



**eiopa**  
EUROPEAN INSURANCE  
AND OCCUPATIONAL PENSIONS AUTHORITY

# IORP Stress Test 2015 – Defined contribution satellite module

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Pension Stress Test & Quantitative Assessment  
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- Purpose:  
*Assess resilience of future retirement income to stress scenarios.*
- What is a DC stress test?
  - o Long-horizon exercise (about 40y-60y)
  - o Focus on pension outcomes (pension income, replacement rates)
  - o For three “representative” members
  - o Simulate plan under baseline and stress scenarios

- The DC plan is modelled
  - Investing in basic assets (equity index and bonds)
  - Allocation based on **fixed proportions** of pension wealth
  - Portfolio weights can be age-specific (life cycle)
- Comprehensive reporting template:
  - Set of userforms to collect details about the DC plan
- Calculation tool will run the whole exercise
  - Simulates DC plan for representative members under all scenarios
  - Reports pension outcomes

- **Baseline scenario**
  - o Interest rates and inflation “follow” forwards
  - o Risk premia: equity 3%, government bonds 30bps, corporate bonds 90bps
- **2 shock scenarios**
  - o Baseline + ESRB shocks at end 2014
- **2 low return scenarios**
  - o Baseline + ESRB shocks distributed over long period
- **Longevity scenario**
  - o -20% in mortality rates

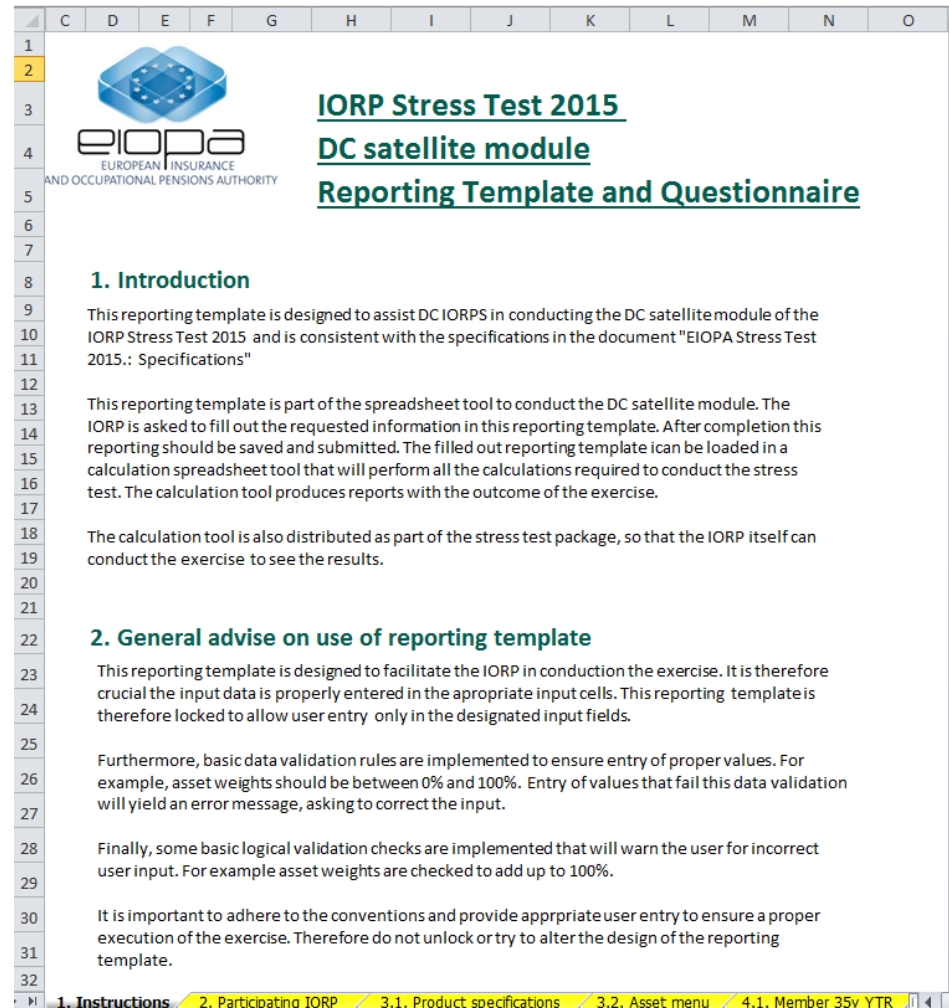
## DC satellite module package will contain

- o IORP Stress test specifications document
- o DC reporting template
  - Excel spreadsheet containing userforms to be filled out
  - Qualitative questionnaire
- o DC calculation tool
  - Takes a completed DC reporting template as input
  - Simulates the DC plan under all stress scenarios
  - Reports outcomes of the simulation
  - Optional for IORP


