakings, they should try to provide the exact 99,5% percentile of the distribution. CEIOPS is however aware that the assumptions used to derive this figure when another risk measure is used could in practice lead to a higher or equal capital requirement, but the aim should always be the 99.5 percentile.
1438.	AAS BALTA	6.7.	This requirement effectively means that you need a cut of the	The measure should however be

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			model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	compliant with the use of the model and longer time horizons will need to be touched to fulfil Pillar II requirements like the ORSA.	
1439.	AB Lietuvos draudimas	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1440.	CODAN Forsikring A/S (10529638), Denmark	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1441.	CODAN Forsikring (Branch Norway) (991 502 491)	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1442.	Link4 Towarzystwo Ubezpieczeń SA	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1443.	RSA Insurance Group PLC	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	

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1444.	RSA Insurance Ireland Ltd	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1445.	RSA - Sun Insurance Office Ltd.	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1446.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	6.7.	This requirement effectively means that you need a cut of the model that is a one year model. Thus, potentially discouraging undertakings from moving away from the one year structure even if that is most appropriate.	Please see remarks on comment 1438	
1447.	Groupe Consultatif	6.9.	This would seem to be an unnecessary requirement (taken in addition to more general documentation requirements).	The appropriateness of the measure needs to be justified to the supervisor. CEIOPS also expects undertakings to have internal processes to justify its appropriateness.	
1448.	AAS BALTA	6.10.	Agreed	Noted	
1449.	AB Lietuvos draudimas	6.10.	Agreed	Noted	
1450.	CODAN Forsikring A/S (10529638), Denmark	6.10.	Agreed	Noted	

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1451.	CODAN Forsikring (Branch Norway) (991 502 491)	6.10.	Agreed		Noted
1452.	Groupe Consultatif	6.10.	We do not believe that it is generally possible to reconcile directly any other choice of confidence level, time horizon or risk metric to the 1 year 99.5% VaR (however, it is certainly possible to demonstrate super-equivalence). We would therefore agree with CEIOPS that a list of principles is not required as any use of the model to calculate the SCR would need to meet the statistical quality test.		Article 119 will indeed be the key to assess the statistical appropriateness of the methods.
1453.	Link4 Towarzystw o Ubezpieczeń SA	6.10.	Agreed		Noted
1454.	RSA Insurance Group PLC	6.10.	Agreed		Noted
1455.	RSA Insurance Ireland Ltd	6.10.	Agreed		Noted
1456.	RSA - Sun Insurance Office Ltd.	6.10.	Agreed		Noted
1457.	SWEDEN:	6.10.	Agreed		Noted

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	Trygg-Hansa Försäkrings AB (516401-7799)				
1458.	CRO Forum	6.11.	We disagree with the last sentence. Varying the choice of risk measure and time horizon per purpose of the internal model does not necessarily mean that an undertaking does not meet the use-test criteria, it may in reality be more appropriate to look at a different time horizon or risk measure for certain type of decisions.	Agreed that the paragraph was unclear. Deletion of the end of the paragraph	
1459.	Groupe Consultatif	6.11.	We do not understand the issue being raised here. The SCR calculation itself only tests that the own funds will remain non-negative in the 99.5%-ile rather than that the SCR will continue to be covered. An economic capital might therefore be required to ensure that basic own funds remain non-negative over the projection period (or at least the first year of the projection period) with at least a 99.5%-ile level of confidence.	Please see remark on comment 1458	
1460.	Institut des actuaires	6.11.	<p>According to this paragraph, by using other calibration standards than the one defined in article 101 (3), the undertaking can not come up with an economic capital where the "basic own fund level" is less than the SCR otherwise it would not satisfy the use test: the integration of the internal model in the risk management system must be set on a coherent basis for all uses.</p> <p>Could CEIOPS clarify because this point does not seem very clear :</p> <p>Firstly, what is the meaning of a coherent basis? Is it a unique basis for all calculations or on the opposite, is it about different basis according to the considered use? If it is possible to use different basis or different calibration standards, the results will be different. Whatever the case, it is possible to argue that the upper limit of proper funds of the undertaking must be the SCR in order to</p>	Please see remark on comment 1458	

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			<p>guarantee the equivalent level protection. However if the fact of having a basic own funds level means that the criterion of coherent basis of the use test is not respected, what happens if the basic own funds level is higher than the SCR? Is the criterion still respected? It seems that the basic own fund level of the economic capital can be higher than the SCR. According to the CP 17, such a case can justify the need for horizon projections higher than one year.</p> <p>We would suggest to delete the three last sentences of the paragraph and to stop it after "the non-compliance set out in Article 136 refers to the SCR and not to the Economic Capital".</p>	
1461.	Groupe Consultatif	6.13.	The undertaking needs to document why it uses a shorter time period.	Yes
1462.	Institut des actuaires	6.13.	<p>The CEIOPS thinks that the resort to time horizons lower than one year is less able to happen whereas in the CEIOPS report following the QIS4</p> <p>http://www.ceiops.eu/media/files/consultations/QIS/CEIOPS-SEC-82-08%20QIS4%20Report.pdf p.273, one can note that many participants were using time horizons lower than one year.</p> <p>Could CEIOPS precise if it considers that this choice of modelling is not to be very adequate? If this is the case, could it details and justify this issue?</p>	<p>Noted and redrafted</p> <p>"Shorter time periods than one year for the distribution at the topmost level shall not be prohibited..., whereas for some risks, it may be better."</p>
1463.	Groupe Consultatif	6.14.	We would expect this to be covered in the wider documentation requirements and does not require specific mention here.	As mentioned in §1.6, requirements have to be seen as a whole, and not on a stand alone basis. Of course, this is part of the documentation.

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1464.	AAS BALTA	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Agreed	New version to remove this dissymmetry
1465.	AB Lietuvos draudimas	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464	
1466.	CODAN Forsikring A/S (10529638), Denmark	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464	
1467.	CODAN Forsikring (Branch Norway) (991 502 491)	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464	
1468.	CRO Forum	6.15.	We disagree that the choice of time-horizon needs to be justified to the regulator always.	Not agreed	
1469.	Groupe Consultatif	6.15.	As for 6.14. Also the suggestion that undertakings need to justify their choice of time horizon should not be taken to undermine the	Please see remark on comment 1464	

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			use of a 1 year VaR by life insurance companies.	
1470.	Link4 Towarzystwo Ubezpieczeń SA	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464
1471.	RSA Insurance Group PLC	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464
1472.	RSA Insurance Ireland Ltd	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464
1473.	RSA - Sun Insurance Office Ltd.	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	Please see remark on comment 1464
1474.	SWEDEN: Trygg-Hansa Försäkrings	6.15.	It is not clear why undertakings should not have to justify their choice of time horizon if they choose the default position of one year. Surely the undertaking should justify its choice of time	Please see remark on comment 1464

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	AB (516401-7799)		horizon in all cases. Otherwise they may miss key risks (eg premium rates falling over time) just because they took the easy route of choosing a one year model.	
1475.	Groupe Consultatif	6.16.	We agree with this statement.	Noted
1476.	Groupe Consultatif	6.20.	These conditions are simple to state, but are not simple to fulfil in a robust way.	Agreed
1477.	DIMA	6.21.	Demonstration of equivalence with SF SCR: further guidance potentially needed on how this is done.	This may be tackled in the L3 Guidance
1478.	Institut des actuaires	6.21.	Could CEIOPS specify what would be the method(s) to make outputs of the internal model calculated with a different risk measure and/or a different time horizon compatible with a 99.5% VaR over one year? Is the process about calculating the 99.5% VaR over one year and comparing results? Can other methodologies be suggested? We suggest one sentence is added after "...over a 1-year period." saying "This reconciliation should consist / rely on..."	This may be tackled in the L3 Guidance
1479.	KPMG ELLP	6.24.	More details could be provided on how the following is implemented: "Consideration is required of how accurately do undertakings have to calculate the 99,5% one year VaR when approximations are used."	This may be tackled in the L3 Guidance
1480.	CRO Forum	6.25.	It is unclear what is meant by "temporal dependency effects".	Redrafted in "dependencies

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					between consecutive time steps"
1481.	Groupe Consultatif	6.25.	It should be recognised that full probability distributions of the capital requirements will frequently only be available via approximations and that point estimates may be more common and indeed reliable and transparent. It is unclear what is meant by "temporal dependency effects".		Redraft in "dependencies between consecutive time steps"
1482.	AAS BALTA	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.		Agreed. Deleted this example
1483.	AB Lietuvos draudimas	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.		Please see remark on comment 1482
1484.	CODAN Forsikring A/S (10529638), Denmark	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.		Please see remark on comment 1482
1485.	CODAN Forsikring (Branch Norway) (991 502 491)	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.		Please see remark on comment 1482
1486.	Groupe Consultatif	6.26.	The SCR should relate to a one year time horizon and capital sufficient to cover a longer period (with intermediate checks on own funds adequacy) at the requisite confidence level, or for one year but at a higher confidence level, should be more than sufficient. Approximations may be required to determine the excess capital requirement determined under these methods.		Please see remark on para 6.6

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1487.	Link4 Towarzystw o Ubezpieczeń SA	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.	Please see remark on comment 1482
1488.	Llody's	6.26.	We believe that any undertaking that "has great confidence" in the 99.95th quantile of its basic own funds is, in fact, demonstrating that it does not understand the risks it is subject to. CEIOPS should view such a situation as a regulatory red flag, and not be using it as an exemplar of how a 99.5th quantile might be derived through interpolation.	Please see remark on para 6.6
1489.	RSA Insurance Group PLC	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.	Please see remark on comment 1482
1490.	RSA Insurance Ireland Ltd	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.	Please see remark on comment 1482
1491.	RSA - Sun Insurance Office Ltd.	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.	Please see remark on comment 1482
1492.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	6.26.	Are these examples actually useful in practice? For example having great confidence in 99.95% percentile of own funds is unlikely.	Please see remark on comment 1482
1493.	Groupe Consultatif	6.27.	It would be helpful if CEIOPS could provide examples of the justifications for the example approximations that might be considered valid and of the adjustments that might be needed to	Not agreed to replace "thoroughly", this is a key figure of the IM and it is difficult to

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			allow for the "high degree of uncertainty attached to these adjustments". Allowing such approaches suggests that a similar flexibility be permitted in applying the statistical quality standards to undertakings using an internal model calibrated to a 1 year VaR 99.5% confidence level. We would recommend the removal of the word "thoroughly" as this implies onerous testing which seems likely to add little value.	tackle via the use test. CEIOPS may provide Level 3 guidance for the rest
1494.	KPMG ELLP	6.27.	Additional provisions will be required to compensate for the uncertainty surrounding approximations but it is not clear how much prudence will be required for this and how to allow for it.	CEIOPS may provide Level 3 guidance on this
1495.			Confidential comment deleted.	
1496.	Llody's	6.28.	Where approximations are allowed for the SCR, can these approximations simply use the standard formula having demonstrated that it over-states the 99.5th percentile requirements for basic own funds?	Our intention is not to use the standard formula as a substitute in internal models for any risk where data are missing. Using the SF parameters without any entity-specific justifications is generally not consistent with the provisions in Article 119, and should therefore be left out of the scope of the internal model.
1497.	CRO Forum	6.30.	"The undertaking shall show equivalence at least annually, ..." Equivalence is a methodological and conceptual question. It shall therefore be shown as part of the approval process rather than annually.	Not agreed Because of the complexity of the comparison between two sets of measures and the non-linearity between them, a small change in the risk profile could lead to important changes in the risk

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				measures.
1498.	Groupe Consultatif	6.30.	<p>"The undertaking shall show equivalence at least annually, ..."</p> <p>Equivalence is a methodological and conceptual question. It shall therefore be shown as part of the approval process rather than annually. [GC][However, we acknowledge that modest annual checks may be required to ensure that the rationale for equivalence has not been undermined by the recalibration of the model. Again, proportionality must be applied here.]</p>	Please see remark on comment 1497
1499.			Confidential comment deleted.	
1500.	CRO	6.32.	Generally the provisions for the Group model apply, rather than the solo level. It has to be clear though, that all internal risk and capital transfer instruments, e.g. reinsurance, have to be taken fully into account.	Agreed
1501.	Groupe Consultatif	6.32.	Generally the provisions for the Group model apply, rather than those for the solo level. It has to be clear though, that all internal risk and capital transfer instruments, e.g. reinsurance, have to be taken fully into account.	Agreed
1502.	CRO Forum	6.33.	We disagree with this paragraph. Whether the assessment of diversification effects based on an internal model are appropriate, shall not be determined by comparison to the (in many respects inappropriate) standard approach.	Generally, provisions given by CP60 apply, irrespective of the choice of method by the group (internal model or standard formula)
1503.	Groupe Consultatif	6.33.	[We strongly disagree with this paragraph. Whether the assessment of diversification effects based on an internal model are appropriate or not]should be determined by whether they can be	Please see remark on comment 1502

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			justified against the relevant statistical quality standards and [not by comparison to the (in many respects inappropriate) standard approach.] The rationale given of ensuring a level playing field between groups using an internal model and those using the standard formula could easily be extended to solo entities and thereby prescribe the correlation structure of the standard formula for all entities – this would be a significant step backwards from the aim of introducing an economic and risk sensitive solvency regime. It would also make substantially more difficult the satisfaction of calibration standards and the use test for group internal models.	
1504.	CRO Forum	6.34.	We disagree with this paragraph. Also diversification effects with banks or other financial institutions have to be taken into account; this will give the right incentives to risk management.	With the current wording of the Financial Conglomerates Directive, it is strictly impossible to change this. Please see CEIOPS CP 60
1505.	Groupe Consultatif	6.34.	We disagree with this paragraph for the same reasons as those given for 6.33. Diversification effects with banks or other financial institutions have to be taken into account as this provides the right incentives for risk management. We think that at least diversification within and between the insurance sectors life, health, non-life and reinsurance should be allowed.	Please see remark on comment 1504
1506.	CRO Forum	6.36.	A group internal model might directly or via other ways consider limitations on fungibility and transferability. For example, a group risk model might stochastically simulate economic results in the solo entities and per simulation consider where capital is needed and from what entities fungible and transferable capital can be used to cover losses. In such a case, the presented approach is a less realistic simplification and the more sophisticated approach should	The Level 1 text does not give this ability.

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			be used. We therefore suggest to not restricting possible better solutions to cope with fungibility and transferability limitations in advance.	
1507.	DIMA	6.36.	Where the outcome of a benchmarking exercise is to have an impact on the approval of an internal model or a supervisory review in the context of a potential Risk Capital Add On, the benchmark portfolio used by the supervisor should be relevant and in line with the portfolio of the (re)insurance undertaking in order to effectively assess the sets of hypothesis, calibration and results of the internal model.	Agreed
1508.	German Insurance Association – Gesamtverb and der D	6.36.	A group internal model might directly or via other ways consider limitations on fungibility and transferability. For example, a group risk model might stochastically simulate economic results in the solo entities and per simulation consider where capital is needed and from what entities fungible and transferable capital can be used to cover losses. In such a case, the presented approach is a less realistic simplification and the more sophisticated approach should be used. We therefore suggest to not restricting possible better solutions to cope with fungibility and transferability limitations in advance.	Please see remark on comment 1506
1509.	Groupe Consultatif	6.36.	We agree that fungibility and transferability issues are best addressed through the assessment of the own funds rather than the calculation of the SCR.	Noted
1510.	Munich RE	6.36.	A group internal model might directly or via other ways consider limitations on fungibility and transferability. For example, a group risk model might stochastically simulate economic results in the solo entities and per simulation consider where capital is needed and from what entities fungible and transferable capital can be used to	Please see remark on comment 1506

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			cover losses. In such a case, the presented approach is a less realistic simplification and the more sophisticated approach should be used. We therefore suggest not to restrict possible better solutions to cope with fungibility and transferability limitations in advance.	
1511.	AAS BALTA	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	CEIOPS saw this difficulty that may be tackled in L3 Guidance.
1512.	AB Lietuvos draudimas	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511
1513.	CODAN Forsikring A/S (10529638), Denmark	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511
1514.	CODAN Forsikring (Branch Norway) (991 502 491)	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511
1515.	European Union member firms of Deloitte	6.38.	We believe further guidance on benchmark portfolios is required to ensure that undertakings can design/amend internal models in a way which will permit the use of benchmark portfolios.	Please see remark on comment 1511

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	Touche To			
1516.	Groupe Consultatif	6.38.	We agree with the problems identified and would highlight that frequent changes to the benchmark portfolio bring extra operational costs to insurers and infrequent changes to the benchmark portfolios risks arbitrage or at least a drift away from the underlying risk profile. For contracts where the liabilities depend on management actions by the insurer (discretionary bonuses, discretionary investment strategy, variable charges etc) significant differences may exist between companies even for the same benchmark portfolio of liabilities. Moreover, it leads to convergence of models used. Supervisors should thus consider usage of benchmark portfolios in exceptional and justified cases only.	CEIOPS is aware that the use of benchmark portfolios should not be systematic to avoid situations where the undertakings design their models to obtain "good results" when it comes to benchmarking. However, these exercises must also be a tool for supervisors to check the calibration of the model and the undertakings will always be able to comment and explain their results.
1517.	Link4 Towarzystw o Ubezpieczeń SA	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511
1518.	RSA Insurance Group PLC	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511
1519.	RSA Insurance Ireland Ltd	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511

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1520.	RSA - Sun Insurance Office Ltd.	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511	
1521.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	6.38.	It is very difficult – maybe impossible – to require undertakings to design their own methods and then be able to apply benchmark portfolios that will be able to be used in all models in a sensible way.	Please see remark on comment 1511	
1522.	German Insurance Association – Gesamtverb and der D	6.39.	Referring to the last bullet point: It should be made more clear what type of concerns may trigger the use of benchmarks.	CEIOPS may provide Level 3 guidance on this	
1523.	Groupe Consultatif	6.39.	Referring to the last bullet point: It should be made more clear what type of concerns may trigger the use of benchmarks.	Please see remark con comment 1522	
1524.	Fed of Europ Accountants (FEE)	6.40.	We support the proposed flexibility to be given to the supervisor in constructing “relevant benchmark portfolios” at a sector or national level, but, as does CEIOPS, would caution against frequent “automatic benchmarking”. This comment also applies to paragraph 6.41.	Please see remark con comment 1522	
1525.	Groupe Consultatif	6.40.	We agree that too frequent use of this option would be unduly burdensome.	The main difficulty is to find a trade-off between too rare exercises and too frequent.	
1526.	CRO Forum	6.41.	We disagree with this approach. The requirement to run the internal model based on benchmark portfolios shall be limited to the approval process and to exceptional circumstances in the SRP,	Not agreed. This is a supervisory tool. CEIOPS will however in its L3 guidance discuss the	

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			when there are well-founded concerns by the regulator that the approved internal model is no longer appropriate.	frequency, but it seems difficult to justify every exercise.
1527.	German Insurance Association – Gesamtverb and der D	6.41.	In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models where developed to fit the portfolio of the undertaking; e.g. new products usually need substantial effort to be included into the model.	Please see remark con comment 1526
1528.	Groupe Consultatif	6.41.	We disagree with this approach. The requirement to run the internal model based on benchmark portfolios shall be limited to the exceptional cases within the approval process and to the exceptional circumstances in the SRP, when there are well-founded concerns by the regulator that the approved internal model is no longer appropriate.	Please see remark con comment 1526
1529.	KPMG ELLP	6.41.	This could be quite onerous for (re)insurance undertaking as models will have to be adapted for the benchmark portfolios and external assumptions. The frequency of running the models for benchmark portfolios could also become onerous.	Noted. But the Level 3 Guidance will aim at supervisory convergence, and may include advice on the frequency for the use of benchmark portfolios.
1530.	Munich RE	6.41.	In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models where developed to fit the portfolio of the undertaking; e.g. new products usually need substantial effort to be included into the model.	Please see remark con comment 1526
1531.	Groupe Consultatif	6.44.	We agree with the proposal, but would suggest that the supervisor be required to justify its use of a benchmark ptfolio.	Not agreed : benchmark portfolios are part of supervisory toolkits, and CEIOPS does not see reasons why it should be justified.

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1532.	Llody's	6.44.	We believe that if a benchmark portfolio is pushed onto a company, then the regulator should have to justify why it is appropriate for the business, and how the results will be used and interpreted	Same as above
1533.	Groupe Consultatif	6.45.	We support the further development of measures describing the construction of benchmark portfolios.	Noted
1534.	Groupe Consultatif	6.46.	We agree that a discussion with the undertaking is an appropriate first step.	Noted
1535.	CRO Forum	6.48.	CEIOPS outlines the consequences of benchmark portfolios however it is unclear what the intention of proposing benchmark portfolio is. The proposal, as it stands with limited justification on why it is being proposed, will be impractical and costly for both the undertakings and the supervisory authority without adding any significant value towards better regulation and protection of the policy holders.	As mentioned in the Level 1 Text, the aim is to check the calibration... It adds value to observe discrepancies that are only linked to model specifications and not to the underlying risk factors. But it is only one supervisory tool among others.
1536.	EMB Consultancy LLP	6.49.	We welcome the focus on undertakings being able to use a different time horizon and risk measure to those set out for the standard formula;; we feel that this is important for undertakings to be able to make an economic assessment of their own capital requirements. We welcome the provision for undertakings to calculate the SCR from their internal model via approximations.	Noted
1537.	Groupe	6.49.	See our response to 6.6	

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	Consultatif				
1538.	Investment & Life Assurance Group (ILAG)	6.49.	We welcome the allowance of calibrations that are not 1 year VAR at 99.5 percentile.	Noted	
1539.	CRO Forum	6.50.	As mentioned above, a choice of a different time horizon for internal purposes does not have to be justified vis-à-vis the regulator.	Please see remark on comment above	
1540.	AAS BALTA	6.51.	Bullet 4 pre-supposes that 1 year is a "good" choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted	
1541.	AB Lietuvos draudimas	6.51.	Bullet 4 pre-supposes that 1 year is a "good" choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted	
1542.	Association of British Insurers	6.51.	We agree that firms should have the choice to use a different time horizon from one year, provided it can demonstrate equivalence. It would be helpful in this respect to have EU wide realistic illustrations of what equivalence could look like to ensure some degree of harmonisation. This will be important to both Life and GI sectors.	Noted. This may be part of the L3 Guidance.	
1543.	CODAN Forsikring A/S (10529638), Denmark	6.51.	Bullet 4 pre-supposes that 1 year is a "good" choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted	
1544.	CODAN Forsikring	6.51.	Bullet 4 pre-supposes that 1 year is a "good" choice. Perhaps the undertaking should justify the choice of time horizon whatever the	Noted	

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	(Branch Norway) (991 502 491)		time horizon - i.e. including 1 year.	
1545.	Dutch Actuarial Society – Actuariel Genootschap (6.51.	The justification of the chosen time horizon in view of the average duration of the liabilities seems peculiar, since the liabilities can have significant higher durations than the chosen time horizon. The emphasis should be on the implications on the total liabilities of changed assumptions in the chosen horizon. For example a changed view on mortality rates in a given year has impact on the whole life liability.	Agreed. However, CEIOPS does not state that duration of liabilities shall drive the choice of time horizon, but may drive.
1546.	Groupe Consultatif	6.51.	See our response to 6.9	
1547.	Link4 Towarzystwo Ubezpieczeń SA	6.51.	Bullet 4 pre-supposes that 1 year is a “good” choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted
1548.	RSA Insurance Group PLC	6.51.	Bullet 4 pre-supposes that 1 year is a “good” choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted
1549.	RSA Insurance Ireland Ltd	6.51.	Bullet 4 pre-supposes that 1 year is a “good” choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted
1550.	RSA - Sun Insurance Office Ltd.	6.51.	Bullet 4 pre-supposes that 1 year is a “good” choice. Perhaps the undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	Noted
1551.	SWEDEN:	6.51.	Bullet 4 pre-supposes that 1 year is a “good” choice. Perhaps the	Noted

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	Trygg-Hansa Försäkrings AB (516401-7799)		undertaking should justify the choice of time horizon whatever the time horizon - i.e. including 1 year.	
1552.	PricewaterhouseCoopers LLP	6.52.	CEIOPS expresses a view that the undertaking should using its own calculation methodology in running its business, and thus meeting the Use Test. It should not be attempting, and is not being asked, to use in its business the end result of its analysis of how its calculation methodology is equivalence to a one year 99.5% VaR standard. We very much support this. We did feel the drafting should be looked at in case the "consistent" in the paragraph is interpreted as meaning the opposite to the above.	Noted
1553.	Association of British Insurers	6.53.	We agree that this step in the process is necessary, but the wording "at least annually" could act as a deterrent to the use of alternative methodologies.	Please see remark on comment 1497
1554.	CRO Forum	6.53.	The undertaking shall demonstrate the equivalence set out in Article 120 at least annually, but also when there are significant events or changes to the risk profile of the undertaking. We accept the need to demonstrate equivalent protection as stated Article 120. However, we would urge CEIOPS to take a sensible and pragmatic approach to this test in situations where alternative risk measures to 1-year-VaR have been used. There should not be an expectation to demonstrate equivalence on a very frequent basis, annual should suffice, and principles of proportionality should be considered when reconciliation is performed between 1-year-VaR and adopted method to limit granularity for practical reasons.	Please see remark on comment 1497
1555.	Groupe Consultatif	6.53.	See our response to 6.30	

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1556.	RBS Insurance	6.53.	We would appreciate a clearer idea of how equivalence is to be proved for the common scenarios where a different time horizon or a different definition of reserves is used (e.g. ultimate rather than 1 year recognition).	CEIOPS may consider this on Level 3 guidance	
1557.	CEA	6.54.	(Equivalent protection of policyholders) Level 2 should acknowledge that companies may use approximations to determine the SCR. Undertakings are likely to use widely accepted approaches to derive the SCR calculation because it will not be practical to derive this directly from the probability distribution forecast. This should be documented, but usually the approaches should be fairly stable over time and therefore documentation not too onerous.	Level 1 Text states that it is possible to use approximations in the calibration process, and generally provisions from article 119 apply to derive the SCR.	
1558.	CRO Forum	6.54.	It is not clear, what is meant by “temporal dependency effects”.	Noted	
1559.	FFSA	6.54.	CEIOPS displays how the undertaking shall explain and disclose elements if the SCR cannot be derived directly from the probability distribution. FFSA thinks that Level 2 needs to acknowledge that it will be the norm rather than the exception that companies use approximations to determine the SCR.	Noted, however CEIOPS does not think this has its place in L2 measures.	
1560.	German Insurance Association –	6.54.	(Equivalent protection of policyholders) Level 2 should acknowledge that companies may use	Please see remark on comment 1557	

