

# Bulgarian Insurance Sector Balance Sheet Review

Methodology

2016

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# 1. Introduction

On 26 February 2016, the European Commission (EC) published its Country Report for Bulgaria for 2016. The report assesses the progress in the execution of Bulgaria-specific recommendations approved by the Council on 14 July 2015<sup>1</sup>. The report also includes results from the in-depth review under Article 5 of Regulation (EU) No. 1176/2011 on the prevention and correction of macroeconomic imbalances. The analysis of EC gives grounds to conclude that there are excessive macroeconomic imbalances in Bulgaria. A part of country specific recommendation (CSR) 2 requires performing a portfolio screening for the pension funds and insurance sectors.

With a view to guarantee efficient functioning for the financial system and the need to ensure better transparency of transactions on the local financial market and in accordance with the National Reform Program - 2015 update to reach the objectives of Europe 2020 strategy adopted with the Council of Ministers decision No. 298 of May 2015 and on the grounds of § 10 of the Transitional and Final Provisions of the Law on Recovery and Resolution of Credit Institutions and Investment Firms (LRRCIF), the Financial Supervision Commission (FSC) organizes a review of the insurers' balance sheets with the participation of independent external parties and institutions of high professional reputation.

The review will be overseen by a Steering Committee (SC) that includes representatives from the FSC, the Ministry of Finance (Observer), the Bulgarian National Bank (Observer) and from international organizations - European Commission (Observer) and European Insurance and Occupational Pensions Authority (EIOPA; member of the SC). The FSC has selected a consultant, hereinafter referred as Project Manager (PM) that will ensure a harmonised application of the review's methodology by the independent external reviewers performing the reviews as well as a similar treatment of the participating undertakings by the respective independent external reviewers.

The main objectives of the review of the Insurance sector are:

- ▶ to analyze the insurance portfolio of each insurance undertaking in order to establish the obligations under the insurance contracts, to assess the adequacy of technical provisions under Solvency II and have a reasoned estimate of the economic value of the respective technical provisions;
- ▶ to assess the appropriateness under a Solvency II framework of the recognition and valuation principles applied to all assets and liabilities with a special focus on the impact of operations and transactions with natural or legal persons with close links to the insurance undertaking;
- ▶ to assess under a Solvency II framework the effectiveness of the risk transfers to third parties of risks stemming from (re)insurance contracts written by the insurance undertakings including finite reinsurance contracts;
- ▶ to re-calculate the prudential parameters in accordance with Solvency II, (MCR and SCR). This covers also the need for reviewers to present a statement for all undertakings whether articles 131 and 308b (14) of Directive 2009/138/EC of the European Parliament and of Council of 25 November 2009 (Solvency II Directive) are applicable. The latter is expected to entail a table with the SCR, MCR and Solvency Margin (available and required solvency margin) for each undertaking. The solvency margin recalculation at the end of December 2015 will be required if an undertaking does not cover the SCR or MCR unless the solvency margin is already negative in the year end or the reviewer is confident that there is no material change of this prudential indicator at the year-end;
- ▶ to review the risks of the insurance undertakings and to provide insight and raise awareness of the insurance' sector risks and vulnerabilities including potential contagions to the rest of the financial sector and the real economy.

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<sup>1</sup>

*COUNCIL RECOMMENDATION of 14 July 2015 on the 2015 National Reform Programme of Bulgaria and delivering a Council opinion on the 2015 Convergence Programme of Bulgaria (2015/C 272/08)*

For undertakings that fall under the scope of article 4 of the S2 Directive (i.e. exempt from the scope of Solvency II) the above referred objectives will be considered on the basis of the applicable framework.

These assessments will include a thorough check of the completeness and accuracy of the general ledger of the insurance undertaking, the analysis of insurance portfolios, methodologies, assets and liabilities including the assessment of the adequacy of technical provisions.

Independent external reviewers are expected to provide useful insights about the risks and vulnerabilities of the Bulgarian insurance sector.

This manual describes the minimum procedures to be followed by the reviewers that will perform the Balance Sheet Review exercise ("BSR") for the insurance/re-insurance companies. The reviewers are requested to use their professional judgment to determine the extent and nature of any additional procedures or information considered appropriate taking into account the scope of work requested in this exercise and their assessment of the specific characteristics of the respective companies under review.

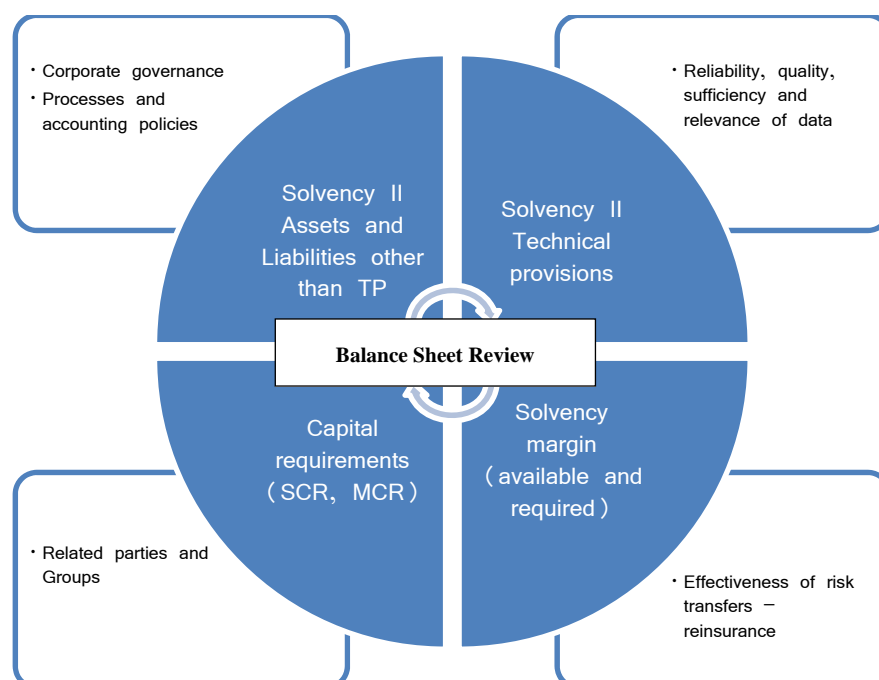
## 1.1 Context

Please refer to the Appendix 6 for a list of the undertakings included in the BSR exercise.

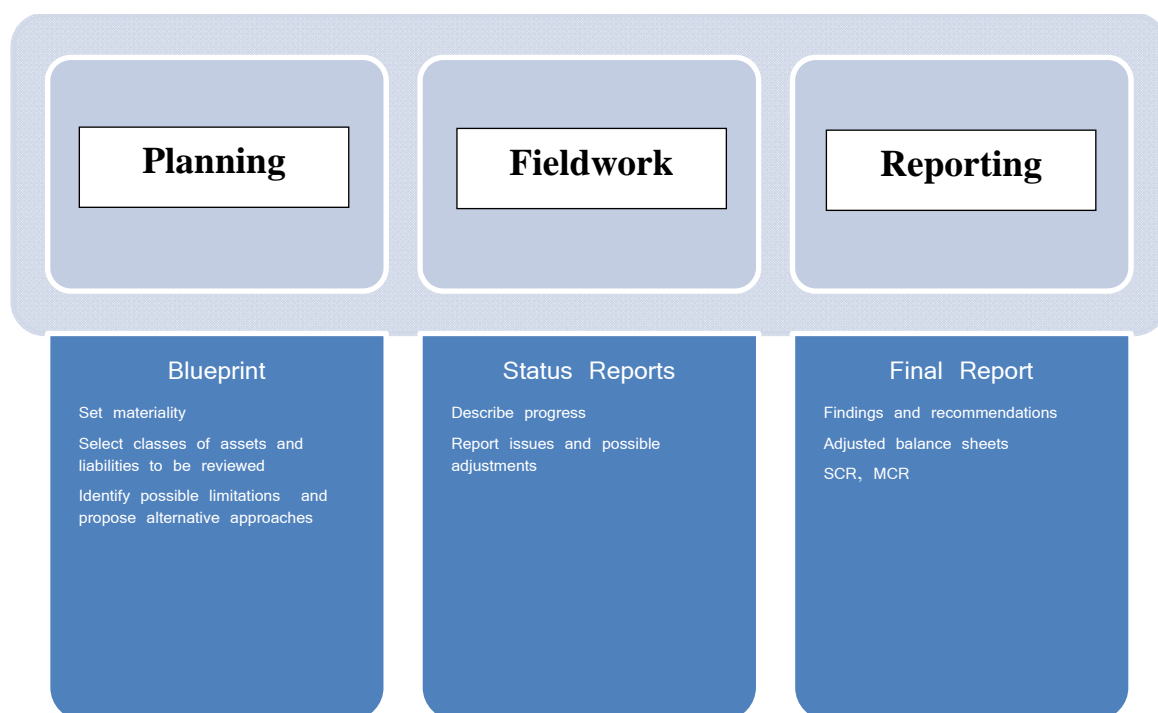
Starting 1 January 2016, the requirements of Solvency II are in force, therefore the BSR exercise will be focused on compliance with the requirements of this framework.

## 1.2 Overview

The methodology will describe the scope of the review and the methods and techniques which are deemed as relevant for the review of insurer's balance sheet, as presented below more in-depth. Specifically, this will cover the following main work blocks:



The exercise is structured in 3 main phases, as follows:



## 1.3 Key Tools

The BSR will make use of several types of tools that are specific to a particular phase of the BSR:

- **Templates:** these will be provided in this Manual for population by the reviewer and used to deliver information and final results to the PM and the SC and insurance/reinsurance companies.

### Templates

BSR phase	Reference	Description	When
Planning	R1 Blueprint	To describe the working plan proposed by the reviewer for completing the Balance Sheet Review	14 days from the start date of the BSR
Planning	R2 Materiality	To compute materiality and select assets and liabilities to be reviewed	To be included as Appendix to the Blueprint
Fieldwork	R3 Progress reports	To inform the PM about the status of completion of work of reviewers, main findings and recommendations, proposed adjustments, potential delays and proposed corrective actions, any other issues encountered	Twice per month, exact dates shall be communicated by the PM to the reviewers
Fieldwork	R4 Adjusted balance sheet	To present proposed adjustments	Twice per month, together with R3 and at the end of the exercise together with R7
Fieldwork	R5 Corporate governance	Checklist for assessment of appropriateness of Corporate Governance	To be used for completing Chapter 2 and submitted at the end of the exercise together with R7
Reporting	R6	To present recalculated prudential parameters	At the end of the exercise together with R7
Reporting	QRTs*	To present detailed information for S2 purpose	Preliminary information to be presented together with R3 and final together with R7
Reporting	R7 Conclusion report	To describe results of the reviewers work	Draft on 30 September 2016. Final on 15 Oct 2016.
Reporting	R8 Information on financial assets valuation.	To present detailed information on financial assets valuation based on reviewers assessment.	Preliminary information to be presented together with R3 and final together with R7.

\* The independent external reviewer should obtain from the undertaking, review under each relevant section and submit as Appendixes to the Conclusion report (“R7”) and as soon as available together with the progress report (“R3”) the S2 QRTs (i.e. templates under Implementing Regulation (EU) 2015/2450 of 2 December 2015. , as follows:

Individual level:

- ▶ All quarterly quantitative templates
- ▶ From the annual quantitative templates as follows:
  - S.03.03.01 – Off-balance sheet items, general, as at 30.06.2016
  - S.04.01.01 – Activity by country, for the period 01.01.-30.06.2016 and possibly for 2015.
  - S.04.02.01 – Information in class 10 for the period 01.01.-30.06.2016 and possibly for 2015.
  - S. 05.02.01 – Premiums, claims and expenses by country (identical with the period of S.05.01.01)
  - S 07.01.01 – Structured products
  - S. 10.01.01 – Securities lending and repos
  - S.12.02.01 – Gross TP and Gross BE for different countries
  - S.14.01.01 – Life obligations analysis at 30.06.2016 for the period 01.01-30.06.2016
  - S. 17.02.01 – Non-life TP for different countries as at 30.06.2016
  - S. 19.01.01 – for MTPL only, annual data
  - S. 20.01.01 - for MTPL only, annual data
  - S. 21.01.01 – for MTPL only, annual data
  - SCR QRTs: S. 25.01.01, S.26.01.01, S. 26.02.01, S. 26.04.01, S. 26.05.01, S. 26.06.01, S.27.01.01, S. 28.02.01
  - S.30.03.01 – Outgoing Reinsurance Program basic data
  - S.30.04.01 – Outgoing Reinsurance Program shares data

Group level:

- ▶ S.02.01.01 (instead of S.02.01.02 from the quarterly) plus the rest of the quarterly templates
- ▶ The following from the annual QRTs:
  - S.03.01.04 Off-balance sheet items – general
  - S.05.02.01 Premiums, claims and expenses by country
  - S 07.01.04 – Structured products
  - S. 10.01.04 Securities lending and repos
  - SCR:S.25.01.04, S.26.01.04, S.26.02.04, S.26.03.04, S.26.04.04, S.26.05.04, S.26.06.04, S.26.07.04, S.27.01.04
  - S.31.01.04 Share of reinsurers
  - S.33.01.04 Insurance and reinsurance individual requirements
  - S.34.01.04 Other regulated and non-regulated financial undertakings including insurance holding companies and mixed financial holding company individual requirements
  - S.35.01.04 Contribution to group Technical Provisions
  - S.37.01.04 Risk concentration

The undertakings under art 4 of the SII Directive, shall use the forms prepared for supervisory reporting in accordance with the Bulgarian insurance accounting and reporting secondary legislation.

#### **Requests for clarification regarding methodology**

Reviewers will be able to submit their questions in a consolidated manner to the dedicated mailbox: [georgiev\\_a@fsc.bg](mailto:georgiev_a@fsc.bg)

PM will circulate the Q&A log answers to all independent external reviewers on a regular basis (typically once per week or sooner for critical or high priority) through email. .

## **1.4 Definitions and abbreviations**

BSR – Bulgarian Insurance Sector Balance Sheet Review

PM – Project manager

SC – Steering Committee

PMT – Planning materiality threshold as defined in section 1.5.3

ST- Significance threshold as defined in section 1.5.3

RT – Reporting threshold as defined in section 1.5.3

MUS – Monetary Unit Sampling as defined in section 1.5.4

ISA – International Standards on Auditing

IFRS – International Financial Reporting Standards

SII Directive - Directive 2009/138/EC of the European Parliament and the Council of 25 Nov 2009

DA – Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

S1 legislation - Insurance Code and secondary regulations on its application effective at the reference date of 31 December.2015

S1BS – Solvency I Balance Sheet

S2BS – Solvency II Balance Sheet

Reviewers – the independent external reviewers appointed to perform the BSR

SII framework – the applicable Solvency II framework as defined in chapter 1.5.2

Adjustment – any misstatement with a value higher Reporting Threshold (refer to the materiality chapter)

TP -Technical provisions

EC – European Commission

CSR – Country Specific Recommendations

SCR – Solvency Capital Requirement

MCR - Minimum Capital Requirement

RA - Risk Assessment

VA - volatility adjustment

MA - matching adjustment

HRG - homogeneous risk group

LOB - line of business

RFF - Ring-Fenced Funds



BSCR - The Basic Solvency Capital Requirements

IPS - investment policy

DTA - Deferred tax assets

DTL - Deferred liabilities assets

CoC – Cost-of-capital rate

BEL – Best estimate Liability

IMF - International Monetary Fund

WEO - World Economic Outlook

QRT – Quantitative Reporting Template

## 1.5 Main assumptions and parameters

### 1.5.1 Reference date

The reference date for the BSR exercise is 30 June 2016.

The reviewer is requested to consider any subsequent event relevant to the analysis performed, including application of supervisory measures or provision of recommendations by the FSC or any other relevant information as applicable. Subsequent events should be included in the final report (“R7”) together with an analysis of their impact over findings (not directly in the adjusted assets value at the reference date). This applies to all areas under review.

### 1.5.2 Applicable framework

#### **Solvency II**

The Balance Sheets reviewed will be prepared in accordance with Solvency II requirements, including the following:

- ▶ Technical standards for application of Directive 2009/138/EC of the European Parliament and the Council of 25 Nov 2009
- ▶ Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)
- ▶ Omnibus II (Directive 2014/51/EU of the European Parliament and of the Council of 16 April 2014 amending Directives 2003/71/EC and 2009/138/EC and Regulations (EC) No 1060/2009, (EU) No 1094/2010 and (EU) No 1095/2010 in respect of the powers of the European Supervisory Authority (European Insurance and Occupational Pensions Authority) and the European Supervisory Authority (European Securities and Markets Authority))
- ▶ Commission Delegated Regulation(EU) amending Commission Delegated Regulation (EU) 2015/35 concerning the calculation of regulatory capital requirements for several categories of assets held by insurance and reinsurance undertakings published on 30 September 2015
- ▶ EIOPA Guidelines on implementation of the Directive and Regulations

#### **Auditing**

The reviewers shall consider the applicable legal framework and the applicable International Standards on Auditing (“ISA”) for the performance of the review of the financial information.

## Special cases

The reviewers of the insurance/reinsurance companies that do not meet SCR and MCR ratio of 100% as at 30.06.2016, will report SCR and MCR as at 30.06.2016 and will be required to provide an Adjusted SI Balance Sheet and a Solvency margin as at 31.12.2015 unless the solvency margin is already negative in the year end. The methodology will provide some limited additional procedures to be applied on the Balance sheet as at 31.12.2015 to obtain adjustments (full application of procedures already performed as at 30.06.2016 will not be requested).

The undertakings that will fall under the scope of article 4<sup>2</sup> of the S2 Directive (i.e. exempt from the scope of Solvency II) will apply Solvency I in regards to the calculation of solvency margin and to holding eligible assets to cover technical provisions being however requested for the purpose of this exercise to fully apply Solvency II requirements regarding system of governance, information systems and quality of data, prudent person principle, as well as frequency of reporting.

Specific guidance for reviewers of those undertakings will be included in chapter 4 Section C1 and C2.

## 1.5.3 Materiality

Materiality concept, is defined in accordance with ISA320 “Materiality in Planning and Performing and Audit” and Article 291 of the published DA, by the magnitude of an omission or misstatement that, individually or in the aggregate, in light of the surrounding circumstances, could reasonably be expected to influence the economic decisions of the users of the results of the BSR exercise.

The concept of materiality will be applied in planning and performing the procedures, in evaluating the effect of identified misstatements and in forming the final conclusion.

The significance threshold (ST) is determined to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds the planning materiality (PMT). ST will also be used as an estimate of undetected misstatements within the undertaking’s balance-sheet items in order to conclude on uncorrected misstatements.

In addition to determining PM and ST, Reporting Threshold (RT) will also be determined. RT is the amount below which identified misstatements are considered clearly trivial.

Materiality will be based on total assets.

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<sup>2</sup>  
“Article 4”

*Exclusion from scope due to size.*

*Without prejudice to Article 3 and Articles 5 to 10, this Directive shall not apply to an insurance undertaking which fulfils all the following conditions:*

- (a) the undertaking’s annual gross written premium income does not exceed EUR 5 million;*
- (b) the total of the undertaking’s technical provisions, gross of the amounts recoverable from reinsurance contracts and special purpose vehicles, as referred to in Article 76, does not exceed EUR 25 million;*
- (c) where the undertaking belongs to a group, the total of the technical provisions of the group defined as gross of the amounts recoverable from reinsurance contracts and special purpose vehicles does not exceed EUR 25 million;*
- (d) the business of the undertaking does not include insurance or reinsurance activities covering liability, credit and suretyship insurance risks, unless they constitute ancillary risks within the meaning of Article 16(1);*
- (e) the business of the undertaking does not include reinsurance operations exceeding EUR 0,5 million of its gross written premium income or EUR 2,5 million of its technical provisions gross of the amounts recoverable from reinsurance contracts and special purpose vehicles, or more than 10 % of its gross written premium income or more than 10 % of its technical provisions gross of the amounts recoverable from reinsurance contracts and special purpose vehicles.”*

Table XX: Materiality

BSR phase	Reference	Measurement basis / Percentage	Scope
Planning	Planning materiality threshold ("PMT")	1% Total assets*	To select assets* and liabilities* to be reviewed by the third party reviewer.  The following shall be reviewed, irrespective of materiality: technical provisions, part of the technical reserves ceded in reinsurance; premium receivables from policyholders; receivables (and payables) from reinsurers; receivables (and payables) from intermediaries, holdings in related undertakings, derivatives.
Performing procedures	Significance threshold ("ST")	50% PMT	To decide on sampling ST is the application of planning materiality threshold at the individual account or balance level. ST is set to reduce to an appropriately low level the probability that the aggregate of misstatements exceeds the value that is material for the overall scope of the exercise.
Reporting	Reporting threshold ("RT")	5% PMT	To report proposed adjustments (below this amount the adjustments are clearly trivial and will not be included in the adjusted balance sheet nor reported as findings in the final report).