# Overview DC reporting template

## Sheets

1. Instructions
2. Participating IORP
  - 3.1. Product specification
  - 3.2. Asset menu
4. Member profiles 3
5. Questionnaire
6. Complete exercise



The screenshot shows a spreadsheet interface with columns C through O and rows 1 through 32. The content is as follows:

Row	Content
1	
2	 <b>EUROPEAN INSURANCE AND OCCUPATIONAL PENSIONS AUTHORITY</b>
3	
4	<b><u>IORP Stress Test 2015</u></b>
5	<b><u>DC satellite module</u></b>
6	<b><u>Reporting Template and Questionnaire</u></b>
7	
8	<b>1. Introduction</b>
9	This reporting template is designed to assist DC IORPS in conducting the DC satellite module of the IORP Stress Test 2015 and is consistent with the specifications in the document "EIOPA Stress Test 2015.: Specifications"
10	
11	
12	This reporting template is part of the spreadsheet tool to conduct the DC satellite module. The IORP is asked to fill out the requested information in this reporting template. After completion this reporting should be saved and submitted. The filled out reporting template can be loaded in a calculation spreadsheet tool that will perform all the calculations required to conduct the stress test. The calculation tool produces reports with the outcome of the exercise.
13	
14	
15	
16	
17	
18	The calculation tool is also distributed as part of the stress test package, so that the IORP itself can conduct the exercise to see the results.
19	
20	
21	
22	<b>2. General advise on use of reporting template</b>
23	This reporting template is designed to facilitate the IORP in conduction the exercise. It is therefore crucial the input data is properly entered in the appropriate input cells. This reporting template is therefore locked to allow user entry only in the designated input fields.
24	
25	Furthermore, basic data validation rules are implemented to ensure entry of proper values. For example, asset weights should be between 0% and 100%. Entry of values that fail this data validation will yield an error message, asking to correct the input.
26	
27	
28	Finally, some basic logical validation checks are implemented that will warn the user for incorrect user input. For example asset weights are checked to add up to 100%.
29	
30	It is important to adhere to the conventions and provide appropriate user entry to ensure a proper execution of the exercise. Therefore do not unlock or try to alter the design of the reporting template.
31	
32	

At the bottom of the spreadsheet, a navigation bar shows the following sheet names: 1. Instructions, 2. Participating IORP, 3.1. Product specifications, 3.2. Asset menu, 4.1. Member 35y YTR.

# Participating IORP sheet

- o Basic info about IORP
- o Contact information

Participant information	
IORP name	-
IORP abbreviation	-
IORP type	IORPs providing pure-DC plans
Country	United Kingdom
Country abbreviation	UK
Reporting currency used	GBP
National supervisor	-
Local registration number	-

Contact information	
Name of contact person 1	-
Name of institution	-
Position / title	-
Phone number	-
E-mail address	-
Name of contact person 2	-
Name of institution	-
Position / title	-
Phone number	-
E-mail address	-

# Product specification sheet

- o Applies to whole DC plan
- o Costs
  - All costs apply cumulative
  - Investment costs at portfolio level
  - Investment costs can be set at asset level as well
- o Pay-out product target
  - Selective list of options

Costs	
<u>ADMINISTRATIVE COSTS</u>	
Fixed annual cost	<input type="text" value="0"/>
Annual percentage of total asset value	<input type="text" value="0%"/>
Percentage of contribution	<input type="text" value="0.00%"/>
Percentage of final pension wealth	<input type="text" value="0%"/>
<u>INVESTMENT COSTS</u>	
Annual percentage of total asset value	<input type="text" value="0%"/>
Percentage of contribution	<input type="text" value="0.00%"/>
Percentage of final pension wealth	<input type="text" value="0%"/>
Percentage of gross annual return	<input type="text" value="0%"/>
Return threshold	<input type="text" value="0%"/>

Pay-out product	
What pay-out product/solution does the plan target? Choose the option that is most representative for DC plan	
Pay-out option	<input type="text"/>



# Asset menu sheet

**Control**

Asset number: 2 of 5

< << >> >

Add Delete Save

Move Up Move Down

**activated asset**

**Control buttons:**

- select activated asset
- add/delete/save
- reorder

**Asset specification**

Asset class: Real Estate EU

Asset name: Real estate

Description:

Investment costs: 0.30%

**View and edit details of activated asset**

**Asset Menu**

No	Asset name	Asset class	Costs	Duration	Inflation Lin
1	Equities	Equities Developed Markets	0.30%		
2	Real estate	Real Estate EU	0.30%		
3	Sovereign bonds	Government Bond Fund	0.30%	7	FALSE
4	Corporate bonds	Corporate Bond Fund	0.30%	8	FALSE
5	Cash and deposits	Cash and Deposits	0.30%	1	FALSE