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	Gesamtverb and der D		<p>approximations to determine the SCR</p> <p>Undertakings are likely to use widely accepted approaches to derive the SCR calculation because it will not be practical to derive this directly from the probability distribution forecast. This should be documented, but usually the approaches should be fairly stable over time and therefore documentation not too onerous.</p>	
1561.	Groupe Consultatif	6.54.	See our response to 6.25	
1562.	ROAM –	6.54.	<p>CEIOPS displays how the undertaking shall explain and disclose elements if the SCR cannot be derived directly from the probability distribution.</p> <p>ROAM thinks that Level 2 needs to acknowledge that it will be the norm rather than the exception that companies use approximations to determine the SCR.</p>	Please see remark on comment 1559
1563.	CEA, ECO-SLV- 09-451	6.55.	<p>Requirements to test assumptions seem onerous.</p> <p>In particular assumptions underlying approximations should be appropriately tested against alternative assumptions as part of demonstration of compliance.</p> <p>Replace “thoroughly” with “appropriate”.</p>	Not agreed. The SCR will be a key figure in the new regime and therefore efforts have to be made to derive it as accurate as possible.
1564.	CRO Forum	6.55.	This paragraph is unclear. Which additional provisions are envisaged? If the approximations fulfil the statistical quality test, no	The Statistical Quality Standards, validation and other provisions

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			additional provisions shall be required.		given in this CP
1565.	FFSA	6.55.	<p>CEIOPS says that assumption underlying approximations should be thoroughly tested against alternative assumptions.</p> <p>FFSA thinks that requirements to test assumptions seem onerous, in particular assumptions underlying approximations being tested against alternative assumptions as part of demonstration of compliance.</p>		Please see remark on comment 1563
1566.	German Insurance Association – Gesamtverb and der D	6.55.	<p>Requirements to test assumptions seem onerous.</p> <p>In particular assumptions underlying approximations should be appropriately tested against alternative assumptions as part of demonstration of compliance.</p> <p>Replace “thoroughly” with “appropriate”.</p>		Please see remark on comment 1563
1567.	Groupe Consultatif	6.55.	See our response to 6.27		
1568.	ROAM –	6.55.	<p>CEIOPS says that assumption underlying approximations should be thoroughly tested against alternative assumptions.</p> <p>ROAM thinks that requirements to test assumptions seem onerous, in particular assumptions underlying approximations being tested against alternative assumptions as part of demonstration of compliance.</p>		Please see remark on comment 1563
1569.	Association of British	6.56.	We agree that the solo SCR should follow the solo SCR provisions and that the group supervisor will follow the group SCR principles		Noted

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	Insurers		and will take into account diversification and will not reflect any restrictions on own funds within the group.	
1570.	CEA, ECO-SLV-09-451	6.56.	We agree that the solo SCR should follow the solo SCR provisions and that the group supervisor will follow the group SCR principles and will take into account diversification and will not reflect any restrictions on own funds within the group.	Noted
1571.	CRO Forum	6.56.	<p>"When a group internal model is used to assess the solo Solvency Capital Requirement of related undertakings, the provisions defined at solo level shall apply. Besides, this calculation shall not take into account any group diversification, either directly or indirectly (e.g., by using group consolidated parameters). The principles set out in the CEIOPS Consultation Paper 60 (Advice on Group Solvency assessment) and related to the possible consolidation methods and the assessment of diversification benefits shall apply to the assessment of the group Solvency Capital Requirement with an internal model. The Solvency Capital Requirement shall thus be calibrated in a way that it does not reflect any restriction about the ability of own funds located in a related undertaking to cover any kind of losses within the group."</p> <p>Group's diversification shall be acknowledged in the calculation of the risk margin.</p> <p>Generally the provisions for the Group model apply, rather than the solo level. It has to be clear though, that all internal risk and capital transfer instruments, e.g. reinsurance, have to be taken full into account.</p> <p>FORTIS:</p> <p>This paragraph is very difficult to interpret with its current wording</p>	<p>Risk margin : This is an issue for CP about the risk margin.</p> <p>Agreed for the rest.</p>

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			and should be reworded given the potential significant implications it may have. We understand that with respect to calibration only, when a group internal model is used to calculate the SCR at solo undertaking level, group diversification cannot be taken into account in the calibration of the internal model parameters. However, all intra-group risk arrangements as well as capital transfer instruments can be fully taken into account.	
1572.	German Insurance Association – Gesamtverb and der D	6.56.	We agree that the solo SCR should follow the solo SCR provisions and that the group supervisor will follow the group SCR principles and will take into account diversification and will not reflect any restrictions on own funds within the group.	Noted
1573.	Groupe Consultatif	6.56.	See our response to 6.33. We strongly disagree with this proposal.	Noted
1574.	Pearl Group Limited	6.56.	We agree with the proposal that the group SCR shall be calibrated in a way that does not reflect any restriction on the transfer of own funds within the group.	Noted
1575.	Association of British Insurers	6.57.	It is not clear what the benchmark portfolio actually is and how this would work in practice.	How it would work in practice may be tackled in the Level 3 Guidance.
1576.			Confidential comment deleted.	
1577.	CEA, ECO-SLV-09-451	6.57.	(Benchmark portfolios) Model methodology and assumptions are tailored to the particular undertaking and portfolio, results of benchmark portfolios should therefore not be overrated.	CEIOPS will try to limit as much as possible the costs linked to this benchmarking exercise.

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			In general we are very concerned about the use of benchmark portfolios. Applications of benchmark portfolios to test assumptions need to take into account that there will be significant differences between models tailored to specific portfolios and that the re-run of models on the benchmark portfolio will require an important amount of resources. Therefore, it is crucial that this approach is used on an exceptional basis and that there results are carefully interpreted by supervisors
1578.	DIMA	6.57.	<p>This provides scope for supervisory authorities requiring undertakings to run their internal models on relevant benchmark portfolios, individually or for the whole market. Given the diversity of companies' risk profiles, developing a benchmark portfolio on a whole market basis would not appear to be reasonable.</p> <p>Agreed, but for some risks and in some situations, the exercise may be useful and not unduly burdensome given specific circumstances.</p>
1579.	EMB Consultancy LLP	6.57.	<p>Supervisors must be sure to appreciate that the structure of undertakings internal models may differ greatly and will not necessarily be parameterised according to standard business segments or types of risk. It may be impractical for undertakings to shoe-horn certain benchmarks assumptions into their model. The external assumptions provided to the undertaking should therefore, as much as possible, reflect the design of their model.</p> <p>An alternative approach is to require undertakings to report certain results from their internal model in a way which facilitates comparison between undertakings and against benchmark results. The danger of this is that undertakings interpret the requirements differently, using varying methodologies, which reduces the value of the exercise.</p> <p>Noted, this problem may be tackled in a Level 3 Guidance.</p>
1580.	FFSA	6.57.	<p>CEIOPS says that supervisory authorities may require undertakings</p> <p>Noted</p>

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			<p>to run their internal model on relevant benchmark portfolios.</p> <p>FFSA thinks that with these applications of benchmark portfolios to test assumptions there will be significant differences between how models are applied. As a consequence, FFSA thinks that some flexibility is be required.</p>	
1581.	German Insurance Association – Gesamtverb and der D	6.57.	<p>(Benchmark portfolios)</p> <p>Model methodology and assumptions are tailored to the particular undertaking and portfolio, results of benchmark portfolios should therefore not be overrated</p> <p>In general we are very concerned about the use of benchmark portfolios. Applications of benchmark portfolios to test assumptions need to take into account that there will be significant differences between how models tailored to specific portfolios are applied and that the re-run of models on the benchmark portfolio will require an important amount of resources. Therefore, it is crucial that this approach is used on an exceptional basis and that there results are carefully interpreted by supervisors. Some flexibility will be required.</p>	See remark on comment 1577
1582.	Groupe Consultatif	6.57.	See our responses to 6.38 and 6.41.	
1583.	Munich RE	6.57.	<p>In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models where developed to fit the portfolio of the undertaking; e.g. new products usually need substantial</p>	Noted

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			effort to be included into the model.	
1584.	RBS Insurance	6.57.	We would be concerned that benchmark portfolios under different supervisors could drive internal models down inconsistent routes. We would also be concerned that internal models would have to be adjusted to be able to model benchmark portfolios this introducing a 'standard' within the industry.	Level 3 Guidance will aim at ensuring convergence..
1585.	ROAM –	6.57.	CEIOPS says that supervisory authorities may require undertakings to run their internal model on relevant benchmark portfolios. ROAM thinks that with these applications of benchmark portfolios to test assumptions there will be significant differences between how models are applied. As a consequence, ROAM thinks that some flexibility is being required.	Noted
1586.	XL Cap Ltd	6.57.	We would welcome more guidance on how external benchmarks may be used for calibration purposes.	CEIOPS may provide Level 3 guidance on this
1587.	Association of British Insurers	6.58.	Whilst we agree supervisors should be able to require undertakings to run their model on benchmark portfolios, we are concerned that allowing too much flexibility to supervisors might run the risk of applying different standards throughout Europe.	This may be part of CEIOPS' Level 3 guidance to ensure convergence
1588.	CEA, ECO-SLV-09-451	6.58.	DITTO	
1589.	Dutch Actuarial Society – Actuariel Genootscha	6.58.	The supervisor should have explicit knowledge about the insurance company (for example insurance portfolio breakdowns into segments), to evaluate if the benchmark portfolio is representative for the specific company.	True, but this will be part of the discussions after the test to see whether results are appropriate or not.

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1590.	German Insurance Association – Gesamtverb and der D	6.58.	DITTO	
1591.	CEA, ECO-SLV-09-451	6.59.	DITTO	
1592.	German Insurance Association – Gesamtverb and der D	6.59.	DITTO	
1593.	Intern Udrwrtg Asso London	6.59.	Benchmark Portfolios: If a model creates a deviation from the benchmark portfolios, we believe that there should be an onus on the undertaking to satisfactorily explain to the supervisor why there has been such a deviation. A deviation in itself should not automatically require a model rejection (or change) to the model. For example there might be particular characteristics of an undertaking's business/model which might lead to a scenario generating a deviation in a particular model	Agreed
1594.	EMB Consultancy LLP	7.	Overall the advice on profit and loss attribution does not look unreasonable, and there is a strong link to validation.	CEIOPS appreciates this comment
1595.	German	7.	(Profit and loss attribution)	The principle of proportionality

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	Insurance Association – Gesamtverb and der D		<p>Profit and loss attribution mainly follows risk strategy and risk management which shall be supported by the internal model.</p> <p>Findings of profit and loss attribution shall be used on the basis of materiality to validate the internal model.</p>	applies to all aspects of internal models, including the profit and loss attribution.
1596.	Institut des actuaires	7.	<p>French IA believes the P&L attribution has to be kept simple and proportionate.</p> <p>We suggest that the CEIOPS establish a materiality threshold under which the gaps do not have to be explained. This threshold shall be adapted to the size and the nature of the accounted item.</p>	<p>CEIOPS does not believe that it is appropriate to establish a hard threshold under which gaps do not have to be explained, as focussing on the overall number alone may result in two large offsetting numbers not being detected. Also, this is not in line with the principle based approach of Solvency II or the proportionality principle which should take into account nature, scale and complexity.</p> <p>Please see also response to comment 1595</p>
1597.	Llody's	7.	Overall the P&L attribution section seems reasonable, although we are concerned that CEIOPS may be overestimating the value of emerging experience to model design and parameterisation.	CEIOPS appreciates the requirement to supplement past data with expert judgement for design and parameterisation, and

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					this is covered in section 5.3.3.5 of the consultation paper.
1598.	CEA, ECO-SLV-09-451	7.2.	According to Article 110 (3) in case of partial internal models the profit and loss attribution should only refer to the individually modelled parts.		CEIOPS agrees with this comment. In addition, the further advice will consider whether there are any further specificities relating to the profit and loss attribution for partial internal models, apart from the reduced scope.
1599.	German Insurance Association – Gesamtverb and der D	7.2.	According to Article 110 (3) in case of partial internal models the profit and loss attribution should only refer to the individually modelled parts.		Please see response to comment 1598
1600.	Groupe Consultatif	7.2.	In the case of a partial model, the attribution of profits and losses should be limited to the internally modelled part, in line with Article 110 (3).		Please see response to comment 1598
1601.	CRO Forum	7.3.	In general we feel that this requirement set out for P&L attribution may be better addressed as part of the Use test.		CEIOPS considers that the advice for the profit and loss attribution warrants its own section, even though it is closely linked to the requirements for both the Use Test and the Validation requirements
1602.	CEA, ECO-SLV-	7.5.	The definition of major business units should be in the responsibility of the undertaking and depend on its internal management structure. Examples for major business units are life and non-life		Major business units will be considered in the consultation paper relating to partial internal

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1603.	CRO Forum	7.5.	The advice proposes that definition of 'major business units' will be provided in future level 2 implementation measures. However, the major business units will be largely dependent on the nature of the undertaking and group therefore they should not be dictated by CEIOPS.		Please see response to comment 1602
1604.	German Insurance Association – Gesamtverb and der D	7.5.	The definition of major business units should be in the responsibility of the undertaking and depend on its internal management structure. Examples for major business units are life and non-life business as well as more granular classifications.		Please see response to comment 1602
1605.	Groupe Consultatif	7.6.	Is this intended to be "internal model variables"?		This paragraph has been reworded to provide more clarity
1606.	AAS BALTA	7.7.	In the example given, useful information is only gathered if a significant event happens.		As more experience is obtained by the undertaking, the undertaking will have more data relating to their top risks
1607.	AB Lietuvos draudimas	7.7.	In the example given, useful information is only gathered if a significant event happens.		Please see response to coment 1606
1608.	CODAN Forsikring A/S (10529638), Denmark	7.7.	In the example given, useful information is only gathered if a significant event happens.		Please see response to coment 1606

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1609.	CODAN Forsikring (Branch Norway) (991 502 491)	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	
1610.	Link4 Towarzystw o Ubezpieczeń SA	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	
1611.	Llody's	7.7.	We believe that CEIOPS appears to over-estimate the value of profit and loss attribution. It can certainly give very useful insights in extreme circumstances, however, these do not occur in most years, when profits and losses emerge broadly as anticipated.	Please see response to coment 1606 and 1597	
1612.	RSA Insurance Group PLC	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	
1613.	RSA Insurance Ireland Ltd	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	
1614.	RSA - Sun Insurance Office Ltd.	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	
1615.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-	7.7.	In the example given, useful information is only gathered if a significant event happens.	Please see response to coment 1606	

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	7799)				
1616.	German Insurance Association – Gesamtverb and der D	7.8.	<p>An aspiration to validate the model mainly by profit and loss attribution is too far-reaching.</p> <p>See also para 7.19.</p>	The profit and loss attribution exercise is only one tool to be used for the validation of the internal model. Further details on the validation requirements are set out in Chapter 8 of the consultation paper	
1617.	German Insurance Association – Gesamtverb and der D	7.13.	<p>Hint to the connection with section 8.3.6 (para 8.102-8.106) and para 8.166-8.176:</p> <p>We support that profit and loss attribution mainly provides useful information whether the risks in the internal model are complete or whether material risks are missing.</p> <p>With respect to pseudo-accuracy see para 7.19.</p>	<p>CEIOPS agrees that the profit and loss provides useful information for validation, but it is also very important to show compliance with the use test.</p> <p>Also, please see reponse to comment 1643</p>	
1618.			Confidential comment deleted.		
1619.	CRO Forum	7.15.	<p>“.. the categorisation of risks shall be based on the results of the internal model”</p> <p>The internal model risks are categorised as part of setting the scope and development of the internal model. It is unclear how the categorisation of risks is expected to be based on the results of the internal model.</p>	This small excerpt could be confusing, but not in the context of chapter 7.3.4 of the CP 56.	
1620.	Groupe Consultatif	7.15.	<p>“.. the categorisation of risks shall be based on the results of the internal model”</p> <p>The internal model risks are categorised as part of setting the scope and development of the internal model. It is unclear how the</p>	Please see response to 1619	

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			categorisation of risks is expected to be based on the results of the internal model, although there should be a feedback mechanism.	
1621.	Association of British Insurers	7.17.	Performing an analysis of change on the Risk Margin would be extremely challenging and unlikely to yield any particularly valuable insights into the business. We recommend that the analysis of change in own funds excludes the risk margin on the grounds of proportionality.	In the P&L attribution, undertakings must reconcile the profits and losses consistent with the variable underlying the probability distribution function. It may be that the change in risk margin results in a significant change in this measure, and thus CEIOPS would not like to exclude the consideration of the impact of the change in risk margin. If the change in risk margin is does not have a significant impact, undertakings must be able to justify why this is the case.this is the case.
1622.	CEA, ECO-SLV-09-451	7.17.	We support the definition of profit and loss based on the change in basic own funds. We are supportive of this definition as it provides the most direct mechanism to support the validation of the internal model. Any alternative definitions would require a complex second level of reconciliation to account for fundamental differences between the metrics.	Paragraph 7.17 does not set out the advice of CEIOPS, but rather sets out various possible interpretations. The advice of CEIOPS is set out in paragraph 7.18 and has been clarified. CEIOPS advice is for the profits and losses to be consistent with the variable underlying the probability distribution forecast (Article 119). The variable may differ from basic own funds,

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					because of another internal definition of economic capital resources. The wording in 7.17 and 7.18 has been adjusted to clarify this
1623.	German Insurance Association – Gesamtverb and der D	7.17.	We support the definition of profit and loss based on the change in basic own funds. We are supportive of this definition as it provides the most direct mechanism to support the validation of the internal model. Any alternative definitions would require a complex second level of reconciliation to account for fundamental differences between the metrics.		Please see response to comment 1622
1624.	Groupe Consultatif	7.17.	(a) mentions that the profit and loss attribution could be performed on profit/losses based on changes in basic own funds. Performing an analysis of movement on the Risk Margin component of the technical provisions is likely to be very demanding, particularly given some of the advice in the other CPs, and is also unlikely to yield any particularly useful insights into the cause of the profits/losses. It is proposed that CEIOPS include some advice to this effect in 7.21 (ie that an analysis of changes in own funds excluding changes in the Risk Margin would be sufficient in most cases on the grounds of proportionality).		Please see response to comment 1621
1625.	Munich RE	7.17.	Only the basis of Solvency II should be considered. For the internal model this is the economic balance sheet. The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should be done.		Please see response to comment 1622

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1626.	AAS BALTA	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1627.	AB Lietuvos draudimas	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1628.	CEA, ECO-SLV-09-451	7.18.	The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice.		CEIOPS does not advise that the internal model should be used to cover all accounting regimes. However, CEIOPS does advise that the undertaking should be aware of how the profits and losses used in the profit and loss attribution are different to the profits and losses reported in their accounting systems and what the causes of these differences are.
1629.	CODAN Forsikring A/S (10529638), Denmark	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1630.	CODAN Forsikring (Branch Norway) (991 502 491)	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1631.	German Insurance	7.18.	The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from		Please see response to comment 1628

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	Association – Gesamtverb and der D		<p>comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should suffice.</p> <p>See also para 7.21.</p>	
1632.	Groupe Consultatif	7.18.	<p>We agree that the internal definition used to measure performance should be referenced. However, for the purposes of internal model approval, we would expect that at least one internal definition would need to be very closely aligned to the Solvency II definition of own funds and that the definition of profit and loss should be determined by reference to this internal definition.</p> <p>We would advise against the use of the terminology “profit and loss” (despite its use in the Directive) for any public disclosures of these analyses. This is for the following reasons:</p> <p><input type="checkbox"/> The global insurance industry already has multiple “profit” measures (i.e. IFRS, EEV and local accounting). This creates confusion amongst market analysts and materially increases the cost of capital for the industry. Any additional “profit” measures will confound this situation further.</p> <p><input type="checkbox"/> Own funds have been designed as a solvency metric with customer protection in mind, not as a measure of shareholder value. The change in own funds from one year to the next therefore represents a change in the solvency capital position, not a level of shareholder “profit”.</p> <p>Our advice to CEIOPS is to use the term “analysis of change in own</p>	<p>CEIOPS advice is for the profits and losses to be consistent with the variable underlying the probability distribution forecast (Article 119). The variable may differ from basic own funds, because of another internal definition of economic capital resources.</p> <p>CEIOPS appreciates the possible confusion with the term profit and loss, given all the other definitions used in the accounts of undertakings, but this is the terminology used in the level 1 text.</p> <p>The reporting requirements for internal models is considered in CP 58.</p>

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			funds” for any public disclosures of these analyses.		
1633.	KPMG ELLP	7.18.	We agree with CEIOPS advice on the use of internal definitions of profit and loss and the need for (re)insurance undertaking to understand the reasons for the differences between the profits and losses from the profit and loss attribution and the profits and losses reported in their accounting systems.		CEIOPS appreciates this comment
1634.	Link4 Towarzystw o Ubezpieczeń SA	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1635.	Munich RE	7.18.	The internal model should not be required to cover all accounting regimes. It is questionable what insight will be gained from comparisons. The prevailing view for solvency purposes should be the economic view. If at all, reconciliations at an aggregate level should be done.		Please see response to comment 1628
1636.	RSA Insurance Group PLC	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1637.	RSA Insurance Ireland Ltd	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1638.	RSA - Sun Insurance Office Ltd.	7.18.	This is a sensible approach.		CEIOPS appreciates this comment
1639.	SWEDEN: Trygg-Hansa Försäkrings	7.18.	This is a sensible approach.		CEIOPS appreciates this comment

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1640.	CEA, ECO-SLV-09-451	7.19.	<p>(Profit and loss attribution)</p> <p>The Profit & Loss Attribution is an element of validation as well as a support for business uses.</p> <p>P&L Attribution is a Level 1 test. Level 2 should make the dependencies and hierarchies of this test clearer. The application at business unit level and the use of the metrics in business decisions (rather than accounting standards) is sensible. However there is limited experience in the industry of what the attribution is and how it is used for validation purposes. Ceiops should provide examples.</p> <p>Clarify that the role of the P&L attribution is (1) a validation element, and (2) supports business uses. Add examples for P&L attribution.</p> <p>Overall however, we wonder whether the profit and loss attribution requirement would not be better addressed as part of the use test. 103.</p>	<p>Further clarification of the requirements for both the validation and the use test is considered in paragraphs 8.102 – 8.106 and 3.47 – 3.48 respectively. CEIOPS may provide further guidance in Level 3.</p> <p>Please see also response to comment 1601</p>
1641.	CRO Forum	7.19.	<p>“The profit and loss attribution for each major business unit shall be as transparent as possible ...”</p> <p>We are supportive of this but highlight that there are very substantial practical challenges in performing such an attribution. These practical challenges mean it will take some years (i.e. post-2012) before the robustness and transparency of attribution can be considered equivalent to that of established profit measures such</p>	<p>Performing the attribution is prescribed in Level 1. CEIOPS is aware that this practice is not currently widespread among undertakings, but this will need to be completed if an undertaking wishes to use an internal model to calculate regulatory capital..</p>

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			as IFRS.	
1642.	FFSA	7.19.	FFSA wonders whether the profit and loss attribution requirement would not be better addressed as part of the use test.	Please see response to comment 1601
1643.	German Insurance Association – Gesamtverb and der D	7.19.	<p>(Profit and loss attribution)</p> <p>The Profit & Loss Attribution is an element of validation as well as a support for business uses.</p> <p>P&L Attribution is a Level 1 test. Level 2 should make the dependencies and hierarchies of this test clearer. The application at business unit level and the use of the metrics in business decisions (rather than accounting standards) is sensible. However there is limited experience in the industry of what the attribution is and how it is used for validation purposes. CEIOPS should provide examples.</p> <p>Clarify that the role of the P&L attribution is (1) a validation element, and (2) supports business uses. Add examples for P&L attribution.</p> <p>Overall however, we wonder whether the profit and loss attribution requirement would not be better addressed as part of the use test.</p> <p>Profit and loss attribution can only be one element in the validation process. An actual validation of the internal model by this attribution seems to be too far-reaching. An analysis of profits and losses by risk categories and major business units amounts to a cross classification of yield contributions. The meaning of such a</p>	Please see response to comment 1640 and 1616 and 1595.

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			<p>very detailed analysis with a problematic break down will often be questionable.</p> <p>In our view, the analysis has to be restricted to material yield sources and material risks.</p> <p>For example, capturing and analysing operational risks by major business units or profit centers and modelling them by separate stochastic processes is not useful and should not be requested given the costs involved and the expected (pseudo-)accuracy of results.</p>	
1644.	Groupe Consultatif	7.19.	<p>"The profit and loss attribution for each major business unit shall be as transparent as possible ..."</p> <p>We are supportive of this but highlight that there are very substantial practical challenges in performing such an attribution. These practical challenges mean it may take some years (i.e. post-2012) before the robustness and transparency of attribution can be considered equivalent to that of established profit measures such as IFRS.</p>	Please see response to comment to 1641
1645.	Munich RE	7.19.	It is a very onerous requirement to ask for a P&L attribution for each major business unit. For a group the group view should be the prevailing view. Proportionality to major sources of risk should be applied.	The requirement for a profit and loss attribution for each major business unit is set out in the Level 1 text. There are no specificities for group internal models, so the same requirements will apply to the group internal models.
1646.	RBS Insurance	7.19.	We would like clarification on whether "major business units" is an internal definition for the undertaking or is a definition that will be	Please see response to comment 1602

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			imposed by the legislation.		
1647.	CRO Forum	7.20.	<p>As currently worded, it is difficult to interpret the advice in this paragraph.</p> <p>We interpret this paragraph as advising that there should be little or no sources of profit and loss that are not attributable to one of the risks captured within the internal model.</p>	<p>This interpretation is partly correct. Any residual sources of profit and loss may be explained by non-material risks, or by non-quantifiable risks that may not be included in the internal model for purposes of calculation of the SCR, but may be included in the ORSA.</p> <p>This is a principle based requirement and the undertaking will need to take account of their own risk profile and circumstances when applying the principle. Again, the proportionality principle applies as well.</p>	
1648.	Groupe Consultatif	7.20.	<p>As currently worded, it is difficult to interpret the advice in this paragraph.</p> <p>We interpret this paragraph as advising that there should be little or no sources of profit and loss that are not attributable to one of the risks captured within the internal model.</p>	Please see response to comment 1647	
1649.	Llody's	7.20.	This paragraph does not seem to have any direct relationship to profit and loss attribution, and would be best dealt with elsewhere, in context.	This paragraph gives more information on how the risks are categorised, which is required for the profit and loss attribution.	
1650.			Confidential comment deleted.		