The determination and use of materiality will not be only a mathematical exercise but will also require **professional judgment** in assessing risk and hence, excluded classes of assets and liabilities may be included in the review where considered appropriate by the reviewer, or additional sample or procedures may be proposed. To ensure consistency the PM will review those judgments and ask the reviewers to amend their sample if deemed necessary (e.g. if reviewer of one undertaking identifies risk, which is also present in other undertaking but is not specifically identified by their reviewers).

- *\*Total assets, assets and liabilities referred to in this computation are the values included in the accounting and not Solvency 2 economic values (as it is expected that at the date of performing the planning phase, the Solvency 2 may not be readily available to the reviewer).*

### 1.5.4 Sampling

In accordance with ISA 530, "Audit sampling can be applied using either non-statistical or statistical sampling approaches."

Sampling will be used to obtain sufficient appropriate evidence using tests of controls or tests of details. Sampling techniques help determine the number of items from a population to test and how to select the items on which to apply the required procedures. The purpose of sampling is to draw inferences about the entire population from the results of a sample. The reviewer should exercise judgment in identifying methods to:

- Define the population
- Determine statistical sample size
- Determine judgmental sample size
- Choose sample selection methods

For the purpose of this exercise, the following sampling approaches are permitted, if not instructed differently in the specific section:

- a. Non-statistical – selection of items to ensure a specific coverage (requested for the BSR 90%). No extrapolation of findings shall be performed.
- b. Statistical – top 10 items to be selected and for the rest of the exposure apply Monetary Unit Sampling<sup>3</sup>(MUS) method as defined in ISA 530. Allows extrapolation.

The reviewers should select the sampling method considered the most appropriate in order to form a conclusion concerning the population from which the sample is drawn.

The sample size using MUS shall be determined based on the following factors:

- The Risk Assessment (“RA”) associated to the balance-sheet item under review
- The coverage of key items expressed as % from the total balance of the population tested for the respective procedure. The key items will be set according to the professional judgment of the reviewer, however the maximum level will be set at ST. The top 10 exposures will be included in the key items.

The RA shall be assessed by the reviewer based on its professional judgment considering the control environment appropriateness and the inherent risk associated for each balance-sheet section selected to be tested. The technical provisions and investments valuation are deemed to have high inherent risk. The reviewer shall explain in detail the consideration for each section.

The following results combinations are possible for risk assessment depending on the combination between control environment appropriateness and inherent risk assessment:

Control environment appropriate (yes/no)	Inherent risk (High/Low)	Risk Assessment
yes	Low	Low Risk
yes	High	Medium Risk
no	Low	Medium Risk
no	High	High Risk

RA	Key item coverage						
	0%	10%	30%	50%	70%	90%	100%
LOW RISK	1	0.9	0.7	0.3	•	•	•
MEDIUM RISK	2.1	2	1.7	1.4	0.9	•	•
HIGH RISK	3	2.9	2.6	2.3	1.8	0.7	•
• Indicates that no representative sample is required at this combination of key item coverage as sufficient appropriate audit evidence has been obtained to maintain audit risk at the appropriate level							

The following steps will be used to determine the sample:

- 1) Find the intersection of key item coverage and RA to determine the sample size factor
- 2) Compute the base sample size by dividing the BGN amount of the population, excluding key items, by ST
- 3) Multiply the sample size factor determined in step 1 by the base sample size determined in step 2 to arrive at the required representative sample

<sup>3</sup> ISA 530 Appendix 4 (c) Monetary Unit Sampling is a type of value-weighted selection (as described in Appendix 1) in which sample size, selection and evaluation results in a conclusion in monetary amounts.

- 4) Determine the sampling interval as the total amount of the population to be tested (amount of the population excluding key items) divided to the sample size

We included below an example for computation in order to illustrate the computation:

Assume:

- ▶ We determined that our RA is Low Risk
- ▶ We have no key items (0% key item coverage)
- ▶ The balance of population under testing is BGN 10 million and the ST is BGN 500,000.

This would result in a base sample size of 20 (BGN 10,000,000 account balance/BGN500,000 ST).

Multiply the base sample size of 20 times the factor of 1 for 'Low Risk' assessment. This would result in a representative sample of 20 items.

In this case, since we are using MUS we use systematic sample selection to select our sample. In this example, we use a sampling interval of BGN500,000 which is calculated as follows:

$$\text{BGN } 500,000 = (10,000,000 - 0)/20$$

We then select a random number between BGN 1 and BGN 500,000 as our random starting point (selected randomly), in this case, BGN 1,053. The first item selected is BGN 1,053<sup>st</sup> leva, then BGN 501,053<sup>th</sup> leva (BGN 500,000 sampling interval plus BGN 1,053) is selected, and then every succeeding BGN 500,000 are selected until the entire population has been subject to sampling.

During the communication with the PM, the reviewers are requested to clearly describe the following:

1. Blueprint – the sampling method to be used for each S2BS account
2. Status report – the size of the sample per each S2BS account together with a brief description of the inputs affecting the sample size, as well as any deviations from the Blueprint, if the case with justification
3. Conclusion report – the sampling method and size of the sample

## 2. Corporate Governance, processes and internal control framework, accounting policies

### 2.1 System of Governance

As described in the **EIOPA Guidelines on System of Governance ("EIOPA-BoS-14/253")**, the requirements on the system of governance are aimed at providing for sound and prudent management of the business of undertakings without unduly restricting them in choosing their own organizational structure, as long as they establish an appropriate segregation of duties.

The reviewers are required to:

- ▶ review the appropriateness of the system of governance including the internal control mechanisms in place based on the requirements of the SII framework and specifically with EIOPA Guidelines on System of Governance ("EIOPA-BoS-14/253")<sup>4</sup> by completing a checklist to compare the requirements of the guidelines and the current status of the Undertaking in respect of the following areas: organizational and operational structure, policies, key functions, fit and proper requirements, remuneration, risk management, internal control environment, outsourcing, group specific requirements, etc.

### 2.2 Processes and internal control framework

The undertakings are expected to have in place an internal control framework commensurate to the risks arising from the activities and processes to be controlled.

The internal control mechanisms expected to be in place, encompass the following components:

- ▶ control environment;
- ▶ management's risk assessment process;
- ▶ monitoring of controls;
- ▶ information and communication process;
- ▶ IT processes.

The procedures that will be designed by the reviewers should at a minimum refer to the identification and testing of entity level controls which involves the understanding of how the entity's internal control operates at the entity level in relation To (a) control environment, (b) management's risk assessment process, (c) monitoring of controls, (d) information and communication process), (e) IT processes.

Therefore, for the following processes:

- ▶ Underwriting
- ▶ Technical provisions
- ▶ Reinsurance
- ▶ Investments
- ▶ Financial statements closing (specifically for Solvency II reporting)

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<sup>4</sup> These Guidelines are based on Articles 40 to 49, Article 93, Article 132 and Article 246 of Solvency II and on Articles 258 to Article 275 of Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC ("Commission Delegated Regulation 2015/35").

The reviewers are requested to:

- ▶ obtain an understanding of the policies and procedures in place that management uses to determine that directives are carried out and applied at various organizational and functional levels (e.g., segregation of duties, safeguarding of assets, monitoring of processes, information processing)
- ▶ identify controls (manual, IT dependent manual, application, IT general controls), understand their design and determine which are relevant (the ones that have been implemented and that are sufficiently precise and sensitive to prevent, or detect and correct, material misstatements)
- ▶ design and execute tests of the relevant controls, identify deficiencies, if any,
- ▶ conclude on whether controls are properly designed and operated effectively as at the review date.

**Output:**

- Findings and recommendations for remedial actions
- Conclusion on the appropriateness of the system of governance including the internal control mechanisms in place

## **2.3 Accounting policies review**

The review will be centered on ensuring that the undertaking has a robust set of clearly defined policies and processes for the correct interpretation of accounting rules as imposed by the SII framework and best market practices in the insurance sector. Also, identification of any issues that are most likely to result in material misstatement of the balance sheet value is requested.

In brief, this review will include aspects such as the recognition and measurement of transactions (eg. Cost (Cost), Fair Value or Equity Method, liabilities recognition, and other policies and definitions).

Procedures to be performed under this caption are described in each relevant section in Chapter 4.

It is expected that adjustments may be proposed by the reviewer following both:

- ▶ The review of the accounting policies
- ▶ The procedures to be performed as detailed in Chapter 4.

**Output:**

- Findings and recommendations for remedial actions
- R4Adjusted Balance Sheet (including adjustments proposed by the reviewers based on the findings quantification)
- Conclusion on the appropriateness of the accounting policies and methodologies used

### 3. Reliability, quality, sufficiency and relevance of data

In accordance with Art.82 of the S2 Directive, insurance and reinsurance undertakings internal processes and procedures should be in place to ensure the appropriateness, completeness and accuracy of the data used in the calculation of their technical provisions.

The reviewers are required to:

► **Obtain the description of the process for collecting and processing of data and compare with the requirements of the Title I, Chapter III, Section 2 of the DA, specifically whether it includes:**

- a) the definition of criteria for the quality of data and an assessment of the quality of data, including specific qualitative and quantitative standards for different data sets;
- b) the use of and setting of assumptions made in the collection, processing and application of data;
- c) the process for carrying out data updates, including the frequency of updates and the circumstances that trigger additional updates;
- d) procedures to ensure that:
  - the data is used consistently over time in the calculation of the technical provisions
  - the data are consistent with the purposes for which it will be used;
  - the amount and nature of the data ensure that the estimations made in the calculation of the technical provisions on the basis of the data do not include a material estimation error;
  - the data are consistent with the assumptions underlying the actuarial and statistical techniques that are applied to them in the calculation of the technical provisions;
  - the data appropriately reflect the risks to which Undertaking is exposed with regard to its insurance and reinsurance obligations;

► **Check completeness of data used in the calculation of the technical provisions, i.e. whether all of the following conditions are met:**

- a) the data include sufficient historical information to assess the characteristics of the underlying risks and to identify trends in the risks;
- b) the data are available for each of the relevant homogeneous risk groups used in the calculation of the technical provisions and no relevant data is excluded from being used in the calculation of the technical provisions without justification (please refer also to the specific areas).
- c) Specific reconciliation check with Trial Balance/S2BS of databases obtained are included in each relevant area, as applicable (e.g.: Insurance portfolio, List of reported claims)

► **Check that data used in the calculation of the technical provisions is accurate through tests including:**

- ✓ Check the duplication of unique fields (Policy ID number, Claim file number)
- ✓ For date fields, check that no expiration dates are in the past (policies)
- ✓ For date fields, check that no starting dates (claims occurrence, opening) are in the future
- ✓ For numerical fields check that fields expected to have positive values are not negative and vice versa (e.g. the receivables are positive)
- ✓ Cross time checks
- ✓ Samples from the databases obtained from the undertaking should be defined in each area and checks of details included should be performed against supporting documentation (please refer to each relevant



area). These samples may be extended depending on the information received from the Undertaking and based on the reviewers professional judgment.

▶ **Data adjustments or removals**

- ✓ Understand whether there are audit trails documenting when data is adjusted or removed.
- ✓ If such data adjustments are performed by the undertaking to overcome incomplete data, the independent external reviewer should assess if the expert judgment is applied correctly, the rationale justifying those adjustments and how sensitive are the results of the calculation to the adjustments applied.

▶ **Claims management**

- ✓ The claims management unit will likely be the original source of the claims data for non-life. Therefore, when performing an assessment of the data used to calculate NL-TP the independent external reviewers are expected to form a judgment on the reliability of the data coming from the claims management unit (e.g. general organization, decision making process, timetable for average payouts, accuracy of the amounts paid, how complaints and litigations are handled, how often are claims re-opened, automatic and additional controls performed on the data by management).
- ✓ Investigate registration of claims (e.g. time lag between information received and registration, registration in a logical order (e.g. chronological) unique identification and accurate tracing, registration of all reported events covered by the contract, (old) closed claims records readily available, etc), claims files (accessible documentation by appropriate staff, file containing all relevant information, estimation of the claim cost includes all reported events, etc) and payment of benefits (e.g. payment calculation/amount reflecting all relevant information, payments appearing in the accounting system, analysis of the data flow, etc).
- ✓ Please corroborate the results from the above, to the procedures performed in Section 2.2 Processes and internal control framework.

▶ **External data**

Where the undertaking uses external data, the independent external reviewers should check if data is exposed to at least same data standards as internal data and meets the criteria set out on EIOPA Guidelines on the valuation of TP in regards to the use of external data (GL 15 and 16).

With a view to ensure consistency, please find in Appendix 7 a suggested minimum list/format of information to be requested by the independent external reviewers. Depending on limitations which could exist and the reviewer is required to adjust the list of information so that can perform the required procedures.

Any data quality issues should be addressed ideally before other procedures are started. If the reviewed undertaking is not able to deliver the data requested or the data delivered is not complete or accurate, the reviewer is requested to:

- ▶ Assess whether the lack of information is blocking performance of critical procedures
- ▶ Propose alternative approach/procedures to the PM (for eg.: use of approximations to calculate the best estimate)
- ▶ Apply a conservative proxy

**Output:**

- Findings and recommendations
- Assessment of impact on BSR procedures for relevant sections (the reviewer should conclude whether data quality is sufficient for performing the needed procedures, request additional information or propose remedial action).

## 4. Balance sheet assessment

An assessment of all material assets and liabilities recognition and valuation, other than technical provisions will be performed with reference to Article 75<sup>5</sup> of the S2 Directive that requires an economic, market-consistent approach to the valuation of assets and liabilities, supplemented by the requirements of the Articles 7-16 of the DA and the EIOPA Guidelines on recognition and valuation of assets and liabilities other than technical provisions (“EIOPA-BoS-15/113”).

Valuation should be performed by the (re)insurance companies and reviewed by the external independent reviewer (using licensed appraisers as appropriate). Such valuations shall be based on application of International Valuation Standards, International Financial Reporting Standards, DA guidance and if, more conservative, the locally established best practices, the selection of the most appropriate method/technique being at the discretion of the appraiser and requiring exercise of expert judgment. It is the responsibility of the external independent reviewer to ensure that the assumptions and the techniques used in the valuation are adequate and accurate.

The reviewer shall present in R3 Progress Report details regarding assessment of the valuation of the financial instruments including assessment of (in)active markets, valuation techniques used together with the rationale behind, main assumptions and adjustments performed by the reviewer, at a sufficient level of detail to allow performance of quality assurance procedures by the PM.

According to the Article 10 of the DA, the default valuation method to be applied by the undertaking is valuation of assets and liabilities using quoted market prices in active markets for the same assets or liabilities. In cases when the use of quoted market prices in active markets is not possible, the undertaking will perform valuation of assets and liabilities using quoted market prices in active markets for similar assets and liabilities with adjustments to reflect the differences considering the factors specific to the asset or liability (as outlined in the DA):

- (a) the condition or location of the asset or liability;
- (b) the extent to which inputs relate to items that are comparable to the asset or liability; and
- (c) the volume or level of activity in the markets within which the inputs are observed.

The use of quoted market prices is based on the criteria for active markets, as defined in international accounting standards adopted by the Commission in accordance with Regulation (EC) No 1606/2002, specifically please refer to IFRS 13 Fair value measurement. *“IFRS 13 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (ie an exit price)”*(IN8 from IFRS 13).

An active market is *“a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.”*

The reviewer should be alert to potential indicators (depending on their significance and relevance) that a market is not active in accordance with the requirements in IFRS 13 paragraph B37, such as:

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<sup>5</sup> (a) assets shall be valued at the amount for which they could be exchanged between knowledgeable willing parties in an arm's length transaction;  
(b) liabilities shall be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm's length transaction.  
When valuing liabilities under point (b), no adjustment to take account of the own credit standing of the insurance or reinsurance undertaking shall be made.

- “(a) There are few recent transactions.*
- (b) Price quotations are not developed using current information.*
- (c) Price quotations vary substantially either over time or among market-makers (eg some brokered markets).*
- (d) Indices that previously were highly correlated with the fair values of the asset or liability are demonstrably uncorrelated with recent indications of fair value for that asset or liability.*
- (e) There is a significant increase in implied liquidity risk premiums, yields or performance indicators (such as delinquency rates or loss severities) for observed transactions or quoted prices when compared with the entity's estimate of expected cash flows, taking into account all available market data about credit and other non-performance risk for the asset or liability.*
- (f) There is a wide bid-ask spread or significant increase in the bid-ask spread.*
- (g) There is a significant decline in the activity of, or there is an absence of, a market for new issues (ie a primary market) for the asset or liability or similar assets or liabilities.*
- (h) Little information is publicly available (eg for transactions that take place in a principal-to-principal market).”*

Additional potential indicators refer to:

- ▶ A significant trading volume is between related parties.
- ▶ There are restrictions on trading.

For additional guidance related to measuring fair value when the volume or level of activity for an asset or a liability has significantly decreased please refer also to the paragraphs B38-B47 of IFRS 13. For identification of transactions that are not orderly (paragraphs B43-B44 from IFRS 13), please consider also the guidance in BC181 to IFRS 13: *“... an entity should focus on whether an observed transaction price is the result of an orderly transaction, not only on the level of activity in a market, because even in a market with little activity, transactions can be orderly. Accordingly, the boards concluded that an entity should consider observable transaction prices unless there is evidence that the transaction is not orderly. If an entity does not have sufficient information to determine whether a transaction is orderly, it performs further analysis to measure fair value.”*

For the situations when the criteria for the active market is not met, the undertaking will perform valuation using alternative valuation methods, unless outlined specifically in the DA.

The DA prescribes also the use of observable and unobservable inputs and required adjustments. The undertaking is required to make maximum use of the market inputs and to rely as little as possible on specific inputs. Adjustments need to be made to reflect the specific factors and inherent risk in the specific valuation technique.

The valuation techniques to be used when using alternative techniques include market approach, income approach and cost approach or current replacement cost approach.

Special focus is required from the external independent reviewer to assess whether the valuation technique incorporates adjustments to reflect the risks and uncertainties regarding the amount and timing of the cash flows (even contractually fixed amounts, such as the payments on a bond/loan/etc, are uncertain if there is risk of default).

In cases of group insurance companies, the reviewers should perform, regardless of the method, a verification/assessment of the value of assets and liabilities (other than TP) at group level consistent to the one required to be performed at individual level.

### **Adequacy of the level of obligations under the insurance contracts**

In accordance with Article 76 of the S2 Directive, the companies are required to establish technical provisions with respect to all of their insurance and reinsurance obligations towards policy holders and beneficiaries of insurance

or reinsurance contracts. The review will be performed with reference to the above article supplemented by the requirements of the Chapter III of the DA and the EIOPA Guidelines on the valuation of technical provisions (“EIOPA-BoS-14/166”).

The reviewers are required to report their findings and to assess any potential impact as a result of their findings and propose an adjustment, if the case. The adjustment shall be reflected in the Adjusted Balance Sheet (“R4”).

**Output:**

- Findings and recommendations for remedial actions.
- R4 Adjusted Balance Sheet (including adjustments proposed by the reviewers based on the findings quantification)
- R8 Information on financial assets valuation.

**Selection of assets and liabilities presented in the balance sheet to be reviewed**

All assets and liabilities that have values higher than the PM should be included in the review.

The following shall be reviewed, irrespective of materiality: technical provisions, part of the technical reserves ceded in reinsurance; premium receivables from policyholders; receivables (and payables) from reinsurers; receivables (and payables) from intermediaries, holdings in related undertakings, derivatives.

Illustrative example:

Balance Sheet		Caption > 1% Total assets?	Selected
	Property, plant and equipment held for own use	Yes	Yes
	Investments (other than assets held for index-linked and unit-linked contracts)		
	Property (other than for own use)	No	No
	Equities	Yes	Yes

As already described above, professional judgment is requested in assessing risk and hence, excluded classes of assets and liabilities may be included in the review where considered appropriate by the reviewer.

**Output:**

- R2 (presenting materiality and selected assets and liabilities) to be included as Appendix to the Blueprint.
- Following the review of the R2, the FSC may request the reviewer to include other assets or liabilities in the scope of the exercise, based on their knowledge of the market.

## A. Technical provisions

### A.1 General

#### A.1.1 Introduction

The accounting policy for general provisions and with regards to the calculation of technical provisions shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 76, 77 and 78 of Directive 2009/138/EC and Article 22 of Delegated Act 2015/35, which introduces the definition of technical provisions and establishes general rules for their calculation.

The value of technical provisions shall correspond to the current amount (re)insurance companies would have to pay if they were to transfer their (re)insurance obligations immediately to another (re)insurance company and shall be equal to the sum of a best estimate and a risk margin.

The fair value of technical liabilities is estimated by projecting and discounting all future cash flows on a market consistent basis. Each (re)insurance company follows a methodology for the calculation of the fair value of technical liabilities across the different lines of business, which consist of calculation for the best estimate of liabilities before reinsurance (including the reinsurance recoverables after the counterparty default adjustment) and the risk margin after the reinsurance effect.<sup>6</sup>

In principle, the change of the valuation of the insurance obligations could lead to a change in the deferred tax asset or deferred tax liability, except for those insurance liabilities which are not subject to corporate taxation.