**Table with all assets**

# Member profile sheet

Member detail	
Name	Member 5y YTR
Years to retirement	5
Retirement age	65
Age	60
Product name	
Profile name (optional)	
Current salary	35000
Current pension wealth	15000
<b>Pensionable income</b>	
Floor	<input type="checkbox"/> 200
Cap	<input type="checkbox"/> 100

Validation of user input	
✓	Asset weights add to 100%
✓	Floor level does not exceed cap level

## Explanation

**Current salary:** Provide an estimate of the current level of salary in your member population.

*For comparison, the median earnings in United Kingdom*

**Current pension wealth:** Provide a best estimate of pension

**Pensionable income** is the (part of) member wage over which capped and floored to obtain the pensionable income: control the cap and floor. Specify whether a cap and /or floor apply assumed to grow with price inflation.

**Age-dependent variables:** Contribution rates, Career weight per year to retirement in the table below.

**Contribution rates** are specified per year to retirement in table pensions savings in the plan as a fraction of pensionable income by the member and the employer on the members behalf.

**Career salary growth** is defined as the additional annual growth career development. Specify per year to retirement in table growth data. This value can be overridden by specifying a custom

**Asset weights** are the fractions of pension wealth allocated year before retirement in the table below. Please make sure

**Projected real salary** is presented only as a reference. It should i.e. in local currency value per end 2014. The projection grows plus the career salary growth.

Year	Age	Year to retirement	Projected real salary
2015	60	5	35,000
2015	61	4	35,350
2016	62	3	35,704
2017	63	2	36,061

Contribution rate
10%
10%
10%
10%

Career salary growth	
value	custom value
0.00%	
0.00%	
0.00%	
0.00%	

## ASSET MIX

Asset name & number:

1	2	3	4
Equities	Real estate	Sovereign bonds	Corporate bonds
26%	8%	35%	13%
21%	7%	39%	12%
12%	3%	4%	5%
7%	2%	2%	3%

# Questionnaire sheet

## 1. Description of IORP, pension scheme(s) and sponsor

1 Does the IORP participate in the DC satellite module for only part of its activities (i.e. for ring-fenced/schemes/sub-funds of the IORP)

Choose yes or no

2 Please provide the number of DC members and beneficiaries covered by the IORP broken down by active, deferred and retired persons at the end of 2014 (or the most recent earlier date for which data are available).

	Number (x1000)
Active members	
Deferred members	
Retired persons	
Total	0

3

Please provide the total number of DC members in the accumulation phase and amount assets invested by the IORP for these members broken down by remaining years to the standard retirement age at the end of 2014 (or the most recent earlier date for which data are available).

Years to standard retirement age	beneficiaries (in 1000)	Assets (reporting currency and unit)
0 up to 5 years		
5 up to 10 years		
10 up to 15 years		
15 up to 20 years		
20 up to 25 years		

- Questionnaire in DC reporting template
- Also extensive text-fields for taking multi-line text
- Use ALT+Enter to make new line

- Check that everything is filled out correctly
- Sheet shows basic validation checks
- Incorrect input can lead to failure in simulation
  
- Save and submit
  
- Optional: You can load saved reporting template in calculation tool to get results from exercise

## 1. Validate your input

Make sure that all the input forms are properly filled out. Below is automatically indicated whether any validation issues are found. An example of a validation issue is when the asset weights do not add up to 100%. If validation issues are found, go to the corresponding sheet and correct the input.

✔ **No validation issues for input data found!**

- ✔ **4.1. Member 35y YTR**
- ✔ **4.2. Member 20y YTR**
- ✔ **4.3. Member 5y YTR**

## 2. Save this reporting template

If all input forms are properly filled out, then make sure you save this file .

## 3. *Optional*: Run the exercise

The DC calculation spreadsheet tool is distributed as part of the stress test package. You can open the calculation tool to run the exercise and generate the

## 4. Submit

After completion, you are asked to submit the filled out reporting template.

# Tips for doing the exercise



- Fill out carefully, make sure to be complete
- Do not try to alter or modify spreadsheet!
- Spreadsheet uses a “model” of DC so it does not encompass every potential detail of every scheme. Exercise judgment and make choice within the spreadsheet that best represents the DC plan
- Specify all assets you need for the three member profiles in the asset menu
- The asset mix is specified per member/per year → you can incorporate a life-cycle investment mix
- If the duration of a bond portfolio changes over time → specify a short and long duration bond and mix these in the life-cycle mix to get desired duration profile.



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# Thank you

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