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1651.	Association of British Insurers	7.21.	We are not clear what is meant by the first sentence: 'For the purposes of the Profit and loss attribution the profits and losses shall be of the same relevance as the risk numbers for the Uses test'.	Please see response to comment 1650	
1652.			Confidential comment deleted.		
1653.	CEA, ECO-SLV-09-451	7.21.	<p>We support the definition of profit and loss based on the change in basic own funds.</p> <p>We are supportive of this definition as it provides the most direct mechanism to support the validation of the internal model. Any alternative definitions would require a complex second level of reconciliation to account for fundamental differences between the metrics.</p>	CEIOPS appreciates this comment	
1654.	CRO Forum	7.21.	<p>CEIOPS advice defines "profit" as the change in Solvency II basic own funds, as opposed to, for instance, IFRS profit, EEV profit, or other (local accounting) profit.</p> <p>We are supportive of this definition as it provides the most direct mechanism to support the validation of the internal model. Any alternative definitions would require a complex second level of reconciliation to account for fundamental differences between the metrics.</p> <p>However, we are against the use of the terminology "profit and loss" for any public disclosures of these analyses. This is for the following reasons:</p> <p><input type="checkbox"/> The global insurance industry already has multiple "profit" measures (i.e. IFRS, EEV and local accounting). This creates confusion amongst market analysts and materially increases the</p>	Please see response to comment 1632	

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			<p>cost of capital for the industry. Any additional "profit" measures will confound this situation further.</p> <p><input type="checkbox"/> The basic own funds has been designed as a solvency metric with customer protection in mind, not as measure of shareholder value. The change in own funds from one year to the next therefore represents a change in solvency position, not a level of shareholder "profit".</p> <p>Our advice to CEIOPS is to use the term "analysis of change in own funds" for any public disclosures of these analyses.</p>	
1655.	EMB Consultancy LLP	7.21.	<p>Understanding how the profit and loss attribution may differ to accounting systems is likely to be a challenge for undertakings as accounting standards evolve.</p>	<p>CEIOPS would be concerned if undertakings were not aware of differences, or sources of difference, in their internal measures of profit and loss compared to those required by accounting systems.</p>
1656.	FFSA	7.21.	<p>CEIOPS says that the undertaking shall create its own definition of profits and losses.</p> <p>FFSA thinks that profit and loss attribution has to be stated at own fund level, that is on the net asset value. However, in some particular back-testing processes, reconciliation with accounts could be considered to be relevant.</p>	<p>CEIOPS advice is for the profits and losses to be consistent with the variable underlying the probability distribution forecast (Article 119). The variable may differ from basic own funds, because of another internal definition of economic capital resources.</p> <p>CEIOPS agrees that reconciliation with the accounts could be useful,</p>

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				and therefore we have advised that undertakings shall be aware how the profits and losses used in the Profit and loss attribution are different to the profits and losses reported in their accounting systems and what the causes of these differences are..
1657.			Confidential comment deleted.	
1658.	German Insurance Association – Gesamtverb and der D	7.21.	<p>We support the definition of profit and loss based on the change in basic own funds.</p> <p>We are supportive of this definition as it provides the most direct mechanism to support the validation of the internal model. Any alternative definitions would require a complex second level of reconciliation to account for fundamental differences between the metrics.</p> <p>The mentioned consistency with the probability distribution forecast according to Article 119 is desirable in theory. However, the described analysis of differences should not result in a compulsory introduction of additional details in the internal model owing to accounting criteria. This analysis of difference should be restricted to the most important risks (e.g. equity, NatCat) on a sufficient high aggregation level.</p>	Please see response to comment 1622

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1659.	Groupe Consultatif	7.21.	See our response to 7.18	Please see response to comment 1632
1660.	Legal & General Group	7.21.	We do not understand the first sentence or the intention of this section	Please see response to comment 1650. The purpose of this section is to provide advice as to what form of profits and losses should be used for the purpose of the profit and loss attribution exercise.
1661.	Pearl Group Limited	7.21.	We are not clear what is meant by the first sentence: 'For the purposes of the Profit and loss attribution the profits and losses shall be of the same relevance as the risk numbers for the Uses test'.	Please see response to comment 1650
1662.	PricewaterhouseCoopers LLP	7.21.	CEIOPS expresses a preference for profit and losses to be recognised on the basis of "internal definitions" consistent with "the variable underlying the probability density forecast (Article 119)" . We take this to be the internal model assessment of capital, possibly calculated over a different time period than one year as allowed under the Calibration Article. We support CEIOPS preference if our interpretation is correct. We do have difficulty seeing the relevance of the Profit and Loss attribution as an exercise separate from Validation. We believe it is very important as part of Validation.	CEIOPS agrees with the interpretation given. Also, please see response to comment 1601.
1663.	German Insurance Association –	8.	(Validation) Validation methods from the Basel II environment cannot simply be	CEIOPS agrees that all validation methods used for Basel II models should not be directly applied to internal models under Solvency

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	Gesamtverb and der D		<p>transferred for Solvency II purposes.</p> <p>Experiences with respect to the review of internal modelling basically only exist in the banking industry so far. Unrestricted transfer of the mathematical/statistical validation methods tested there to the insurance business is impossible due to the partly considerably different nature of the modelled components. This applies in particular to backtesting procedures which are unable to furnish significant statements given the annual time horizons that are common in the insurance industry. Therefore, the explanatory power of validation methods from the banking industry should be reviewed carefully before applying them to the insurance business.</p> <p>The frequency of implementing the validation shall be determined individually for each model component by taking the principle of proportionality into account.</p> <p>The section on validation is partly excessive. In practice, too much effort would be needed to fulfil all requirements. The proportionality principle has to be applied. Validation of model parts concerned with material risks is more important and should be more detailed than validation of other parts.</p>	<p>II, as the models are different, especially with regard to the modelling freedom allowed and the variety of risks which are modelled. However, some of the validation tools do however remain valid for use in insurance, although care should be taken in interpreting the results.</p> <p>The CP makes clear that not all validation tools will be able to validate various parts of the model to the same extent, and that it is up to each undertaking to set out in their validation policy how they will validate the various parts of their model.</p> <p>CEIOPS agrees that proportionality should be taken into account in the validation of an internal model, as the proportionality principle applies to the whole directive. A paragraph has been included in the introduction to the paper to re-inforce this. In addition, section 8.3.2.1 relating to the validation</p>

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					policy has been changed so that undertakings may consider the materiality of the internal model components when setting their validation policy.
1664.	Munich RE	8.	The validation policy appears very onerous; proportionality should be applied		Please see response to 1663, relating to proportionality.
1665.			Confidential comment deleted.		
1666.			Confidential comment deleted.		
1667.	CRO Forum	8.5.	Article 122 is a very onerous requirement.		Please see response to comment 1666
1668.	Groupe Consultatif	8.10.	We agree with the rationale given for needing an appropriately robust validation of internal models.		CEIOPS appreciates this comment
1669.	Groupe Consultatif	8.15.	We agree that validation is necessarily both a quantitative and qualitative process.		CEIOPS appreciates this comment
1670.			Confidential comment deleted.		
1671.	German Insurance Association – Gesamtverb and der D	8.18.	The validation should be restricted to the actual parts of the internal model. Upstream input or procedures which are outside the scope of the model can not be subject to this validation. In case of a partial internal model, the parts according to the standard formula are also not subject to this validation.		Validation only applies to that which has been defined in the internal model, so careful consideration needs to be applied when defining the scope of the internal model. Please note however that the internal model is wider than just the calculation kernel of the model.

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1672.	Groupe Consultatif	8.18.	We agree that the validation should extend beyond the calculation kernel of the internal model. For example, misapplications of the model or model results are common failings and should be addressed. A pragmatic approach should be adopted.	CEIOPS appreciates this comment
1673.	Groupe Consultatif	8.20.	We agree that the undertaking must take the primary responsibility for the validation of the model.	CEIOPS appreciates this comment
1674.	Groupe Consultatif	8.24.	It is unclear from this paragraph where the relative responsibilities of the internal audit function and the internal model validation team within the risk management function lie. Extensive involvement of internal audit in the validation of internal models may be impractical without a significant change in this function's remit and skills.	The risk management function is responsible for putting the internal model validation structure in place. Some of the actions that need to be performed for the validation processes may be performed by the internal audit function, if the undertaking finds that this is an effective way to complete the validation processes.
1675.	Llody's	8.24.	Under 3.72e "Article 43(5) requires the risk-management function (RMF) to design, implement, test, validate, document, analyze the performance of the internal model and inform the administrative or management body on its performance", and under 4.30c the RMF shall pass information to the Internal Audit function for them to assess the effectiveness around controls around the internal model. Perhaps 8.24 should refer to 4.30c highlighting that under Article 43(5) it is the RMF responsibility to validate the Internal Model	CEIOPS agrees that the risk management function has the responsibility of validating the model. This is set out in paragraph 8.41
1676.	Groupe Consultatif	8.28.	We agree that it would not be appropriate or even possible for CEIOPS to set out a list of validation procedures to be applied.	CEIOPS appreciates this comment
1677.	Groupe	8.29.	We are uncertain as to whether a validation policy will add	Undertakings will need to

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	Consultatif		significant value. If a validation policy is to be required, it should be clear that the principle of proportionality should be applied throughout the validation process.	consider which validation tools to use for which parts of their model. The existence of a validation policy facilitates good governance practice for this.	
				Please see also response to comment 1663 relating to proportionality.	
1678.	AAS BALTA	8.31.	Does this sentence add any value to section 8?	This sentence captures the fact that different validation tools will provide different levels of comfort, and as a consequence that the undertaking should be aware of the limitations of any validation tools.	
1679.	AB Lietuvos draudimas	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678	
1680.	CODAN Forsikring A/S (10529638), Denmark	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678	
1681.	CODAN Forsikring (Branch Norway) (991 502	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678	

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1682.	Link4 Towarzystw o Ubezpieczeń SA	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678
1683.	Llody's	8.31.	'Significant Change' is referred to above in relation to the frequency of validation, it may be beneficial to provide examples as to what is considered a significant change or magnitude of limits, for example which recent market events over the last few years may have required a full market wide review of validation procedures.	The frequency referred to in paragraph 8.38 refers to the frequency with which validation tools are run, not the frequency with which validation tools are reviewed. It is impossible to give an example of an event that would lead to a requirement for the market to review their methods, as the market consists of many different undertakings with different risk exposures.
1684.	RSA Insurance Group PLC	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678
1685.	RSA Insurance Ireland Ltd	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678
1686.	RSA - Sun Insurance Office Ltd.	8.31.	Does this sentence add any value to section 8?	Please see response to comment 1678

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1687.	SWEDEN: Trygg-Hansa Försäkrings AB (516401- 7799)	8.31.	Does this sentence add any value to section 8?		Please see response to comment 1678
1688.	KPMG ELLP	8.32.	In general, this seems to set out a very comprehensive validation process which may be quite onerous even for large (re)insurance undertakings.		<p>Due to the use of internal model to be used as a tool to make business decisions, and also to calculate the regulatory capital, CEIOPS expects that undertakings would want to have a comprehensive validation process in place to gain comfort over the results of the internal model.</p> <p>Also please see response to comment 1663 relating to proportionality.</p>
1689.	DIMA (Dublin International Insurance & Management	8.33.	"Testing results against experience" may not be appropriate or possible for low frequency events.		The requirement to test results against experience is a requirement of the level 1 text. CEIOPS agrees that in certain cases testing results against experience would only provide limited information, and thus CEIOPS would expect it to be complemented by further validation tools set out in the undertaking's validation policy.

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1690.	Groupe Consultatif	8.37.	It would be helpful if CEIOPS could be more definitive as to whether or not further guidance on validation tools will be given at Level 3. This may influence the planning process for internal model development for some undertakings.	CEIOPS plans to provide further Level 3 guidance on validation tools.
1691.	Groupe Consultatif	8.38.	We agree that the proportionality principal should be applied in determining model validation frequency.	CEIOPS appreciates this comment
1692.			Confidential comment deleted.	
1693.	DIMA (Dublin International Insurance & Management	8.41.	There is an apparent contradiction between 8.41 and 8.49, whereby the former tasks the risk management function with validation of the internal model, whereas the latter states that "independence within the validation process is essential to effective validation". Risk management cannot independently validate the internal model, where it has been assigned responsibility for "detailed internal model governance".	CEIOPS understands how this can cause confusion, but he believe there is no contradiction: The risk management function is responsible for putting the validation of the internal model in place. However, some of the tasks may be carried out by the independent audit function, as they may be best placed to complete this.
1694.	Groupe Consultatif	8.42.	This requirement seems to run the risk of constraining developments in validation reporting and more dynamic, situation-based responses.	CEIOPS considers that with further developments in validation reporting, changes should be made to the validation policy. The undertaking should consider this when defining its model change policy. CEIOPS has amended paragraph 8.42 to also include the reporting

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					of additional ad hoc validation.
1695.	Groupe Consultatif	8.44.	The policy should perhaps set out how senior management would be involved as a minimum in model validation.		The suggestion to include senior management involvement in model validation in the validation policy is already considered in paragraph 8.44
1696.	Groupe Consultatif	8.46.	It is unclear why CEIOPS would accept such limitations, if material, and, if immaterial, why there should be planned developments to address these limitations.		The limits may be acceptable to the current risk profile due, for example, to proportionality issues, but may not be acceptable if the risk profile were to change significantly. In this case, it is important that the undertaking is well aware of what the limitations are.
1697.	KPMG ELLP	8.48.	This seems reasonable as it would make it easier to implement the process.		CEIOPS appreciates this comment.
1698.	DIMA (Dublin International Insurance & Management)	8.49.	See comment in 8.41.		Please see response to comment 1693
1699.	Federation of European Accountants (FEE)	8.49.	The CEIOPS decision to require the validation of the internal model1 to cover both the quantitative and the qualitative process of the internal model is appropriate. We concur with the statement of the Paper where it notes "Independence within the validation proceeds is essential to effective validation as it creates objective challenges to the internal model". This comment also applies to paragraphs 8.50, 8.51 and 8.52.		CEIOPS appreciates this comment.

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			1 Validation is detailed in paragraph 8.15 and is "a set of tools and processes used by the undertaking to gain confidence over the results, design, workings and other processes within the internal model." (page 142 of the Paper)	
1700.	International Underwriting Association of London	8.49.	We have concerns that the requirement for independent validation and review, whilst having clear merits, could effectively double the resourcing requirements for firms seeking to obtain an internal model. We would like to refer CEIOPS to our general comment on avoiding incurring excessive costs.	CEIOPS believes that the objective challenge created by independence is crucial for any effective validation. CEIOPS also believes that the independence will not effectively double the resource requirement, and the advice is in line with the earlier advice that we gave on proportionality, as set out in paragraph 8.52.
1701.	Groupe Consultatif	8.50.	It may be difficult to demonstrate a high degree of independence between the model construction and model validation teams, particularly as the risk management function is responsible for both activities and the requisite skills are quite scarce.	CEIOPS agrees that this is a challenging requirement, but nevertheless that objective challenge is required for an effective validation process. Independence can be maintained even though the risk management function is responsible for both the design and validation, as they will be able to direct different people to perform different tasks. CEIOPS may provide further guidance on independence.

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1702.	AAS BALTA	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	CEIOPS agrees that a commonsense approach needs to be taken in this regard and paragraph 8.51 has been amended. CEIOPS still advises that undertakings should consider the maintenance of independence over time.	
1703.	AB Lietuvos draudimas	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702	
1704.	CODAN Forsikring A/S (10529638), Denmark	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702	
1705.	CODAN Forsikring (Branch Norway) (991 502 491)	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702	
1706.	European Union member firms of Deloitte Touche To	8.51.	It is not clear why this the situation described here causes an independence issue.	If the independent review team remains unchanged, as time goes by after they have suggested a number of changes they will effectively be reviewing their own work which takes away the independence.	

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1707.	Groupe Consultatif	8.51.	The potential requirement that a model validator, who suggests changes to the internal model, should not be used to validate the model after the changes are made seems impractical even for the largest organisations.	Please see response to comment 1702	
1708.	International Underwriting Association of London	8.51.	We would question whether this might preclude some firms from conducting independent internal reviews, and whether there would be sufficient personnel within an organisation who had not been involved in the model's development process, to be able to conduct such a review. This might be an issue for some medium sized entities who wished to opt for an internal model.	Please see response to comment 1702	
1709.	Link4 Towarzystw o Ubezpieczeń SA	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702	
1710.	Llody's	8.51.	The wording in 8.141 that "Undertakings shall also consider how independence is maintained over time" is reasonable, but the background discussion in 8.51 that "the review of the change by the same reviewer at the next validation cycle may not maintain independence" is unreasonable; it seems to require the undertaking having a third set of internal model experts available for this part of the activity. It is perfectly acceptable that, if an internal audit team makes a recommendation, then they check later on if that recommendation has been carried out. The independence requirements for review of internal models could sensibly be benchmarked against the independence requirements for auditors. Expectations for the former should not be more demanding than those applying for the latter. This issue should be considered by the undertaking's Audit Committee.	Please see response to comment 1702 Please see response to comment 1702	

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1711.			Confidential comment deleted.	
1712.	RSA Insurance Group PLC	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702
1713.	RSA Insurance Ireland Ltd	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702
1714.	RSA - Sun Insurance Office Ltd.	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702
1715.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.51.	The risk of this is very small. A commonsense approach needs to be taken over independence over time to keep validation costs manageable.	Please see response to comment 1702
1716.	AAS BALTA	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1717.	AB Lietuvos draudimas	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large	Please see response to comment 1689

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			range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	
1718.			Confidential comment deleted.	
1719.	CODAN Forsikring A/S (10529638), Denmark	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1720.	CODAN Forsikring (Branch Norway) (991 502 491)	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1721.	CRO Forum	8.53.	"...Where actual realisations may not be directly available, the model forecasts may be compared to realisations made on the base of comparable data sets." We agree but note that producing "comparable data sets" could itself be subject to the subjectivity.	CEIOPS agrees to this response and have made an amendment to paragraph 8.53. In addition, this has now also been added to the advice section of the paper
1722.	Groupe Consultatif	8.53.	Models designed to reproduce as accurately as possible the 99.5th percentile 1 year VaR may well not be appropriate to forecast 1 in 2 year or 1 in 5 year outcomes. Consequently, we remain sceptical as to whether this form of "backtesting" provides a meaningful	Please see response to comment 1689

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			validation of the internal model used to calculate the SCR.	
1723.	Link4 Towarzystwo Ubezpieczeń SA	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1724.	RSA Insurance Group PLC	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1725.	RSA Insurance Ireland Ltd	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1726.	RSA - Sun Insurance Office Ltd.	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path	Please see response to comment 1689

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			(i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	
1727.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.53.	Backtesting should be performed. But it should also be recognised that it actually has limited value in practice. It can tell you where things are clearly wrong, but is less good at telling you "to which extent the prediction proved right." This is because in one path (i.e. your factual data for backtest) there is usually a very large range of "reasonable" outcomes. Also, for example, it can only tell you how good your windstorm prediction is if you actually have a windstorm.	Please see response to comment 1689
1728.			Confidential comment deleted.	
1729.	Llody's	8.54.	The paper suggests ways to validate (back test) parameters of the model (calculation kernel). However we believe that undertakings may be exposed to risks where no meaningful back testing can be done (the two methodologies suggested are actual vs. predicted results and GOF testing, and feel that neither are appropriate with too little data).	Please see response to 1689.
1730.	AAS BALTA	8.55.	Not a very helpful sentence unless you have worked in banking.	In this case, the techniques used that are similar in banking use various time horizons and confidence levels to avoid concentrating on one percentile level.
1731.	AB Lietuvos draudimas	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730
1732.			Confidential comment deleted.	

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1733.	CODAN Forsikring A/S (10529638), Denmark	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1734.	CODAN Forsikring (Branch Norway) (991 502 491)	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1735.	Link4 Towarzystw o Ubezpieczeń SA	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1736.	RSA Insurance Group PLC	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1737.	RSA Insurance Ireland Ltd	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1738.	RSA - Sun Insurance Office Ltd.	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	
1739.	SWEDEN: Trygg-Hansa Försäkrings	8.55.	Not a very helpful sentence unless you have worked in banking.	Please see response to comment 1730	

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	AB (516401-7799)			
1740.	Groupe Consultatif	8.56.	The term "root causes" is ill defined and presumes a complex driver based risk model. Many risk models are exogenous in that they rely on observations of outcomes in fitting distributions to these.	All models aim to reflect the reality to which an undertaking is exposed. If testing the results against experience shows that there have been outliers, then the undertaking will need to analyse the root cause, to understand whether the model appropriately reflects this reality.
1741.	Groupe Consultatif	8.57.	<p>"In addition, undertakings shall also, on a regular basis, analyse the results of the backtesting that are not above the trigger event."</p> <p>The advice in this paragraph suggests that on a regular basis back testing is performed on all parameters. This advice disregards the concept of materiality and can result in unnecessary backtesting on parameters that are well below trigger event.</p> <p>We propose that concept of materiality is introduced in this advice.</p> <p>It is not clear what is meant by "analyse... information on the performance of the model for new business.."</p>	<p>When testing results against experience, one danger is to only concentrate on outliers, and not to consider more data that is available in the distribution. This advice sets out that the undertaking should also look at the distribution of information gathered that is not above the trigger event.</p> <p>Please see also the response to comment 1663 relating to proportionality.</p> <p>For new business, there may be a lack of experience data, making it difficult to test results against experience for extreme events. However, more analysis can be</p>

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					done if al data is tested, not only data at extreme events.
1742.	KPMG ELLP	8.57.	Backtesting should also be carried out on a regular basis for results which are not above the trigger event. However, if this is carried out too frequently it could become resource consuming.		Please see response to comment 1741.
1743.	AAS BALTA	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.		CEIOPS has amended paragraph 8.58 to reflect this view.
1744.	AB Lietuvos draudimas	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.		Please see response to comment 1743
1745.	CODAN Forsikring A/S (10529638), Denmark	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.		Please see response to comment 1743
1746.	CODAN Forsikring (Branch Norway) (991 502 491)	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.		Please see response to comment 1743
1747.	Link4 Towarzystwo Ubezpieczeń SA	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.		Please see response to comment 1743
1748.	RSA	8.58.	We do not agree that backtesting is easily automated in the		Please see response to comment

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	Insurance Group PLC		General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.	1743	
1749.	RSA Insurance Ireland Ltd	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.	Please see response to comment 1743	
1750.	RSA - Sun Insurance Office Ltd.	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.	Please see response to comment 1743	
1751.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.58.	We do not agree that backtesting is easily automated in the General Insurance Industry. The frequency of items you wish to test are much lower than those you may test in the banking sector.	Please see response to comment 1743	
1752.	Groupe Consultatif	8.59.	Practical examples of these tests and the errors that they have detected would be welcomed.	CEIOPS may provide further guidance and examples in Level 3.	
1753.	Llody's	8.62.	We propose that the words "or weakened" should be added, as follows: "Using backtesting results ... to change parameters without any qualitative analysis of those results may lead to the parameters systematically being strengthened or weakened without proper analyses of whether the underlying risk has actually changed".	Agreed CEIOPS agrees with this comment and has made the amendment suggested	
1754.	CRO Forum	8.65.	Experiences with respect to the review of internal modelling basically only exist in the banking industry so far. Unrestricted transfer of the mathematical/statistical validation methods tested there to the insurance business is impossible due to the partly considerably different nature of the modelled components. This applies in particular to backtesting procedures which are unable to furnish significant statements given the annual time horizons that	Please see response to comments 1663 and 1689	

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			are common in the insurance industry. Therefore, the explanatory power of validation methods from the banking industry should be reviewed carefully before applying them to the insurance business.	
1755.	German Insurance Association – Gesamtverb and der D	8.65.	109. Experiences with respect to the review of internal modelling mainly exist in the banking industry so far. Unrestricted transfer of the mathematical/statistical validation methods tested there to the insurance business is impossible due to the partly considerably different nature of the modelled components. This applies in particular to backtesting procedures which are unable to furnish significant statements given the annual time horizons that are common in the insurance industry. Therefore, the explanatory power of validation methods from the banking industry should be reviewed carefully before applying them to the insurance business. 110.	Please see response to comments 1663 and 1689
1756.	KPMG ELLP	8.65.	Depending on how proportionality will be applied in practice, this may be quite onerous for some (re)insurance undertakings.	Please see response to comment 1663, relating to proportionality.
1757.	German Insurance Association – Gesamtverb and der D	8.66.	See para 8.65	Please see response to comments 1663 and 1689
1758.	Groupe Consultatif	8.66.	It is unclear why backtesting should ideally be carried out more frequently than annually – should the validity of the model be subject to change purely based on a single additional observation? If this requirement is introduced, we would recommend allowing flexibility to adopt a risk-based approach where certain parts of the model are reviewed with a higher frequency and other parts with a	Data permitting, the more frequent the testing is performed the better. The flexible approach recommended is already allowed for by the adoption of a validation

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			lower frequency and that proportionality/materiality is explicitly referenced.		policy, where the frequency of validation for various components and tools is determined by the undertaking..
1759.			Confidential comment deleted.		
1760.	German Insurance Association – Gesamtverb and der D	8.67.	See para 8.65		Please see response to comments 1663 and 1689
1761.	KPMG ELLP	8.67.	The CP should define what is meant by a sufficiently granular level for backtesting.		The level of the granularity should be linked to the scope in the validation.
1762.	German Insurance Association – Gesamtverb and der D	8.68.	See para 8.65		Please see response to comments 1663 and 1689
1763.	Groupe Consultatif	8.70.	We agree with this observation. Moreover, we would like to emphasise the necessity of differentiating between the data used for calibration and that used for backtesting, as the usage of the same dataset will not provide any additional test.		CEIOPS agrees with this comment. The paragraph has been made clearer to reflect this view
1764.	Groupe Consultatif	8.72.	We are supportive of the use of sensitivity and stability testing.		CEIOPS appreciates this comment
1765.	KPMG ELLP	8.73.	It is not clear how the sensitivity testing will allow for the structure and formulation of the internal model.		Sensitivity testing for the structure or formulation of the

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				model is completed by obtaining the results if a different structure or formulation is used. For example, if the model uses a copula to aggregate the results, the model could sensitivity test various types of copulas.
1766.			Confidential comment deleted.	
1767.	Groupe Consultatif	8.75.	It is unclear whether, in commenting that sensitivity testing can be considered as assessments of model and parameter risk, whether CEIOPS is proposing that the sensitivity tests rather than the main runs are used to set the overall capital requirement.	In this case sensitivity testing refers to a validation tool, not to the calculation of capital.
1768.	CRO Forum	8.79.	Sensitivity testing is especially important in validating parts of the internal model where expert judgement has been used." Expert judgement has to be used in designing, implementing and using a model, so CEIOPS' drafting could have very extensive requirements. CROF proposes "Sensitivity testing is especially important in validating parts of the internal model where expert judgement is critical to the model results."	Agreed CEIOPS agrees with this comment and has amended paragraph 8.79
1769.	Llody's	8.79.	"Sensitivity testing is especially important in validating parts of the internal model where expert judgment has been used" wrongly implies that there are parts of the model where expert judgment is not used. We believe that this should be amended to read "sensitivity testing is especially important in validating parts of the internal model which place particular reliance upon expert judgments".	Agreed CEIOPS agrees with this comment and has amended paragraph 8.79
1770.	Groupe Consultatif	8.82.	It is important to note that in many cases sensitivity tests are not quick to run and constitute a significant additional burden for insurers.	CEIOPS is aware of this. Please see also response to comment 1766, relating to level 1

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				requirements.
1771.	Groupe Consultatif	8.86.	It would be helpful to have some guidance on what is meant by “a significantly different answer” in this context.	The significance should be determined by the undertaking in their validation policy.
1772.	AAS BALTA	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	CEIOPS agrees and has amended this text.
1773.	AB Lietuvos draudimas	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772
1774.	CODAN Forsikring A/S (10529638), Denmark	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772
1775.	CODAN Forsikring (Branch Norway) (991 502 491)	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772
1776.	Link4 Towarzystwo Ubezpieczeń SA	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772
1777.	RSA Insurance Group PLC	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772

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1778.	RSA Insurance Ireland Ltd	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772	
1779.	RSA - Sun Insurance Office Ltd.	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772	
1780.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.90.	Stress and scenario testing can inform on correlations. It can not measure them.	Please see response to comment 1772	
1781.	Llody's	8.91.	"The stress and scenario testing and the resulting effects shall be continuously monitored, assessed and updated by the undertakings" (our italics). We believe that to do this continuously (meaning: without pause or interruption) is obviously entirely unrealistic. We suspect what is meant is "continually" (meaning: repeatedly). Even this is too onerous, however. If the model does not change, and the inputs do not change, then the results of the stress and scenario testing will not change. Thus, the timing of stress and scenario testing should be linked with the timing of model changes and dealt with in the model change policy.	CEIOPS agrees that continuously is incorrect and this has been changed in the paragraph.	
1782.	Groupe Consultatif	8.93.	These comments are perhaps more relevant to the ORSA than the internal model used to calculate the SCR.	CEIOPS agrees that these comments are of relevance to the ORSA as well, but it is CEIOPS opinion that this should be kept in this section as it is also of relevance to the validation of the internal model.	