The reviewer shall verify the underlying methodology and assumptions, including any updates on any aspect of the methodology or assumptions. In case that updates have taken place, the reviewer shall ask for explanations, including the reason for each change and the reasonableness given the actual experience.

#### Technical provisions as a whole

Under certain conditions that relate to the replicability of the cash flows underlying the (re)insurance obligations, best estimate and risk margin should not be valued separately and technical provisions should be calculated as a whole. The calculation of technical provisions as a whole shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 40 of Delegated Act 2015/35, which sets out the circumstances for the calculation of technical provisions as a whole.

Where future cash flows associated with (re)insurance obligations can be replicated reliably using financial instruments for which a reliable market value is observable, the value of technical provisions associated with those future cash flows should be determined on the basis of the market price of those financial instruments. In this case, separate calculations of the best estimate and the risk margin should not be required.

The replication of cash flows shall be considered to be reliable where those cash flows are replicated in amount

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<sup>6</sup> This calculation applies in case part of the liabilities are ceded via reinsurance. Otherwise, the value of technical provisions shall be equal to the sum of a best estimate and a risk margin.

and timing in relation to the underlying risks of those cash flows and in all possible scenarios.

The following cash flows associated with (re)insurance obligations cannot be reliably replicated:

- (a) cash flows associated with (re)insurance obligations that depend on the likelihood that policy holders will exercise contractual options, including lapses and surrenders
- (b) cash flows associated with (re)insurance obligations that depend on the level, trend, or volatility of mortality, disability, sickness and morbidity rates
- (c) all expenses that will be incurred in servicing (re)insurance obligations

For the purpose of determining those circumstances, reviewer shall assess whether all the criteria set out below are met.

Moreover, reviewer shall consider whether under the same contract a number of future cash flows exists, which meet all the conditions mentioned above, in order to calculate the technical provision as a whole, but other future cash flows also exist, which do not meet some of those conditions. In this case, both sets of cash flows should be unbundled.

For the first set of cash-flows which do meet the conditions, no separate calculation of the best estimate and the risk margin should be required. However, a separate calculation should be required for the second set of cash-flows, where the required conditions are not met.

If the proposed unbundling is not feasible, for instance when there is significant interdependency between the two sets of cash flows, separate calculations of the best estimate and the risk margin should be required for the whole contract.

### **A.1.2 Segmentation and homogeneous risk groups**

The segmentation into lines of business and homogeneous risk groups shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 80 of Directive 2009/138/EC and Article 35, 55, Annex I of Delegated Act 2015/35 and Section 2 of EIOPA Guidelines on the valuation of technical provisions, which establish the general principles governing segmentation into lines of business and homogeneous risk groups, as well as the relevant lines of business.

For the calculation of the technical provisions, (re)insurance companies shall segment the (re)insurance obligations into homogeneous risk groups and as a minimum by lines of business. Therefore, an assessment of the compliance of product segmentation into lines of business and homogeneous risk groups with SII regulations should be applied.

Segmentation and unbundling principles indicate the ways to segment the (re)insurance obligations with the purpose to achieve an accurate valuation of technical provisions. The segmentation of (re)insurance obligations into lines of business and homogeneous risk groups should reflect the nature of the risks underlying the obligation.

Thus, the reviewer shall perform the following procedures during the review of the segmentation into lines of business and homogeneous risk groups:

- ▶ Verification that the technical provisions have been segmented into homogeneous risk groups, at least at the level of lines of business in accordance with Article 80 of the Directive 2009/138/EC and Article 55 of the Delegated Act 2015/35.

- ▶ Review of whether the company has fulfilled the following requirements, before proceeding to the split of the contracts into homogeneous risk groups:
  - Availability of data in a more granular level.
  - The senior management of the company has accessed and communicated whether the collection and use of granular data is easily applicable on an annual basis.
  - The use of data in a more granular level has material impact on the level of the best estimate of homogeneous risk groups.
- ▶ Review of any policies that have not been assigned to a SII line of business; where have these policies been allocated and documentation stating the reasons.
- ▶ Review of the way the company ensures that the grouping of policies creates homogeneous risk groups that appropriately reflect the risks of the individual policies included in that group.
- ▶ Review of the description of the existing homogeneous risk groups, including the characteristics defining these groups.
- ▶ Verification of how the company ensures that the segmentation is correct.
- ▶ Ascertainment whether the company has taken into account the following factors, before the segmentation into homogeneous risk groups:
  - The nature of the underlying risk.
  - The risk characteristics.
  - None detection of significant differences in the nature and complexity of the risks underlying the policies that belong to the same group.
  - The grouping of policies does not misrepresent the risk underlying the policies and does not misstate their expenses
  - The relevance of size of the homogeneous risk group.
  - Whether a different calibration is used for those insurance liabilities where the capital requirements for the underwriting risks are determined by the use of an internal model.
  - The grouping of policies is likely to give approximately the same results for the best estimate calculation as a calculation on a per policy basis, in particular in relation to financial guarantees and contractual options included in the policies.
- ▶ Mapping along insurance contracts, homogeneous groups and lines of business.
- ▶ Mapping of health business across SLT and NSLT products.

The segmentation into lines of business distinguishes between life and non-life insurance obligations. This distinction does not coincide with the legal distinction between life and non-life insurance activities or the legal distinction between life and non-life insurance contracts. Instead, the distinction between life and non-life insurance obligations should be based on the nature of the underlying risk:

- ▶ Insurance obligations of business that is pursued on a similar technical basis to that of life insurance should be considered as life insurance obligations, even if they are non-life insurance from a legal perspective.
- ▶ Insurance obligations of business that is not pursued on a similar technical basis to that of life insurance should be considered as non-life insurance obligations, even if they are life insurance from a legal perspective.

In consistency with the previous requirements and as stated in Article 55 of the Delegated Act 2015/35, where a contract includes life and non-life (re)insurance obligations, it should be unbundled into its life and non-life parts, whereas where a contract covers risks across the different lines of business for non-life (re)insurance obligations, these contracts should be unbundled into the appropriate lines of business. Where a contract gives rise to SLT

health insurance obligations, it should be unbundled into a health part and a non-health part where it is technically feasible and where both parts are material. Notwithstanding the above, unbundling may not be required where only one of the risks covered by a contract is material. In this case, the contract should be allocated according to the major risk driver. A risk is assumed not to be material if the following conditions are satisfied simultaneously:

- ▶ The best estimate of that part of the contract with the specified risk (based on the whole contract and also determined by the sum of the best estimates of the unbundled risks) is smaller than 0.5% of the own funds allocated to cover the risk associated with part of the technical provisions.
- ▶ The best estimate of the risk (component) covered by the contract is smaller than 5% of the best estimate for the whole contract.

Hence, the reviewer shall justify whether an unbundling has been performed for certain products and policies and be provided with a description of the approach followed.

Appendix3 includes all lines of business in line with Annex I of Delegated Act 2015/35.

### **A.1.3 Recognition and contract boundaries**

The accounting policy for recognition and derecognition of (re)insurance obligations business and contract boundaries shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 17, 18 of Delegated Act 2015/35 and EIOPA Guidelines on contract boundaries, which establish principles for the recognition and derecognition of contracts as well as the determination of their contract boundaries.

A reinsurance or insurance obligation should be initially recognized by (re)insurance companies at whichever is the earlier of the date the company becomes a party to the contract that gives rise to the obligation or the date the (re)insurance cover begins. A contract should be derecognized as an existing contract only when the obligation specified in the contract is extinguished, discharged or cancelled or expires.

Companies should determine the contract boundaries of their (re)insurance contracts in order to decide whether options to renew the contract, to extend the insurance coverage to another person, to extend the insurance period, to increase the insurance cover or to establish additional insurance cover gives rise to a new contract or belongs to the recognized contract. Where the option belongs to the recognized contract the provisions for policyholder options should be taken into account, thus the reviewer shall ensure that the determination of the contract boundaries is consistent with the SII regulation.

Regarding accepted reinsurance contracts, their boundaries shall be defined according to Article 18 of Delegated Act 2015/35 independently of the boundaries of the underlying reinsurance contracts to which they relate.

In addition to this, the procedures below shall be followed regarding the review of the approach to contract boundaries of recognized contracts and assessment of its compliance with SII with focus on riders, UL main covers and individual continuation of group policies.

- ▶ Review of whether the company follows the recognition and derecognition principles regarding (re)insurance obligations according to Article 17 of Delegated Act 2015/35.
- ▶ Verification of correctness of inclusion of future premiums.
- ▶ Identification of where the contract boundary lies on each of the insurance contracts. For example, is there a set of agreed principles or criteria that is followed when deciding where the contract boundaries lie?
- ▶ Determination of the extent to which the terms and conditions of the insurance contracts have been reviewed to establish the contractual boundary of the policy.
- ▶ Identification of whether there is the right to re-rate or cancel the contract within each of the insurance contracts.



- ▶ Review of how the phrases 'Financial Guarantee' and 'Individual Risk Assessment' have been interpreted by the company.
- ▶ Detection of any legal issues that have arisen in identifying the contractual boundaries of the policies.
- ▶ Consideration of local regulation and business practice and whether any forthcoming changes in law or regulation are likely to affect the method of calculation of the technical provisions.
- ▶ Review of the decision process for which parts of the contract belong to the contract boundary.

### **A.1.4 Proportionality assessment**

The procedures below shall be followed in order to determine the most proportionate actuarial method following an assessment based on the nature, scale and complexity of the risk profile of the company.

- ▶ Review whether the method determined is appropriate for the calculation of technical provisions through an assessment which includes:
  1. Evaluation of the nature, scale and complexity of the risks underlying their (re)insurance obligations.
  2. Evaluation in qualitative or quantitative terms of the error introduced in the results of the method due to any deviation between the following: the assumptions underlying the method in relation to the risks and the results of the assessment.
- ▶ Review whether the method is not considered proportionate to the nature, scale and complexity of the risks, which is in force if the aforementioned error is material, unless:
  - No other method with a smaller error is available and the method is not likely to result in an underestimation of the amount of technical provisions or
  - The method leads to an amount of technical provisions of the (re)insurance company higher than the amount that would result from using a proportionate method and the method does not lead to an underestimation of the risk inherent in the (re)insurance obligations that it is applied to.
- ▶ The walkthrough of three steps defines the above assessment:
  - Step 1: Assessment of the nature, scale and complexity of underlying risks
  - Step 2: Check whether valuation methodology is proportionate to risks as assessed in step 1, having regard to the degree of model error resulting from its application. The model error has to be within the limits of materiality
  - Step 3: Back testing and review of the assessment carried out in steps 1 and 2

More details on the three steps approach are presented in Appendix 2.

## **A.2 Best Estimate Liability (BEL)**

The best estimate shall correspond to the probability-weighted average of future cash-flows, taking account of the time value of money (expected present value of future cash-flows), using the relevant risk-free interest rate term structure.

The best estimate of cash flows are defined as the expected cash flows of liabilities conditional on the outcome of the market risk factors, which are either deterministic, when not depending on the economic scenarios, or stochastic when depending on the Economic Scenarios. Hence, the best estimate value is the market value of the best estimate of cash flows, which equals to the discounted value of these cash flows when it concerns a deterministic approach or the value is determined using risk neutral valuation with regards to the stochastic approach.

For the SII process, the best estimates have to be mapped to the lines of business of SII; however, the best estimate is calculated at the level of the policy and aggregated subsequently without diversification effects. The aggregated totals are always equal regardless of the perspective.

The best estimate is calculated on a different basis for life and non – life liabilities. For life contracts the best estimate value is divided to the value of the deterministic cash flows of the contract and the value of the stochastic cash flows of the contract. The value of options and guarantees, which are further analyzed, are calculated separately.

## **A.2.1 BEL - Life and Health SLT (excluding index-linked and unit-linked)**

### **A.2.1.1 Sampling**

The insurance portfolio of each (re)insurance company, which includes the description of the key features of all products provided, should be analyzed indicating the following characteristics:

- Name of the product
- Version of the product
- Line of business related to the product
- Amount of gross premiums (cumulative since the beginning)
- Amount of technical provisions
- Amount of expenses
- Main guarantees associated with the product
- Type of distribution channel

In life insurance, where relevant, a split of products could be made based on the provided guarantee rates. Moreover, it should be explicitly mentioned whether any significant changes in the composition of the portfolio have occurred.

Moreover, in regards to the policy by policy best estimate calculation, the reviewer shall create a list from the selected insurance contracts for audit purposes (sample) in an appropriate manner in order to efficiently represent a thorough and adequate analysis of the total business portfolio. The sample list (non – exhaustive) should include the following characteristics:

- Policy number
- Insurance product type
- Inception date
- Maturity/Expiration date
- Frequency of the premium payment
- Age of the insured on the inception date
- Annual gross written premium
- Date of the last received premium
- Date of the last due premium
- Method of payment
- Percentage of commission
- Method of payment

- Unit linked reserves
- Sum assured
- Surrender value

The reviewers should proceed with a recalculation of the best estimate liability for the selected sample and compare with the best estimate liability computed by the (re)insurance undertaking. In case of differences, assess the impact over the procedures to be performed for the technical provisions assessment.

### **A.2.1.2 Actuarial model – BEL methodology**

In order to calculate the best estimate of liabilities, companies should use actuarial and statistical methods, which appropriately reflect the risks that affect the cash-flows. The best estimate is calculated by the use of a model, which is determined by the company according to the complexity, scale and nature of the exposures. More details on the allowed actuarial methods are presented in Appendix 1.

The cash flows projections for the calculation of the best estimate shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 77 of Directive 2009/138/EC and Article 28, 29 and 30 of Delegated Act 2015/35, which establish principles for the identification and calculation of the cash flow projections.

The cash flow projection used in the calculation of the best estimate shall take account of all the cash in- and out-flows required to settle the (re)insurance obligations over the lifetime thereof. The best estimate shall be calculated gross, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles. Those amounts shall be calculated separately, in accordance with Article 81. The best estimate should allow for the uncertainty in the future cash flows, but no additional margins should be included within the best estimate.

A review of the approach and design of the underlying liability model shall be conducted. The review of the liability model requires the adoption of the following procedures:

- ▶ Review of a description of the underlying methods for the valuation of the insurance liabilities including justification for the use of the chosen methodology.
- ▶ Check that the use of simulation techniques for the determination of the best estimate of liabilities is not necessary by applying the following principle:

When the difference between the calculation of best estimate based on a simulation technique and the calculation of the best estimate based on an analytical/deterministic technique is smaller than 5% of the technical provisions.

Moreover, it should be ensured that the use of deterministic or analytical techniques is endorsed by the risk and compliance functions.

- ▶ In case of not using the optimal calculation method, request of a documentation of the simplified methods used, approximations and simplifications, including reasons for not applying the main actuarial techniques and reasoning for using simplifications. It should be ensured that the documentation is signed off by the senior management and the risk and compliance units.

A list with non-exhaustive reasons is set out below:

- ✓ Limited availability of data about the underlying insurance liability. This could be caused by limited historical data or data required to calibrate the assumptions
- ✓ Limited availability of data at a sufficient granular level
- ✓ Limited information about policy holder behaviour and/or management actions

- ✓ Limited computational power to execute the calculations within an acceptable time slot
  - ✓ Limited human resources to develop the methodology and incorporate it in a model
  - ✓ A product is relatively new and as per the valuation date the methodology has not been incorporated in the models.
  - ✓ A group of contracts has a limited size and does not contain any complex and unique contract features.
- ▶ Following the ascertainment that the (re)insurance company is allowed to use simplifications / approximations, the underlying simplifications should be reviewed.

A non-exhaustive list with possible simplifications for the valuation of the best estimate of technical provisions is set out below:

- ✓ Scaling methods; the best estimate of a representative portfolio is used as a basis for scaling
- ✓ Usage of model points (aggregated contract information) instead of a calculation with all contracts
- ✓ Estimation based on crude data (single or a few model points)
- ✓ Expert judgement
- ✓ The valuation as used for IFRS reporting may be used if no other solutions are available. It is required to document adequately the applied simplifications and an estimate of the related model error
- ✓ According to Article 60 of Delegated Act 2015/35 and without prejudice to Article 56, companies may calculate the best estimate of life insurance obligations with an arrangement by which the insurance company has the right or the obligation to adjust the future premiums of an insurance contract to reflect material changes in the expected level of claims and expenses (premium adjustment mechanism) using cash flow projections which assume that changes in the level of claims and expenses occur simultaneously with premium adjustments and which result in a net cash flow that is equal to zero, provided that all of the following conditions are met:
  - the premium adjustment mechanism fully compensates the insurance company for any increase in the level of claims and expenses in a timely manner;
  - the calculation does not result in an underestimation of the best estimate;
  - the calculation does not result in an underestimation of the risk inherent in those insurance obligations

It should be ensured that when using approximations, the following requirements are fulfilled:

- ✓ The insufficiency of data is not due to inadequate internal processes and procedures of collecting, storing or validating data used for the valuation of technical provisions
  - ✓ There are no relevant external data which could be used by the company to enhance the quality of the available data
  - ✓ It would not be practicable for the company to adjust the data to remedy the insufficiency.
- ▶ Comparison of the modelled liabilities with the total booked value in balance sheet for reconciliation purposes
- ▶ Review of the amount of unmodelled insurance portfolio, reasonability for not modelling that part of business and verification of its materiality
- ▶ Verification of whether the amount of unmodelled business is consistent with the company's threshold of unmodelled business
- ▶ Check that the calculation of the cash flows is consistent with technical features along different products

- ▶ Review of how recoverables are implemented along with general approximations and simplifications used to capture recoverables separately in order to assess the ability of the model to produce outcomes based on the split between gross and net of reinsurance
- ▶ Review of the modelling of operating assumptions, whose analysis is further analyzed
- ▶ Review of the modelling methodology underlying options and guarantees along with possible simplifications used, whose analysis is further analyzed
- ▶ Review of the modelling methodology underlying the projection of characteristics of participating business
- ▶ Review whether manual adjustments are implemented under liability process and the reasonableness behind them
- ▶ Review of whether the company follows a model point approach instead of a policy by policy approach and if yes, verification that the model points adequately reflect the risk drivers and values of the product, as well as assurance that the model point projection of cash flows surpasses the projection on a policy by policy basis. Moreover, the grouping policies and their representation by model points along with the grouping criteria should be reviewed.
- ▶ Assessment of whether the use of model point is appropriate by meeting the following conditions:
  1. The grouping of policies and their representation by model points is acceptable provided that it can be demonstrated by the company that the grouping does not misrepresent the underlying risk and does not significantly misstate the costs.
  2. The grouping of policies should not distort the valuation of technical provisions by, for example, forming groups containing life policies with guarantees that are "in the money" and life policies with guarantees that are "out of the money".
  3. Sufficient validation should be performed by the company to be reasonably sure that the grouping of life policies has not resulted in the loss of any significant attributes of the portfolio being valued. Special attention should be given to the amount of guaranteed benefits and any possible restrictions (legislative or otherwise) for a company to treat different groups of policyholders fairly (e.g. no or restricted subvention between homogeneous groups).
  4. The projection on a policy-by-policy basis would be an undue burden on the company compared to the projection based on suitable model points.
- ▶ Assessment of the impact of using grouping criteria instead of policy by policy basis
- ▶ Comparison for the sample of policies (on a policy by policy basis) of cash flows projected with result obtained with a calculation file (e.g. Prophet, Excel)
- ▶ Review of the modelling of future cash flows in a less granular level, such as per line of business, in order to assess the reasonableness of the discounted future cash flows for each line of business.
- ▶ Performance of sensitivity analysis in order to test the reasonableness of the cash flows under deterministic and stochastic scenarios along with the assumptions used.
- ▶ Performance of scenario analysis in order to compare the extremely high and low cash flows with the middle of the range of technical provisions in order to verify the reasonableness of the model's results.

The review of the best estimate methodology and its compliance to SII regulation requires the adoption of the following procedures:

- ▶ Review of how it is ensured that the technical provisions have been calculated in a prudent, reliable and objective manner

- ▶ Verification that the best estimate is calculated separately for each currency in which the obligation is denominated
- ▶ Explanation of the process that the best estimate is calculated in a transparent manner and in such a way as to ensure that the calculation method and the results that derive from it are capable of review by an independent qualified expert
- ▶ Detection of areas where, when calculating the technical provisions, a probability weighted average of future cash flows approach is not followed. For example, derivation of SII technical provisions by making adjustments to IFRS technical provisions
- ▶ Review of whether the reserving methodology is appropriate for the risks being assessed
- ▶ Confirmation that the calculation of BEL:
  - does not take into account investment returns (i.e. interests earned, dividends, etc.)
  - includes the investment management expenses in the expenses as a cash out-flow
  - excludes intra-group relations and in particular profits and cash flows which may be generated by another group entity via an intra-group arrangement
  - includes only future cash-flows associated with recognized obligations within the boundary of the contract and no future business is taken into account
- ▶ Review of whether future premium cash flows from policyholders have been included within technical provisions. How the uncertainty is taken into account?
- ▶ Detection of any expected payments to policyholders under any of the policies that are not contractually guaranteed. What allowance for these has been made in the technical provisions
- ▶ Review of any group (if exist) policies when calculating the best estimates for life insurance obligations. If yes, how is it satisfied that the grouping of policies does not misrepresent the risk and is likely to give approximately the same results for the best estimate calculation as a calculation for individual policies on a best estimate basis?
- ▶ Review of any financial guarantees or contractual options allowed, included under any of the policies, in the calculation of technical provisions
- ▶ In certain specific circumstances that the best estimate of technical provisions is negative, it is acceptable, but it should be ensured that the company has not set to nil the value of the best estimate of those individual contracts. A zeroing could take place only in the level of a homogeneous risk group.  
  
In case that the technical provisions are negative due to the fact that the present value of future premiums is higher than the present value of future outgoing cash flows including the value of the options and guarantees and the allocated risk margin, it is required to monitor the level of the premiums. The premiums have to be in range of what is acceptable in the market.
- ▶ Verification of correctness of the approach to unmodelled business lines (i.e. those for which IFRS reserves are taken as BEL or other simple approach is used). What criteria the Company is using to define threshold of acceptable share of unmodelled business?
- ▶ Surrender value floors will have no impact on the level of the technical provision. In the projection of future cash flows, it should be ensured that payments due to surrender or lapse of the contract will be included in the valuation of the technical provision. This means that if the sum of a best estimate and a risk margin of a contract is lower than the surrender value of that contract there is no need to increase the value of insurance liabilities to the surrender value of the contract.
- ▶ Review of the experience studies conducted for the reasonableness and appropriateness of the selected assumptions

### **A.2.1.3 Guarantees and options**

The accounting policy for valuation of guarantees and options shall be obtained and compared with SII framework

requirements, respectively:

- ▶ According to the Article 79 of Directive 2009/138/EC and Article 32 of Delegated Act 2015/35, which establish principles for the valuation of guarantees and options.

For the calculation of the best estimate, (re)insurance companies shall identify and take into account:

- ▶ all financial guarantees and contractual options included in their (re)insurance policies
- ▶ all factors which may affect the likelihood that policy holders will exercise contractual options or the value of the guarantees

A contractual option is defined as a right to change the benefits, to be taken at the choice of its holder (generally the policyholder), on terms that are established in advance. Thus, in order to trigger an option, a deliberate decision of its holder is necessary.

The description of the methods used to project options and guarantees with details regarding all parameters considered in the actuarial model should be reviewed.

When considering the use of a closed formula approach or a stochastic approach for the valuation of contractual options and financial guarantees included in insurance contracts, (re)insurance companies should apply the proportionality assessment according to Article 56 of Commission Delegated Act 2015/35. Whenever neither method is possible, companies may use as a last resort an approach consisting in the following steps:

- ▶ Analysis of the characteristics of the option or guarantee and of how it would affect the cash-flows
- ▶ Analysis of the amount the option or guarantee is expected to be currently in-the-money or out-of-the-money
- ▶ Determination of the cost of the option or guarantees is expected to vary with time
- ▶ Estimation of the probability that the option or guarantee would become more or less costly in the future
- ▶ Verify that the method and assumptions underlying the calculation of BEL regarding contractual options and guarantees are determined in an appropriate way e.g. by performing sensitivity analysis in order to assess the materiality of assumptions.

Further to the above, the reviewer shall ensure that the company has performed an assessment of the appropriateness of the company's proportionality assessment including the appropriateness of the analysis of policyholder behavior and the evaluation of the error introduced in the result of the method chosen, including information about sensitivity analysis, back testing etc.

The reviewer shall ensure that a process has been put in place and is documented to identify all relevant contractual options and financial guarantees as well as the factors indicative of the extent to which policyholders will use those options and realize the value of the guarantees.

The reviewer shall ensure that the company has established that the methods to value the identified contractual options and financial guarantees have been documented with due observance of the provisions set out in Guidelines 35-37, 53 and 54 of the EIOPA Guidelines on valuation of technical provisions (EIOPA BoS-14-166) and Articles 26 and 32 of the Delegated Act 2015/35.

#### Policyholder behavior

When determining the likelihood that policyholders will exercise contractual options, including lapses and

surrenders, (re)insurance companies shall conduct an analysis of past policyholder behavior and a prospective assessment of expected policyholder behavior.

- ▶ Verify that the best estimate assumptions underlying the policyholder behavior are determined in an appropriate way and in line with the requirements settled in Article 22 and 26 of Delegated Act 2015/35.
- ▶ It should be reviewed whether that analysis takes into account all of the following (Article 26):
  - how beneficial the exercise of the options was and will be to the policy holders under circumstances at the time of exercising the option
  - the influence of past and future economic conditions
  - the impact of past and future management actions
  - any other circumstances that are likely to influence decisions by policyholders on whether to exercise the option
- ▶ It should be ensured that any assumption regarding policyholder behavior included in the calculation of the best estimate is documented, evidenced and signed off by senior management
- ▶ All policyholder behavior shall be documented and reported on an annual basis or more frequently if there are strong indications that the behavior evolved significantly since the last reporting date
- ▶ The impact of the policyholder behavior on the best estimate is determined and provided to senior management and other users of the value of the best estimate to understand the impact.
- ▶ In case of performing stochastic scenarios and simulations, dynamic policyholder behavior assumptions should take into consideration the following principles:
  - Ensure that dynamic policyholder behavior is appropriately founded in statistical and empirical evidence.
  - Ensure that the economic scenario generator (ESG) is up to date and properly calibrated.
  - Ensure that dynamic policyholder behavior should not be assumed independent from changes in the financial markets and the financial position of the company.
  - Whether sensitivity analysis is performed on assumptions in order to measure the impact on BEL.
  - Ensure that grouping performed in order to carry out the projections is appropriate.

#### **A.2.1.4 Future discretionary benefits**

The accounting policy for valuation of future discretionary benefits shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 1 (35), 24 and 25 of Delegated Act 2015/35, which establish principles for the valuation of future discretionary benefits.

‘Future discretionary bonuses’ and ‘future discretionary benefits’ mean future benefits other than index-linked or unit-linked benefits of (re)insurance contracts which have one of the following characteristics:

(a) They are legally or contractually based on one or more of the following results:

- (i) The performance of a specified group of contracts or a specified type of contract or a single contract;
- (ii) The realized or unrealized investment return on a specified pool of assets held by the (re)insurance company;
- (iii) The profit or loss of the (re)insurance company or fund corresponding to the contract.



(b) They are based on a declaration of the (re)insurance company and the timing or the amount of the benefits is at its full or partial discretion.

For the calculation of the best estimate, (re)insurance companies shall identify and take into account the value of future discretionary benefits which are expected to be made, whether or not those payments are contractually guaranteed. However, payments that relate to surplus funds which possess the characteristics of Tier 1 basic own funds should not be included.

- ▶ The reviewer shall ask for a comprehensive analysis of past experience, practice and distribution mechanism when assessing the proportionality of a simplified method used for determining the future discretionary benefits.

### **A.2.1.5 Assumptions**

The accounting policy for the assumptions underlying the methodologies to calculate the technical provisions shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the Article 77 of the Directive 2009/138/EC and Article 22 of Delegated Act 2015/35, which establish principles for assumptions underlying the calculation of the best estimate of technical provisions.

The calculation of the best estimate shall be based upon up-to-date and credible information and realistic assumptions and be performed using adequate, applicable and relevant actuarial and statistical methods.

The reviewer shall follow the required procedures in order to assess the assumptions used to calculate the best estimate:

- ▶ Are assumptions consistent with industry practice?
- ▶ Reconciliation to audited resources
- ▶ Explanation of the assumptions
- ▶ How the company ensures that the underlying techniques and approaches are adequate, appropriate and realistic. Is this information credible? Does the company use approximations?
- ▶ Frequency of re-evaluation of the assumptions used
- ▶ Performance of validation on the assumptions. How do you ensure consistency over time?
- ▶ Where there is insufficient internal or external data, what approximations have been made?
- ▶ Reliance on external data for any of the technical provisions assumptions
- ▶ Whether the assumptions reflect the uncertainties in the cash flows of the relevant insurance contracts
- ▶ The assumptions have been subjected to a process of internal or external review prior to formal approval of the relevant management
- ▶ Description of management actions when setting the technical provisions
- ▶ What are the specific assumptions regarding management actions
- ▶ Whether the setting of assumptions is well established and documented
- ▶ List and description of the key assumptions used to derive the technical provisions, e.g. inflation, rate changes, risk mix etc.
- ▶ Review the modelling projection of the economic assumptions and check that the methodology allows the projection of economic assumptions consistently with a market consistent valuation.

- ▶ Verify that the economic and non-economic assumptions underlying the calculation of technical provisions are determined in an appropriate way and in line with the requirements settled in Article 22 of Delegated Act 2015/35.

### **Economic assumptions**

#### **Risk - free interest rate term structure**

When calculating the SII technical provisions, the best estimate is discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure published by EIOPA. Hence, the reviewer shall assess:

- ▶ the yield curve used for the discounting of the future cash flows and conduct a comparison with EIOPA risk free yield curve for the reference date, which is communicated at the following link:  
<https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii-technical-information/risk-free-interest-rate-term-structures>
- ▶ whether volatility adjustment (VA) or matching adjustment (MA) has been applied for the discounting of the future cash flows
- ▶ check of consistency of VA with EIOPA published figures (aforementioned link)
- ▶ whether risk free curves, MA, VA assumptions used are consistent with EIOPA guidelines
- ▶ whether the transitional measure on the risk-free interest rates has been applied for the discounting of future cash flows

#### **Long Term Guarantees – Volatility Adjustment**

In accordance to Article 77d of Omnibus II, a (re)insurance company may apply a volatility adjustment (VA) to the relevant risk-free interest rate term structure.

For each relevant currency, the VA to the relevant risk-free interest rate term structure shall be based on the spread between the interest rate that could be earned from assets included in a reference portfolio for that currency and the rates of the relevant basic risk-free interest rate term structure for that currency.

The VA curve is issued by EIOPA on a monthly basis and is located at the following link:

<https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii-technical-information/risk-free-interest-rate-term-structures>

The following procedures shall be performed by the reviewer in order to check that the application of the long term guarantee measures is in line with the necessary conditions:

- ▶ Verify that the adjustment is applied across the portfolio, per country and per currency.
- ▶ Verify that the company has set up a liquidity plan projecting the incoming and outgoing cash flows in relation to the assets and liabilities subject to VA in order to ensure that an adequate level of liquidity exists on a continuous basis.
- ▶ Ensure that the company has adopted the use of VA into its risk management system and risk management policy setting out the criteria for the application of the adjustment.
- ▶ Ensure that the company assesses the sensitivity of the technical provisions and eligible own funds to the assumptions underlying the calculation of the VA.

- ▶ Ensure that the company assesses the possible effect of a forced sale of assets on its eligible own funds.
- ▶ Ensure that the company assesses the impact of a reduction of the VA to zero.
- ▶ Ensure that in case a (re)insurance company applies the transitional measure on the risk-free interest rates simultaneously with the use of VA, then the transitional measure applies on the interest rate structure includes VA.
- ▶ Verify that the amount of the VA remains unchanged after the application of the shocks to the basic interest rate term structure, under the interest rate risk sub-module and the spread risk sub-module of the SCR standard formula.
- ▶ Ensure that the SCR has been calculated with and without the use of the adjustment.

### **Investment return**

The investment return is considered equal to the risk – free interest rate term structure published by EIOPA.

### **Market inflation rates**

- ▶ Review of methodology for the derivation / construction of the inflation rate
- ▶ Comparison with the current inflation in Bulgaria
- ▶ Check whether inflation assumptions are consistent with market data
- ▶ Assumption benchmarking: If the inflation assumption is 50% different from the benchmark market assumption for similar companies, then adjustments should be conducted.
- ▶ International Monetary Fund (IMF) communicates the inflation indexes inside the World Economic Outlook (WEO) database at the following link:  
<http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx>

### **Currency exchange rates**

Regarding insurance companies with obligations in different currencies, respective exchange rates should be documented. The Bulgarian National Bank publishes the exchange rates in the following links:

<http://www.bnb.bg/Statistics/StExternalSector/StExchangeRates/StERForeignCurrencies/index.htm>

<http://www.bnb.bg/Statistics/StExternalSector/StExchangeRates/StERFixed/index.htm>

### **Corporate tax rate**

The underlying corporate tax rate should be compared with the corporate tax in Bulgaria.

- ▶ In case that a model is used in order to produce the financial market assumptions, it should be ensured that:

- The model generates prices which are consistent with financial markets
  - The model does not lead to arbitrage opportunities
  - The calibration of the parameters/scenarios is consistent with the relevant risk-free interest rate term structure
- ▶ Review of the derivation of the non - economic assumptions

### **Non-economic assumptions**

- Gathering of all underlying assumptions for the calculation of the best estimate, i.e. mortality rates, morbidity rates, critical illness rates, longevity rates, lapse rates / persistency, cancellation rates, option take up rates, surrender assumptions, paid – up rates and expenses.
- Review of the experience studies conducted for the reasonableness and appropriateness of the selected assumptions (e.g. binomial test)
- Check best estimate assumptions against experience
- Benchmark assumptions to market peers
- Verification whether policyholder actions are modelled, including a check of whether the dynamic assumptions are justified by experience data (e.g. the proportion of policyholders that are expected to take up options to change the terms of the contract)
- Verification whether management actions are modelled, comparison with actions assumed by other companies in the market to see whether the assumed actions would be considered aggressive relative to the market (e.g. change in bonus rates, change in product charges)

### **Expenses**

- ▶ According to Article 78 of the Directive 2009/138/EC, when calculating technical provisions, a company shall take into account all expenses that will be incurred in servicing (re)insurance obligations, as well as inflation, including expenses and claims inflation.
- ▶ It should be ensured that the cash flow projection takes into account all of the following expenses:
- (a) administrative expenses
  - (b) investment management expenses
  - (c) claims management expenses
  - (d) acquisition expenses
- ▶ Moreover, the following procedures shall be taken into account regarding the expense assumptions:
- Whether the future expenses included within the technical provisions for inflation (expenses inflation and claims inflation) have been adjusted
  - Description of the estimation and incorporation of the future inflation in the technical provision projections
  - Justification of the allocation of the expenses appropriately between future business and existing business
  - Projection of the future expected expense cash flows or underlying assumptions about how the expenses will change relative to the current expenses as the existing liabilities run off

- Explanation of the calculation of the amount included in the technical provisions for investment management expenses
- Explanation of the calculation of the amount included in the technical provisions for risk mitigation and management action expenses
- Treatment of expenses that do not result in cash flows. For example, whether future investment management expenses have been included in the technical provisions or investment returns have been netted off

### **A.2.2 BEL – Index-linked and unit-linked**

This is the total amount of technical provisions for index – linked and unit – linked business, which are the technical provisions for life insurance obligations, where the investment risk is borne by the policyholders.

The actuarial method used and the selection of assumptions is based on the same principles analyzed for life portfolio.

Particularly for index-linked and unit-linked business, the following procedures shall be performed by the reviewer:

- ▶ Reconciliation between the financial statements and the economic balance sheet with respect to all balance sheet entries related to unit linked
- ▶ Ascertainment that the calculation of unit linked products includes the identification of the following components when calculating the best estimate:
  1. Death benefit  
In these contracts the beneficiary receives either the fund value or the death benefit. Thus the probability weighted average of the loss should be assessed.
  2. Discounted value of the fees received over the duration of the contract with the discount rate provided by EIOPA
  3. Expenses directly related with the unit linked contracts or management of these contracts.
  4. Value of the unit account which is actually for the benefit of the policyholder, which should be equal on both sides of the balance sheet.
- ▶ Verification that the unit linked insurance contracts do not contain embedded derivatives, which is a common mistaken approach. In order to ensure the appropriate classification of the contracts, the “host contract” should be assessed without considering any added options and guarantees. Then, if the market or investment risk is for the risk of the policyholders, these insurance contracts are to be segmented as unit linked.

It should be highlighted that under IFRS 4, investment contracts do not transfer significant insurance risk from the policyholder to the company. However, SII regime does not recognize this distinction; therefore these contracts are presented as part of the unit linked contracts.

### **A.2.3 BEL – Non Life and Health NSLT**

The Non-Life and Health NSLT BE is usually performed by projecting the claims in triangulation format. The triangles should be prepared and analyzed separately for direct, proportional indirect and non-proportional indirect business. Practices of registration and valuation of claims in the above-mentioned business differ, hence calculations should be performed separately. Further to this, technical provisions should also be analyzed separately. However, in case that the data are not sufficient in order for the company to form separate triangulation analysis, the companies should assess the materiality of a less granular approach. Therefore, the

reviewer could assess whether an analysis based on the combined triangles could be performed by the company, by checking if the projection is representative of the expected claims development.

### A.2.3.1 Data Checks

The insurance portfolio of each (re)insurance company, which includes the description of the key features of all Lobs provided, should be analyzed, indicating the following characteristics:

- Amount of Gross Written Premiums (GWP)
  - Amount of Gross Earned Premiums (GEP)
  - Amount of Unearned Premium Reserve (UPR)
  - Amount of Outstanding Claims Reserve (OCR)
  - Amount of Allocated Loss Adjustment Expense (ALAE)
  - Amount of Unallocated Loss Adjustment Expense (ULAE)
  - Amount of Paid Claims
  - Amount of total Technical Provisions
- ▶ The reviewer shall evaluate that internal controls related to reserving process are in place and conducted in an appropriate manner.
- ▶ The reviewer shall verify that the (re)insurance company's provided checks on the Data Input are conducted. A non-exhaustive list of the checks that should be verified by the reviewer is the following:
- ✓ Reconciliation checks for all the Lobs between the Balance Sheet, P&L and Triangles for the following amounts:
    - Claims
    - Salvages and Recourses (if they are not included in the triangles)
    - Expenses
    - Premiums
  - ✓ Review of any plausibility checks and/ or reconciliations between prior year's triangles and the corresponding current year's triangles. The reviewer shall verify that the two periods' triangles include the same equal amounts per origin year and year of development. The reconciliations should verify the following:
    - No differences in the triangle amounts are detected between the two periods (both per triangle and LoB).
    - Differences could be detected in case that a reallocation of amounts has been conducted by the company. This could be justified if the sum of differences per triangle amounts to zero.
    - In the case above or in any other case of reconciliation issue, the company should justify the reason of the differences detected.
  - ✓ Documentation of data limitations including an analysis on the impact of material data limitations on modelling. Any limitations implied in the data should be clearly justified and documented and should not affect more than 5% of the total Non - Life business.
  - ✓ Review of the justification provided by the (re)insurance company for any reconciliation issue identified and materiality assessment of the misstatements (where applicable).
- ▶ The reviewer shall review the materiality assessment and the application of the proportionality criterion for the semi/unmodelled business and verify that it does not exceed the 5% of the total Non-Life portfolio. As semi/unmodelled business it is defined the part of business of a homogenous risk group for which a proper actuarial analysis has not been performed.

Detailed quality checks for amount of Outstanding Claims Reserve (OCR - reported and incurred but not reported)

The reviewer should perform the following:

- ▶ Obtain the detail of reported claims (at claim level) as at 30 June 2016 and reconcile it with the relevant accounts at the same date. Investigate differences which are above RT and propose adjustment if needed.
- ▶ Obtain the detail of reported claims (at claim level) as at 31 December 2014 and reconcile it with the relevant accounts at the same date. Investigate differences which are above RT and propose adjustment if needed.
- ▶ Obtain the detail of amounts paid (claims paid) during the period 1 January 2015 - 30 June 2016 and in the period 1 July 2016 – 31 July 2016 reconcile it with the expense presented in the relevant accounts.

For the claims which were in reserves as of 31 December 2014, compute the difference at claim level between the reported claims as of 31 December 2014 less payments made during the period 1 January 2015 - 30 June 2016 and the reported claims as of 30 June 2016.

The variation must take in consideration:

- Fully paid claims: claims which appear in the reported claims detail at 31 December 2014, payments were made for these claims and they no longer appear in the reported claims reserve at 30 June 2016.
- Claims closed without payment: claims which appear in the reported claims detail at 31 Dec 2014, no payment was made and they no longer appear in the reported claims reserve at 30 June 2016.
- Claims for which partial payment was made: claims which appear in the reported claims detail at 31 Dec 2014, a payment was made, and they also appear in the reported claims detail at 30 June 2016
- Claims reassessed: claims which appear in the reported claims detail at 31 Dec 2014 and also appear in the reported claims detail at 30 June 2016 with a different value but no payment was made during this period.

Based on this the independent external reviewer should assess whether the claim amount established by the undertaking at 30 June 2016 is relevant and reasonable under the circumstances.

Overall difference above ST per line of business should be investigated and adjustment should be proposed as needed as an overstatement/understatement of reported claims detail.