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				The information provided by other stress testing as may be required by supervisors under Article 34 of the directive, or performed as part under Pillar 2, may also be used in the validation of the internal model where this is appropriate.
1783.	Groupe Consultatif	8.97.	<p>Reverse stress tests may be better situated in the ORSA, although the comparison to the 99.5th percentile scenario is informative. It would be helpful if CEIOPS' advice indicated the number of such reverse stress test scenarios that might need to be considered. We would expect this number to be in the range of 1-5.</p> <p>However, we welcome CEIOPS suggestion of the board reviewing the underlying documentation on reverse stress testing and providing a signoff as proof of their review, but would suggest that the board be permitted to delegate this review and sign-off to a board level risk committee if this is more appropriate.</p>	<p>CEIOPS believes that the requirement for reverse stress testing should be part of the validation process of the internal model. However, the information provided by other stress testing as may be required by supervisors under Article 34 of the directive, or performed as part of Pillar 2 requirements, may also be used in the validation of the internal model where this is appropriate.</p> <p>CEIOPS would not like to prescribe a specific number of reverse stress tests to be completed by all undertakings using an internal model, as this will depend on the risk profile of the undertaking. However, further information may be provided in Level 3 guidance.</p>

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				CEIOPS believes that the board should provide a sign-off of the reverse stress testing, as the reverse stress testing will identify the risks which are most likely to threaten the viability of the undertaking..
1784.	KPMG ELLP	8.99.	We agree that proportionality should be applied to stress and scenario testing, otherwise this could be very onerous for some (re)insurance undertakings.	CEIOPS agrees with this comment.
1785.	Groupe Consultatif	8.104.	<p>"Any indication from the results of the Profit and loss attribution which imply that the risk categorisation of the internal model does not reflect the risk profile of the undertaking shall be escalated to the management body. If further qualitative and quantitative analyses of the results show that the model does not reflect the risk profile appropriately, then the model shall be developed appropriately."</p> <p>We propose to change "developed appropriately" to "improved".</p>	CEIOPS agrees with this comment and has made the amendment
1786.	Groupe Consultatif	8.107.	Facilitating benchmarking of internal models in this way might lead to convergence of the models used by individual undertakings and thus increase systemic risk. It may also encourage smaller insurers to rely on larger insurers for the development of new techniques in risk measurement. Furthermore, we are sceptical as to whether this can be reliably achieved without disclosing commercially sensitive information and without generating huge volumes of disclosures.	CEIOPS agrees that there is a danger of increasing systemic risk, as set out in paragraph 8.109.
1787.	KPMG ELLP	8.109.	The use of this type of benchmarking should be monitored to avoid herd mentality as mentioned in this paragraph.	CEIOPS agrees with this point and plans to provide further guidance

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				under Level 3.
1788.			Confidential comment deleted.	
1789.	CRO Forum	8.110.	It should be borne in mind that model outcomes should be comparable in order for bridging to be effective.	CEIOPS agrees with this comment, as set out in paragraph 8.109
1790.	German Insurance Association – Gesamtverband der D	8.110.	There is a danger if this requirement becomes too descriptive, as the internal models are built to fit the portfolio of the undertaking. Parameters are thus usually derived from company specific data.	Please see response to comment 1788
1791.	Munich RE	8.110.	There is a danger if this requirement becomes too descriptive, as the internal models are built to fit the portfolio of the undertaking. Parameters are thus usually derived from company specific data.	Please see response to comment 1788
1792.	AAS BALTA	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	CEIOPS agrees with this comment and has added a further paragraph setting this out
1793.	AB Lietuvos draudimas	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1794.	CODAN Forsikring A/S (10529638), Denmark	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1795.	CODAN Forsikring	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different	Please see response to comment 1793

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	(Branch Norway) (991 502 491)		types of different undertakings internal models.	
1796.	CRO Forum	8.113.	In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models were developed to fit the portfolio of the undertaking; e.g. new products usually need substantial effort to be included into the model.	The use of benchmark portfolios is not a requirement, but is one validation tool that can be used in the undertaking's validation policy. The section has been restructured to clarify this point
1797.	German Insurance Association – Gesamtverb and der D	8.113.	In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models were developed to fit the portfolio of the undertaking; e.g. new products usually need substantial effort to be included into the model.	Please see response to comment 1796
1798.	Link4 Towarzystw o Ubezpieczeń SA	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1799.	Llody's	8.113.	"run model against hypothetical assumptions/portfolio" We can see how this applies to Life companies, but are unable to see how this is possible for non-life companies, unless what is actually meant by this is sensitivity testing of parameters of model. Please clarify.	This validation tool may not be equally appropriate to use for all types of business. Also, please see response to comment 1796.

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1800.	Munich RE	8.113.	In general we are concerned about the use of benchmark portfolios. This measure should be kept at a minimum, as it may require tremendous effort to apply the model to the portfolio and it should be kept in mind that the models were developed to fit the portfolio of the undertaking; e.g. new products usually need substantial effort to be included into the model.	Please see response to comment 1799
1801.	RSA Insurance Group PLC	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1802.	RSA Insurance Ireland Ltd	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1803.	RSA - Sun Insurance Office Ltd.	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1804.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.113.	Hypothetical portfolios would have the same issues as benchmarking over making them suitable for all of the different types of different undertakings internal models.	Please see response to comment 1793
1805.	CEA, ECO-SLV-09-451	8.115.	Such a comparison is only meaningful if the ESGs are designed to cover the same asset universe. Usually rougher approximations are made for irrelevant asset classes in a portfolio. Under such a benchmarking a chosen portfolio that is then more pronounced in exactly these asset classes might not be captured by the ESG appropriately simply by the fact that it was not designed to capture these. There is a danger that wrong conclusions are drawn in such cases.	CEIOPS agrees with the comment, but the example given is only an example, and is not advice given by CEIOPS. The paragraph has been amended to take into account the point raised in the comment

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1806.	German Insurance Association – Gesamtverb and der D	8.115.	Such a comparison is only meaningful if the ESGs are designed to cover the same asset universe. Usually rougher approximations are made for irrelevant asset classes in a portfolio. Under such a benchmarking a chosen portfolio that is then more pronounced in exactly these asset classes might not be captured by the ESG appropriately simply by the fact that it was not designed to capture these. There is a danger that wrong conclusions are drawn in such cases.	Please see response to comment 1805	
1807.	Groupe Consultatif	8.115.	<p>It is hard to see how a hypothetical portfolio could be used for validation by an undertaking alone. See also our comments on benchmark portfolios in section 6 (6.38 and 6.41).</p> <p>We would also note that a comparison is only meaningful if the ESGs are designed to cover the same asset universe. Usually rougher approximations are made for irrelevant/minor asset classes in a portfolio. A benchmark portfolio containing higher allocations to these asset classes might not be captured by the ESG appropriately simply due the fact that it was not designed to capture them. There would be a danger that wrong conclusions are drawn in such cases.</p>	<p>CEIOPS agrees that there must be additional market information available for this to be used as an effective validation tool.</p> <p>Also, please see response to comment 1805</p>	
1808.	Munich RE	8.115.	Such a comparison is only meaningful if the ESGs are designed to cover the same asset universe. Usually rougher approximations are made for irrelevant asset classes in a portfolio. Under such a benchmarking a chosen portfolio that is then more pronounced in exactly these asset classes might not be captured by the ESG appropriately simply by the fact that it was not designed to capture these. There is a danger that wrong conclusions are drawn in such cases.	Please see response to comment 1805	

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1809.	Association of British Insurers	8.122.	The list of validation areas is helpful but it is not particularly clear how non-quantitative elements such as governance would actually be validated.	The validation of qualitative aspects of the model is considered in paragraph 8.19. Further guidance of how this may work in practice may be subject to Level 3 guidance by CEIOPS.	
1810.			Confidential comment deleted.		
1811.	CEA, ECO-SLV-09-451	8.122.	(Validation) Validation is comprehensive and will create substantial work for companies. Generally, a pragmatic approach is required. The validation should be restricted on the actual parts of the internal model.	All parts listed in a – h are actual parts of the internal model. Also please see response to comment 1663 relating to proportionality.	
1812.	CRO Forum	8.122.	This is a very burdensome requirement. There is a need for prioritisation and possible dispensation based on materiality and relevance. If the data, for example, comes from a specific source, we assume verification and checking of integrity will only be needed at one stage and validation not required at every point of use.	Please see response to comment 1810	
1813.	German Insurance Association – Gesamtverb and der D	8.122.	(Validation) Validation is comprehensive and will create substantial work for companies. Generally, a pragmatic approach is required. The validation should be restricted on the actual parts of the	Please see response to comment 1671	

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			internal model. Upstream input or procedures which are outside the scope of the model can not be subject to this validation. In case of a partial internal model, the parts according to the standard formula are not subject to this validation, too.	
1814.	Groupe Consultatif	8.122.	See our response to 8.18	Please see response to comment 1672
1815.	Investment & Life Assurance Group (ILAG)	8.122.	The validation requirements are significant. Welcome the proportionality principle 8.164, but there is a risk of excessive validation of the models discouraging the use of the models for a wide range of applications.	Please see response to comment 1663 relating to proportionality.
1816.			Confidential comment deleted.	
1817.	CEA, ECO-SLV-09-451	8.123.	<p>For a better structure of this section, auditing the model and evaluating its power could be seen as two separate activities.</p> <p>This article talks about 'validation tools'. There are two general validation activities: auditing and evaluating which could be treated separately as they require different resources and will therefore most likely apply to different parts of the organisation:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Auditing of the internal model (data, documentation, etc,) should be done against approved standards and internally defined policies. <input type="checkbox"/> Interpreting and evaluating the power of model output to judge whether the output can be used with confidence. 	CEIOPS accepts the comment that these are separate activities, but both of these activities are part of the overall validation process. The advice in 8.123 does not prevent an undertaking treating these as separate activities.

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			The level 2 advice should separate its guidance for these activities.	
1818.	German Insurance Association – Gesamtverb and der D	8.123.	<p>For a better structure of this section, auditing the model and evaluating its power could be seen as two separate activities.</p> <p>This article talks about 'validation tools'. There are two general validation activities: auditing and evaluating which could be treated separately as they require different resources and will therefore most likely apply to different parts of the organisation:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Auditing of the internal model (data, documentation, etc,) should be done against approved standards and internally defined policies <input type="checkbox"/> Interpreting and evaluating the power of model output to judge whether the output can be used with confidence <p>The level 2 advice should separate its guidance for these activities.</p>	Please see response to comment 1817
1819.			Confidential comment deleted.	
1820.	Groupe Consultatif	8.125.	<p>See our response to 8.20</p> <p>(<i>We agree that the undertaking must take the primary responsibility for the validation of the model.</i>)</p>	Please see response to comment 1673
1821.	PricewaterhouseCoopers LLP	8.126.	We agree responsibility remains with the board of the undertaking for validation. However, as we note in our response on 4.47, we remain unclear how CEIOPS sees the risk management function	Our advice is in line with the level 1 text.

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			being responsible for both the design and build of the model as well as the validation and improvement of the model (4.30). A more natural division would be for the actuarial function to be responsible normally for model build and design, allowing risk management to perform its second line of defence role of oversight and challenge.	
1822.	CRO Forum	8.127.	Validation policy A risk based proportionality approach, in which more material parts of the model and validation thereof are subject to more stringent requirements than less material parts, should be underlying the validation policy. This should be added as a principle.	Please see response to comment 1663 relating to proportionality.
1823.	EMB Consultancy LLP	8.127.	Most of the material on the validation policy looks sensible. We welcome the call for undertakings to form their own validation policies and the consideration of proportionality.	CEIOPS appreciates this comment
1824.	Groupe Consultatif	8.127.	See our response to 8.29 (<i>We are uncertain as to whether a validation policy will add significant value. If a validation policy is to be required, it should be clear that the principle of proportionality should be applied throughout the validation process.</i>)	Please see response to comment 1677
1825.	Munich RE	8.127.	A risk based proportionality approach, in which more material parts of the model and validation thereof are subject to more stringent requirements than less material parts, should be underlying the validation policy. This should be added as a principle.	Please see response to comment 1663 relating to proportionality.
1826.	FFSA	8.130.	CEIOPS discusses the frequency of the validation process of the internal model. FFSA thinks that regular backtesting for small events is onerous and may be unnecessary.	The advice in 8.130 does not address the issue of back-testing specifically, and it will be up to the undertaking to define their own frequency to perform this.

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				Also please see response to comment 1663 relating to proportionality.
1827.	Llody's	8.130.	"principal" should be replaced with "principle" in the final sentence.	CEIOS advice in 8.130 shall be amended as suggested.
1828.	PricewaterhouseCoopers LLP	8.130.	We support leaving validation frequency as determined in a proportionate manner, but note that an up to date independent validation report is required as part of the approval submission in CP 37. The submission demands on "major change" to the model, which could be quite frequent given the pace of change in the industry, could of themselves effective drive a more explicit frequency of validation. Too frequent validation has the danger of making the process repetitive and less challenging.	The submission associated with a major change will require a validation report appropriate for the major change
1829.	RBS Insurance	8.130.	We agree with the principles behind how frequently the validation process should occur	CEIOPS appreciates this comment
1830.	ROAM –	8.130.	CEIOPS discusses the frequency of the validation process of the internal model. ROAM thinks that regular back testing for small events are onerous and may be unnecessary.	Please see response to comment 1826
1831.			Confidential comment deleted.	
1832.			Confidential comment deleted.	
1833.	Llody's	8.134.	The requirements are set out in 8.134 that "The validation policy shall set out how the results of the different validation tools ... will be used if the tests show that the internal model did not meet its objectives" and in 8.146 that "The policy shall contain the goals and	The intention behind the advice in 8.134 and 8.146 is that an undertaking's validation policy includes its processes and

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			measures of the backtesting". It seems reasonable to require that the results are discussed at the appropriate level of management and that the results of the discussions and any actions arising are documented. However, it seems unreasonable to require that the validation policy sets out in advance how any deficiencies will be addressed in any specific detail, because that would require undertakings to spend much time trying to document all possible reasons for unexpected outcomes, which is an unreasonable burden.	escalation paths for addressing cases where validation tests identify shortcomings in the internal model. It is not CEIOPS intention that exact actions to address any such shortcomings are set out in advance in the validation policy
1834.	AAS BALTA	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	There may only be one policy for the whole group, but this must be relevant and applicable for subsidiaries included in the scope of the group model. For instance, a particular risk might be material to a related undertaking but not to the group as a whole. Therefore the validation policy relating to how that risk is taken into account in the model should be included in the validation policy.
1835.	AB Lietuvos draudimas	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1836.	CODAN Forsikring	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other	Please see response to comment 1835

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	A/S (10529638), Denmark		regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	
1837.	CODAN Forsikring (Branch Norway) (991 502 491)	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1838.	Link4 Towarzystwo Ubezpieczeń SA	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1839.	RSA Insurance Group PLC	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1840.	RSA Insurance Ireland Ltd	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1841.	RSA - Sun Insurance Office Ltd.	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835

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1842.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.137.	This is sensible. In addition there should only need to be one policy for the complete Group that satisfies the lead regulator. Other regulators should be required to follow the lead regulators assessment of the policy and the continued adherence of the Group to the policy.	Please see response to comment 1835
1843.	AAS BALTA	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	CEIOPS understands and accepts that there might be some overlap between that part of an undertakings validation policy that sets out limits of the policy and planned developments to it, and the model change policy that forms part of the internal model approval application (see CP 37 3.30(m) & (n) and 3.61 to 3.78). The model change policy will need to define what changes to the validation policy are major, and what will be minor. Major changes will require prior approval..
1844.	AB Lietuvos draudimas	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843
1845.	CODAN Forsikring A/S (10529638), Denmark	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843

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1846.	CODAN Forsikring (Branch Norway) (991 502 491)	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	
1847.	Link4 Towarzystw o Ubezpieczeń SA	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	
1848.	RSA Insurance Group PLC	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	
1849.	RSA Insurance Ireland Ltd	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	
1850.	RSA - Sun Insurance Office Ltd.	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	
1851.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.138.	This and 8.139 mean that the validation policy will be a "live" policy. This is fine but needs to be understood by the regulator at approval stage so that it is expected that changes may be made to the policy with out triggering a further approval of the whole model.	Please see response to comment 1843	

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1852.	CEA, ECO-SLV-09-451	8.139.	(Validation Policy) Planned model development should also be taken into account in the validation, but should not be used to delay model approval until changes are made.	CEIOPS sees no reason why the requirement in 8.139 should delay model approval. Under this requirement the supervisory authority would need to be satisfied that the undertaking clearly sets out its planned developments to its validation policy and that these are appropriate given the known limitations of the current validation policy as set out by the undertaking and planned model improvements.
1853.	German Insurance Association – Gesamtverb and der D	8.139.	(Validation Policy) Planned model development should also be taken into account in the validation, but should not be used to delay model approval until changes are made.	Please see response to comment 1852
1854.	Association of British Insurers	8.141.	We are concerned that the wording could be read as meaning that someone can validate the model only once. The requirement to maintain independence over time needs to be clarified or interpreted reasonably. Requiring a new reviewer year on year would be an unreasonable requirement.	Please see response to comment 1702
1855.	Llody's	8.141.	The wording in 8.141 that "Undertakings shall also consider how independence is maintained over time" is reasonable, but the background discussion in 8.51 that "the review of the change by	Please see response to comment 1702

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			the same reviewer at the next validation cycle may not maintain independence" is unreasonable; it seems to require the undertaking having a third set of internal model experts available for this part of the activity. It is perfectly acceptable that, if an internal audit team makes a recommendation, then they check later on if that recommendation has been carried out. The independence requirements for review of internal models could sensibly be benchmarked against the independence requirements for auditors. Expectations for the former should not be more demanding than those applying for the latter. This issue should be considered by the undertaking's Audit Committee.	
1856.	PricewaterhouseCoopers LLP	8.141.	We agree that undertakings should have a formal policy on independent validation. We also agree that this policy should also consider how independence is maintained over time. However, the discussion in the preceding white text (8.51) implies a harsh test that "taints" the reviewer if a prior review has recommended change. This would seem to make the use of an internal audit function impossible, and cause the undertaking to move from one external reviewer to the next. This seems both costly and disruptive for a questionable benefit given that all these reviewers may have other consultancy interactions with the undertaking. We believe independence should focus on ensuring the proper relationships more broadly and not focus on whether a prior change has been recommended or not (comment applies to point g).	Please see response to comment 1702
1857.	RBS Insurance	8.141.	We are concerned that the implication that any model changes have to then be validated by an independent reviewer (independent of the original reviewer who suggested the change) would require too many reviewers and would quickly become unwieldy.	Please see response to comment 1702
1858.	Association of British	8.143.	We believe this gives undue credibility to the backtesting of extreme events predicted the probability distribution forecast. In	Please see response to comment 1689

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	Insurers		practice, availability of historic data on extreme may limit the reliability of such tests.	
1859.			Confidential comment deleted.	
1860.	EMB Consultancy LLP	8.143.	<p>We agree that backtesting should be considered by undertakings as part of validation, but feel that this will be a challenging requirement for undertakings.</p> <p>The level of granularity at which results are subject to backtesting will be a key question for undertakings.</p>	<p>Testing results against experience is a requirement of the level 1 text.</p> <p>CEIOPS agrees that the level of granularity will be a key question for the undertaking, and this must be set appropriately when considering the scope of the validation policy</p>
1861.	Groupe Consultatif	8.143.	See our response to 8.56	Please see response to comment 1740
1862.	Legal & General Group	8.143.	<p>We agree with backtesting but have found that it is as much an art as a science. This is mainly due to data issues especially in the tail. We do find it useful but would worry if it became a "test" rather than a useful tool. The latter is important as it is in the tail that its value is most useful and here it can be used to act as a trigger in advance of a particular outcome to mitigate the risks in a timely way. It also helps management understand the "real" material risk which are by definition rare.</p> <p>Also applied to 8.144-8.149</p>	Please see response to comment 1689
1863.	Pearl Group Limited	8.143.	We believe this gives undue credibility to the backtesting of extreme events predicted the probability distribution forecast. In practice, availability of historic data on extreme may limit the reliability of such tests.	Please see response to comment 1689

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1864.	Association of British Insurers	8.144.	See comments under 8.143		Please see response to comment 1689
1865.	CEA, ECO-SLV-09-451	8.144.	<p>(Testing results against experience)</p> <p>The general formalistic identification of reasons for divergence between model and reality is onerous and may be unnecessary for smaller events.</p> <p>The further analysis of back testing results for events below the triggers should not be formalised. However, those analyses could be used to support decisions for model changes that might be considered following deviations for trigger events.</p> <p>A deeper analysis of the divergence between model and reality should not be required for the events below the trigger.</p>		<p>CEIOPS does not intend to require undertakings to identify reasons for divergence for smaller events.</p> <p>CEIOPS are unclear what is meant by the term "formalised" in this item of feedback. CEIOPS is of the view that back-testing results for events below the trigger event provide useful information to how the model is operating.</p> <p>8.144 does not require a deeper analysis of divergence between model and reality for events below the trigger. However, it is CEIOPS view that undertakings ought to have some understanding of divergence between model and reality even for events below the trigger.</p>
1866.	CRO Forum	8.144.	<p>"In addition, undertakings shall also, on a regular basis, analyse the results of the backtesting that are not above the trigger event."</p> <p>The advice in this paragraph suggests that on a regular basis back testing is performed on all parameters. This advice disregards the concept of materiality and can result in unnecessary backtesting on</p>		This advice does not set out that all parameters should be backtested. It sets out that for parameters which are backtested the undertaking should not only concentrate on the observations

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			<p>parameters that are well below trigger event.</p> <p>We propose that concept of materiality is introduced in this advice.</p>	<p>above a specific “trigger event”, but should also analyse the remainder of the observations, as this may provide information, for example on the validity of assumptions regarding the shapes of distributions.</p>
1867.	German Insurance Association – Gesamtverb and der D	8.144.	<p>(Testing results against experience)</p> <p>The general formalistic identification of reasons for divergence between model and reality is onerous and may be unnecessary for smaller events.</p> <p>The further analysis of back testing results for events below the triggers should not be formalised. However, those analyses could be used to support decisions for model changes that might be considered following deviations for trigger events.</p> <p>A deeper analysis of the divergence between model and reality should not be required for the events below the trigger.</p>	<p>Please see response to comment 1865</p>
1868.	Groupe Consultatif	8.144.	<p>See our response to 8.57</p> <p><i>“In addition, undertakings shall also, on a regular basis, analyse the results of the backtesting that are not above the trigger event.”</i></p> <p><i>The advice in this paragraph suggests that on a regular basis back testing is performed on all parameters. This advice disregards the concept of materiality and can result in unnecessary backtesting on</i></p>	<p>Please see response to comment 1741</p>

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			<p><i>parameters that are well below trigger event.</i></p> <p><i>We propose that concept of materiality is introduced in this advice.</i></p> <p><i>It is not clear what is meant by "analyse... information on the performance of the model for new business..")</i></p>	
1869.	Legal & General Group	8.144.	See 8.143	Please see response to comment 1862
1870.	AAS BALTA	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689
1871.	AB Lietuvos draudimas	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689
1872.	Association of British Insurers	8.145.	See comments under 8.143	Please see response to comment 1689
1873.	CEA, ECO-SLV-09-451	8.145.	DITTO	CEIOPS is not aware what the comment is referencing
1874.	CODAN Forsikring A/S (10529638), Denmark	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689

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1875.	CODAN Forsikring (Branch Norway) (991 502 491)	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	
1876.	German Insurance Association – Gesamtverb and der D	8.145.	DITTO	CEIOPS is not aware what the comment is referencing	
1877.	Groupe Consultatif	8.145.	It would seem difficult to differentiate between divergences between the modelled result and reality resulting from unlucky random outcomes and those resulting from a permanent change in environment or model assumption error or parameter estimation error, due to the inherent infrequency of annual observations.	CEIOPS agrees that this is difficult, but also believes that this is a very crucial part of the process. Without this exercise, undertakings will accept without question that past experience is an appropriate guide to future experience. This is something that CEIOPS would like to avoid	
1878.	Legal & General Group	8.145.	See 8.143	Please see response to comment 1862	
1879.	Link4 Towarzystw o Ubezpieczeń SA	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	

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1880.	Llody's	8.145.	"a lucky or" should be added to the final sentence, as follows: "Undertakings shall decide whether the deviation is, for example, the consequence of a lucky or an unlucky random change in environment ..."	CEIOPS agrees and has made this change.	
1881.	RSA Insurance Group PLC	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	
1882.	RSA Insurance Ireland Ltd	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	
1883.	RSA - Sun Insurance Office Ltd.	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	
1884.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.145.	It needs to be understood that backtesting is looking at just one path of several that may have been taken. It is likely to generate useful information but does not on its own actually perform a good validation of the model. In our view it is of limited use.	Please see response to comment 1689	
1885.	Association of British Insurers	8.146.	See comments under 8.143	Please see response to comment 1862	
1886.	Legal & General Group	8.146.	See 8.143	Please see response to comment 1862	

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1887.	Llody's	8.146.	The requirements are set out in 8.134 that "The validation policy shall set out how the results of the different validation tools ... will be used if the tests show that the internal model did not meet its objectives" and in 8.146 that "The policy shall contain the goals and measures of the backtesting". It seems reasonable to require that the results are discussed at the appropriate level of management and that the results of the discussions and any actions arising are documented. However, it seems unreasonable to require that the validation policy sets out in advance how any deficiencies will be addressed in any specific detail, because that would require undertakings to spend much time trying to document all possible reasons for unexpected outcomes, which is an unreasonable burden.		Please see response to comment 1833
1888.	Association of British Insurers	8.147.	See comments under 8.143		Please see response to comment 1862
1889.	Legal & General Group	8.147.	See 8.143		Please see response to comment 1862
1890.	Llody's	8.147.	We believe that the importance of backtesting is overestimated. Most years it will tell you almost nothing - one more data point somewhere near the middle of the sample adds little to knowledge of the underlying distribution. In years of extreme stress (or extreme fortune), however, it can be very useful for looking at individual distributions and dependencies between distributions. The sentence on more data is odd; if you have more data for backtesting you must surely have had more data for initial parameterisation, therefore more confidence in any case.		Please see response to comment 1689.

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1891.	AAS BALTA	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		All references made to timing are not hard requirements, and the timing will ultimately be determined by the undertaking when the validation policy is set out.
1892.	AB Lietuvos draudimas	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		Please see response to comment 1891
1893.	Association of British Insurers	8.148.	See comments under 8.143		Please see response to comment 1862
1894.	CODAN Forsikring A/S (10529638), Denmark	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		Please see response to comment 1891
1895.	CODAN Forsikring (Branch Norway) (991 502 491)	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		Please see response to comment 1891
1896.	CRO Forum	8.148.	"If expert judgment was used in the modelling, then back testing will also include a commonsense comparison between prediction and realization. Back testing shall be carried out at least annually and ideally more often if practical."		Please see response to comment 1758

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			Back testing should be carried out at least annually and ideally more often if practical. We would recommend to allow for flexibility based on a risk-based approach where certain parts of the model are reviewed with a higher frequency and other parts with a lower frequency.		
1897.	Groupe Consultatif	8.148.	See our response to 8.66		Please see response to comment 1758
1898.	Legal & General Group	8.148.	See 8.143		Please see response to comment 1862
1899.	Link4 Towarzystwo Ubezpieczeń SA	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		Please see response to comment 1891
1900.	Lloyds	8.148.	<p>"If expert judgment was used in modelling": We question how it could not be? This seems to be referring to a restricted aspect of expert judgment - assumptions/parameterisation based on judgement, not data.</p> <p>An annual model will not be able to backtest many (any?) aspects more often than annually, which we maintain is perfectly adequate</p>		We have changed the wording to consider this comment
1901.	RSA Insurance Group PLC	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.		Please see response to comment 1891
1902.	RSA Insurance	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very		Please see response to comment 1891

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	Ireland Ltd		compatible with 8.143 and should in any case be part of the validation policy.	
1903.	RSA - Sun Insurance Office Ltd.	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.	Please see response to comment 1891
1904.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.148.	The words "and ideally more often if practical" should be removed. In fact all references to timing could be removed as it is not very compatible with 8.143 and should in any case be part of the validation policy.	Please see response to comment 1891
1905.	Association of British Insurers	8.149.	See comments under 8.143	Please see response to comment 1862
1906.	Groupe Consultatif	8.149.	See our response to 8.70	Please see response to comment 1763
1907.	Legal & General Group	8.149.	See 8.143	Please see response to comment 1862
1908.	Lloyds	8.150.	".. shall include" is unclear and suggest replace with "shall perform".	CEIOPS has included the suggested amendment
1909.			Confidential comment deleted.	
1910.	CRO Forum	8.151.	It is not clear how this will work when an internal model takes input from other models. This scenario is very common and should be made clearer. Will there be a materiality clause?	Please see response to comment 1766
1911.	RBS	8.151.	We would appreciate more clarity on what is required within the	The qualitative review is required

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	Insurance		qualitative review of model results.	after the sensitivities have been run in order to gain more clarity of the risks to which the undertaking are exposed.
1912.	Llody's	8.154.	Please consider how regular is "regularly"? Surely annually, except if a major model change has taken place? It is not as if the results of the sensitivity tests will change dramatically from period to period, unless there has been a major change in model structure or model inputs.	This information should be provided by the undertaking in their validation policy. Further guidance may also be provided by CEIOPS in Level 3
1913.	Llody's	8.155.	"Sensitivity testing is especially important in validating parts of the internal model where expert judgement has been used" wrongly implies that there are parts of the model where expert judgement is not used. This could be amended to read "sensitivity testing is especially important in validating parts of the internal model which place particular reliance upon expert judgements".	Please see response to comment 1769
1914.	AAS BALTA	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	This information should be provided by the undertaking in their validation policy. Further guidance may also be provided by CEIOPS in Level 3
1915.	AB Lietuvos draudimas	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914
1916.	CODAN Forsikring A/S	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording	Please see response to comment 1914

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	(10529638), Denmark		should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	
1917.	CODAN Forsikring (Branch Norway) (991 502 491)	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914
1918.	Link4 Towarzystw o Ubezpieczeń SA	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914
1919.	Llody's	8.157.	Stability is best tested independent of any changes to the model, i.e. by rerunning without changes	CEIOPS agrees that this is a useful test and this is described in paragraph 8.157. The wording has been adjusted to clarify this
1920.	RSA Insurance Group PLC	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914
1921.	RSA Insurance Ireland Ltd	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914
1922.	RSA - Sun	8.157.	It is not clear how often this needs to be tested. Clearly at	Please see response to comment

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	Insurance Office Ltd.		approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	1914	
1923.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	8.157.	It is not clear how often this needs to be tested. Clearly at approval stage it is sensible. However, it would be onerous to satisfy this requirement every time the model is run. The wording should read it is necessary to gain approval and should be re-tested whenever major changes are made to the model.	Please see response to comment 1914	
1924.	Association of British Insurers	8.158.	We would highlight the need to make sure stress and scenario testing is not performed twice as it is likely to be done through Pillar II already.	Please see response to comment 1782	
1925.	European Union member firms of Deloitte Touche To	8.158.	A recommended set of standard scenarios / stress tests would be useful.	Undertakings do not have standard business models or standard internal models. Therefore CEIOPS is of the view that standard scenarios / stress tests for the purpose of the validation of the internal model would not be useful.	
1926.	Legal & General Group	8.158.	It is important to ensure that the stress tests are not duplicated.	Please see response to comment 1924	
1927.	Lloyd's	8.158.	"The stress and scenario testing and the resulting effects shall be continuously monitored, assessed and updated by the undertakings" (our italics). We believe that to do this continuously (meaning: without pause or interruption) is obviously entirely unrealistic. We suspect what is meant is "continually" (meaning: repeatedly). Even this is too onerous, however. If the model does	Please see response to comment 1781	

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			not change, and the inputs do not change, then the results of the stress and scenario testing will not change. Thus, the timing of stress and scenario testing should be linked with the timing of model changes and dealt with in the model change policy.	
1928.	Pearl Group Limited	8.158.	We would highlight the need to make sure stress and scenario testing is not performed twice as it is likely to be done through Pillar II already.	Please see response to comment 1924
1929.	Association of British Insurers	8.159.	See comments under 8.158	Please see response to comment 1924
1930.	Association of British Insurers	8.160.	See comments under 8.158	Please see response to comment 1924
1931.	Association of British Insurers	8.161.	See comments under 8.158	Please see response to comment 1924
1932.	XL Capital Ltd	8.161.	We would welcome a more precise definition of 'Senior Management'. Is it intended that the Board of Directors should be involved in overseeing the stress and testing scenarios?	Senior management in this case does not refer specifically to the board of directors
1933.	Association of British Insurers	8.162.	See comments under 8.158	Please see response to comment 1924
1934.	Association of British Insurers	8.163.	See comments under 8.158 The high level results should be reported to and considered by the Board. We think this better reflects their role.	Please see response to comment 1783
1935.	CEA,	8.163.	(Stress and scenario testing)	Please see response to comment 1934

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	ECO-SLV-09-451		<p>A sign-off of reverse internal model stress tests by the Board does not seem to properly reflect the role of that body.</p> <p>The high level results should be reported to and considered by the Board rather than signed off.</p>	
1936.	CRO Forum	8.163.	<p>"... We will expect an undertaking to document its reverse stress testing and to be able to demonstrate that it has been signed off by its board."</p> <p>We welcome CEIOPS suggestion of the board reviewing the underlying documentation on reverse stress testing and providing a signoff as proof of their review.</p>	CEIOPS appreciates this comment
1937.	German Insurance Association – Gesamtverb and der D	8.163.	<p>(Stress and scenario testing)</p> <p>A sign-off of reverse internal model stress tests by the Board does not seem to properly reflect the role of that body.</p> <p>The high level results should be reported to and considered by the Board rather than signed off.</p>	Please see response to comment 1934
1938.	Groupe Consultatif	8.163.	6. See our response to 8.97	Please see response to comment 1783
1939.	Pearl Group Limited	8.163.	The high level results should be reported to and considered by the Board. We think this better reflects their role. As it stands it	Please see response to comment 1934

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			appears they are expected to sign-off the reverse stress testing.		
1940.	PricewaterhouseCoopers LLP	8.163.	We recognise the usefulness of what is termed "reverse stress testing" where the undertaking investigates stresses that are less than the 99.5% one year standards but are of a scale to put in question the viability of the business model of the undertaking. However, such tests would seem to fall into the ambit of the ORSA. We could not see what purpose they performed in a validation test of a model being approved for use to replace the standard formula SCR.	The reverse stress test provides information that gives the undertaking information about what risks would seriously threaten their viability. If the model shows that these risks are not what they would expect, this may indicate that there are serious issues with their model. Also please see the response to comment 1924	
1941.	Association of British Insurers	8.164.	See comments under 8.158	Please see response to comment 1924	
1942.	Association of British Insurers	8.165.	See comments under 8.158	Please see response to comment 1924	
1943.	German Insurance Association – Gesamtverband der D	8.166.	We support the statement that profit and loss attribution mainly provides useful information whether the risks in the internal model are complete or whether material risks are missing.	CEIOPS appreciates this comment	
1944.	CRO Forum	8.167.	"Any indication from the results of the Profit and loss attribution which imply that the risk categorisation of the internal model does not reflect the risk profile of the undertaking shall be escalated to the management body. If further qualitative and quantitative	Please see response to comment 1785	

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			analyses of the results show that the model does not reflect the risk profile appropriately, then the model shall be developed appropriately.” We propose to change “developed appropriately” to “improved”.	
1945.	Groupe Consultatif	8.167.	See our response to 8.104	Please see response to comment 1785
1946.	CRO Forum	9	More explanation of how the validation should be documented and included in the overall documentation is needed. In many cases, the internal model is actually a system of connected internal models and documentation may be more fragmented.	The documentation of the validation is strongly linked to the validation policy and also the data policy. The possible fragmentation of the documentation is taken into account in 9.58
1947.	AAS BALTA	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1948.	AB Lietuvos draudimas	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1949.			Confidential comment deleted.	
1950.	CODAN Forsikring A/S (10529638), Denmark	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1951.	CODAN Forsikring (Branch Norway)	9.	The documentation - including data and validation policy is going to be a very large document.	Noted

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1952.	Dutch Actuarial Society – Actuarieel Genootschap (9.	The general remarks at the top about principle based versus rule based are very much appropriate here at the documentation standards. We feel that the documentation standards are too severe and will result in overkill. The documentation should show that the important actions have taken place, not extensively how this has been done.	Noted	
1953.	German Insurance Association – Gesamtverband der D	9.	<p>(Documentation standards)</p> <p>The documentation of an internal model should be sufficiently complete and sufficiently detailed to enable an independent knowledgeable third party to form a sound judgement as to the reliability of the model and the compliance with Articles 118 to 124 and to understand the underlying design as well as operational details. This includes considerations of the limitations and weaknesses of the model which are currently identifiable.</p> <p>The documentation should enable the different levels and units of management, in particular the board of management and persons in key positions, to understand those issues of the internal model which are relevant for them.</p> <p>The proportionality principle has to be applied.</p>	<p>The principle of proportionality has been expressed in 9.56 and 9.57</p> <p>And proportionality applies to everything in the directive.</p>	
1954.	Link4	9.	The documentation - including data and validation policy is going	Noted	

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	Towarzystw o Ubezpieczeń SA		to be a very large document.	
1955.	Llody's	9.	<p>The documentation requirements all look reasonable; however, there will be a significant amount of work needed to get the documentation to the required standard and maintain that standard.</p> <p>The different levels of documentation for different people within an undertaking takes account of the differing levels of understanding and expertise required for different areas within the undertaking. The use of the model code as documentation of what the model does is a good idea and encourages well written code with inclusion of detailed comments.</p>	Noted
1956.	RSA Insurance Group PLC	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1957.	RSA Insurance Ireland Ltd	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1958.	RSA - Sun Insurance Office Ltd.	9.	The documentation - including data and validation policy is going to be a very large document.	Noted
1959.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.	The documentation - including data and validation policy is going to be a very large document.	Noted

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1960.	CRO Forum	9.2.	16.	
1961.	Groupe Consultatif	9.6.	We welcome this definition of the documentation standard.	Noted
1962.	Llody's	9.7.	The requirement to "describe the drawbacks and weaknesses of the model" is vague. Clearer guidance is needed for which level of limitations, drawbacks and weaknesses that details are needed. Proportionality should apply	More guidance could possible be given in level 3, whereas level 2 should be more principle based rather than rule based.
1963.	AAS BALTA	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1964.	AB Lietuvos draudimas	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1965.	CODAN Forsikring A/S (10529638), Denmark	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1966.	CODAN Forsikring (Branch Norway) (991 502 491)	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1967.	German Insurance Association	9.8.	The text seems to require different documentation for different groups thereby increasing the burden on undertakings to provide documentation. In our view a modular approach of the	One document as well as a more fragmented approach is possible.

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	- Gesamtverb and der D		documentation might serve the same purpose. 112.	
1968.	Link4 Towarzystwo Ubezpieczeń SA	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1969.	Munich RE	9.8.	The text seems to require different documentation for different groups thereby increasing the burden on undertakings to provide documentation. In our view a modular approach of the documentation might serve the same purpose.	One document as well as a more fragmented approach is possible.
1970.	RSA Insurance Group PLC	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1971.	RSA Insurance Ireland Ltd	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1972.	RSA - Sun Insurance Office Ltd.	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1973.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.8.	We would only want one model document. Ensuring others understand the model could be done via (documented) training sessions.	One document as well as a more fragmented approach is possible.
1974.	AAS BALTA	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of	The documentation does not need to prove understanding only show

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			training provided combined with the person being fit to serve in the senior capacity.	evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence.
1975.	AB Lietuvos draudimas	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence.
1976.	Association of British Insurers	9.11.	See comments under 9.57	
1977.	CODAN Forsikring A/S (10529638), Denmark	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence..

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1978.	CODAN Forsikring (Branch Norway) (991 502 491)	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence.
1979.	German Insurance Association – Gesamtverb and der D	9.11.	It is not clear how written documentation can provide evidence that “all levels of management ... understand the relevant aspects of the internal model.” We believe that this issue is sufficiently addressed by Principle 1 of the Use Test (sections 3.102-3.104), according to which “senior management ... shall be able to demonstrate understanding of the internal model”.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered.
1980.	Groupe Consultatif	9.11.	<p>“The documentation shall include evidence that all levels of management of the undertaking understand the relevant aspects of the internal model.”</p> <p>To evidence that all levels of management “understand” may be an unrealistic requirement.</p> <p>We appreciate the principle behind this advice, however, we believe that the “fit and proper” requirement as set out in the “System of Governance” consultation paper (CP33) and Principle 1 of the Use Test sufficiently covers this point. We suggest that this paragraph be deleted.</p> <p>If evidence is to be required we would suggest that minuted</p>	<p>The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered.</p> <p>“fit and proper” assessment would in most circumstances be determined before any internal model approval and would not necessary be covered from an</p>

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			discussions of, or decisions based on, the model results should be taken as sufficient evidence of understanding.	internal model approval perspective. Minuted discussions may provide part of the evidence required
1981.	KPMG ELLP	9.11.	This section states that all levels and functions of management should understand the internal model. We believe that a measure of proportionality should be applied to this requirement and clarification should be given over which management functions must demonstrate understanding of the model.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered. Training would be part of evidence. Please see paragraph 9.12 regarding the extent to which management understanding should be documented
1982.	Link4 Towarzystw o Ubezpieczeń SA	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence.
1983.	Llody's	9.11.	How would the understanding of "all levels and functions of management" be evidenced in practice? We believe that it is	The documentation does not need to prove understanding only show

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			realistic to require that relevant information is communicated to all levels and functions of management in such a way as to give them the opportunity to adequately understand the material points, and to rely on the "fit and proper" requirements to ensure that they take the necessary steps to ensure that they do understand it. Actually demonstrating such understanding is impractical.	evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered. "fit and proper" assessment would in most circumstances be determined before any internal model approval and would not necessary be covered from an internal model approval perspective.
1984.			Confidential comment deleted.	
1985.	RSA Insurance Group PLC	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered Training would be part of evidence.
1986.	RSA Insurance Ireland Ltd	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.	The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered

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					Training would be part of evidence.
1987.	RSA - Sun Insurance Office Ltd.	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.		<p>The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered.</p> <p>Training would be part of evidence.</p>
1988.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.11.	It would be hard to evidence understanding (unless you set an exam!) Surely sufficiency would be obtained by the correct level of training provided combined with the person being fit to serve in the senior capacity.		<p>The documentation does not need to prove understanding only show evidence of understanding, which should be interpreted less stringent than proving. Further level 3 guidance may be considered.</p> <p>Training would be part of evidence</p>
1989.	Groupe Consultatif	9.12.	We agree that the level of understanding should depend on the relevant oversight responsibilities.		Noted
1990.	Groupe Consultatif	9.19.	We do not understand this statement.		"a form of" has been deleted, which should make the sentence more understandable
1991.	Llody's	9.19.	Please clarify the meaning of "a form of a main aim" in this context.		"a form of" has been deleted, which should make the sentence

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				more understandable
1992.	Groupe Consultatif	9.20.	We suggest keeping this more flexible. It is not clear why the source code of the implementation should necessarily be an integral part of the documentation, but appreciate this being given as an option.	"source code of the" has been deleted. Now it refers to the IT implementation
1993.	RBS Insurance	9.20.	More clarity on what is meant by the source code would be appreciated. Also we assume this will not apply to external models?	"source code of the" has been deleted. Now it refers to the IT implementation
1994.	AAS BALTA	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted
1995.	AB Lietuvos draudimas	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted
1996.	Association of British Insurers	9.21.	It will be very important to keep requirements in proportion here in order to ensure that the information provided is exploitable and 'understandable' as mentioned in this paragraph. Too much documentation might also jeopardise the fulfilment of the use test.	Noted
1997.	CEA, ECO-SLV-09-451	9.21.	(Documentation standards) Proportionality needs to be ensured here. Also see comments for paragraph 9.53. It will be very important to keep requirements in proportion here in order to ensure that the information provided is exploitable and 'understandable' as mentioned in this paragraph. Too much documentation might also jeopardise the fulfilment of the use test.	Noted Proportionality applies to the whole directive
1998.	CODAN	9.21.	Good documentation does remove key person risk. It can help	The word "increased" has been

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	Forsikring A/S (10529638), Denmark		mitigate the impact.		inserted.
1999.	CODAN Forsikring (Branch Norway) (991 502 491)	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.		The word "increased" has been inserted.
2000.	German Insurance Association – Gesamtverb and der D	9.21.	(Documentation standards) Proportionality needs to be ensured here. Also see comments for paragraph 9.53. 113. 114. It will be very important to keep requirements in proportion here in order to ensure that the information provided is exploitable and 'understandable' as mentioned in this paragraph. Too much documentation might also jeopardise the fulfilment of the use test.		Noted
2001.	Groupe Consultatif	9.21.	We understand that the words "third person" refer to "independent knowledgeable third person".		"independent knowledgeable" has been inserted.
2002.	Link4 Towarzystw o Ubezpieczeń SA	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.		The word "increased" has been inserted.

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2003.	Pearl Group Limited	9.21.	It will be very important to keep requirements in proportion here in order to ensure that the information provided is exploitable and "understandable" as mentioned in this paragraph. Too much documentation might also jeopardise the fulfilment of the use test.	Noted	
2004.	RSA Insurance Group PLC	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted.	
2005.	RSA Insurance Ireland Ltd	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted.	
2006.	RSA - Sun Insurance Office Ltd.	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted.	
2007.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.21.	Good documentation does remove key person risk. It can help mitigate the impact.	The word "increased" has been inserted.	
2008.	AAS BALTA	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	
2009.	AB Lietuvos draudimas	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	
2010.	CODAN Forsikring A/S (10529638), Denmark	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	

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2011.	CODAN Forsikring (Branch Norway) (991 502 491)	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included
2012.	Groupe Consultatif	9.23.	The requirement of generally documenting the past development of the model seems demanding given that the overall burden of documentation in any case is quite onerous. The issue of “frequent model changes” should be sufficiently addressed by Article 123(5) requiring the documentation of “major changes”. - This also refers to 9.59.	Only an overview is required, not a rigorous documentation. This is also set out in paragraph 9.25
2013.	Link4 Towarzystw o Ubezpieczeń SA	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included
2014.	Llody’s	9.23.	There is an apparent inconsistency here with other comments in the rest of CP56. The paragraph suggests that frequent model changes are a sign of the model potentially being unreliable. This could potentially discourage undertakings from updating their model to reflect their changing risks or improving techniques as this may affect their internal model approval. There needs to be some kind of balance here and some discretion for the supervisory authority to say whether the frequency of changes to the model are suitable given the changes in business risks and changes. If there is excessive change this could indicate instability in the model.	Agree that a balance need to be in place
2015.	RSA Insurance	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included

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	Group PLC				
2016.	RSA Insurance Ireland Ltd	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	
2017.	RSA - Sun Insurance Office Ltd.	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	
2018.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.23.	A lack of changes may indicate inferior technical input into the model over time.	Aspect included	
2019.	AAS BALTA	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included	
2020.	AB Lietuvos draudimas	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included	
2021.	CODAN Forsikring A/S (10529638), Denmark	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included	
2022.	CODAN Forsikring (Branch Norway) (991 502 491)	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included	

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2023.	German Insurance Association – Gesamtverb and der D	9.25.	This should be kept to only the relevant steps in the model development, especially if models are in use for some years. Recent history (e.g. two years) could be documented in more detail. 115.	The words “overview” and “key development steps” are already included. To fix a time span would in practise be hard to set, since the model development history varies from one undertaking to another. Aspects have been included.	
2024.	Groupe Consultatif	9.25.	It is unclear from the text whether CEIOPS would expect undertakings which already have internal models, but which do not have documentation of its historical development, to attempt to recreate this documentation. We would recommend not, as this would be unnecessarily burdensome (and in some cases impossible) and generally not be justified by the modest potential benefits.	Aspect to some extent included. CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk crystallises.	
2025.	Link4 Towarzystw o Ubezpieczeń SA	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included.	
2026.	Llody's	9.25.	We agree in principle with the requirement for “a record of the past development of the internal model”; however, more guidance is needed on how long records are required to be kept for. For example, the records might be required to detail the changes made from the initial model used for Solvency II, or the changes to the model made in the last 5 years. Consideration should also be given to whether the timescale should be different for major and minor	Aspects included. The timescale would vary from one undertaking to another. Only key development steps are required.	

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			changes and also for changes that were proposed but not made.		
2027.			Confidential comment deleted.		
2028.	Munich RE	9.25.	This should be kept to only the relevant steps in the model development, especially if models are in use for some years. Recent history (e.g. 2 years) could be documented in more detail.	The words "overview" and "key development steps" are already included. To fix a time span would in practise be hard to set, since the model development history various from one undertaking to another. Aspect have been included.	
2029.	RSA Insurance Group PLC	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included.	
2030.	RSA Insurance Ireland Ltd	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included.	
2031.	RSA - Sun Insurance Office Ltd.	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included.	
2032.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.25.	If documentation standards have not been S2 before implementation this may be difficult in practice.	Aspect included.	
2033.	AAS BALTA	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.	Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to	

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					understand how the outputs are linked to the inputs.
2034.	AB Lietuvos draudimas	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.		Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.
2035.	CODAN Forsikring A/S (10529638), Denmark	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.		Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.
2036.	CODAN Forsikring (Branch Norway) (991 502 491)	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.		Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.
2037.	Groupe Consultatif	9.29.	Guidance might be useful as to for how many years supervisors expect results to be stored, or companies to be able to reproduce them. This could be a topic for the Level 3 guidance.		Noted
2038.	Link4 Towarzystwo Ubezpieczeń SA	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.		Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.