Compare the amounts in reported claims as at 30 June 2016 with:

- the amounts subsequently paid for the claim files in balance as at 30 June 2016 that were subsequently closed (until 31 July 2016), or
- the amount in reported claims detail as of 30 June 2016 plus any payments after 30 June 2016 up to 31 July 2016, if the case).
- ask the Company to explain any differences above RT (including providing the appropriate supporting documents).

Based on this the auditor should assess whether the claim amount established by the undertaking at 30 June 2016 is relevant and reasonable under the circumstances.

### **Sample tests for reliability, quality, sufficiency and relevance of data**

**The reviewer should:**

Select a sample of top 10 and 10 random claims files covering different lines of business representing minimum 80% of the population value for each of non-life and respectively life from reported claims detail as at 30 June 2016 and compare the amounts against the amounts from the supporting evidence.

- ▶ Obtain from the undertaking the claims under litigations as of 30 June 2016. From the claims under litigation the auditor should select from each line of business (lines of business covering minimum 80% of the population value for each of non-life and respectively life) top 10 and 10 random claims and compare the

amounts against the amounts from the supporting evidence.

- Obtain from the undertaking closed and reopened claim files, select a sample of the top 10 files and random 10 files reopened between 1 January 2015 and 30 June 2016 and assess if the claim files selected were closed/re-opened in accordance with the undertaking's internal procedures and whether the closing of the files were justified and supported by evidence. If the undertaking policy is to reopen a file under a different identification number the auditor should obtain relevant information for identifying the reopened claims.

The external independent reviewer is expected to use professional judgment and to extend the sample as appropriate by taking into account relevant risks (e.g. for long term lines of business it is important to include older claims), different years of occurrence, large/medium/small claims, bodily injury/ property damage, files with significant readjustments, files by geographical area, recent claims still open (2-3 years), new claims, old claims still open, old claims closed and reopened.

The reviewer should obtain the detail of the customer's (policyholders) complaints during the period 1 January 2015 – 30 June 2016. The reviewer should analyze the complaints (types, number, values, line on business) in relation also with other evidence obtained: court decision for legal cases, decisions of the financial supervisory commission, subsequent settlements and should report any identified weaknesses in the claims handling process which result in material misstatements.

The reviewer will select from the development triangles top 10 and 10 random claims from the first year of the development triangle per line of business as 30 June 2016 (such as to cover minimum 80% of the IBNR value as of 30 June 2016 in order to assess the ultimate loss. Analyze outliers as per procedures described in A 2.3.2.

### **A.2.3.2 Actuarial Model – BEL Methodology**

In order to calculate the best estimate of liabilities, companies should use actuarial and statistical methods, which appropriately reflect the risks that affect the cash-flows. The best estimate is calculated by the use of a model, which is determined by the company according to the complexity, scale and nature of the exposures.

The cash flows projections for the calculation of the best estimate shall be obtained and compared with SII framework requirements, respectively:

- According to the Article 77 of Directive 2009/138/EC and Article 28, 29 and 30 of Delegated Act 2015/35, which establish principles for the identification and calculation of the cash flow projections.

In Non - Life portfolio, the valuation of the best estimate for provisions for claims outstanding and for premium provisions should be carried out separately.

#### **Outstanding Claims Reserve (Non – Life and Health NSLT)**

With respect to the best estimate for provisions for claims outstanding, the cash-flow projections relate to claim events having occurred before or at the valuation date – whether the claims arising from these events have been reported or not (i.e. all incurred but not settled claims). The cash-flow projections should consider future benefit payments to policyholders and beneficiaries, payment of expenses (allocated and unallocated), taxation payments, future premium (adjustments made after valuation date to premiums already paid) and payments for salvage and subrogation

The outstanding claim reserve is calculated as the sum of Reported But Not Settled claims (RBNS), Incurred But Not Reported claims (IBNR) and cost for claims settlement.



The RBNS is estimated on a “claim by claim” basis including the estimated claim amount as well as the direct expenses of settlement that are expected to occur until the final and definitive settlement of the claims. The reviewer should have in mind that the case by case estimates are produced by expert claims handlers and hence, the actuarial department has no involvement in the calculation.

The reviewer shall check that the methodology followed for the formation of RBNS is consistent within the years and no differentiations have been performed. In case that there is any amendment on the methodology process, the reviewer shall identify and assess the reasonableness and justification provided by the company.

The IBNR refers to those losses that have occurred but have not yet been announced. This provision includes claims from insurance risks that are incurred but not reported until the date of calculation as well as the direct expenses of settlement that are expected to occur until the final and definitive settlement of such claims. The IBNR also captures the losses that have not been fully captured, the Incurred But Not Enough Reported (IBNER). The Actuarial department is responsible for the calculation of the IBNR. The calculation of IBNR can be derived either from the paid or from the incurred data sets.

In addition, the reviewer should check the need for inclusion of the future inflation with regards to the claims as well as the expenses. In case that the company has assumed the existence of inflation deviating from the historical one, the reviewer should check that the specific assumption can be considered reasonable.

The Unallocated Loss Adjustment Expense (ULAE) refers to those expenses that are not attributable to the processing of a particular insurance claim. The reviewer shall make sure that the company has clearly described the methodology followed for the treatment of the ULAE reserve and verify the reasonability of the calculation method applied.

For the assessment of the Outstanding Claims Reserve, the reviewer shall conduct the following:

- ▶ Review of the justification provided by the company concerning the appropriateness of the method applied.  
The projection of the cash-flows can be performed through a number of methodologies. The most common used methods are:
  - Chain Ladder
  - Bornhuetter – Fergusson
  - Average Cost per Claim, etc.
- ▶ Verify that the underlying assumptions of the selected actuarial method are applicable to the specific portfolio.
- ▶ Verify that the whole business has been modelled appropriately and in case of semi/unmodelled business it should be verified that it is due to limitations of data.
- ▶ Verify that the analysis of the Gross Best Estimate Claims Provision has been conducted by LoB and separately for Attritional and Large claims, where this is applicable. For more clarification on the large claims determination please refer to the Assumptions – OCR section.

A non – exhaustive list of indicative KRIs is provided below along with the check points that the reviewer could assess:

- ▶ Ultimate Loss Ratio  
  
The year-on-year Ultimate Loss Ratios should not present fluctuations. In case that there is a deviation of 4% - 5% and above among the accident years, this should be justified by the company. Further to this, any increasing or decreasing trends on the ultimate loss ratios should be explained so that the reviewer has a full assessment of the rationale behind.
- ▶ Premiums

Premiums depict the volume of the business of the company. Any differentiation could affect the characteristics of the portfolio, Hence, any increasing or decreasing trends on the amount of premiums should be explained by the company so that the reviewer has a full assessment of the rationale behind.

▶ **Settlement speed**

The settlement speed should be reviewed and any deviation should be justified by the company. The claims settlement speed should be checked in order the claims development included in the development factors determination to be assessed. For more explicit information, refer to Appendix 5.

Concerning the settlement speed the reviewer shall perform checks between the consecutive accident years' elements for any given development year. Any deviation above 4% - 5% should be justified by the company in order the reviewer to assess the reasonableness of the respective inclusion in the claims projection.

▶ **Frequency - Ultimate number of claims**

The ultimate number of claims should be checked in terms of consistency within the years. The company should justify any deviation. Any increasing or decreasing trends on the amount of ultimate number of claims should be explained by the company so that the reviewer has a full assessment of the rationale behind.

▶ **Severity - Average cost per claim**

The average cost per claim should be checked in terms of consistency within the years especially for those LoBs that are related to significant amounts of costs. The company should justify any differentiations.

▶ **Claims provisions run-off**

The reviewer should review the run-off analysis prepared by the company and assess should the claims provisions in the beginning of the year is adequate to cover the claims arose during the year. In case of a negative run-off result the reviewer should investigate the reasons for this and how this is related to the appropriateness of the reserving methodology used by the company.

Further details on the Key Risk Indicators are provided in the Appendix 5 section.

### **Projection Methods - Link Ratio Methods on Paid/Incurred**

The Link Ratio Methods are a generalization of the Chain Ladder Method, based on the analysis of the cumulative payments (Paid Claims' triangles) or incurred claims (Incurred Triangles) along the years.

The main assumptions of this method are:

- The independent development of the payments/ incurred claims during the scoped origin years.
- Weighted average past inflation will be repeated in the future. This is because claims inflation is one of the influences swept up within the projection factors.

In case a Link Ratio Method has been applied, the reviewer shall conduct the review on following areas:

- ▶ Verify that the choice of the triangle (Paid or incurred) has been applied based on the nature of the specific portfolio.
- ▶ Review of the justification and documentation related to any data exclusions (if any).

**Link Ratio exclusions:** one or more link ratios could be taken out from the set of data used for estimating the development factors. In such case, the reviewer shall ensure that the past experience is unlikely to be repeated in the future. A non-exhaustive list of the reasons that could justify link ratio exclusions is following:

- Change in the underwriting policy
- Change in the settlement process
- Change in the accounting rules
- Change in macroeconomic variables
- Change in portfolio mix or distribution channels

- ▶ In case that curve fitting is applied by the company, the reviewer should consider that its aim is to smooth the observed link ratios development pattern identifying its systematic behavior and eliminating the random noise. The reviewer shall:
  - ✓ Verify that potential outliers have been excluded by the curve fitting process.
  - ✓ Verify that the curve fitting has been applied to a proper subset of development factors, selected from the ones estimated in the Ratio Analysis.
  - ✓ Verify that a goodness of fit test has been applied in order to assess the appropriateness of the curve.
  - ✓ Check the graph comparing the selected and observed curve with the fitted curves in order to assess the appropriateness of the curve.
- ▶ In case that a tail factor is applied by the company, the reviewer should consider that its aim is to capture the undeveloped information of the examined triangle and that the factor should be set carefully. The reviewer shall:
  - ✓ Review the justification and the documentation on the reason for the inclusion of tail factor on the development of the triangle.
  - ✓ Verify that the documentation includes quantitative and qualitative explanation on the selected tail factor and the chosen tail length.
  - ✓ Assess the inclusion of the tail factor. A non-exhaustive list with possible checks for the tail factor is set below:
    - The use of Curve Fitting Methods.
    - The use of Incurred to Paid ratio.

The setting of this parameter has to be done carefully, especially for long tail business. Market data may be helpful to derive an estimate for the number of future development periods.

- ✓ Compare the tail factor applied with benchmarks (e.g. factors from other portfolios with similar claims development, factors estimated by other companies or market data) and verify its consistency overtime.
- ✓ Verify that the choice of the length of the tail depends on the size of the analyzed triangle as well as the nature of claims.

#### **🔍 Projection Methods - Bornhuetter-Ferguson Methods on Paid / Incurred**

The Bornhuetter-Ferguson Method combines the projected ultimate (obtained for example by means of a Development Factor Method) with an alternative (a priori) value, using a weighted credibility approach.

In case a Bornhuetter-Ferguson method has been applied, the reviewer shall:

- ▶ Review the justification and documentation concerning the selection of the method applied.
- ▶ Check that the a priori ultimate is a reliable estimate. The source of the a priori ultimate is clearly documented and justified by the company.
- ▶ Assess whether the a priori Loss Ratio selected by the company is appropriate. The standard practice is to use the earned premium, but the companies, might select different exposure based on number of risks, providing the reason. A non-exhaustive list of areas where a company could base the a priori value adopted is following:
  - Quantitative internal information provided by the run-off triangle itself (i.e. the development factors) or analysis on frequency and severity change, volume measures for the portfolio under consideration (i.e.

- premiums)
  - The company's target loss ratio (the company should justify the rationale behind the selection of the ratio).
  - The average of previous years' loss ratios.
  - External information like market statistics, group information or data of similar portfolios.
- ▶ Verify that the method has been performed appropriately considering both a priori and the chain-ladder methodology.
- ▶ Verify that the calibration of the credibility factors (weights) is based on appropriate considerations.
- ▶ Verify that the percentage of the development factor on which the method is applied is less than 85%. It should be noted that the aforementioned percentage is a market benchmark. The (re)insurance company should justify the application of the method in each origin year.

### **Projection Methods - Average Cost per Claim Method on Paid**

The Average Cost per Claim Method (ACPC) is defined using one of the previously described models on paid amounts plus a separated projection on claim numbers, in the situation of both amounts and number of claims being available. This method allows for getting useful information on claims settlement speed.

In case an Average Cost per Claim method has been applied, the reviewer shall:

- ▶ Verify the method applied for the ultimate number of claims has been considered as reliable.
- ▶ Verify that for each origin year, both the number and average amount of claims relating to each development year are constant proportions of the totals from that origin year.
- ▶ Verify that in case any factor has been excluded, documentation and justification is provided by the company and has been assessed by the reviewer.
- ▶ The coherence between the data underlying the two projections involved in this method (claims run-off triangle and number of claims triangle) has to be verified.
- ▶ Check that, when projecting number of claims with a Development Factor Method, the underlying assumption is that settlement rates are independent by accident year. This assumption should be checked before to proceed in its application.
- ▶ The underlying assumptions are tested with care by the company before their use.
- ▶ In case the paid triangles include partial payments made on claims that are still outstanding, the preferable solution is to leave the partial payments in the paid amount triangle but exclude them from the number of closed claims triangle).

### **Allocated Loss Adjustment Expenses (ALAE)**

ALAE is related to the claims handling expenses that can be allocated directly to a single claim.

The reviewer shall ensure that:

- ▶ The ALAE amounts are included in the triangles used for the projection of best estimate.
- ▶ In case that ALAE amounts are not included in the triangles
  - Assessment of the treatment of the handling expenses with regards to the materiality and the proportionality criterion.
  - Review of the documentation and justification of the treatment followed.
  - Verification that the data used for the approximation of ALAE are appropriate, accurate and complete.

- Verification of the parameters used for the approximation of the ALAE amounts.

### **Unallocated Loss Adjustment Expenses (ULAE)**

ULAE is related to the claims handling expenses that cannot be allocated directly to a single claim.

The reviewer shall:

- ▶ Ensure that the treatment of ULAE is clearly defined by the company.
- ▶ Review the (re)insurance company's documentation related to the ULAE and verify the reasonability of the ULAE calculation method.
- ▶ Verify that the ULAE reserve has been aggregated with the claims provisions.

### **Annuity Claims**

Where Non-Life / Health NSLT insurance policies give rise to the payment of annuities, these should be valued using methodologies usually applicable to the valuation of life technical provisions.

The reviewer shall perform review on the following areas:

- ▶ Review the valuation of technical provisions for such annuities.
- ▶ Verify that the technical provisions related to such annuities are calculated separately from the technical provisions related to the remaining non-life and health obligations. They should apply appropriate life insurance valuation techniques.
- ▶ Ensure that the valuation is consistent with the valuation of life insurance annuities with comparable technical features.
- ▶ Otherwise, if the (re)insurance company has considered the annuities as lump-sum payments, the inclusion in the run-off triangle should be verified and in addition the justification of this selection to be reviewed.

### **Payment Pattern**

For each LoB and for each calendar year the Payment Pattern is defined as the percentage of the expected payment for the calendar year over the sum of the expected payments for all the calendar years. The payment pattern is then applied to the claims provisions in order to determine the cash flows.

The reviewer shall ensure that:

- ▶ Review and assess the description of the applied valuation methods.
- ▶ The payment patterns derived sum to 1.
- ▶ Justification on the appropriateness of the method used.
- ▶ In case a paid claims triangle has been used for the payment pattern derivation, the ultimate claims of the projected triangle should be verified that it is equal to the selected ultimate claims.

The reviewer is expected, as it is referred above, to comment on the appropriateness of the method used.

If a simplified method is used to give a view on the rationale, the reviewer should use methods to estimate potential error (e.g. use of several other methods, application of a formula to estimate the error where applicable, use of simulation techniques to calculate the error), assess the key expert judgment applied by the undertaking where applicable and verify how the back testing on the utilized results from claims provision is conducted.

The reviewer is required to include comments, conclusions as well as judgment over the different findings and the necessary quantitative assessments.

### **Premium Provision (Non – Life and Health NSLT)**

Premium provision is related to the future claims that may be incurred by the existing policies (“one year” or “multi-year” contracts). Cash-flow projections for the calculation of the premium provision include benefits and claims (cash out-flows), expenses (cash out-flows) and future premiums (cash in-flows) and other cash flows relating to these events.

The most common approach followed for the calculation of Premium Provision is the Loss Ratio approach adjusting the UPR with the combined loss ratio. Hence, the UBEL of the Premium Reserves is defined as the sum of the claims related component and the administration expenses related component.

The reviewer shall perform the following procedures:

- ▶ Verify that the premium reserve has been calculated taking into account the relevant cash out-flows and cash in-flows.
- ▶ Verify that both the Loss Ratio and the Administrative Expense Ratio are representative of the historical data of the company or when expert judgment has been used for their derivation to understand the reasonability of the estimations having reviewed the (re)insurance company’s justification.
- ▶ Verify that in case of existing multi-year contracts in the (re)insurance company’s portfolio, they have been included in the calculation appropriately.
- ▶ Verify that in case that the premiums are paid in installments, they have been included in the calculation of premium provision appropriately.
- ▶ Verify that the valuation of premium provisions has taken into account the future policyholder’s behavior.

### **Payment Pattern**

For each LoB and for each calendar year the Payment Pattern is defined as the percentage of the expected payment for the calendar year over the sum of the expected payments for all the calendar years. The payment pattern is then applied to the total reserve in order to determine the cash flows.

The reviewer shall ensure that:

- ▶ Review and assess the description of the applied valuation methods.
- ▶ The payment patterns derived sum to 1.
- ▶ Justification on the appropriateness of the method used.
- ▶ In case a paid claims triangle has been used for the payment pattern derivation, the ultimate claims of the projected triangle should be verified that equal the selected ultimate claims.
- ▶ In case the payment pattern used for the Premium Provision is the same with the one derived by the Claims provisions, this selection should be assessed with regards to the materiality and the proportionality criterion.

Both Outstanding Claims Reserve and Premium Provision need to be discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure as provided by EIOPA. The BEL is derived by discounting the expected future payments of the Undiscounted BEL by the reference basic risk free rate curve. More information on the assessment is provided in section of Assumptions.

### A.2.3.3 Assumptions

The Article 77 of the Directive 2009/138/EC and Article 22 of Delegated Act 2015/35, establish principles for assumptions underlying the calculation of the best estimate of technical provisions.

The calculation of the best estimate shall be based upon up-to-date and credible information and realistic assumptions and be performed using adequate, applicable and relevant actuarial and statistical methods.

The reviewer shall follow the following procedures in order to assess the assumptions used to calculate the best estimate:

- ▶ Verify that the assumptions are consistent with industry practice.
- ▶ Review the justification of the assumptions.
- ▶ Check that the underlying techniques and approaches are adequate, appropriate, realistic and that the information is credible based on the (re)insurance company's justification. In case that the (re)insurance company uses approximations their reasonableness and deviation from the best practice with regards to the materiality and proportionality criterion should be assessed.
- ▶ Check that the frequency of re-evaluation of the assumptions is considered rationale.
- ▶ Ensure the consistency of the performance of the assumptions
- ▶ Verify all the approximations performed in case of insufficient internal or external data
- ▶ Verify the appropriateness, accuracy and completeness of external data.
- ▶ Ensure that the assumptions reflect the uncertainties in the cash flows of the relevant insurance contracts.
- ▶ Verify that the assumptions have been subjected to a process of internal or external review prior to formal approval of the relevant management.
- ▶ Review the description of management actions available concerning the setting of the technical provisions.
- ▶ Review of the documentation and justification with regards to the assumptions underlying the management actions.
- ▶ Review the list and description of the key assumptions used to derive the technical provisions, e.g. inflation, rate changes, risk mix etc.

#### **Assumptions related to Outstanding Claim Reserve**

##### **Analysis of historical development of key figures**

It is expected that the company provides some indicative statistics per LoB that present the characteristics of the portfolio, the stability within the years or any differentiations. Such statistics could be:

- Number of policies per LoB
- Outstanding Claims, Paid Claims, etc. per LoB
- Premiums per LoB.
- Loss Ratios
- Average frequency of claims
- Average severity of claims
- Expenses (both Allocated and Unallocated)

- Comparison of the development between close origin years

### **Identification of Attritional / Large claims**

The definition of large claim in the qualitative approach may vary according to the type of business and the size of the portfolio. The company should provide methodological explanation and justification of the choice and definition of the approach (both quantitative and qualitative).

The reviewer shall:

- ▶ Assess the threshold for the determination.
- ▶ Assess the need to split between Attritional/Large claims. The decision for splitting should depend on the number of the large claims that are included in the triangle.
- ▶ Understand the method used for the estimation of the Large claims
- ▶ Verify that the company provides the conditions under which this split is applied and information of any differentiations and/or specificities that concern the treatment of large claims.

### **Assumptions related to Premium Provision**

#### **Expenses**

The cash-flow projections should comprise all future claim payments as well as claims expenses arising from these events.

For the assessment of the future expenses, companies should take into account all the expenses that are directly related to the on-going administration of obligations related to recognize (re)insurance contracts, together with a share of the relevant overhead expenses.