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2039.	RSA Insurance Group PLC	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.	Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.	
2040.	RSA Insurance Ireland Ltd	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.	Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.	
2041.	RSA - Sun Insurance Office Ltd.	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.	Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.	
2042.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.29.	It is very likely that any stochastic model will require compromises over storage of output data. It would not be satisfactory for the model design to be significantly de-scoped due to storage issues.	Not all outputs from each stochastic simulation must be documented, but there must be an appropriate audit trail to understand how the outputs are linked to the inputs.	
2043.	Llody's	9.30.	More guidance is needed around what is required in "a data flow chart". The level of detail required in this and whether details are required of the checks and adjustments made to the data at each stage need more clarification.	The explanation "illustrating how data flows through the internal model" has been added.	

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2044.	Groupe Consultatif	9.34.	Should the reference be to section 9.3.6?	Agreed
2045.	Groupe Consultatif	9.39.	<p>The paragraph suggests that, in principle, the internal model should be reproducible based on the documentation. We believe that this goes beyond the general points mentioned in paragraph 9.53 which propose that a knowledgeable third party could understand the reasoning and the underlying design and operational details of the internal model.</p> <p>In addition, there is no requirement by the directive for the documentation to be detailed enough to "reproduce" the internal model. We strongly propose that the reference to reproduction of the internal model using the documentation by a third party should be removed. Furthermore, it does not seem necessary to document generally known and accepted mathematical theory in the documentation. This could be stressed in the L2 advice.</p>	<p>Section 9.3.4 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>The aim of the paragraph is to have a harmonized aim across different EU member states and undertakings.</p> <p>The paragraph should not be confused with 9.6, which concerns the high level documentation principle of the internal model.</p> <p>9.39 concerns the detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>What is generally known and accepted mathematical theory would be a too ambiguous statement.</p> <p>Leaving generally known and accepted mathematical theory outside the documentation cannot be seen to produce a detailed outline.</p>

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2046.			Confidential comment deleted.	
2047.	Groupe Consultatif	9.43.	<p>"The documentation shall include a rationale for decisions on assumptions, data and parameters. Known drawbacks or weaknesses shall also be documented. Where complex approaches have been used then a more detailed description of the approach shall be given. Where adjustments are made to the underlying data the nature, amount, and rationale for the adjustments shall be clearly stated."</p> <p>We would propose to add "and its development over time" to the first sentence.</p>	Agreed
2048.	Llody's	9.44.	To state that "using data blindly [to predict future behaviour] is in many circumstances not appropriate" is misleading. It is never appropriate.	<p>Saying never at all future timepoints seems be too strong</p> <p>I think the point here is that past data may be appropriate, but it may also not be appropriate. What is never appropriate is to use past data "blindly". So maybe we can change this to</p> <p>"...using data blindly suggests that the undertaking thinks that the past experience perfectly predicts future behaviour. The assumption that the past experience perfectly predicts future behaviour may in many circumstances not be appropriate, and making this assumption</p>

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				blindly is never appropriate."
2049.	DIMA (Dublin International Insurance & Management	9.45.	Any expert judgment inputs to the model – assumptions, data, and parameters – need to be documented and understood. Also explanations are needed about what processes the expert judgment is based on and how the expert judgment has been validated. This may be difficult given it is a judgment call that is being made. Also, it would mainly be due to a lack of credible data an expert judgment opinion is sought.	The exercise of expert judgment should be a formal process and not an informal "black box" process. We could reference the section in SQS dealing with expert judgement
2050.	Groupe Consultatif	9.45.	Expert judgment is widely used in internal models. For example, in the selection of the data set to use, the time period and step length, the models to fit, the goodness of fit tests to apply and any adjustments to make. The requirement to document the extent to which the use of expert judgment will affect the model result is impractical if applied at the level of each instance of the application of expert judgment.	The exercise of expert judgment should be a formal process and not an informal "black box" process.
2051.	CEA, ECO-SLV- 09-451	9.48.	In practice it will be impossible to capture "all" shortcomings. We would find it useful to explain why the undertaking believes that the model works appropriately for the purposes it was built for.	Explaining why the undertaking believes that the model works appropriately for the purposes it was built for does not disclose information about circumstances under which the internal model does not work effectively
2052.	German Insurance Association – Gesamtverb and der D	9.48.	In practice it will be impossible to capture "all" shortcomings. We would find it useful to explain why the undertaking believes that the model works appropriately for the purposes it was built for.	Explaining why the undertaking believes that the model works appropriately for the purposes it was built for does not disclose information about circumstances under which the internal model does not work effectively

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2053.	Groupe Consultatif	9.48.	In practice it will be impossible to capture “all” shortcomings. It may be more helpful to require an explanation of why the undertaking believes that the model works appropriately for the purposes for which it was built.	Explaining why the undertaking believes that the model works appropriately for the purposes it was built for does not disclose information about circumstances under which the internal model does not work effectively
2054.	Munich RE	9.48.	In practice it will be impossible to capture “all” shortcomings. We would find it useful to explain why the undertaking believes that the model works appropriately for the purposes it was built for.	Explaining why the undertaking believes that the model works appropriately for the purposes it was built for does not disclose information about circumstances under which the internal model does not work effectively
2055.	AAS BALTA	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth. 9.49 deals with all changes from the point of model approval. 9.23 – 9.26 also affects the documentation of significant changes to the model prior to model approval
2056.	AB Lietuvos draudimas	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.
2057.	CODAN Forsikring A/S (10529638),	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.

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	Denmark				
2058.	CODAN Forsikring (Branch Norway) (991 502 491)	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2059.	Link4 Towarzystw o Ubezpieczeń SA	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2060.	RSA Insurance Group PLC	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2061.	RSA Insurance Ireland Ltd	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2062.	RSA - Sun Insurance Office Ltd.	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2063.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.49.	9.23-9.26 effectively mean that ALL changes need to be documented	Yes, but with different width and depth.	
2064.	Groupe Consultatif	9.51.	We agree that it is important to isolate/identify the impact of (major) model changes by running, for comparison, like-for-like	Changed to "most recent valuation date".	

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			models which only differ with regard to the model change in question. However, we believe that the requirement to re-calculate/re-run past models should be limited, for instance to the most recent valuation date (as in 9.52.), as it can become extremely onerous if more than one change has to be analysed.	
2065.	Federation of European Accountants (FEE)	9.52.	The overarching benchmark that documentation be such that "an independent knowledgeable third party could form a sound judgement", is appropriate.	Noted
2066.	Groupe Consultatif	9.52.	This may not have been intended by CEIOPS, but the wording of 9.52 implies that one particular way in which the analysis of the model change should be carried out. For example, an insurer may have applied a -40% equity shock to its holdings at 31.12.2012 and, in its valuation at 31.12.2013, subsequently changes the model to adopt a -50% equity shock. There are two ways of analysing the model change i) rerunning the 31.12.2012 valuation using a -50% shock and ii) rerunning the 31.12.2013 valuation using the -40% equity shock. This paragraph appears to promote method ii).	The text has been changed to include both alternatives.
2067.			Confidential comment deleted.	
2068.	Association of British Insurers	9.53.	We welcome this paragraph which provides a sensible interpretation of the knowledgeable third party build principle.	May be considered as level 3 guidance.
2069.			Confidential comment deleted.	
2070.	CEA, ECO-SLV-09-451	9.53.	(General points) Purpose of the documentation should be for a third party to form a	9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.

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			<p>sound judgement as to the reliability of the internal model and its compliance, everything else would result in an excessive burden for the companies.</p> <p>The challenge is to produce documentation that provides a sufficient understanding without creating excessive burden to the company. There is some inconsistency in the advice, with paragraph 9.53 referring to the ability of an independent knowledgeable third party being able to form sound judgement and paragraph 9.67 referring to a third party being able to reproduce model outputs.</p> <p>Paragraph 9.53 rather than 9.67 should apply.</p>	<p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>
2071.	CRO Forum	9.53.	<p>We are supportive of the level of documentation requirements suggested in this paragraph, in particular that the documentation should be sufficient enough for a knowledgeable third party to understand the reasoning and the underlying design and operational details of the internal model.</p> <p>It is not clear if the documentation needs to be self-standing or can refer to books/scientific papers/internal technical documents for further detailed description and analysis.</p>	May be considered as level 3 guidance.
2072.	FFSA	9.53.	FFSA stresses that the challenge for documentation is to produce documentation that provides a sufficient understanding without creating excessive burden to the company.	Noted
2073.			Confidential comment deleted.	
2074.	German Insurance	9.53.	(General points)	9.67 concerns the level 1 requirement of a detailed outline

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	Association – Gesamtverb and der D		<p>Purpose of the documentation should be for a third party to form a sound judgement as to the reliability of the internal model and its compliance, everything else would result in an excessive burden for the companies.</p> <p>The challenge is to produce documentation that provides a sufficient understanding without creating excessive burden to the company. There is some inconsistency in the advice, with para 9.53 referring to the ability of an independent knowledgeable third party being able to form sound judgement and para 9.67 referring to a third party being able to reproduce model outputs.</p> <p>Para 9.53 rather than para 9.67 should apply.</p>	<p>of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>	
2075.	Groupe Consultatif	9.53.	See our response to 9.6	Please see the reply to that comment	
2076.	Investment & Life Assurance Group (ILAG)	9.53.	We welcome clarity on the documentation requirements.	Noted	
2077.	Just Retirement Limited	9.53.	Although this requirement on its own is relatively clear, there has been a degree of industry confusion around whether an independent third party should be able to replicate the internal model. Were this to be the case the documentation standards would become significantly more onerous to comply with, we believe unnecessarily so, as there appears to be no justification for requiring that the model be replicable on the basis of its	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of</p>	

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			documentation. It would therefore be helpful if the final guidance could confirm that replication of the model, based on its documentation, is not a requirement.	the internal model. The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.
2078.	Legal & General Group	9.53.	We support this paragraph as being a good definition of the documentation required	Noted
2079.	ROAM –	9.53.	ROAM stresses that the challenge for documentation is to produce documentation that provides a sufficient understanding without creating excessive burden to the company.	Noted
2080.	CRO Forum	9.54.	... for all material parts and relevant aspects”.	Not agreed would be too ambiguous
2081.	Groupe Consultatif	9.54.	... for all material parts and relevant aspects”.	Not agreed would be too ambiguous
2082.	AAS BALTA	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2083.	AB Lietuvos draudimas	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use

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2084.	CODAN Forsikring A/S (10529638), Denmark	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2085.	CODAN Forsikring (Branch Norway) (991 502 491)	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2086.	KPMG ELLP	9.56.	On one hand CP56 requires the documentation to be very detailed; on the other it suggests tailoring the documentation keeping in view its intended users, e.g. the document for management focusing only on key areas. It is not clear if this implies maintaining two sets of model documentation.	9.56 should be combined with 9.58
2087.	Link4 Towarzystw o Ubezpieczeń SA	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2088.	RSA Insurance Group PLC	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2089.	RSA Insurance	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood.	Not agreed documentation should be fit for

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	Ireland Ltd		Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	the purpose and use
2090.	RSA - Sun Insurance Office Ltd.	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2091.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.56.	It does not seem sensible for there to be different documentation for the different levels at which the model may be understood. Rather, evidence of training should be sufficient to ensure that non model experts have a sufficient knowledge of the key and relevant aspects of the internal model	Not agreed documentation should be fit for the purpose and use
2092.	AAS BALTA	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Not agreed documentation should be fit for the purpose and use
2093.	AB Lietuvos draudimas	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Not agreed documentation should be fit for the purpose and use
2094.	Association of British Insurers	9.57.	It is difficult to document understanding of a model – it would be possible to document items such as training materials provided to the different bodies. Also, the wording “all levels of management” needs to be interpreted sensibly as this could cover managers in client services or marketing who manages a small team of people and who would have no need to know about the internal model. This phrase needs to be interpreted as only those in management who have an active	Adequate training would be part of evidence Understanding with respect to “relevant aspects”.

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			role in the internal model or who are active users of the output of the model.	
2095.	CODAN Forsikring A/S (10529638), Denmark	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2096.	CODAN Forsikring (Branch Norway) (991 502 491)	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2097.	CRO Forum	9.57.	<p>"The documentation shall include evidence that all levels of management of the undertaking understand the relevant aspects of the internal model."</p> <p>To evidence that all level of management understand "may be an unrealistic requirement.</p> <p>We appreciate the principle behind this advice however we strongly believe that the "fit and proper" requirement as set out in the "System of Governance" consultation paper (CP33) sufficiently covers this point. We therefore propose that the first two sentences in this advice are removed.</p>	<p>Note agreed</p> <p>Note the understanding with respect to "relevant aspects".</p> <p>"fit and proper" assessment would in most circumstances be determined before any internal model approval and would not necessary be covered from an internal model approval perspective.</p>
2098.	Groupe Consultatif	9.57.	See our response to 9.11. We propose that the first two sentences in this advice are removed.	<p>Not agreed</p> <p>Please see reply to response 1980.</p>
2099.	KPMG ELLP	9.57.	The CP recommends that the documentation should contain	Listing suitable evidence would be

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			evidence that all levels of management should understand relevant aspects of the model. What form or shape this evidence should take is however not clear. Also, the management is expected to have an understanding of key model parts. We suggest that CEIOPS should specify these key parts in the model document.	too prescriptive. Since the internal models will vary from each other, key parts of the internal model would in general be hard to define and too prescriptive.
2100.	Legal & General Group	9.57.	It is difficult to document understanding of a model – it would be possible to document items such as training materials provided to the different bodies.	Adequate training would be part of evidence
2101.	Link4 Towarzystwo Ubezpieczeń SA	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2102.	Llody's	9.57.	How would the understanding of "all levels and functions of management" be evidenced in practice? We believe that it is realistic to require that relevant information is communicated to all levels and functions of management in such a way as to give them the opportunity to adequately understand the material points, and to rely on the "fit and proper" requirements to ensure that they take the necessary steps to ensure that they do understand it. Actually demonstrating such understanding is impractical. +	Not agreed Note the understanding with respect to "relevant aspects". "fit and proper" assessment would in most circumstances be determined before any internal model approval and would not necessary be covered from an internal model approval perspective.
2103.			Confidential comment deleted.	
2104.	RSA Insurance Group PLC	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence

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2105.	RSA Insurance Ireland Ltd	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2106.	RSA - Sun Insurance Office Ltd.	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2107.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.57.	It is not possible to provide evidence that all levels of management understand the relevant aspects of the internal model. A reference to adequate training etc would be more reasonable.	Adequate training would be part of evidence
2108.	KPMG ELLP	9.58.	We suggest that the proposed list of documents relevant for modelling should also identify those responsible for pulling together/ updating those documents.	Agreed
2109.	AAS BALTA	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25
2110.	AB Lietuvos draudimas	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25
2111.			Confidential comment deleted.	
2112.	Association of British Insurers	9.59.	Providing documentation of the historical development of the internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of all historical change. This should therefore be kept at a sensible level.	Note the reference to to key development steps. After internal model approval changes will most likely flow naturally through.
2113.			Confidential comment deleted.	
2114.	CEA,	9.59.	(Design and operational details)	CEIOPS experience is that past

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	ECO-SLV-09-451		<p>The documentation of historic model developments should be kept at a sensible level.</p> <p>Providing documentation of the historical development of the internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of historical change. This should therefore be kept at a sensible level.</p>	<p>development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk cristalises.</p> <p>Note the reference to to key development steps.</p> <p>After internal model approval changes will most likely flow naturally through.</p>	
2115.	CODAN Forsikring A/S (10529638), Denmark	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25	
2116.	CODAN Forsikring (Branch Norway) (991 502 491)	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25	
2117.	CRO Forum	9.59.	<p>"The documentation shall include an overview of the historical development of the internal model, including methodologies, assumptions and data, so that an independent third party would be able to understand key development steps and their reasoning."</p> <p>Providing documentation of the historical development of the</p>	CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings,	

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			<p>internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of historical change. We believe that the initial internal model approval documentation coupled with “major change” documentation and approval process should be sufficient to keep track of the internal model evolution.</p> <p>We propose that documentation regarding the historical development should be kept at a sensible level, and where possible the existing documentation (e.g. “major change” process) should be used.</p>	<p>especially when key-person risk cristalises.</p> <p>Note the reference to to key development steps.</p> <p>Agree, after internal model approval changes will most likely flow naturally through.</p>
2118.			Confidential comment deleted.	Confidential comment deleted.
2119.	German Insurance Association – Gesamtverb and der D	9.59.	<p>(Design and operational details)</p> <p>The documentation of historic model developments should be kept at a sensible level.</p> <p>Providing documentation of the historical development of the internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of historical change. This should therefore be kept at a sensible level.</p>	<p>CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk cristalises.</p> <p>Note the reference to to key development steps.</p> <p>After internal model approval changes will most likely flow naturally through.</p>
2120.	Groupe Consultatif	9.59.	See our response to 9.25	Please see reply to 2024.
2121.	Just Retirement	9.59.	A complete record of historical development of the internal model will be impractical to compile for the majority of undertakings.	Note the reference to to key development steps.

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	Limited			
2122.	Link4 Towarzystw o Ubezpieczeń SA	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25
2123.			Confidential comment deleted.	
2124.	Munich RE	9.59.	<p>1. Providing documentation of the historical development of the internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of historical change. We believe that the initial internal model approval documentation coupled with "major change" documentation and approval process should be sufficient to keep track of the internal model evolution.</p> <p>We propose that documentation regarding the historical development should be kept at a sensible level, and where possible the existing documentation (e.g. "major change" process) should be used.</p>	<p>CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk cristalises.</p> <p>Note the reference to to key development steps.</p> <p>After internal model approval changes will most likely flow naturally through.</p>
2125.	Pearl Group Limited	9.59.	Providing documentation of the historical development of the internal model could be very onerous and lead to an unusable amount of information if it meant that firms would have to hold a detailed record of historical change. Historical documentation should begin with the development of Solvency II model and not be expected to go further into the past. Also, the level of documentation required should be kept at a reasonable level.	CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk cristalises.

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					<p>Note the reference to to key development steps.</p> <p>After internal model approval changes will most likely flow naturally through.</p>
2126.	RBS Insurance	9.59.	We believe this requirement should be restricted to a high level and to a maximum historical number of years prior to the implementation of solvency 2.		<p>CEIOPS experience is that past development steps have added value to the supervision of internal models. As mentioned in 9.24 there is also a potential benefit for undertakings, especially when key-person risk cristalises.</p> <p>Note the reference to to key development steps.</p> <p>After internal model approval changes will most likely flow naturally through.</p>
2127.	RSA Insurance Group PLC	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.		The wording is the same as in 9.25
2128.	RSA Insurance Ireland Ltd	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.		The wording is the same as in 9.25
2129.	RSA - Sun Insurance Office Ltd.	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.		The wording is the same as in 9.25

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2130.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.59.	The word overview indicates a lighter touch than described in 9.23-9.26. This is more sensible.	The wording is the same as in 9.25
2131.	KPMG ELLP	9.60.	We suggest that the documented policies, controls and procedures for management of operational details of the model should be reviewed at least annually.	Agreed Please see IM governance section
2132.			Confidential comment deleted.	
2133.	Llody's	9.61.	This is an unnecessary repeat of 9.58, and we suggest should be deleted.	Agreed
2134.	Association of British Insurers	9.62.	It is not clear to us why a description of technology and software tools is required. It would be more appropriate if this section was limited to a description of how the tools / technology are covered by contingency plans / security policies / recovery plans and evidence of controls testing. Also, it should be acceptable to provide a reference to the appropriate documentation within the relevant governance framework (e.g. SOX) rather than draft new documentation.	Partly taken on board.
2135.			Confidential comment deleted.	
2136.			Confidential comment deleted.	
2137.			Confidential comment deleted.	
2138.	German Insurance Association –	9.63.	The documentation of data should start with the dispositive data basis and not with operative data systems.	Please see also section on data policy related to statistical quality standard

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	Gesamtverb and der D				
2139.	KPMG ELLP	9.63.	There is lack of clarity around what is meant by ‘filters’ used to create and debug the database.	e.g. the data will be filtered before entering the database (sometimes in small firms occurs manually).	
2140.	CRO Forum	9.64.	“A record of version control of the internal model needs to be kept. Changes made, whether minor or major, to the design or the operational details of the internal model shall be documented, including the rationale for the changes.” There should be a lower bound, based on materiality of the change, to the definition of minor changes to be documented. Once the model is validated sufficient assurance is in place that the model does what it should do.	Aspect taken on board.	
2141.	Llody’s	9.64.	Version control of the calculation kernel is entirely appropriate. However, to the extent that the internal model exceeds the calculation kernel, version control may be an unrealistic expectation.	Also operational details are in level 1 text considered to be an essential part of the internal model documentation.	
2142.	Association of British Insurers	9.67.	Using a sensible interpretation, we agree with the requirements set out in this paragraph.	Noted	
2143.			Confidential comment deleted.		
2144.	CEA, ECO-SLV-09-451	9.67.	(Detailed outline of the theory, assumptions, and mathematical and empirical basis) The qualification “in principle” has to be emphasised. The mentioned theoretical possibility of reproducing model outputs	Noted	

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			should not be seen as applicable in practice.	
2145.	CRO Forum	9.67.	<p>The paragraph suggests that, in principle, the internal model should be reproducible based on the documentation. We believe that this is in direct contradiction with the general points mentioned in para 9.53 which proposes that a knowledgeable third party could understand the reasoning and the underlying design and operational details of the internal model.</p> <p>In addition, there is no requirement by the directive for the documentation to be detailed enough to “reproduce” the internal model. We strongly propose that the reference to reproduction of the internal model using the documentation by a third party should be removed.</p>	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>
2146.	German Insurance Association – Gesamtverb and der D	9.67.	<p>(Detailed outline of the theory, assumptions, and mathematical and empirical basis)</p> <p>See comments for paragraph 9.53.</p> <p>The qualification “in principle” has to be emphasised. The mentioned theoretical possibility of reproducing model outputs should not be seen as applicable in practice.</p>	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>

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2147.	Groupe Consultatif	9.67.	See our response to 9.39	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>	
2148.	Legal & General Group	9.67.	The documentation required in this paragraph is in excess of that defined in paragraph 9.53 as it requires a much deeper understanding by a third party. On grounds of proportionality we feel paragraph 9.53 defines the level more appropriately.	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p>	

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2149.	Llody's	9.67.	<p>The requirement to be able to "in principle reproduce" is unnecessarily demanding and stronger than that laid out in 9.53 under "general points" which reads as follows:</p> <p>"9.53 The documentation of an internal model shall be thorough, sufficiently detailed and sufficiently complete to satisfy the criterion that an independent knowledgeable third party could form a sound judgment as to the reliability of the internal model and the compliance with Articles 118 to 124 and could understand the reasoning and the underlying design and operational details of the model".</p> <p>Documentation requirements should be aligned to the level set out in 9.53.</p> <p>"... sufficiently complete enough ..." is tautologous; delete "enough".</p>	<p>9.67 concerns the level 1 requirement of a detailed outline of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p> <p>The aim of the paragraphs 9.53 and 9.67 is to have a harmonized aim across different EU member states and undertakings.</p> <p>"enough" deleted</p>
2150.	Pearl Group Limited	9.67.	Using a sensible interpretation, we agree with the requirements set out in this paragraph.	Noted
2151.	CRO Forum	9.68.	24.	
2152.	Llody's	9.68.	The first sentence should start: "The documentation shall include ..." or alternatively, it could be deleted altogether, since the balance of the paragraph deals with the matter adequately.	The sentence has been clarified.
2153.	Association of British Insurers	9.69.	It would be helpful to clarify the scope of the term 'algorithms'.	Please see new 9.42.
2154.	CRO Forum	9.69.	<p>"All algorithms related to the mathematical methods shall be thoroughly documented, including the rationale supporting the selection of the algorithms and known drawbacks or weaknesses."</p> <p>The advice proposes that the mathematical methods shall be</p>	<p>The requirement thorough should here be seen relative to 9.67.</p> <p>9.67 concerns the level 1 requirement of a detailed outline</p>

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			<p>thoroughly documented, however it is important that such documentation is tailored towards a knowledgeable third party. It is not clear what a “through” documenting entails and it has the potential to become too basic, expanding on trivial points.</p> <p>We propose that mathematical methods are documented for a knowledgeable third part, consistent with the general point mentioned in para 9.53.</p>	<p>of the theory, assumptions and mathematical and empirical basis.</p> <p>9.67 should not be confused with 9.53, which concerns the high level documentation principle of the internal model.</p>
2155.	EMB Consultancy LLP	9.69.	We agree that algorithms implemented by the undertaking should be documented. However, we would question the extent to which all mathematical algorithms need to be documented as the details of some of these algorithms might not be available to the end user. This is particularly the case when external software or models are used.	Please see section on external models and data
2156.	Legal & General Group	9.69.	It would be helpful to clarify the term algorithms.	Please see new 9.42
2157.	Association of British Insurers	9.70.	Documenting ‘known drawbacks and weaknesses’ might be difficult to implement if applied exhaustively. This might be better phrased as any limitations on the appropriateness of the model should be documented. In particular, areas where the model breaks down need to be covered.	Partly taken into account
2158.	CEA, ECO-SLV-09-451	9.70.	Documenting ‘known drawbacks and weaknesses’ might be difficult to implement if interpreted too strictly.	Noted
2159.	CRO Forum	9.70.	“The documentation shall include a rationale for decisions on assumptions, data and parameters. Known drawbacks or	Agreed

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			<p>weaknesses shall also be documented. Where complex approaches have been used then a more detailed description of the approach shall be given. Where adjustments are made to the underlying data the nature, amount, and rationale for the adjustments shall be clearly stated.”</p> <p>We would propose to add “and its development over time” to the first sentence.</p>	
2160.	German Insurance Association – Gesamtverb and der D	9.70.	Documenting ‘known drawbacks and weaknesses’ might be difficult to implement if interpreted too strictly.	Noted
2161.	Groupe Consultatif	9.70.	See our response to 9.43	
2162.	Legal & General Group	9.70.	This would be better phrased as any limitations on the appropriateness of the model should be documented. In particular, areas where the model breaks down need to be covered.	Partly taken into account
2163.	Pearl Group Limited	9.70.	Documenting “known drawbacks and weaknesses” should only be required for those that have a significant impact. If this was required regardless of impact it would be difficult to implement and the important drawbacks/weaknesses could be lost in the list.	Partly taken into account
2164.	RBS Insurance	9.70.	We believe that this requirement should apply to ‘material’ drawback and weaknesses.	Partly taken into account
2165.	Association of British Insurers	9.71.	This will need to be balanced against materiality and significance of the use of expert judgement.	Noted

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2166.	CEA, ECO-SLV-09-451	9.71.	This will need to be balanced against materiality and significance of the use of expert judgement.	Noted
2167.	CRO Forum	9.71.	<p>"The documentation shall include all use of expert judgment on assumptions, data and parameters. Insurance and reinsurance undertakings shall have thorough documentation for expert judgement and shall include at least why it is an expert judgment, what processes the expert judgment is based on, the extent the expert judgment is likely to affect the internal model result and how the expert judgment has been validated. Where an expert judgment has been made the name and qualifications of the person or people making the judgment shall be documented."</p> <p>The extent to which expert judgement needs to be documented is onerous.</p> <p>We propose to replace "validated" by "evaluated", as this is not in line with the purpose and use of expert judgement in practice.</p>	"Validated" is replaced by "evaluated".
2168.	German Insurance Association – Gesamtverb and der D	9.71.	This will need to be balanced against materiality and significance of the use of expert judgement.	Noted
2169.	Groupe Consultatif	9.71.	See our response to 9.45	Please see response to 2050
2170.	Just Retirement Limited	9.71.	These proposals are unnecessarily burdensome in relation to many of the areas in which expert judgement would typically be used, namely for setting relatively minor/immaterial assumptions. In	The exercise of expert judgment should be a formal process and not an informal "black box"

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			these cases the amount of documentation and justification for the expert judgement would be disproportionate. We agree that there are some judgements where this level of justification is required, but argue that a proportionate approach is needed.	process.
2171.	Llody's	9.71.	Materiality needs to be incorporated within the documentation requirements for expert judgement. There are some areas where judgement is used, but will result in minimal change to the overall internal model.	<p>The exercise of expert judgment should be a formal process and not an informal "black box" process.</p> <p>There is possibility that non-material stand alone expert judgments will cumulatively become material. Hence the requirement of all expert judgment.</p>
2172.	Pearl Group Limited	9.71.	This will need to be balanced against materiality and significance of the use of expert judgement.	<p>The exercise of expert judgment should be a formal process and not an informal "black box" process.</p> <p>There is possibility that non-material stand alone expert judgments will cumulatively become material. Hence the requirement of all expert judgment.</p>
2173.	RBS Insurance	9.71.	The significance and materiality of the expert judgement should be used to prevent this requirement being too onerous. Also we think that instead of, or in addition to, the word 'qualifications' some mention of experience should be made to allow for a more meaningful case of why the judgement is 'expert'.	The exercise of expert judgment should be a formal process and not an informal "black box" process.

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					There is possibility that non-material stand alone expert judgments will cumulatively become material. Hence the requirement of all expert judgment. Experience included.
2174.	AAS BALTA	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.		Disagree, for sensitivity analysis it is referred to the section on validation. Validation includes performing the sensitivity test – this chapter includes the documentation of the test
2175.	AB Lietuvos draudimas	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.		Disagree, for sensitivity analysis it is referred to the section on validation.
2176.	CODAN Forsikring A/S (10529638), Denmark	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.		Not agreed For sensitivity analysis it is referred to the section on validation.
2177.	CODAN Forsikring (Branch Norway) (991 502 491)	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.		Not agreed For sensitivity analysis it is referred to the section on validation.

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2178.	KPMG ELLP	9.73.	The CP recommends taking into consideration a minimum set of scenarios where the model may be considered as not working effectively. We suggest adding to that the list 'shortcoming/ deficiencies in input data'.	Taken into account.
2179.	Link4 Towarzystw o Ubezpieczeń SA	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.	Not agreed For sensitivity analysis it is referred to the section on validation.
2180.	RSA Insurance Group PLC	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.	Not agreed For sensitivity analysis it is referred to the section on validation.
2181.	RSA Insurance Ireland Ltd	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.	Not agreed For sensitivity analysis it is referred to the section on validation.
2182.	RSA - Sun Insurance Office Ltd.	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.	Not agreed For sensitivity analysis it is referred to the section on validation.
2183.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	9.73.	9.73b does not belong here. It is covered elsewhere and the fact that results are sensitive to assumptions does not mean the model is not effective.	Not agreed For sensitivity analysis it is referred to the section on validation.

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2184.	XL Capital Ltd	9.73.	We agree with the need for documentation of circumstances under which the internal model does not work effectively. We ask that a point be stressed around documentation of only circumstances that management believes can have a material impact on the undertaking. To ask for documentation of all circumstances is impractical as no model can replicate the real world.	Taken into account in 9.72.
2185.	Association of British Insurers	9.75.	We believe this is a very important requirement, if not the most important one with regard to documentation.	Noted
2186.	Groupe Consultatif	9.75.	See our response to 9.52	Please see reply to 2066.
2187.	CRO Forum	10	As a general comment: In certain circumstances external data and external model can be superior to internal models and a Group might consciously decide to rely on external models and data as a preferred option. Therefore external solutions should not be considered as a 'second-best' solution (which is the implicit assumption in several sections of this chapter).	Noted
2188.	Association of British Insurers	10.	<p>In respect to external models and data, we believe it is important to take into account the following:</p> <p><input type="checkbox"/> External models cover different possibilities which need to be treated distinctively: there is an important difference between the use of external platforms on which an internal model is built and the use of an entire external model ('black box model'). The latter should be subject to more scrutiny and challenge than the former.</p> <p><input type="checkbox"/> External data should not be treated similarly to external models. Undertakings use external data (from Bloomberg, Reuters...) on a day to day basis. It would be improper to apply</p>	The aspects taken into account.

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			<p>strictly all requirements covered by external models and data to such sources of data.</p> <p>In the context of a group, we would understand 'external' as meaning outside the group.</p>	
2189.	DIMA (Dublin International Insurance & Management	10.	<p>We welcome the advice of CEIOPS in this regard however we would echo the concerns expressed in QIS 4 and outlined in 10.4. In particular we note that the use of external data may also countenance the use of external advisors in the preparation and use of that the data. The main issue may be around external providers being reluctant to provide detail on the workings of their models for copyright reasons. Users however need to be able to demonstrate that they understand these externally provided models and be happy that they meet their purposes. For example this may be an issue in areas such as ESGs and ESG calibration.</p>	Noted
2190.	EMB Consultancy LLP	10.	<p>The suggestions relating to external data seem reasonable, and we welcome the focus on the undertakings understanding and taking responsibility for any external models and data, which will stop undertakings treating external solutions as "black boxes".</p>	Noted
2191.	German Insurance Association – Gesamtverb and der D	10.	<p>(External models and data)</p> <p>Certain requirements set out in Articles 118 to 123 can only be ensured and reviewed to a limited extent when using external models and data in certain cases.</p> <p>The supervisory authority may impose balancing requirements with respect to validation and documentation in these cases.</p> <p>For many undertakings there is no alternative to the use of external</p>	Noted

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			models for special risk categories (ESG, NatCat etc.). In this context, the proportionality principle should be emphasised more, e.g. with respect to selection, impact assessment and valuation of risks.	
2192.	Groupe Consultatif	10.	<p>As a general comment: External models may frequently be superior to internal models. Therefore external solutions should not be discouraged by being tested against higher standards than internally developed models. We are concerned that drastically more justification is demanded by the draft standards for the use of external models/data than for the assessment of the internal options.</p> <p>We would recommend that CEIOPS develops a practical way of ensuring that there is sufficient understanding and validation of external models and data within the regulated undertaking but which also protects the intellectual property of the external provider.</p>	May be considered for level 3 guidance.
2193.	Llody's	10.	We believe that there is a risk that a significant amount of work here may not be possible due to external suppliers either not being prepared to disclose the required information or not having the resource to provide / document the required information.	Noted
2194.	Pearl Group Limited	10.	<p>In respect to external models and data, we believe it is important to take into account the following:</p> <p><input type="checkbox"/> External models cover different possibilities which need to be treated distinctively: there is an important difference between the use of external platforms on which an internal model is built and the use of an entire external model ('black box model'). The latter should be subject to more scrutiny and challenge than the</p>	The aspects taken into account.

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			<p>former.</p> <p><input type="checkbox"/> External data should not be treated similarly to external models. Undertakings use external data (from Bloomberg, Reuters...) on a day to day basis. It would be improper to apply strictly all requirements covered by external models and data to such sources of data.</p> <p>In the context of a group, we would understand 'external' as meaning outside the group.</p>	
2195.	RBS Insurance	10.	In general we feel that some of the requirement on external models and data are too onerous, and if applied in general would force a lot of insurers down the standard formula route because they cannot get model approval with respect to external models or data.	Level 1 text is already agreed.
2196.			Confidential comment deleted.	
2197.	Groupe Consultatif	10.4.	See our general comments on 10.	Please see reply to 2192.
2198.	KPMG ELLP	10.4.	We would concur with undertakings' concerns - there could be difficulty around documenting weaknesses with the external models.	Noted
2199.	Groupe Consultatif	10.9.	We believe that CEIOPS should be careful about applying Basel II requirements directly to insurance companies, as the specifics are very different.	The word maximum has been deleted, being slightly misleading.
2200.	RBS Insurance	10.9.	We agree it does sound sensible to have consistent principles across financial sector for the use of external models and data.	The word maximum has been deleted, being slightly misleading.
2201.	Llody's	10.10.	"The use of a model or data obtained from a third party shall not be considered to be a justification for exemption for any of the requirements for the internal model set out in Articles 118 to 123". We note that any comments/concerns we have raised in other	Noted

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			sections will, by extension, apply in respect of external models and external data too	
2202.	CRO Forum	10.12.	<p>We agree that external models need to be transparent also regarding the way dependencies are modelled. We disagree however with the last sentence of this paragraph, as it seems to go beyond the use of an external model. There is no difference regarding the assessment of correlations with other risk types, whether an internal or an external model is applied for a single risk type (e.g. it makes no difference for the dependency between market risk and Non-Life insurance risk, whether an internal or an external model is applied to assess the market risk).</p> <p>We also disagree that the use of an external model requires additional stress and scenario testing. We therefore suggest clarifying that the reference to stress and scenario testing is how the use of an external model relates to exiting testing not that it requires additional stress and scenario testing.</p>	<p>Not agreed.</p> <p>"Concern" replaced with "interest"</p>
2203.	Groupe Consultatif	10.12.	<p>We disagree that the use of an external model requires more scrutiny by the supervisory authorities than models developed internally by the entity and using their own data. External models are normally developed by specialised companies, tested for stability and for the correctness of the algorithms. Frequently internally developed models, often in Excel, may lack such features due to the limitations of the entity (knowledge, resources, IT environment, etc.).</p> <p>We believe that the external vendors would have to provide the undertaking with the appropriate level of disclosures to fulfil the required tests. Once the companies start to demand these information, appropriate changes may to be made, however it does not preclude the value added of external models.</p>	Noted

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			We would also note that external models may be provided to the companies to use within their business and calibrated using their own data and so may be fully embedded.	
2204.	Llody's	10.12.	The key areas of use for a non-life insurer will be Catastrophe Modelling tools and ESGs, although there will be others which are significant to specific undertakings. However, using these as an example, we agree that there will be a limit of knowledge internally of the underlying methodology / calculations within the external models. There will be potential Intellectual Property issues regarding achieving the depth of understanding required below (10.19 for example).	Noted
2205.	CRO Forum	10.13.		
2206.	Llody's	10.13.	The requirements under 10.10 of applying Internal Model standards to External Models may create a large resource strain, the suppliers will be requested for documentation, and for some the data may be generic across model releases within the industry. For others though, for example an ESG, the underlying calibration may be specified by the client and unique. The Documentation, Validation, Statistical Quality tests would be onerous for the client and potentially costly to acquire.	Noted Level 1 text has already been agreed.
2207.	European Union member firms of Deloitte Touche To	10.16.	We would expect other key reasons for to choice of external models to include: stability, experience of the vendor is such models, models / platform, market feedback and experience, etc.	Aspects mostly taken into account.
2208.	German Insurance	10.16.	118. Besides lacks of data of internal resources, economic considerations should be mentioned explicitly as further possible	Taken into account

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	Association – Gesamtverb and der D		rationales. 119.	
2209.	Groupe Consultatif	10.16.	The requirements seem to be too burdensome on the decision for the external model compared to the decision of building of an internal model. 10.15 covers the necessary justification sufficiently.	Noted
2210.	Llody's	10.16.	Although the section states "may expect" and "if possible", this may in practice be unlikely that the majority of undertakings could compare to internally developed models due to the complex nature of external models. Secondly, there may not be alternative external models in the market to compare against, or it may be impossible to do so at reasonable cost	Noted
2211.	European Union member firms of Deloitte Touche To	10.17.	We would welcome more details on tests that CEIOPS considers appropriate to justify the use of external models and data and the assessment of the impact on the SCR: for example, using expert judgement, etc.. This requirement should not mean that the undertaking needs to have their own model or data to check the vendor software / data. Typically undertakings do not start building models before choosing an external solution, but undergo a process of choosing the best option (internal development is very costly and doing both "external" and "internal" is not considered as economical).	May be considered for level 3 guidance. The word "possible" has been added. "Possible" has not yet been included in the document Last sentence have been deleted.
2212.	German Insurance Association – Gesamtverb and der D	10.17.	120. The feasibility of an impact assessment is limited. Taken seriously, differences to the alternative (own development instead of external input) can only be analysed if this alternative is realised, but this would at least eliminate the advantages of the external model/data and often be even impossible owing to reasons mentioned in para 10.16.	Noted The word "possible" has been added. Last sentence have been deleted.

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			121.	
2213.	Groupe Consultatif	10.17.	Please clarify what is meant by: "An assessment of the impact of external model on SCR"? Is it the share of SCR calculated using external model or data?	The word "possible" has been added. Last sentence have been deleted.
2214.	German Insurance Association – Gesamtverb and der D	10.18.	122. See para 10.17	Please see reply to 2212. The requirements would correspond to expected rationale for selecting an external provider.
2215.	Groupe Consultatif	10.18.	The requirements seem to be too burdensome on the decision for the external model. 10.15 covers the necessary justification sufficiently.	The requirements would correspond to expected rationale for selecting an external provider.
2216.	German Insurance Association – Gesamtverb and der D	10.19.	Delete "thorough". There is a potential conflict between "thorough understanding of those products" and protected intellectual property rights of the external supplier.	Replaced with "detailed".
2217.	Groupe Consultatif	10.19.	It would be helpful if CEIOPS could define "thorough" in this context. Perhaps the word "appropriate" is better.	The word has been replaced with detailed. Further level 3 guidance could be considered.
2218.	Llody's	10.19.	The paper sets out that the company must demonstrate a full understanding of the effects and significance of the proprietary elements in the external model. "Full" understanding may be difficult, e.g. various cat models. The in-depth knowledge of the methodology underpinning the basic	The word "thorough" has been replaced with "detailed".

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			construction of the External Models and data and their limitations are potentially limited due to the Intellectual Property issue raised under 10.12 above. It would be very useful to get feedback regarding this from, for example, RMS, AIR, and ESG providers	
2219.	AAS BALTA	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2220.	AB Lietuvos draudimas	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2221.	CODAN Forsikring A/S (10529638), Denmark	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2222.	CODAN Forsikring (Branch Norway) (991 502 491)	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2223.	Danish Insurance Association	10.20.	First bullet: In-depth knowledge of a vendor model will likely not be disclosed by the vendor.	"In-depth" replaced by "detailed".
2224.	German Insurance	10.20.	123. Last bullet point: "Retention of in-house-expertise" should not preclude the possibility of outsourcing the development of	Taken into account

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	Association – Gesamtverb and der D		models and/or provision of data as long as compliance with the respective regulations and control mechanisms for outsourcing is given.	
2225.	KPMG ELLP	10.20.	The first bullet in this paragraph is very demanding on (re)insurance undertakings. An external model provider may provide documentation of the methodology, but they may not wish to disclose limitations of the model. Further, whereas Economic Scenario Generator providers (for example) often provide detailed methodologies, Catastrophe model providers do not provide such detailed information. Further discussions between the supervisory authority and the external model provider may be necessary to ensure a consistent minimum level of required documentation is provided by the external model provider to the (re)insurance undertaking.	"In-depth" replaced by "detailed".
2226.	Link4 Towarzystw o Ubezpieczeń SA	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2227.	RBS Insurance	10.20.	The first bullet point would be very dependent on the external provider.	Noted
2228.	RSA Insurance Group PLC	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2229.	RSA Insurance Ireland Ltd	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the	Taken into account

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			ESG - the answer!	
2230.	RSA - Sun Insurance Office Ltd.	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2231.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	10.20.	It would be sensible to include validation of output in this section. For example if the output of an ESG is well validated then it would be show a reasonable understanding of the important part of the ESG - the answer!	Taken into account
2232.	Association of British Insurers	10.21.	We agree that being aware of the limitations of an external model or data is important.	Noted
2233.	Danish Insurance Association	10.21.	<p>This requirement seems difficult to meet; in particular: Model limitations are – so far – not emphasised by vendors.</p> <p>Even if detailed information were disclosed, undertakings not have the internal expertise to verify these models.</p> <p>For an external ESG, medium or large sized undertakings (which likely will be the ones using an internal model) will likely have sufficient economic expertise to meet the requirement.</p> <p>But for an external nat-cat model, undertakings would need meteorologists to verify the windstorm/cloud burst/hail storm analyses, and e.g. geologists to verify the earthquake/flooding/land slide analyses.</p> <p>National regulators would likely need the same expertise to fully understand external model inputs. It needs to be sorted out how the right expertise can be achieved when needed</p>	The word "thorough" has been replaced with "detailed".

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			One method could be to partly rely on an independent agency's expertise as to external models. When undertakings use data from external models, they will need to focus on input data for the external model and on how material a role the external data plays in the internal model, but less on getting an in-depth knowledge of a vendor model.	
2234.	German Insurance Association – Gesamtverband der D	10.22.	Even in the described situation, the undertaking's possibilities might be limited by the proprietary rights of the external supplier. Moreover, economic considerations have to be taken into account. Thus, respective requirements have to be modest instead of referring to the "fullest extent possible". 124.	"fullest extend possible" has been kept. Economic considerations would not be acceptable to take into when considering the extent requirements need to be fulfilled.
2235.	KPMG ELLP	10.22.	The principle of proportionality as given applies to the materiality of the amount of risk capital that the external model calculates. This will not necessarily assist small firms who use external models for, say, market risk where market risk is material, but who do not have the resources to complete the onerous external model and data requirements.	Please see level 1 text. Size of the undertaking would obviously not justify that requirements are not fulfilled.
2236.	Llody's	10.22.	Due to their complex nature and material impact on insurance risk, discounting, etc, ESG and Catastrophe models will almost always require full application of the standards and requirements. This will be an onerous (perhaps impossible) requirement due to the issues raised above.	Noted
2237.	CRO Forum	10.27.	We agree that all model documentation (whether external or internal; whether publicly available or not) has to be shared with the regulator. We disagree however with the assumption that internal models are better documented and validated. External models are in many cases documented in a very detailed way,	Taken into account.

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			<p>although such documentation is not always publicly available.</p> <p>We therefore do not consider compensating documentation requirements to be necessary in general. Only in cases where the documentation of the external model does not fulfil the regulatory standards on documentation and validation, compensating documentation shall be required,</p> <p>We disagree that validations standards for external models shall be different to validation standards for internal models. Both the performance of internal and external models need to be periodically validated.</p>	
2238.	Groupe Consultatif	10.27.	<p>Validation standards for external models should be the same as for internal models.</p> <p>The challenging of the external models could also be done during the implementation phase. Testing of the results using specific formulas could give more assurance in the critical areas than a simplified model.</p> <p>Having a more open code and less experience in building the model does not automatically mean a better model than less open code with more experience of external vendors. It needs to be absolutely clear what needs to be open for the purpose of validation and how this test could be best done.</p>	<p>Partly taken on board.</p> <p>Some aspect could be considered for level 3 guidance.</p>
2239.	KPMG ELLP	10.27.	<p>Validation of an external model may be particularly challenging. A catastrophe model to a small non-life (re)insurance undertaking would be extremely difficult to replicate using simplified methods. Further details should be provided on the extent of validation required. It should also be made clear how expert judgement will be approved as a means of alternative validation.</p>	<p>Aspect could be considered for level 3 guidance.</p>
2240.	BARRIE &	10.29.	<p>The comment on concentration and systematic risk could be applied</p>	<p>"systematic" changed to</p>

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	HIBBERT	<p>to an ESG supplier such as Barrie & Hibbert. We would like to respond to the comment. We presume the text means "systemic" when it refers to "systematic".</p> <p>We believe external model suppliers bring considerable benefits to insurance groups in terms of cost, efficiency and operational risk (particularly in reducing key-man risk in highly technical areas). Economies of scale allow many clients to benefit from investment by external model providers in people, intellectual property and technology. Typically external suppliers offer modelling solutions at a fraction of the cost of firms building and maintaining models and software in-house. Any systemic exposure must be compared to this benefit.</p> <p>The delivery of models and related tools and assumptions for economic scenario generation is the core activity of our (Barrie & Hibbert) business. We take this responsibility very seriously. We believe that our strong market position in the delivery of ESG model software is simply the result of the quality and cost effectiveness of our products and services. There are no inherent barriers to entry of competitors to this business.</p> <p>In response to the question: "Is there a systematic risk if all companies are using the same model?" we have a number of comments (see footnote□):</p> <p>1. Our clients do not use models blindly. Firms validate key assumptions and outputs and use their own judgment to make critical choices of individual model components and model parameters. Users are able to concentrate their limited technical</p>	"systemic"

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			<p>resources on how they use the model rather than the major challenges of designing, building, documenting and maintaining complex software and related hardware solutions.</p> <p>2. We do not provide a single unique model. Users have access to a library of different models in an integrated, economically coherent framework so it is not the case that all firms are using the same model. Many clients calibrate to their own data, liability profiles, methodology and assumptions. Our surveys highlight these differences and this information is shared with users and interested regulators.</p> <p>3. To the extent there is systemic risk in the model itself, this lies within the control of the regulator and the principles set down within the regulatory regime. Asking many firms to implement model X (instead of a very small number) does not remove the risk.</p> <p>4. The exposure of firms to the operational risk of simultaneous software failure at a point in time does exist, but we make considerable effort to manage it to a minimum through robust software development, testing and release procedures. We are (and have always been) willing to expose these processes to model users.</p> <p>5. If such systemic risk does exist, it should be the concern of the system regulator not individual firms (because individual firms are not in a position to manage it).</p>	
2241.	German Insurance Association – Gesamtverb and der D	10.30.	Quantification of risks arising from the use of external data and models is mostly a theoretical exercise which could result in pseudo-accuracy and should not be exaggerated. After all, integration means to assess the effect on the distribution of results and to fulfil the respective requirements (calibration etc.).	Noted

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			Thus, a qualitative integration in the risk management process seems to be more important and useful: The undertaking has to identify and consider these risks (e.g. a failure of the external supplier) adequately in its risk management process.	
2242.	Groupe Consultatif	10.30.	Operational risks associated with external models should be treated the same as with internal models.	Noted
2243.	AAS BALTA	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Noted
2244.	AB Lietuvos draudimas	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Noted
2245.			Confidential comment deleted.	
2246.	CEA, ECO-SLV-09-451	10.31.	(External models and data) Acknowledge that many external models are industry standard. Many external model outputs (which often have substantial impact on the results of internal models) are industry standards, e.g. NatCat or ESG models. Level 2 should acknowledge this fact and	Some explanations have been given in new 10.15 and 10.16. Perhaps we could clarify that whereas software may have been

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			<p>allow companies to rely on the assurance of such standards – however this should not lead to an approved supplier list of external models. Furthermore, many external model providers consider some of the details of the approach to be protected intellectual property and will not want to share as much information as would be required by the advice as is.</p> <p>Highlight that validation and documentation requirements only apply to a very limited extent for acknowledged industry standard models such as NatCat or ESG models.</p> <p>Moreover, more details should be included on what is considered to be an external model. In many companies, modelling software is used that provides some standard applications. These various softwares are already tested by the vendors and have proven to be completely secure. It is unclear however whether they should fall under the external model classification and as a consequence should fulfil the requirements outlined here.</p>	tested by the vendors, this may not be sufficient, as the model may not correctly capture the risk exposure of the undertaking.
2247.	CODAN Forsikring A/S (10529638), Denmark	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Noted
2248.	CODAN Forsikring (Branch Norway)	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure -	Noted

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	(991 502 491)		and even then it would only be the impact relative to the other model that was measured.	
2249.	CRO Forum	10.31.	<p>CEIOPS advice is that undertakings shall:</p> <ul style="list-style-type: none"> document the role of External models and the extent to which they are used within Internal model processes include an assessment of the impact of the External model on the SCR <p>The intention of this advice is sensible, but the second point implies a fundamental misunderstanding about the relationship between the Internal model and "External models and data". Most (if not all) undertakings will choose to build their internal model on an externally provided platform. It is therefore nonsensical to require an assessment of "the impact of the External model on the SCR".</p> <p>We propose that the reference to the "impact of external model on SCR" is removed (second sentence in 10.31).</p>	<p>Agreed</p> <p>Last sentence have been deleted.</p>
2250.	Dutch Actuarial Society – Actuariële Genootschap (	10.31.	<p>We agree that undertakings shall document and explain the role of External models and data and the extent to which they are used within their internal model processes. We doubt, however, if it makes sense to include an assessment of their impact on the SCR. It will be difficult to determine this impact. We recommend to include, at least, more guidance on how to perform this assessment.</p>	<p>Last sentence have been deleted.</p>
2251.	FFSA	10.31.	<p>FFSA is looking for clarification of what is precisely an external model: the definition of an external model is not clearly outlined and it could lead to various interpretations..</p> <p>For example, in many companies, modeling software used provides some standards applications. These various software commonly</p>	<p>Some explanations have been given in new 10.15 and 10.16.</p>

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			<p>used are already tested by the vendors and completely secured: it's unclear whether they should fall under the external model classification and as a consequence should fulfil the requirements outlined in the CP.</p> <p>Are companies using this software, but developing their own model (with some standards applications) to be considered as using an external model?</p> <p>FFSA recommends defining a clear definition of what falls under the external model category and adapt the requirements accordingly.</p>	
2252.	German Insurance Association – Gesamtverb and der D	10.31.	<p>(External models and data)</p> <p>The feasibility of an impact assessment is limited. Taken seriously, differences to the alternative (own development instead of external input) can only be analysed if this alternative is realised, but this would at least eliminate the advantages of the external model/data and often be even impossible owing to reasons mentioned in para 10.16.</p> <p>Acknowledge that many external models are industry standard.</p> <p>Many external model outputs (which often have substantial impact on the results of internal models) are industry standards, e.g. NatCat or ESG models. Level 2 should acknowledge this fact and allow companies to rely on the assurance of such standards – however this should not lead to an approved supplier list of external models. Furthermore, many external model providers consider some of the details of the approach to be protected</p>	<p>A reference to industry standards cannot be not be considered to be a justification for exemption from any of the requirements for the internal model set out in Articles 118 to 123.</p> <p>Some explanations have been given in new 10.15 and 10.16.</p>

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			<p>intellectual property and will not want to share as much information as would be required by the advice as is.</p> <p>Highlight that validation and documentation requirements only apply to a very limited extent for acknowledged industry standard models such as NatCat or ESG models.</p> <p>Moreover, more details should be included on what is considered to be an external model. In many companies, modelling software is used that provides some standard applications. These various software tools are already tested by the vendors and have proven to be completely secure. It is unclear however whether they should fall under the external model classification and as a consequence should fulfil the requirements outlined here.</p>	
2253.	Groupe Consultatif	10.31.	See our comments on 10.17.	Please see reply to 2213.
2254.	Link4 Towarzystw o Ubezpieczeń SA	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Last sentence have been deleted.
2255.			Confidential comment deleted.	
2256.	Pearl Group Limited	10.31.	In the context of a group, we would understand 'external' as meaning outside the group.	From a group perspective yes.
2257.	RBS Insurance	10.31.	We believe that it is not possible to include a true assessment of the impact of external models or data on the SCR without using	Last sentence have been deleted.