Claims management expenses are expenses that will be incurred in processing and resolving claims, including legal and adjuster's fees and internal costs of processing claims payments. Some of these expenses could be assignable to individual claim (e.g. legal and adjuster's fees), others are a result of activities that cover more than one claim (e.g. salaries of staff of claims handling department).

#### **General Assumptions**

##### **Liabilities in different currencies**

In case that the company has liabilities in more than one currency, the reviewer shall check that the volume of claims in currency other than the domestic is sufficient in order to be projected separately.

##### **Inflation**

When projecting the future payments, inflation should be taken into account. The reviewer shall check that:

- ▶ If the analysis of the past inflation trends shows an instable inflation environment and the companies assume that changes in future inflation could be relevant, the additional inflation effect needs to be added to the results.
- ▶ The assumptions as well as decisions regarding the BEL calculation based on this evaluation need to be justified and documented by the company

Further to the above, the reviewer shall ensure that the company has performed a proportionality assessment which has taken into account the materiality per actuarial method performed.



### **Risk - free interest rate term structure**

When calculating the SII technical provisions, the best estimate is discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure published by EIOPA. Hence, the reviewer shall assess:

- the yield curve used for the discounting of the future cash flows and conduct a comparison with EIOPA risk free yield curve for the reference date, which is communicated at the following link:

<https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii-technical-information/risk-free-interest-rate-term-structures>

- whether volatility adjustment (VA) or matching adjustment (MA) has been applied for the discounting of the future cash flows
- check of consistency of VA with EIOPA published figures (aforementioned link)
- whether risk free curves, MA, VA assumptions used are consistent with EIOPA guidelines
- whether the transitional measure on the risk-free interest rates has been applied for the discounting of future cash flows

### **Long Term Guarantees – Volatility Adjustment**

In accordance to Article 77d of Omnibus II, a (re)insurance company may apply a volatility adjustment (VA) to the relevant risk-free interest rate term structure.

For each relevant currency, the VA to the relevant risk-free interest rate term structure shall be based on the spread between the interest rate that could be earned from assets included in a reference portfolio for that currency and the rates of the relevant basic risk-free interest rate term structure for that currency.

The VA curve is issued by EIOPA on a monthly basis and is located at the following link:

<https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii-technical-information/risk-free-interest-rate-term-structures>

The following procedures shall be performed by the reviewer in order to check that the application of the long term guarantee measures is in line with the necessary conditions:

- ▶ Verify that the adjustment is applied across the portfolio, per country and per currency.
- ▶ Verify that the company has set up a liquidity plan projecting the incoming and outgoing cash flows in relation to the assets and liabilities subject to VA in order to ensure that an adequate level of liquidity exists on a continuous basis.
- ▶ Ensure that the company has adopted the use of VA into its risk management system and risk management policy setting out the criteria for the application of the adjustment.
- ▶ Ensure that the company assesses the sensitivity of the technical provisions and eligible own funds to the assumptions underlying the calculation of the VA.
- ▶ Ensure that the company assesses the possible effect of a forced sale of assets on its eligible own funds.
- ▶ Ensure that the company assesses the impact of a reduction of the VA to zero.

- ▶ Ensure that in case a (re)insurance company applies the transitional measure on the risk-free interest rates simultaneously with the use of VA, then the transitional measure applies on the interest rate structure includes VA.
- ▶ Verify that the amount of the VA remains unchanged after the application of the shocks to the basic interest rate term structure, under the interest rate risk sub-module and the spread risk sub-module of the SCR standard formula.
- ▶ Ensure that the SCR has been calculated with and without the use of the adjustment.

### Identification of Binary Event

The definition of binary events refers to claims with very high severity but low frequency. They include losses with low probability but high cost that due to the nature are not captured by the underlying data and are difficult to analyze. Such claims could be extreme catastrophe events, legislative changes or claims steaming from unknown risks.

The reviewer shall:

- ▶ Review the documentation and justification provided concerning the binary events.
- ▶ Assess the company's definition for binary events.
- ▶ Assess qualitatively the framework in place for the treatment of such events.
- ▶ Examine any historical exposure to such event and the treatment provided by the company (if any).

The reviewer should consider if the justification provided is satisfactory and used consistently over time, focusing on the impact of binary events on at least the value of future claims, the future payment pattern and the expenses.

## A.3 Risk margin

The risk margin is determined as the present value of the cost of holding the SCR for non - hedgeable risks during the whole run-off period of the in-force portfolio, using the relevant risk-free interest rate term structure. The calculation should be performed according to the formula presented in the Article 37 of Delegated Act 2015/35. Participating companies should consider whether or not it would be appropriate to apply a simplified valuation technique for the risk margin. As an integral part of this assessment, the companies should consider what kind of simplified methods method would be most appropriate for the business. The chosen method should be proportionate to the nature, scale and complexity of the risks of the business in question.

In the hierarchy set out below, which represents feasible simplified calculations of the risk margin, the calculations get simpler with each step. In addition, these simplifications are described in the context of the standard formula. The application of simplifications for cases where the SCR is calculated with internal models should follow the general approach with an appropriate case-by-case assessment.

1. Full calculation of all future SCRs without using simplifications.
2. Approximation of the individual risks or sub-risks within some or all modules and sub-modules to be used for the calculation of future SCRs.
3. Approximation of the whole SCR for each future year, e.g. by using a proportional approach.
4. Estimation of all future SCRs "at once", e.g. by using an approximation based on the duration approach.
5. Approximation of the risk margin by calculating it as a percentage of the best estimate.

The following procedures should be followed by the reviewer in order to review the calculation of the risk margin:

- ▶ Check the appropriateness of the method used for the calculation of the risk margin with regards to the underlying assumptions of each simplification.
- ▶ Check the (re)insurance company's justification for any simplification used when calculating the risk margin.
- ▶ Check if the risk margin calculation is performed separately for each line of business / for life and non-life business. If not, check how the risk margin is allocated across each line of business and understand why this approach has been adopted.
- ▶ Check the Cost-of-capital rate (CoC) used in addition to the basic risk free yield curve without applying a volatility adjustment or a matching adjustment in order to calculate the risk margin.
- ▶ Check which risks have been included in the future SCRs when calculating the risk margin.
- ▶ Check if for the risks that have been included in the future SCRs, the appropriate correlation matrix has been taken into account.
- ▶ Check that the total risk margin is calculated as the sum of the present value of the cost of capital in each future year until the obligations have been settled.
- ▶ If an internal model exists, check the ability to project the future SCRs required to calculate the risk margin.
- ▶ Use any available risk indicators in order to assess and verify the adequacy of the risk margin. An indicative, non-exhaustive list of indicators is presented in the Appendix 5 of this document.

## B. Assets and liabilities other than the technical provisions

Assets and liabilities should be recognized and valued in accordance with **the international accounting standards adopted by the Commission in accordance with Regulation (EC) No 1606/2002** provided that those standards include valuation methods that are consistent with the valuation approach set out in Article 75 of S2 Directive. Where those standards allow for the use of more than one valuation method, insurance and reinsurance undertakings shall only use valuation methods that are consistent with Article 75 of the S2 Directive.

Delegated Regulation (EU) 2015/35 clearly defines in which cases the valuation methods are not consistent with the valuation approach set out in Article 75 of the Solvency II Directive, and therefore, other valuation principles or adjustments than IFRS shall be applied.

### B.1 Goodwill, Deferred Acquisition Costs and Intangible Assets

According to DA, Chapter 2, Article 12 (Valuation methods for goodwill and intangible assets), insurance and reinsurance undertakings shall value at zero goodwill, deferred acquisition costs and intangible assets other than goodwill, unless the intangible asset can be sold separately and the insurance and reinsurance undertaking can demonstrate that there is a quoted market price for the same or similar assets. Computer software tailored to the needs of the undertaking and "off the shelf" software licenses that cannot be sold to another user shall be valued at zero.

The reviewer will investigate any deviations from the above requirement.

## B.2 Deferred tax assets and deferred tax liabilities

The accounting policy describing deferred tax recognition and valuation on S2BS shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA and final report EIOPA-BoS-15/113-Deferred tax assets and liabilities shall be recognized in accordance with International Accounting Standards (IAS 12), with the following observation:
  - Deferred tax assets (“DTA”) and liabilities (“DTL”) - other than DTA arising from the carry-forward of unused tax credits and the carry-forward of unused tax losses - should be determined on the basis of the difference between the Solvency II values of assets and liabilities (recognized and valued in accordance with Articles 75-86 of Directive 2009/138/EC) and the values ascribed to assets and liabilities as recognized and valued for tax purposes, and not the differences between the carrying amount of an asset or liability in the statement of financial position and its tax base.

The following aspects shall be verified:

- ▶ accuracy of the computation of the deferred tax
- ▶ reconcile the value of total DTA/DTL with S2BS, investigate differences over RT, if any
- ▶ that the overall deferred tax assets/liabilities of the undertaking is split into the various items with reference to the specific category of asset that has generated the corresponding deferred taxes and that the deferred tax assets/liabilities are offset if, and only if, the following two conditions are fulfilled:
  - the undertaking has a legally enforceable right to set off current tax assets against current tax liabilities; and
  - the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend to settle current tax liabilities and assets on a net basis (for example, in case of group consolidation for tax purposes)

The recognition of a DTA has to be subject to a recoverability test, which aims at showing that sufficient profits will be available in the future to absorb the tax credit. The reviewer shall obtain the test and assess the reasonability of the assumptions regarding future profits used in the recoverability test as of 30 June 2016 (by taking into account aspects such as, but without being limited to: historical analysis of the process of budgeting versus actual results, budgets for future periods, reasonability of the assumptions used in the budgeting process) together with any legal or regulatory requirements on the time limits relating to the carry forward of unused tax losses / credits.

Special attention should be given to adjustments proposed by the reviewer throughout the BSR exercise that may impact the deferred tax recognized. The impact shall be quantified and adjustments should be proposed in R4 template, as needed.

## B.3 Pension benefit surplus/obligations

The accounting policy describing pension benefit surplus and pension benefit obligations recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA and final report EIOPA-BoS-15/113, IAS 19 which prescribes the accounting and disclosures for employee benefits, except those to which IFRS 2 Share based payments applies, is consistent as regards measurement principles for employee benefits.

The following procedures shall be performed by the reviewer:

- ▶ Perform an understanding of the pension benefits granted to employees and any other scheme in place related to benefits to employees by discussing with management, reviewing labour contracts and/or other supporting documents (including for eg: Consolidated Annual Report for the parent undertaking).
- ▶ Request the undertaking pension benefits assessment including computation from the undertaking and reconcile with the corresponding account from the S2BS and/or trial balance accounts. Investigate differences over RT, if any.
- ▶ Request supporting documents, information and details in order to review the above assessment performed by the undertaking. Involve specialists (“actuarial”) as needed, depending on the complexity of the calculations.

## B.4 Property, plant and equipment held for own use

The accounting policy for “Property, plant and equipment held for own use” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA and final report EIOPA-BoS-15/113 IAS 16 which prescribes the accounting treatment for property, plant and equipment, **revaluation model only** is a consistent option.

The following procedures shall be performed by the reviewer:

- ▶ Request breakdown of the property, plant and equipment held for own use as at 30 June 2016, as well as 31 December 2015, and reconcile with the trial balance corresponding accounts and S2BS and investigate differences over RT, if any.
- ▶ Perform selection in accordance with the instructions in section 1.5.4 and for the sample:
  - Request supporting documents and information in order to verify the ownership rights for the respective item
  - Request the valuation report prepared by an independent appraiser and:
    - Reconcile the value from the valuation report to the value from breakdown received above
    - Verify whether the valuation was performed by an independent appraiser member of the appropriate professional body
    - Review and assess the valuation of the respective item:
  - In this respect, the reviewer will involve valuation specialists in the review of the valuation report in terms of method of valuation and assumptions used, market comparables included, the computations, any other significant assumptions, in order to assess the appropriateness of the valuation report and the fairness of the valuation
- ▶ Request information regarding subsequent events from the undertaking which may show a deterioration in the value of the respective item or other impairment as applicable (e.g. the reviewer will request the detail(s) regarding property, plant and equipment held for its own use at a subsequent date, etc.)

### Important note regarding the valuation reports:

Appraisals of land and buildings older than 31 December 2015 should not be taken into account for the purpose of the BSR exercise. For land and buildings, for which the latest appraisal was done before 31 December 2015, a new appraisal should be performed. For appraisals of land and buildings performed starting 31 December 2015, appropriate verifications should be performed to ensure that the value reflects the circumstances at the reference date (30 June 2016).

## B.5 Investments (other than assets held for index-linked and unit-linked contracts)

The reviewers are required to perform procedures for each type of the investments separately, as outline below.

Guidance is included for the most usual type of such investments. Instructions will be provided on a case by case basis for other material items existing in the undertaking portfolio not covered by this specific guidance.

### B.5.1 Property (other than for own use)

The accounting policy for “Property (other than for own use)” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to DA 2015/35 and final report EIOPA-BoS-15/113 IAS 40 which prescribes the accounting treatment for investment property and related disclosure requirements, **fair value model only** is a consistent option.

The procedures to be performed by the reviewer are the same as in section B.4 Property, plant and equipment held for own use.

### B.5.2 Holdings in related undertakings, including participations

Holdings in related undertakings, including participations are to be included in the review performed irrespective of the materiality of the item.

The accounting policy for “Holdings in related undertakings, including participations” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35:  
“Participations: Holdings in related undertakings are to be valued at the quoted market price in an active market. If this valuation is not possible:  
  
**(1) Holdings in insurance and reinsurance undertakings**
  - Subsidiary undertakings have to be valued with the equity method that is based on a Solvency II consistent recognition and measurement for the subsidiary’s balance sheet.
  - Related undertakings, other than subsidiaries, would also be valued with the adjusted equity method using a Solvency II consistent recognition and measurement for the holding’s balance sheet. However, if this is not possible, an alternative valuation method in accordance with art 13 DA.  
**(2) Holdings in undertakings other than insurance and reinsurance undertakings**
  - Holdings in undertakings other than insurance and reinsurance undertakings have to be valued with the adjusted equity method that is based on a Solvency II consistent recognition and measurement for the subsidiary’s balance sheet. If that is not practicable, the equity method would be applied to the related undertaking’s balance sheet following IFRSs– with the amendment that goodwill and other intangible assets would need to be deducted. If this is not possible for related undertakings, other than subsidiaries, an alternative valuation method in accordance with the requirements in article 13 DA should be used.”
- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 IAS 28 prescribes applicable equity method measurement principles.

The following procedures shall be performed by the reviewer:

- ▶ Obtain breakdown in respect to the “Holdings in related undertakings, including participations” in balance as at 30 June 2016, and 31 December 2015, containing information with respect to purchase date and any other subsequent participation, the acquisition cost and participation percentage at all respective dates, as well as any other relevant information regarding the acquisition and the related holding, including information regarding market quotation if any. Reconcile with corresponding accounts and S2BS and investigate any differences over RT
- ▶ Understand group’s structure and verify completeness by
  - by inspecting the available information and documents throughout the procedures performed during the review period, by reading the minutes of the general shareholders’ meetings, board of directors and any other committees or boards that are relevant for the management of the undertaking’s activity
  - performing independent research using information publicly available in order to review the list of shareholdings of key management personnel, administrators or any other relevant person to the undertaking and its activity
- ▶ Verification of existence of the “Holdings in related undertakings, including participations” through examination of:
  - the evidence of ownership as well as independent verifications with public information available
  - information/details regarding the acquisition cost against supporting documents, including bank statements
- ▶ Assessment of the reasonableness of the valuation/recoverability of the “Holdings in related undertakings, including participations”:
  - valued at the quoted market price in an active market:
    - Verify compliance with IFRS 13 fair value requirements. Involve specialists/experts (“financial instruments valuation specialists”) as needed, depending on the complexity of the definitions and calculations.  
Obtain supporting evidence from external sources (e.g stock exchange closing price) for the valuation and investigate any difference over RT.
  - valued by application of equity method:

#### **(1) Holdings in insurance and reinsurance undertakings**

- Obtain S2BS as of 30 June 2016 for each holding and check the correct application of the equity method according to SII framework:
  - For Bulgarian companies the S2BS is reviewed as part of this exercise
  - For companies in other member states and groups/sub-groups the reviewer will request the audited S2BS and audit report as at 30 June 2016 for each holding.

#### **(2) Holdings in undertakings other than insurance and reinsurance undertakings**

- Obtain IFRS financial statements as of 30 June 2016 for each holding and check the correct application of the equity method according to SII framework:
  - For each holding representing at least 0.5% from total assets the reviewer will request the audited IFRS financial statements and the audit report as of 30 June 2016 and will review assets and liabilities valuation and propose adjustments as needed to insure S2 framework compliance (for example intangibles are allowed under IFRS but specific compliance criteria is required by S2 framework)

External independent reviewers should perform a verification/assessment of the balance sheet of the holding by either:

- ▶ reviewing the audit reports and assessing the quality of the work performed or
- ▶ performing the procedures consistent to the ones required to be performed at individual level and commensurate to the size and complexity of the holding

For both cases reviewer should ensure that assets and liabilities valuation rules are consistent with the requirements of this methodology (for example reference date for valuation report of property) and propose adjustments as needed.

### B.5.3 Equities

The accounting policy for “Equities” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.
- ▶ Fair value measurement to be applied are in accordance with IFRS 13

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments held by the undertaking (with appropriate details such as rating of the counterparty, etc) and reconcile the respective detail with corresponding accounts and S2BS. Investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received.
- ▶ Select all equity investments with a value equal to or higher than ST and all other equity investments to cover at least 90% from Equities and for the sample:
  - Obtain the evidence from external sources for the valuation of the equity securities investments in accordance with SII framework (e.g. stock exchange closing price, etc) and compare the supporting evidence against the breakdown and other information received from the undertaking
  - Review the rating information against public sources available
  - Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation

### B.5.4 Bonds – Government bonds and Corporate bonds

The accounting policy for “Bonds” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.
- ▶ Fair value measurement to be applied are in accordance with IFRS 13

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments held by the undertaking (with appropriate details such as rating of the counterparty, etc) and reconcile the respective detail with corresponding accounts and S2BS. Investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received.



- ▶ For each Government bonds category and Corporate bonds category select all bonds with a value equal to or higher than ST and all other bonds to cover at least 90% from each category
- ▶ For the sample perform the following procedures:
  - Obtain the evidence from external sources for the valuation of the fixed income securities investments in accordance with SII framework (e.g. Bloomberg/Reuters print-screens with related quotations, etc) and compare the supporting evidence against the breakdown and other information received from the undertaking
  - Review the rating information against public sources available
  - Review any available public information to identify any changes in credit risk (operations such as: extension of maturity, modification of principal and/or interest payments, roll over of principal at maturity into new debt issue, other)
  - Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation.

## B.5.5 Bonds – Structured notes

The accounting policy for “Bonds – Structured notes” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments held by the undertaking (with appropriate details) and reconcile the respective detail with corresponding accounts and S2BS. Investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received.
- ▶ Request the structured notes prospect and other documentation available in order to understand the structured note terms and conditions
- ▶ Obtain the valuation model and evidence for the valuation of the structured notes securities investments in accordance with SII framework and compare the supporting evidence against the breakdown and other information received from the undertaking
- ▶ Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve specialists/experts (“financial instruments valuation specialists”) as needed, depending on the complexity of the calculations. Review any available public information to identify any changes in credit risk of the counterparty and assess if any adjustments are necessary.
- ▶

## B.5.6 Derivatives assets/liabilities

The accounting policy for “Derivative financial instruments” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.

measurement principles applied to financial assets are consistent. In case of financial liabilities adjustments might be needed if the fair value includes changes in own credit standing in subsequent periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance or reinsurance undertaking after initial recognition.

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments held by the undertaking (with appropriate details) and reconcile the respective detail with corresponding accounts and S2BS. Investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request the confirmation regarding the terms and conditions of the derivative financial instruments from the counterparty, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the counterparty with the information from the breakdown received. Investigate any differences over RT.
- ▶ Request the derivative contracts and other documentation available in order to understand the derivative instrument note terms and conditions
- ▶ Obtain the valuation model and the evidence for the valuation of the derivative financial instruments in accordance with SII framework and compare the supporting evidence against the breakdown and other information received from the undertaking.
- ▶ Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve specialists/experts (“financial instruments valuation specialists”) as needed, depending on the complexity of the calculations. Review any available public information to identify any changes in credit risk of the counterparty and assess if any adjustments are necessary.

## **B.5.7 Deposits and other cash equivalents**

The accounting policy for “Deposits and other cash equivalents” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments held by the undertaking (with appropriate details) and reconcile the respective detail with corresponding accounts and S2BS and investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request confirmation letter from financial institutions regarding deposits and other cash equivalents and compare the confirmation letter details against the breakdown received and investigate any differences over RT.
- ▶ Review the valuation of the foreign currencies balances as well as the accrued interest and investigate any differences over RT.
- ▶ Assess the counterparty credit risk for each financial institution and propose adjustments if recoverability issues are encountered.