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			equivalent models or data that have been developed internally (which then defeats the purpose of the external route).	
2258.	ROAM –	10.31.	<p>ROAM is looking for clarification of what is precisely an external model: the definition of an external model is not clearly outlined and it could lead to various interpretations...</p> <p>For example, in many companies, modeling software used provides some standards applications. These various software commonly used are already tested by the vendors and completely secured: it's unclear whether they should fall under the external model classification and as a consequence should fulfil the requirements outlined in the CP.</p> <p>Are companies using this software, but developing their own model (with some standards applications) to be considered as using an external model?</p> <p>ROAM recommends defining a clear definition of what falls under the external model category and adapt the requirements accordingly.</p>	Some explanations have been given in new 10.15 and 10.16.
2259.	RSA Insurance Group PLC	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Last sentence have been deleted.
2260.	RSA Insurance Ireland Ltd	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure -	Last sentence have been deleted.

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			and even then it would only be the impact relative to the other model that was measured.	
2261.	RSA - Sun Insurance Office Ltd.	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Last sentence have been deleted.
2262.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	10.31.	It is hard to enumerate the impact of an external model if it flows through the rest of the internal model. For example an ESG will undoubtedly affect the outcome, but unless a different ESG is placed through the internal model the impact is hard to measure - and even then it would only be the impact relative to the other model that was measured.	Last sentence have been deleted.
2263.	CEA, ECO-SLV-09-451	10.32.	DITTO Efficiency of model developing – which might result in lower costs as well as in better models – is a possible reason for using external models which should be accepted by the supervisor.	Taken into account in new 10.18
2264.	Dutch Actuarial Society – Actuariel Genootschap (	10.32.	Undertakings shall be able to list the alternative external models and data considered and explain the decision for a particular external model or data. We wonder whether it is justified that this requirement does not apply to internally developed models. You could argue that for certain calculations an external model is preferable to an internally developed model.	Similar requirements are in place or suggested for internally developed models.
2265.	German Insurance Association	10.32.	DITTO Efficiency of model developing – which might result in lower costs	Taken into account in new 10.18

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	- Gesamtverb and der D		<p>as well as in better models – is a possible reason for using external models which should be accepted by the supervisor.</p> <p>For purposes in which many or almost all undertakings are subject to the same conditions, the usage of standard solutions provided by external suppliers might be more efficient. This is of course not the case for purposes in which the undertaking exhibits material specialties.</p>	
2266.	Llody's	10.32.	The internal/external data decision is not necessarily the binary one implied. Both internal and external data may be considered by an expert in arriving at a parameterisation estimate, for example	Noted
2267.			Confidential comment deleted.	
2268.	Pearl Group Limited	10.32.	External data should not be treated similarly to external models. Undertakings use external data (from Bloomberg, Reuters...) on a day to day basis. It would be improper to apply strictly all requirements covered by external models and data to such sources of data.	Some explanations have been given in new 10.15 and 10.16.
2269.			Confidential comment deleted.	
2270.	CEA, ECO-SLV-09-451	10.33.	<p>DITTO</p> <p>Delete "thorough".</p> <p>There is a potential conflict between "thorough understanding of</p>	"thorough" have been replaced with "detailed"

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			external models and data" and protected intellectual property rights of the external supplier.	
2271.	CRO Forum	10.33.	<p>"... undertakings shall demonstrate a through understanding of External models and data used in their internal model processes. ..."</p> <p>CEIOPS advice expands on fact that use of an External model or data in no way enables insurance company to abdicate responsibility for that model.</p> <p>We are supportive of this and highlight that we would anticipate performing relevant steps as part of our risk management purposes to ensure a through understanding of the External model. However, it is not clear how this understanding is expected to be demonstrated to the supervisory authorities.</p> <p>Much external model output / data is industry standard (natural catastrophe models, economic scenario generators). Level 2 should acknowledge this fact and allow companies to rely on the assurance of such standards. This should not lead to an approved supplier list of external models however.</p>	<p>"thorough" have been replaced with "detailed"</p> <p>A reference to industry standards cannot be not be considered to be a justification for exemption from any of the requirements for the internal model set out in Articles 118 to 123.</p>
2272.	Dutch Actuarial Society – Actuariel Genootschap (10.33.	<p>This requirement requests thorough understanding of the internal model (if this is based on external models), which sounds more burdensome than principle 1 of the use test. We think that the understanding of senior management does not have to be more thorough regarding external models than regarding internally developed models.</p> <p>We feel that also small and medium sized insurance companies should be able to apply for a (partial) internal model. However, the requirements as stated in the CP are very demanding for this type</p>	<p>"thorough" have been replaced with "detailed"</p> <p>A simple reference to size cannot be not be considered to be a general justification for exemption from any of the requirements for the internal model set out in Articles 118 to 123.</p>

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			of company. In our opinion, it would be appropriate to allow these companies to have sufficient basic knowledge of these models within their internal staff, but that they may refer to external parties for the more detailed knowledge. These external parties must be known to the supervisor and possibly fulfil certain requirements with regards to continuity and staff characteristics (to be determined).	
2273.	FFSA	10.33.	<p>CEIOPS says that insurance and reinsurance undertakings shall demonstrate a thorough understanding of External models and data used in their internal model processes. In particular they shall be aware of model and data limitations.</p> <p>FFSA suggests this point to be completed by the following sentence: "In-house knowledge of External model may be demonstrated by (1) a full understanding of the effect and significance of the proprietary elements in the External model, (2) documentation of the rationale behind any judgment-based overrides or any other adjustments made to external data sets or external model outputs, and (3) retention of in-house expertise on the External model and data for as long they are used to derive the SCR. In-depth knowledge of the methodological underpinning and basic construction of External model and data could also be considered, in the limitation of the information provided by External model vendor."</p>	The list is more suitable for level 3 guidance than level 2 text.
2274.	German Insurance Association – Gesamtverb and der D	10.33.	<p>DITTO</p> <p>Delete "thorough".</p> <p>There is a potential conflict between "thorough understanding of external models and data" and protected intellectual property rights</p>	"thorough" have been replaced with "detailed"

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			of the external supplier.	
2275.	Groupe Consultatif	10.33.	See our general comments on 10.	Please see replu to 2192
2276.	Investment & Life Assurance Group (ILAG)	10.33.	The requirement to demonstrate a 'thorough understanding' of any external model is potentially significant depending on how 'demonstrate' is interpreted.	"thorough" have been replaced with "detailed"
2277.	Just Retirement Limited	10.33.	<p>The definition of "thorough understanding" of the external models and data needs a great deal of additional clarity- to what extent does this cover inputs, assumptions, methodology and other aspects of the external models/data?</p> <p>For example if an external Economic Scenario Generator is used, it will be practically impossible (and akin to setting one up internally) for undertakings to ensure complete understanding of the methodology behind the ESG; there are also likely to be issues relating to the reluctance of providers of such ESGs to share proprietary information which underlies such models.</p> <p>There are also likely to be similar issues if external mortality tables are used – will firms need to demonstrate a full understanding of all methods used in the construction of the tables?</p> <p>Proportionality clearly needs to be emphasised.</p>	"thorough" have been replaced with "detailed"
2278.	CEA, ECO-SLV-09-451	10.34.	DITTO	

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2279.	German Insurance Association – Gesamtverb and der D	10.34.	DITTO	
2280.	Association of British Insurers	10.35.	This requirement could be excessive depending on how much of a look through and validation of external data is required. For example, it would not seem proportionate to be expected, for CMI mortality tables, to validate the data, process and assumptions used by the CMI. The requirement should be to check the output for reasonableness and make sure that you have a sufficient understanding of the process to be comfortable with the information received and hence use it appropriately in the internal model.	Validation would be set out by the undertaking in the validation policy.
2281.			Confidential comment deleted.	
2282.	CEA, ECO-SLV-09-451	10.35.	Even in the described situation, the undertaking's possibilities are limited by the proprietary rights of the external supplier. Moreover, economic considerations have to be taken into account. Thus, respective requirements have to be modest instead of referring to the "fullest extent possible".	Not agreed
2283.	CRO Forum	10.35.	First sentence is not clear enough – what 'requirements' are being referred to; what does it mean to 'try' to meet them?	"try to meet them" has been deleted.
2284.	German Insurance Association –	10.35.	Even in the described situation, the undertaking's possibilities are limited by the proprietary rights of the external supplier. Moreover, economic considerations have to be taken into account. Thus, respective requirements have to be modest instead of referring to	Not agreed

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	Gesamtverb and der D		the "fullest extent possible".	
2285.	RBS Insurance	10.35.	We are not clear on what is meant by the first sentence in this paragraph. What 'requirements' is this sentence referring to? Is the mention of 'the fullest extent possible' meant to imply that the undertaking has to try to use internal models and/or data first?	"Internal model" have been inserted
2286.	CEA, ECO-SLV-09-451	10.36.	DITTO	
2287.	Danish Insurance Association	10.36.	Validating and reviewing performance of external models for nat-cat risks seems impractical. Nat-cats may be very low-frequent and large losses may not be seen for decades.	This is a general validation challenge.
2288.	German Insurance Association – Gesamtverb and der D	10.36.	DITTO	
2289.	Just Retirement Limited	10.36.	Please refer to 10.33 above. In many cases, for example using industry mortality tables, it will be unnecessarily costly for individual firms to have to undertake their own reviews of the integrity of the external data. Proportionality clearly needs to be emphasised.	Noted
2290.	CEA, ECO-SLV-09-451	10.37.	DITTO Quantification of risks arising from the use of external data and	Clarified that this only concerns internal models where operational risk is model.

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			models is mostly a theoretical exercise which could result in pseudo-accuracy and should therefore not be overrated. Thus, a qualitative integration in the risk management process seems to be more appropriate and useful: The undertaking has to identify and consider these risks (e.g. a failure of the external supplier) adequately in its risk management process.	
2291.	CRO Forum	10.37.	We disagree that the operational risks associated with external models shall be treated differently than the operational risks associated with internal models. Risks, which arise from the use of models (irrespective whether they are internal or external), which are not operational risks (e.g. strategic or reputational risks) do not have to be incorporated in the internal model.	Clarified that this only concerns internal models where operational risk is model.
2292.	FFSA	10.37.	CEIOPS has listed some of the risks related to the use of external models and data: Strategic risk, Reputational risk, Compliance risk, Operational risk, Exit-strategy risk, etc. When significant, the impact of those risks should be calculated. FFSA considers that the requirements in terms of risk assessments related to external models and data are not clearly stated and leave too much room for interpretations. Also, it could be a burdensome for companies and multiply the controls. Therefore, FFSA believes that: (i) CEIOPS should clearly outline what is meant by the calculation of the impact of those risks and what methodology should apply, if any. (ii) The undertaking could rely on the validation already performed	Clarified that this only concerns internal models where operational risk is model.

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			<p>by third parties that have developed the model and this aspect should be clearly outlined in the final version.</p> <p>(iii) The principle of proportionality should apply and it should be outlined.</p>	
2293.	German Insurance Association – Gesamtverb and der D	10.37.	<p>DITTO</p> <p>Quantification of risks arising from the use of external data and models is mostly a theoretical exercise which could result in pseudo-accuracy and should therefore not be overrated.</p> <p>Thus, a qualitative integration in the risk management process seems to be more appropriate and useful: The undertaking has to identify and consider these risks (e.g. a failure of the external supplier) adequately in its risk management process.</p>	Clarified that this only concerns internal models where operational risk is model.
2294.	Groupe Consultatif	10.37.	See our comments on 10.30.	Clarified that this only concerns internal models where operational risk is model.
2295.	ROAM –	10.37.	<p>CEIOPS has listed some of the risks related to the use of external models and data: Strategic risk, Reputational risk, Compliance risk, Operational risk, Exit-strategy risk, etc. When significant, the impact of those risks should be calculated.</p> <p>ROAM considers that the requirements in terms of risk assessments related to external models and data are not clearly stated and leave too much room for interpretations. Also, it could be a burdensome for companies and multiply the controls. Therefore, ROAM believes</p>	Clarified that this only concerns internal models where operational risk is model.

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			<p>that:</p> <p>(i) CEIOPS should clearly outline what is meant by the calculation of the impact of those risks and what methodology should apply, if any.</p> <p>(ii) The undertaking could rely on the validation already performed by third parties that have developed the model and this aspect should be clearly outlined in the final version.</p> <p>(iii) The principle of proportionality should apply and it should be outlined.</p>	
2296.	AAS BALTA	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our words in 3.97 - 3.97. As discussed in Section 3.3.4, CEIOPS is not advising a list of possible uses in order to assess compliance with the Use test. Annex A sets out a list of possible uses that undertakings might consider when designing their internal model and when setting out the scope of the internal model as part of their application for approval. CEIOPS does not intend that the list in Annex A should be used as a type of check-list for assessing compliance with the Use test.
2297.	AB Lietuvos draudimas	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296
2298.			Confidential comment deleted.	

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2299.	CODAN Forsikring A/S (10529638), Denmark	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2300.	CODAN Forsikring (Branch Norway) (991 502 491)	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2301.	CRO Forum	Annex A	This is a useful reference list.	Thank you	
2302.	EMB Consultancy LLP	Annex A	<p>The example list of uses is instructive and may help undertakings formulate their ideas in respect of the use test.</p> <p>We note that there appears to have been no attempt to rank these uses in terms of importance in any way.</p> <p>In general we would be wary of firms focusing too much on standard lists of uses, and would be keen to see firms being innovative and focusing on uses that relate to their individual businesses.</p>	Thank you and please see our comment to 2296	
2303.	Link4 Towarzystw o Ubezpieczeń SA	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2304.	Pearl Group Limited	Annex A	It needs to be clear this is a list of possible uses and that this is not a minimum, or required, list.	Please see our comment to 2296	

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2305.	RSA Insurance Group PLC	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2306.	RSA Insurance Ireland Ltd	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2307.	RSA - Sun Insurance Office Ltd.	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2308.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	Annex A	Not sure this list is actually helpful. May push undertakings into a tick box mentality.	Please see our comment to 2296	
2309.			Confidential comment deleted.		
2310.	CRO Forum	Annex B	The CRO Forum supports option 3; "The internal model is to be used at all levels of the organisation. The areas or processes in which the undertaking has to make use of its internal model are comprehensive, but not mandatory and may include, as an example, the pricing of individual insurance contracts".	Thank you	
2311.	CRO Forum	Annex C	The CRO Forum supports Option 2; "Undertakings establish their own policy data quality. The policy specifies the data quality criteria, the respective data sources (internal, external) and use of expert judgements, as well as the methods used and the responsibilities for validating the data and expert judgements. Furthermore, the interrelation between data and expert judgement must be addressed. The policy, as well as major changes to it, is subject to supervisory approval."	Noted	

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2312.	AAS BALTA	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2313.	AB Lietuvos draudimas	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2314.	CODAN Forsikring A/S (10529638), Denmark	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2315.	CODAN Forsikring (Branch Norway) (991 502 491)	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2316.	International Underwriting Association of London	B.6.	We favour Option 3 - whilst an internal model may be used for pricing, and it is important that there is consistency between the model outputs and pricing, there are also other considerations when pricing business. Other pricing tools, and (for example) catastrophe models, may also be used when pricing business.	Thank you	
2317.	Link4 Towarzystw o Ubezpieczeń SA	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2318.	RSA Insurance Group PLC	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	

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2319.	RSA Insurance Ireland Ltd	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2320.	RSA - Sun Insurance Office Ltd.	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2321.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	B.6.	End the sentence after the word "mandatory." The final part adds no value.	Please see our response to 2328	
2322.	XL Capital Ltd	B.6.	We support Option 3	Thank you	
2323.	AAS BALTA	B.29.	We agree that option 3 is the most sensible.	Thank you	
2324.	AB Lietuvos draudimas	B.29.	We agree that option 3 is the most sensible.	Thank you	
2325.	CODAN Forsikring A/S (10529638), Denmark	B.29.	We agree that option 3 is the most sensible.	Thank you	
2326.	CODAN Forsikring (Branch Norway) (991 502 491)	B.29.	We agree that option 3 is the most sensible.	Thank you	

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2327.	EMB Consultancy LLP	B.29.	<p>We agree with CEIOPS'' recommendation for policy option 3.</p> <p>In our view option 2 would encourage a narrow box-ticking compliance mentality and would be incompatible with the foundation principle for the use test.</p> <p>Option 1 would not encourage widespread understanding of the model;; whereas we believe that in the ideal situation the model should become a summary of the collective understanding of the people in the business. There is then a danger with option 1 that the model is used for strategic decision making without full understanding, which potentially introduces risk instead of helping to manage it (take for example the naïve allocation of capital for performance management)</p> <p>Option 2 strikes a good balance and seems compatible with the principles set out for the use test.</p>	Thank you
2328.	FFSA	B.29.	<p>FFSA members have to choose among three options on minimum requirement for the Use test.</p> <p>Option 1: As a minimum requirement, the internal model is to be used at the topmost organisational level of the undertaking. The model is to be used, for instance, (1) in setting in the risk strategy, (2) allocating the risk capital, and (3) taking strategic business decision.</p> <p>Option 2: The internal model is to be used at all levels of the undertaking. The areas or processes in which the undertaking has to make use of its internal model are comprehensive and mandatory for all undertakings and include, as an example, the pricing of individual insurance contracts.</p>	Thank you. We have reworded Option 3 to make it clear that the example use is indeed an example and not, as some readers appear to have thought, a requirement.

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			<p>Option 3: The internal model is to be used at all levels of organisation. The areas or processes which the undertaking has to make use of its internal model are comprehensive, but not mandatory and may include, as an example, the pricing of individual insurance contracts.</p> <p>CEIOPS recommends option 3.</p> <p>FFSA recommends option 3, if rewritten as follows: "The internal model is to be used at all relevant level of organisation. The areas or processes in which the undertaking has to make use of tis internal model are comprehensive, but not mandatory."</p>	
2329.	GROUPAMA	B.29.	<p>We recommend option 1. An internal model is built for VaR and risk calculations. It should not be directly used for tarifications issues for instance. A distinction should be done between use the internal model on one hand, and use the results (as economic capital affection for instance) on the other. We should not be asked to use the internal model where others methodologies could be followed as well.</p>	Please see our response to 2328
2330.	Link4 Towarzystw o Ubezpieczeń SA	B.29.	We agree that option 3 is the most sensible.	Thank you
2331.	ROAM –	B.29.	<p>ROAM members have to choose among three options on minimum requirement for the Use test.</p> <p>Option 1: As a minimum requirement, the internal model is to be</p>	Please see our response to 2328

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		<p>used at the topmost organisational level of the undertaking. The model is to be used, for instance, (1) in setting in the risk strategy, (2) allocating the risk capital, and (3) taking strategic business decision.</p> <p>Option 2: The internal model is to be used at all levels of the undertaking. The areas or processes in which the undertaking has to make use of its internal model are comprehensive and mandatory for all undertakings and include, as an example, the pricing of individual insurance contracts.</p> <p>Option 3: The internal model is to be used at all levels of organisation. The areas or processes which the undertaking has to make use of its internal model are comprehensive, but not mandatory and may include, as an example, the pricing of individual insurance contracts.</p> <p>CEIOPS recommends option 3.</p> <p>ROAM recommends option 3, if rewritten as follows: "The internal model is to be used at all relevant level of organisation. The areas or processes in which the undertaking has to make use of this internal model are comprehensive, but not mandatory."</p>	
2332.	RSA Insurance Group PLC	B.29.	<p>We agree that option 3 is the most sensible.</p> <p>Thank you</p>
2333.	RSA Insurance Ireland Ltd	B.29.	<p>We agree that option 3 is the most sensible.</p> <p>Thank you</p>
2334.	RSA - Sun	B.29.	<p>We agree that option 3 is the most sensible.</p> <p>Thank you</p>

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	Insurance Office Ltd.				
2335.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	B.29.	We agree that option 3 is the most sensible.		Thank you
2336.	XL Capital Ltd	C.3.	We support Option 2		Noted.
2337.	AAS BALTA	C.44.	We agree that option 2 is the most sensible option.		Noted.
2338.	AB Lietuvos draudimas	C.44.	We agree that option 2 is the most sensible option.		Noted.
2339.	CODAN Forsikring A/S (10529638), Denmark	C.44.	We agree that option 2 is the most sensible option.		Noted.
2340.	CODAN Forsikring (Branch Norway) (991 502 491)	C.44.	We agree that option 2 is the most sensible option.		Noted.
2341.	EMB Consultancy LLP	C.44.	We agree with CEIOPS recommendation for option 2. Forcing independent review of expert judgement may not be practical, is likely to be expensive, may act to remove the "edge" that the judgement adds to the firm, may introduce difficult issues		Noted.

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			<p>where data and judgement is commercially sensitive and is difficult to enforce.</p> <p>We also agree with the avoidance of the heavy supervisory burden implied by Option 1, and believe that this would be inappropriate because all firms are different and common supervisor signoff act to discourage firms from a customised solution that suits the individual business best.</p>	
2342.	FFSA	C.44.	<p>FFSA members have to choose among four options on data an expert judgment.</p> <p>Option 1: Undertakings shall check the quality of all data used in the internal model as well as expert judgement used in relation to data. Undertakings shall agree the use of internal and external data and expert judgment with the supervisory authority on a case-by-case basis.</p> <p>Option 2: Undertakings establish their own policy on data quality. The policy specifies the data quality criteria, the respective data sources (internal, external) and use of expert judgments, as well as the methods used and the responsibilities for validating the data and expert judgments. Furthermore, the interrelation between data and expert judgment must be addressed. The policy, as well as major changes to it, are subject to supervisory approval.</p> <p>Option 3: Internal model as well as external data and the use of expert judgment must be reviewed by an independent third party. Expert judgment may be used in all areas. The use of expert judgment must be well-justified, explained and documented. In particular, when data is available, expert judgment must be reconciled with the data.</p> <p>Option 4: Internal as well as external data and the use of expert</p>	Noted.

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			<p>judgment must be reviewed by and independent third party. The use of expert judgment should be kept to a minimum and is only allowed when data is unavailable. It must be well-justified, explained and documented.</p> <p>CEIOPS recommend Option 2, however the comprehensiveness of the data policy will make this exercise extremely onerous and costly for limited value – principle of materiality should apply here.</p> <p>FFSA is in favour of Option 2.</p>	
2343.	GROUPAMA	C.44.	We are in favour of Option 1 or 2. We do not see any reason to involve third party in the data quality assessment process.	Noted.
2344.	Link4 Towarzystw o Ubezpieczeń SA	C.44.	We agree that option 2 is the most sensible option.	Noted.
2345.	ROAM –	C.44.	<p>ROAM members have to choose among four options on data an expert judgment.</p> <p>Option 1: Undertakings shall check the quality of all data used in the internal model as well as expert judgement used in relation to data. Undertakings shall agree the use of internal and external data and expert judgment with the supervisory authority on a case-by-case basis.</p> <p>Option 2: Undertakings establish their own policy on data quality. The policy specifies the data quality criteria, the respective data sources (internal, external) and use of expert judgments, as well as</p>	Noted.

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			<p>the methods used and the responsibilities for validating the data and expert judgments. Furthermore, the interrelation between data and expert judgment must be addressed. The policy, as well as major changes to it, is subject to supervisory approval.</p> <p>Option 3: Internal model as well as external data and the use of expert judgment must be reviewed by an independent third party. Expert judgment may be used in all areas. The use of expert judgment must be well-justified, explained and documented. In particular, when data is available, expert judgment must be reconciled with the data.</p> <p>Option 4: Internal as well as external data and the use of expert judgment must be reviewed by and independent third party. The use of expert judgment should be kept to a minimum and is only allowed when data is unavailable. It must be well-justified, explained and documented.</p> <p>CEIOPS recommend Option 2, however the comprehensiveness of the data policy will make this exercise extremely onerous and costly for limited value – principle of materiality should apply here. ROAM is in favour of Option 2.</p>	
2346.	RSA Insurance Group PLC	C.44.	We agree that option 2 is the most sensible option.	Noted.
2347.	RSA Insurance Ireland Ltd	C.44.	We agree that option 2 is the most sensible option.	Noted.
2348.	RSA - Sun	C.44.	We agree that option 2 is the most sensible option.	Noted.

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	Insurance Office Ltd.				
2349.	SWEDEN: Trygg-Hansa Försäkrings AB (516401-7799)	C.44.	We agree that option 2 is the most sensible option.		Noted.