## **B.6 Assets held for index-linked and unit-linked contracts**

The reviewers are required to perform procedures for each type of the investments as outlined in the section B.5. Investments (other than assets held for index-linked and unit-linked contracts).

Guidance is included for the most usual type of such investments. Instructions will be provided on a case by case basis for other material items existing in the undertaking portfolio not covered by this specific guidance.

## **B.7 Reinsurance receivables/payables, deposits from reinsurers/to cedants (to be read together with section 6)**

The caption comprise of all receivables or payables arising out of reinsurance operations in connection either with reinsurance business ceded or reinsurance business assumed, account settlement transactions, deposits to/from reinsurers, reinsurance deferrals (except the technical provisions related to reinsurance activity which are presented in the reinsurance recoverables caption).

For the procedures to be performed by the reviewer please refer to caption 6 Reinsurance – effectiveness of risk transfer.

## **B.8 Reinsurance recoverables (to be read together with section 6)**

Reinsurance recoverables are defined as the amount of best estimate of liabilities expected to be recovered from reinsurance companies based on recognized reinsurance contracts, i.e. the amount of an insurance company's losses from claims owed to the insurer by the reinsurer.

According to the SII guidelines, the valuation of the reinsurance recoverables refers to the best estimate of the recoverables derived from a reinsurance contract, adjusted in order to take into account timing differences between the timing of the claim and the actual payment of that claim to the company and expected losses due to default of the counterparty. The assumption of when a timing difference is considered material depends on the insurance company.

The reviewer is required to:

- ▶ perform an evaluation the appropriateness of management's methodology, judgments and assumptions used to calculate reinsurance recoveries and whether they are in accordance with the entity's accounting policies and the relevant standards;
- ▶ evaluate the accuracy, completeness and relevance of data on which the estimate is based.

The result from the calculation of the previous section should be adjusted to take account of expected losses due to default of the counterparty (counterparty default adjustment – CDA). That adjustment should be calculated separately and should be based on an assessment of the probability of default of the counterparty, whether this arises from insolvency or dispute and the average loss resulting there from (loss-given-default). For this purpose, the change in cash flows shall not take into account the effect of any risk mitigating technique that mitigates the credit risk of the counterparty, other than risk mitigating techniques based on collateral holdings. The adjustment should be calculated as the expected present value of the change in cash flows underlying the amounts recoverable from that counterparty, resulting from a default of the counterparty at a certain point in time. The CDA should be performed in accordance with the Article 42 of Delegated Act 2015/35; otherwise, when using the simplified calculation in accordance with Article 61 Delegated Act 2015/35.

The reviewers shall perform the following procedures for the review of the reinsurance recoverables:

- ▶ Understand the method that the reinsurance recoverables are calculated.
- ▶ Understand how the timing difference between a recovery and the actual receiving of that recovery is allowed within the valuation of the reinsurance recoverables.

- ▶ If the reinsurance recoverables are calculated on a consistent basis to the contractual boundaries of the underlying insurance contracts?
- ▶ Check that the split of reinsurance recoverables is performed by line of business and by type.
- ▶ Understand the method followed for the adjustment of the reinsurance recoverables for the probability of default of the reinsurer.
- ▶ Any simplifications used when calculating the expected losses due to default of the reinsurance counterparty based on the proportionality principle.
- ▶ Check that the appropriate parameters are used for the counterparty default adjustment.
- ▶ Check that the recovery rate used is equal to 50% unless any historical data exist.
- ▶ Check that when the expected losses due to default is calculated, the recoverable amount outstanding is adjusted to allow for any deposits already made. Check how these deposit arrangements work.
- ▶ Check that when working out the expected credit risk losses from the reinsurer, there are risk mitigation techniques in place to prevent counterparty risk losses included in the technical provision calculation.
- ▶ Check if any of the reinsurance arrangements are collateralized and if so how has this been reflected in the calculations?
- ▶ Any simplifications used when calculating the expected losses due to default of the reinsurance counterparty based on the proportionality principle.

In case of deviation from SII framework is noticed, the reviewer will assess the impact and propose adjustment so that the undertaking complies with the required accounting framework as of 30 June 2016.

The Reviewer is required to:

- ▶ Perform analytical review by comparing the reinsurance recoverables per each type of technical provision (reported claims, premium reserve , etc) and lines of business as at 30 June 2016 and as at 31 December 2015 and investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results.
- ▶ Perform analytical review by comparing the gross technical provisions and reinsurance recoverables as at 30 June 2016 and as at 31 December 2015 and investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results.
- ▶ The reviewer is required to select reinsurance recoverables in order to achieve a coverage of 80% of business lines or type of reinsurance recoverables (e.g unearned premium ceded, reported claims, incurred but not reported claims, etc) and to perform reasonability test and use professional judgment to evaluate the results.
- ▶ The reviewer is required to select a sample in accordance with section 1.5.4 of individual claim amounts from the detail of reported claims reinsurance recoverables as of 30 June 2016 and reconcile values for reinsurer's share in technical provisions based on the information from the reinsurance contracts and the reported claims detail. Differences which remain unreconciled must be adjusted.
- ▶ to perform an assessment of the recoverability of reinsurance assets (e.g. assess any potential indicators suggesting no recoverability of the reinsurance assets recorded: obtain reinsurers credit ratings; obtain correspondence with reinsurers including information regarding disputes or other relevant matters; assess whether delayed payments from the reinsurer exist, if applicable, resulting from inability to pay or from other factors such as disputes with reinsurers).

## **B.9 Insurance receivables**

### **a) Receivables from policyholders**

Insurance receivables include only insurance business written directly by the Undertaking in its own name.

The accounting policy describing receivables from policyholders' recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are relevant in valuation of this item.

The following procedures shall be performed by the reviewer:

- ▶ understanding the accounting policy for the recognition of receivables from policyholders for life and non-life policies and their valuation under SII framework by:
  - Evaluating compliance, verification of application of the fair value, verification of the relevance of the assumptions used for fair value computations and the mathematical accuracy of the fair value computations in accordance with SII framework

In case of deviation from SII framework, the reviewer will assess the impact and propose adjustment so that the undertaking complies with the required accounting framework as of 30 June 2016.

### **Recognition of receivables**

The Reviewer is required to:

- ▶ Obtain the detail of all the receivables from policyholders as at 30 June 2016, at the level of each policy (the detail should include also the ageing (days overdue) related to all the receivables from policyholders as at 30 June 2016 at the level of each policy)
- ▶ Reconcile the total receivables from policyholders from the respective detail with the corresponding accounts and S2BS as at 30 June 2016. Any differences above RT must be investigated. Adjustments should be proposed for unreconciled differences.
- ▶ Obtain all the subsequent cash collections from policyholders related to the receivables as at 30 June 2016 at the level of each policy until 31 August 2016 (including clearance of the suspense accounts for unallocated collections as of 30 June 2016).
- ▶ In order to assess the reliability, quality, sufficiency and relevance of data the reviewer will select a sample of receivables from policyholders as at 30 June 2016 namely: top 10 receivables and 10 random items, from each Line of Business (for the lines of business achieving coverage of minimum 80% from the total receivables from policyholders of the Undertaking, for each of life and non-life segments). For the selected sample:
  - Obtain for these policies the supporting documents for the recorded receivable (the policy for the GWP, any previous collections) and match the information from the supporting documents with the information contained in the details related to receivables from policyholders received from the undertaking, including amount.
  - Verify the accuracy of the computation of the ageing of receivable
  - Check contamination of receivables
  - Match for these policies the subsequent cash collection information from detail obtained with the original bank statements / petty cash receipts.
  - Request for these policies the last unpaid invoices and the last collection document (bank statement / petty cash receipt) in order to validate the overdue days from the ageing detail.
  - Verify the computation of premium reserve and correlate the information for the selected policies with the Technical provisions procedures and details.
  - In case of any differences found between supporting documents and details received or computation differences the reviewer should quantify the impact (including consideration as to whether to extend the sample and/or the procedures to be performed) and determine if any adjustment is needed.
- ▶ Perform analytical review by comparing the balances of receivables from policyholders as at 30 June 2016 and as at 31 December 2015 per lines of business, days past due (DPD) intervals and investigate unexpected or unusual variances that could indicate a potential misstatement.
- ▶ Obtain all the subsequent cancellations related to the receivables as at 30 June 2016 at the level of each policy until 31 August 2016. Adjust the balance of receivables as of 30 June 2016 with the amount of cancelled premiums.

### **Valuation of receivables**

The Reviewer is required to:

- ▶ Obtain management approach and the accounting policy related to provisions (impairment) for receivables from policyholder.

- ▶ Obtain the computation of the allowance for receivables from policyholders at the level of each policy as of 30 June 2016 and reconcile the total allowance from the respective detail received with the corresponding accounts from trial balance as at 30 June 2016.
- ▶ Correlate the computation of allowance for receivables from policyholders with the accounting policy related to the provisioning of receivables from policyholders and investigate any inconsistencies/discrepancies.
- ▶ Perform analytical review by comparing the balances of allowance for receivables from policyholders as at 30 June 2016 and as at 31 December 2015 per lines of business, DPD intervals and investigated unusual or opposite/contradictory variations.
- ▶ Review the historical evidence in respect of the receivable collection and assess the adequacy of the method/policy used by the Undertaking as follows:

**1. For 30 June 2016:**

- Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at **30 June 2016**, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, and 91+DPD, with the cash collected during 1 July 2016 -31 August 2016, matched on each interval. The analysis will be made in both absolute and relative terms.
- For the policies that were due as of 30 June 2016 compute the provision required for all amount not subsequently collected at the level of each policy (until 31 August 2016) ("Provision 1").

**2. For 31 December 2015**

- Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at 31 December 2015, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, 91+DPD, with the cash collected during 1 January 2016 -31 August 2016, matched on each interval. The analysis will be made in both absolute and relative terms and calculate collection ratio per each bucket.
- For each DPD interval as at 30 June 2016 apply the collection ratio per each bucket and compute the provision required based on the historical analysis ("Provision 2").

Compare results under point 1 and point 2 above and conclude on provision required as follows:

- If Provision 1 > Provision 2 apply Provision 2
- If Provision 1 < Provision 2 apply Provision 1

Compare the selected result with provision recorded by the Undertaking and propose adjustment if any difference over RT.

The reviewer should exercise professional judgment to determine whether other assumptions are relevant for the computation of the provision and also correlate the results with other accounts (e.g. technical provisions).

The reviewer is required to:

- ▶ obtain from the undertaking the detail of future premiums included in the receivables from policyholders that fall within the contract boundaries as defined in Article 18 of the Delegated Regulation (i.e. premiums paid in instalments and due in the future, annual premiums on multi-year contracts, bound but not incepted business).
- ▶ to assess the correctness of the detail through:
  - understanding the terms and conditions attached to the policies (for the lines of business achieving coverage of minimum 80% from the total receivables from policyholders of the undertaking).
  - Review correlation of the detail with the future premiums included in the computation of the technical provisions as described in section A. Technical provisions - Recognition and contract boundaries; If any discrepancies identified assess need for adjustment.

## b) Receivables from recourses

The accounting policy describing receivables from recourses recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and TEIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are relevant in valuation of this item.

The Reviewer is required to:

- ▶ understand the accounting policy for the recognition of receivables from recourses and their valuation under SII framework by:
  - Evaluating compliance, verification of application of the fair value, verification of the relevance of the assumptions used for fair value computations and the mathematical accuracy of the fair value computations in accordance with Solvency II framework
- ▶ In case of deviation from framework, evaluating the adjustment needed so that the undertaking complies with the required accounting framework as of 30 June 2016.

The Reviewer is required to:

- ▶ Obtain the detail of all the receivables from recourses as at 30 June 2016 and as at 31 December 2015, at the level of each recourse (item) and reconcile the total receivables from recourses from the respective details with the corresponding accounts from trial balance as at 30 June 2016 and 31 December 2015.
- ▶ Perform analytical review by comparing the balances of receivables from recourses as at 30 June 2016 and as at 31 December 2015 per lines of business, DPD intervals and investigated unusual, opposite/contradictory variations.

### Sample

In order to assess the reliability, quality, sufficiency and relevance of data the reviewer will select a sample of receivables from recourses as at 30 June 2016 namely: top 5 recourses from each Line of Business (for the lines of business achieving coverage of minimum 80% from the total receivables from recourses).

For the selected sample, the Reviewer should at minimum:

- ▶ Obtain for these recourses the supporting documents for the recorded receivable and match the information from the supporting documents with the information contained in the details related to item, including amount.
- ▶ Verify the accuracy of the computation of the ageing of receivable and investigate any unusual discrepancies
- ▶ In case of any differences found between supporting documents and details received or computation differences the reviewer should quantify the impact (including consideration as to whether to extent the sample and/or the procedures to be performed) and determine if any adjustment is needed

### Valuation of receivables

The Reviewer is required to:

- ▶ Obtain management approach and the accounting policy related to allowance (impairment) for receivables from recourses.
- ▶ Obtain the computation of the allowance for receivables from recourses at the level of each policy as of 30 June 2016 and reconcile the total allowance from the respective detail received with the corresponding accounts from trial balance as at 30 June 2016.

- ▶ Correlate the computation of allowance for receivables from recourses as of 30 June 2016 with the accounting policy related to the provisioning of receivables from recourses and investigate any inconsistencies/discrepancies.

Review the historical evidence where available in respect of the receivable from recourses collection and assess the adequacy of the method use by the undertaking:

- ▶ Obtain the detail with all the cash collections from the period 1 January 2016 to 30 August 2016 for the recourses related to the receivables in balance as of 31 December 2015 at the level of each recourses/counterparty. Select a sample of 5 random items from each Line of Business (for the lines of business achieving coverage of minimum 80% from the total receivables from recourses) presented in the collections detail and compare it with the bank statement in order to review the accuracy of the detail received.
- ▶ Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at 31 December 2015, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, 90-180 DPD and 181+DPD, with the cash collected during 1 January 2016 - 31 August 2016, matched on each interval. The analysis will be made in relative terms by computing the collection ratios per DPD buckets.
- ▶ For the receivables from recourses as at 30 June 2016 DPD apply the collection ratios for each DPD bucket and compare with the provision booked by the Undertaking as of 30 June 2016. The reviewer should assess if any adjustment is required.

The reviewer should exercise professional judgment to determine whether other assumptions are relevant for the computation of the provision.

Analysis should also be performed using segmentations the reviewer considers relevant due to different collection patterns: recourses from individuals, recourses from companies, external recourses from green card or recourse from insurance companies.

In cases where the recourse is under litigation the reviewer should verify whether in the computation of the allowance the estimated future litigation cost were appropriately taken in consideration by the undertaking.

In cases where the period of time for collecting the recourses is higher than 1 year the reviewer should verify whether the future cash flows were appropriately discounted by the undertaking.

The reviewer should evaluate whether in cases where financial and economic information available on the market was incorporated in the computation of the allowance for receivables from recourses (eg information regarding counterparties financial difficulties).

## **B.10 Loans and mortgages**

The accounting policy describing loans and mortgages recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are relevant in valuation of this item.

The reviewer is required to:

- ▶ Obtain the detailed list of loans granted by the Undertaking as at 30 June 2016 and will reconcile the outstanding balances with the trial balance.
- ▶ Obtain a schedule of changes/ movement in loans, detailing withdrawals of new loans, reimbursements of loans and interest payments during the period 1 January 2016 – 30 June 2016, understand the nature of any fluctuations and ensure they are reasonable when compared to new or existing loan agreements.



- ▶ Assess the collectability of loans restructured/rescheduled, loans with extended maturities or loans with features outside the market practice. Specifically assess information about counterparty credit risk, based on publicly available information and/or internal credit analysis (at minimum the financial statements information) performed by the undertaking.
- ▶ Will review for reasonableness the calculations of accrued interest.
- ▶ Will send confirmation letters for entire loans exposure and review responses documentation as to amounts owed, terms, collateral, restrictions and the entity's compliance with the provisions of the agreements.
- ▶ Assess the fair value computation performed by the undertaking (i.e. review assumptions used for discounting future cash flows)

If loans are granted to related parties please consider also the procedures from the related parties section.

## **B.11 Cash and cash equivalents**

The accounting policy for “Cash and cash equivalents” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent.

The following procedures shall be performed by the reviewer:

- ▶ Request the investment policy statement (“IPS”) approved by the undertaking and its subsequent amendments valid at the reference date
- ▶ Request a breakdown containing all the investments and cash and cash equivalents held by the undertaking and reconcile the respective detail with corresponding accounts and S2BS and investigate differences over RT, if any.
- ▶ Compare the investments held by the undertaking against its IPS and investigate any deviations from IPS
- ▶ Request confirmation letter from financial institutions regarding current accounts and other cash equivalents (balances, liens and restricted cash) and compare the confirmation letter details against the breakdown received and investigate any differences over RT.
- ▶ Verify the availability of the cash and cash equivalents using the public available sources (for cash used as liens or other restricted cash)
- ▶ Review the valuation of the foreign currencies balances as well as the accrued interest and investigate any differences over RT.
- ▶ Request the supporting documents for the inventory procedures for any other cash item held by the undertaking (other than current accounts and other cash equivalents held at financial institutions) and compare against the breakdown. Investigate any differences over RT.
- ▶ Assess the counterparty credit risk for each financial institution and propose adjustments if recoverability issues are encountered

## **B.12 Other assets / receivables (trade, not insurance)**

The accounting policy describing other assets and receivables recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are relevant in valuation of this item.

The reviewer shall obtain an understanding of the items recorded in this caption and will assess their recoverability.

## B.13 Contingent liabilities

The reviewer will assess if the contingent liabilities are presented in accordance with Article 75 of Directive 2009/138/EC and the Article 11 – Delegated Regulation which state that:

- ▶ Insurance and reinsurance undertakings shall recognize as liabilities contingent liabilities, as defined in international accounting standards IAS 37, as endorsed by the Commission in accordance with Regulation (EC) No 1606/2002, that are material.
- ▶ Contingent liabilities are material if information about the current or potential size or nature of that liability could influence the decision-making or judgment of the intended user of that information
- ▶ In accordance with Chapter 2 Delegated Regulation Art 14, insurance and reinsurance undertakings shall value contingent liabilities, recognized in accordance with Art 11, based on the expected present value of future cash-flows required to settle the contingent liability over the lifetime of that contingent liability, using the basic risk-free interest rate term structure.

In order to identify contingent liabilities that have to be recognized as liabilities, the reviewer will perform the following procedures:

- a) Obtain the list of litigations in which the undertaking is defendant as at 30 June 2016 including an assessment of the outcome and will inquire the management about the outcome of the litigations in which there may be a potential liability for the Undertaking.
- b) Request confirmation letters from all external lawyers who collaborated with the undertaking during 2015 and 2016 until the date of review
- c) Obtain and review the minutes of the meetings for General Shareholders' Meetings, Board of Directors and any other relevant committee of the Undertaking (i.e. Audit Committee, Executive Committee, etc.) during 2015 and 2016 until the date of review.
- d) Obtain and review correspondence with supervisory or fiscal authorities during 2015 and 2016 until 31 July 2016
- e) Obtain the list of contracts and agreements and using professional judgment select for review contracts which could prone to potential contingent liabilities.

## B.14 Provisions other than technical provisions

The accounting policy describing other assets and receivables recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, IAS 37 has consistent measurement principles for Provisions.

The reviewer shall obtain an understanding of the items recorded in this caption and will assess their valuation.

Procedures performed for B.13 Contingent liabilities are also relevant for this caption.

## B.15 Debts owed to credit institutions

The accounting policy for "Debts owed to credit institutions" recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent. In case of financial liabilities adjustments might be needed compared to IFRS, if the fair value includes changes in own credit standing in subsequent

periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance or reinsurance undertaking after initial recognition.

The following procedures shall be performed by the reviewer:

- ▶ Request a breakdown containing all the debts owed to credit institutions and reconcile the respective detail with corresponding accounts and S2BS and investigate differences over RT, if any.
- ▶ Request confirmation letter from all counterparty financial institutions and compare the confirmation letter details against the breakdown received. Investigate any differences over RT.
- ▶ Request the valuation of the debts owed to credit institutions as well as the agreements and any other supporting documents in order to understand the terms and conditions of the respective transactions
- ▶ Obtain the evidence for the valuation of the debts owed to credit institutions in accordance with SII framework and compare the supporting evidence against the breakdown and other information received from the undertaking.
- ▶ Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve specialists/experts as needed, depending on the complexity of the calculations.

Important note:

The reviewer shall perform confirmation procedures of balances as of 31 December 2015 and 30 June 2016 to all financial institutions with which the undertaking had relationship during the period 31 December 2015 – 30 June 2016.

## **B.16 Financial liabilities other than debts owed to credit institutions**

The accounting policy for “financial liabilities other than debts owed to credit institutions” recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113 – IAS 39, which establishes principles for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items, fair value measurement principles applied to financial assets are consistent. In case of financial liabilities adjustments might be needed compared to IFRS, if the fair value includes changes in own credit standing in subsequent periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance or reinsurance undertaking after initial recognition.

The following procedures shall be performed by the reviewer:

- ▶ Request a breakdown containing all the financial liabilities other than debts owed to credit institutions and reconcile the respective detail with corresponding accounts and S2BS and investigate differences over RT, if any
- ▶ Request confirmation letter from all counterparties (related parties or other parties with which the undertaking has financial liabilities) and compare the confirmation letter details against the breakdown received. Investigate any differences over RT
- ▶ Request the valuation of the financial liabilities other than debts owed to credit institutions as well as the agreements and any other supporting documents in order to understand the terms and conditions of the respective transactions
- ▶ Obtain the evidence for the valuation of the financial liabilities other than debts owed to credit institutions in accordance with SII framework and compare the supporting evidence against the breakdown and other information received from the undertaking.
- ▶ Assess the reasonableness of the respective valuation, including the assumptions used, against the SII requirements for this type of investments. Involve specialists/experts as needed, depending on the complexity of the calculations.

## B.17 Intermediaries payables

The accounting policy describing intermediaries' payables recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are relevant in valuation of this item.

The following procedures shall be performed:

- ▶ Obtain the breakdown of payables to intermediaries (broker/agents) as of 30 June 2016 and reconcile the respective detail with the corresponding accounts from trial balance as at 30 June 2016. Investigate differences which are above RT and propose adjustment if needed.
- ▶ Review undertaking's reconciliation with intermediaries procedure as of 30 June 2016 and investigate unreconciled items above RT.
- ▶ Obtain the detail with all the payments from the period 1 July 2016 to 31 July 2016 related to the payables to intermediaries in balance as of 30 June 2016 at the level of each counterparty. Investigate payments which are higher than the liabilities presented in the breakdown of payables to intermediaries as of 30 June 2016.
- ▶ Perform an understanding of the computation amounts payable to intermediary. Depending on the type of computation manual/automatic, number of the staff involved, complexity of the formulas in the commissions schemes used on each line of business, reviewer should test the accuracy of the computations.
- ▶ Performing analytical review on the balances with intermediaries as of 30 June 2016 and 31 December 2015 per counterparty and investigate unusual variations. The reviewer should use professional judgment to evaluate the results.
- ▶ If the Undertaking policy is to settle the commissions liabilities when the premium is cashed the reviewer should perform a reasonability analysis of commissions payable to intermediaries which are not due as of 30 June 2016 based on the average commission ratios and the respective premium reserve as of 30 June 2016 by line of business. The analysis should be conducted in correlation also with the average commission ratios used.

## B.18 Payables (trade, not insurance) and any other liabilities

Payables and other liabilities comprise of liabilities mainly related to: employees payroll, social security funds, payables in connections with properties, trade payables to suppliers (except those related to insurance/reinsurance activity and those related to related parties), different types of taxes (except deferred tax), other creditors and accruals.

The accounting policy describing other liabilities recognition and valuation shall be obtained and compared with SII framework requirements, respectively:

- ▶ According to the DA 2015/35 and EIOPA-BoS-15/113, Fair value principles presented in IFRS 13 are relevant in valuation of this item.

The reviewer is required to:

- ▶ Obtain the breakdown of payables and of other liabilities as of 30 June 2016 and reconcile it with the respective accounts and S2BS. Investigate differences which are above RT and propose adjustment if needed.
- ▶ Perform analytical review for the payables and for other liabilities accounts by comparing balances as of 30 June 2016 and 31 December 2015 and identify variations which could signal that the undertaking has limited financial procedures for interim reporting and not all liabilities are computed and recorded as of 30 June 2016.
- ▶ Depending on the materiality of the amounts presented in payables and in other liabilities the reviewer should select liabilities representing minimum 80% of each balances as of 30 June 2016 and should verify the completeness of the liabilities by performing a search for unrecorded liabilities at 30 June 2016 by selecting top 20 subsequent related disbursements in July 2016.

- ▶ Perform a review of the trade payables breakdown and search for unusual items (e.g., significant debit balances in the trade payables sub ledger or other unexpected amounts) to verify proper classification and valuation.
- ▶ For tax liability accounts should review the computations of significant liabilities (income, VAT, withholding, local taxes representing at least 50% of the balance) in balance as at 30 June 2016 and reconcile the computations with the respective accounts. Review the latest fiscal authorities control report and assess if there are any implications on the current tax liabilities. Review whether the undertaking was subject to fees, penalties or rectification of previous tax declaration and assess if there are any implications on the current tax liabilities. Involve tax specialists depending on the complexity of tax items.
- ▶ For payroll related liabilities the reviewer should obtain the payroll register as at 30 June 2016 and reconcile it with the respective accounts in the trial balance. Obtain payroll payments in July 2016 and compare it to the payroll liabilities recorded in the trial balance as at 30 June 2016.
- ▶ For any other liabilities not captured above the reviewer should refer to Article 75 of Directive 2009/138/EC as follows: liabilities should be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm's length transaction.

## **C. Assets and liabilities including technical provisions for special cases as defined in 1.5.2**

### **1. Undertakings that will not be in accordance with SII requirements as at 30.06.2016**

As already described, the reviewers of the insurance/reinsurance companies that will not be in accordance with SII requirements as at 30.06.2016, will report SCR and MCR as at 30.06.2016 and will be required, unless the solvency margin is already negative at 31.12.2015, to provide an Adjusted SI Balance Sheet and a Solvency margin as at 31.12.2015.

Taking into account that the reviewers of these undertakings have already performed the procedures requested for the S2BS as at 30 June 2016, they will only perform limited additional procedures on the Balance sheet as at 31 December 2015 to obtain adjustments, as follows:

- ▶ Perform analytical review of the evolution of balances between 31 December 2015 and 30 June 2016, investigate differences more than 5% to understand the reasoning behind. Decide if any of the amounts explaining the differences above should have been recorded already as at 31 December 2015 (eg: a claim recorded during 2016 but already notified and not recorded as at 31 December 2015 or an adjustment of value recorded in 2016 but reflecting conditions existing as at 31 December 2015).
- ▶ Starting from the adjustments already identified during the procedures performed on the S2BS as at 30 June 2016, perform roll back to 31 December 2015, as applicable.
- ▶ Discuss with management accounting policies applied as at 31 December 2015, compare with accounting legislation in force, identify gaps and assess financial impact

### **2. Undertakings exempted from the scope of Solvency II**

As described, the undertakings that will fall under the scope of article 4 of the S2 Directive (i.e. exempt from the scope of Solvency II) will apply Solvency I in regards to the calculation of solvency margin and to holding eligible assets to cover technical provisions.

The following procedures shall be requested from reviewers:

- ▶ Obtain and review accounting policies applied as at 30 June 2016, compare with accounting legislation in force, identify gaps and assess financial impact
- ▶ For all assets and liabilities other than technical provisions, perform similar procedures with the ones described for S2BS with the following observations:
  - Items held at cost

- Request breakdown as at 30 June 2016 and 31 December 2015 and reconcile with corresponding accounts and Solvency I Balance-sheet; investigate any differences over RT
- Perform selection in accordance with the specific instructions from corresponding sections from assets and liabilities side
- For the sample selected, request supporting documents and other required information and compare it against the breakdown received; investigate any differences over RT
- Request the impairment test performed by the undertaking for each item held on a basis other than fair value and reconcile the details with the corresponding accounts and Solvency I Balance-sheet; investigate any differences over RT
- Review the assumptions used and the computation performed in case of each impairment test and assess the reasonability of these assumptions and estimations performed
- Goodwill – shall be tested for impairment
- Intangible assets
  - Request breakdown as at 30 June 2016 and 31 December 2015 and reconcile with corresponding accounts and Solvency I Balance-sheet; investigate any differences over RT
  - Perform selection in accordance with the instructions in section 1.5.4
  - For the selected sample, request supporting documents and other required information and compare it against the breakdown received; investigate any differences over RT
  - Request the impairment test performed by the undertaking for the intangible items (per class/category) and reconcile the details with the corresponding accounts and Solvency I Balance-Sheet; investigate any differences over RT
  - Review the assumptions used in case of each impairment test and assess the reasonability of these assumptions and estimations performed
- Deferred acquisition costs
  - Request breakdown as at 30 June 2016 and 31 December 2015 and reconcile with corresponding accounts and Solvency I Balance-sheet; investigate any differences over RT
  - Request supporting documents and other information in order to assess the reasonability and the recoverability of the deferred acquisition cost and propose adjustment as needed
- For technical provisions – instructions will be provided on a case by case basis.

## D. Own Funds

In accordance to Article 87 of Directive 2009/138/EC, Own funds shall comprise the sum of basic own funds and ancillary own funds. Basic own funds are defined as the assets minus the liabilities while ancillary own funds are capital instruments that can be called up to absorb losses, specifically including unpaid share capital, letters of credit, guarantees and any other legally binding commitment. Own-fund items shall be classified into three tiers. The classification of those items shall depend upon whether they are basic own fund or ancillary own-fund. Own funds could be split between eligible and non - eligible.

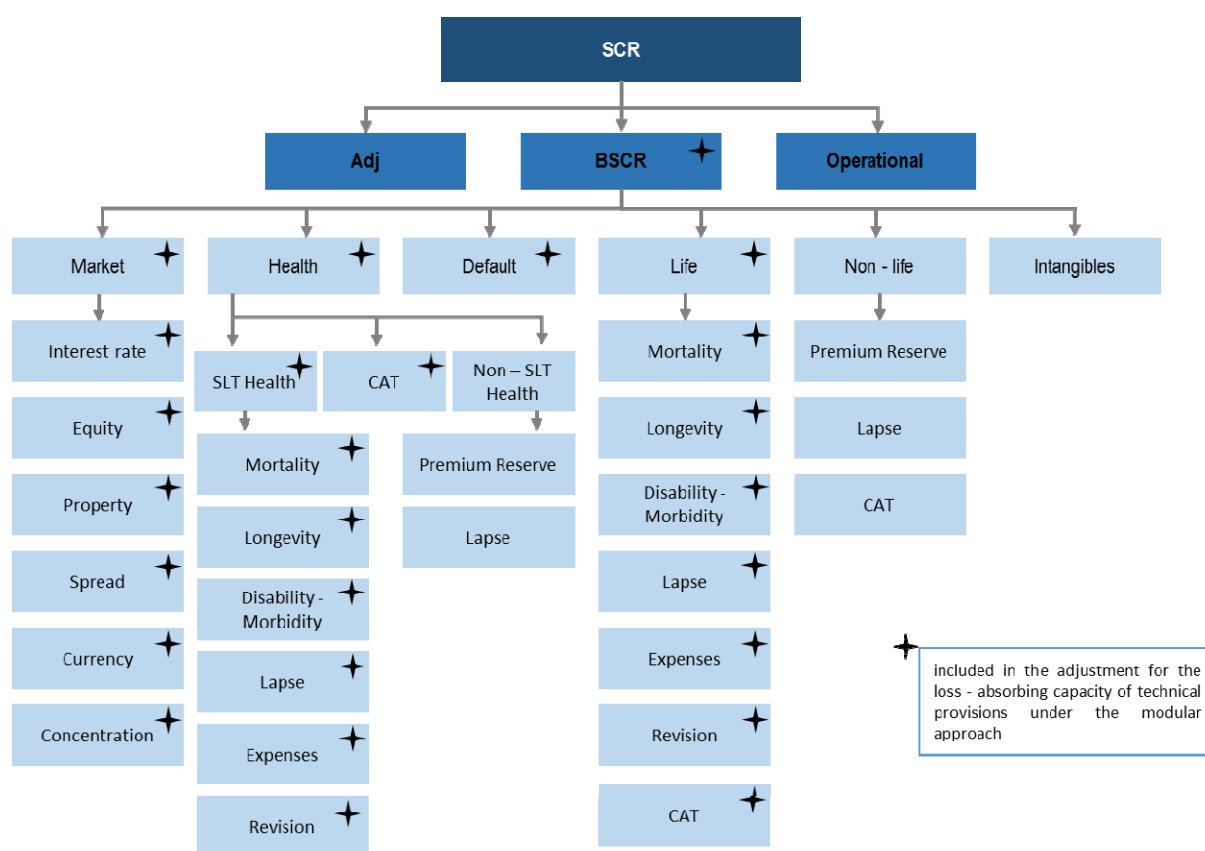
The reviewer shall perform the following procedures:

- ▶ Verify that, as specified in the Article 88 of the Directive 2009/138/EC, the Basic Own Funds consist of
  - The excess of assets over liabilities, which shall be reduced by the amount of own shares held by the insurance or reinsurance undertaking, and
  - subordinated liabilities
- ▶ Verify that in case that the (re)insurance company holds Ancillary Own Funds, as specified in the Article 90 of the Directive 2009/138/EC, a prior supervisory approval is required.
- ▶ Verify that the Ancillary Own Funds consist of
  - Unpaid share capital or initial fund that has not been called up.
  - Letters of credit and guarantees.
  - Any other legally binding commitments received by insurance and reinsurance companies, other than Basic own funds.

- ▶ Assess the accuracy of Tiering by verifying that:
  - The classification into Tiers is consistent with Articles of 69, 71 - 78 of the Delegated Act 2015/35 and 93 - 94 of Directive 2009/118/EC.
- ▶ With regards to the SCR, verify that:
  - The eligible amount of Tier 1 items shall be at least one half of the SCR.
  - The eligible amount of Tier 3 items shall be less than 15% of the SCR.
  - The eligible amount of own funds to cover the SCR shall be equal to the sum of the amount of Tier 1, the eligible amount of Tier 2 and the eligible amount of Tier 3.
  - The sum of the eligible amounts of Tier 2 and Tier 3 items shall not exceed 50% of the SCR.
- ▶ With regards to the MCR, verify that:
  - The eligible amount of Tier 1 items shall be at least 80% of the MCR.
  - The eligible amounts of Tier 2 items shall not exceed 20% of the MCR.
  - The eligible amount of basic own funds to cover the MCR shall be equal to the sum of the amount of Tier 1 and the eligible amount of basic own-fund items classified in Tier 2.
- ▶ In case that a company applies the transitional measures on Own Funds, the reviewer shall review the documentation and assess the re-allocation of Own Funds into tiers, in accordance to Article 308b of the Directive 2009/138/EC.
  - The reviewers should also verify for correctness and compliance with the regulatory requirements regarding all calculations with regards to SCR and MCR providing the proper recalculations when deemed necessary.
  - They are also expected to form a view about the appropriateness of the IT tools used for the calculation of capital requirements

**Output:** Template R6

## 5. Capital Requirements Compliance



### 5.1 Basic Solvency Capital Requirements

The Basic Solvency Capital Requirements (BSCR) is the SCR before any adjustment, combining capital requirements for six major risk categories which follow in the next sections. The reviewer shall:

- ▶ Verify that the appropriate correlation matrix has been used for the aggregation of the risk sub-modules.
- ▶ Verify for correctness and compliance with the regulatory requirements providing the proper recalculations when deemed necessary.
- ▶ Form a view about the appropriateness of the IT tools used for the calculation of capital requirements

#### 5.1.1 Market Risk

According to the Articles 164 – 188 of Delegated Act 2015/35 the Market risk consists of the following six market risk sub-modules:

- ▶ Interest Rate
- ▶ Spread
- ▶ Equity
- ▶ Property



- ▶ Currency
- ▶ Concentration

The reviewer shall verify that the appropriate correlation matrix has been used for the aggregation of the market risk sub-modules.

### **5.1.1.1 Interest Rate Risk Sub-module**

Interest rate risk exists for all assets and liabilities which are sensitive to changes in the term structure of interest rates or interest rate volatility, whether valued by mark-to-model or mark-to-market techniques. The reviewer shall:

- ▶ Identify and reconcile the exposures included in the (re)insurance company's portfolio that are sensitive to changes in the term structure of interest rates with the SII BS.
- ▶ Verify that the (re)insurance company for the assets other than the reinsurance recoverables valuation has used the risk free yield curves as of the reporting period without applying a volatility adjustment or a matching adjustment.
- ▶ Verify that the method used for the assets revaluation is appropriate.
- ▶ Verify that the appropriate risk free yield curve used is in line with the currency that the (re)insurance portfolio's assets have been denominated.

### **5.1.1.2 Spread Risk Sub-module**

Spread risk results from the sensitivity of the value of assets, liabilities and financial instruments to changes in the level or in the volatility of credit spreads over the risk-free interest rate term structure. The reviewer shall:

- ▶ Identify and reconcile the exposures included in the (re)insurance company's portfolio that are sensitive to changes in the level or in the volatility of credit spreads over the risk-free interest rate term structure with the SII BS.
- ▶ Verify the correctness of the applicable asset's modified duration.
- ▶ Verify the application of the appropriate risk factor.

### **5.1.1.3 Equity Risk Sub-module**

Equity risk arises from the level or volatility of market prices for equities. Exposure to equity risk refers to all assets and liabilities whose value is sensitive to changes in equity prices. The reviewer shall:

- ▶ Identify and reconcile the exposures included in the (re)insurance company's portfolio whose value is sensitive to changes in equity prices.
- ▶ Assess the appropriateness of the type I and type II exposures.
- ▶ Verify the parameters used for the equity risk calculation.

#### **5.1.1.4 Property Risk Sub-module**

Property risk arises as a result of sensitivity of assets, liabilities and financial investments to the level or volatility of market prices of property. The reviewer shall:

- ▶ Identify and reconcile the exposures included in the (re)insurance company's portfolio whose value depends on the volatility of market prices of property with the SII BS.
- ▶ Verify the parameter used for the property risk calculation.

#### **5.1.1.5 Currency Risk Sub-module**

Currency risk arises from changes in the level or volatility of currency exchange rates and affects the assets and liabilities denominated in a currency other than the domestic. The reviewer shall:

- ▶ Identify the assets and liabilities denominated in a currency other than the domestic.
- ▶ Verify the parameters used for the currency risk calculation focusing on the currencies pegged to Euro.

#### **5.1.1.6 Concentration Risk Sub-module**

The scope of the concentration risk sub-module extends to assets considered in the equity, spread risk and property risk sub-modules, and excludes assets covered by the counterparty default risk module in order to avoid any overlap between both elements of the standard calculation of the SCR.

The reviewer shall:

- ▶ Identify the exposures that should be included in the concentration risk and to be reconciled with the respective accounts in the SII BS.
- ▶ Verify the excess exposures and the risk factors for the concentration risk calculation.
- ▶ Verify that the risk capital of the appropriate exposures has been set to zero.

### **5.1.2 Counterparty default risk**

The counterparty default risk module shall be obtained according to the section 6 of Delegated Act 2015/35, which establishes the definition, the formula for the calculation of the counterparty default risk and the approved simplifications.

The counterparty default risk module reflects possible losses due to unexpected default of counterparties and debtors of the companies over the forthcoming twelve months.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented that the SCR for counterparty default risk has been calculated for all balance sheet items to which this risk applies, including the determination of the risk mitigating effect based on Article 196 of the Delegated Act 2015/35.
- ▶ Verification that the company has established and documented that the differentiation into Type 1 and Type 2 exposures has been made in accordance with the Delegated Act 2015/35, as well as that the company has clearly documented the reconciliation to the relevant balance sheet items.
- ▶ Verification of whether the company has performed an ageing analysis.
- ▶ Performance of reconciliation between the ageing analysis and the SII BS (Type 2).
- ▶ Review of the underlying methodology regarding the netting down of the receivables.
- ▶ Description of which assets are included under Type 1 and Type 2 exposures and justification of these items with the economic balance sheet.
- ▶ Justification that the company has established and documented that the exposure to each counterparty has been identified, as well as that multiple exposures to the same counterparty are considered as one single name exposure, according to Article 190 of Delegated Act 2015/35.
- ▶ Justification that mortgage loans in the balance sheet have been analyzed to verify that the portfolio meets the characteristics of Article 191 of Delegated Act 2015/35, i.e. that the capital requirement for mortgage loan shall be calculated under this module.
- ▶ Identification of key internal controls in the whole process of calculating the counterparty default risk.
- ▶ Regarding Type 1 exposures, request of a description of each counterparty regarding the determination of the loss given default, which shall include the calculation of the risk mitigation effect, the best estimate of the recoverables, as well as the value of the collateral.
- ▶ Regarding Type 2 exposures, request of a description of each counterparty regarding the probability of default based on the credit assessment by a nominated ECAI and with special attention when such a credit assessment is not available.
- ▶ Review of the description of the risk mitigation techniques that may be in force.
- ▶ Verification of whether the second best rating is considered in the calculation.

### 5.1.3 Non-Life / Health NSLT Underwriting Risk

Non-life and Health NSLT underwriting risk is the risk arising from Non-Life / Health NSLT insurance obligations, in relation to the perils covered and the processes used in the conduct of business. Non-life / Health NSLT underwriting risk also includes the risk resulting from uncertainty included in assumptions about exercise of policyholder options like renewal or termination options.

The Non-Life / Health NSLT underwriting risk module takes account of the uncertainty in the results of companies related to existing (re)insurance obligations as well as to the new business expected to be written over the following 12 months. The reviewer shall:

- ▶ Verify that the appropriate correlation matrix is used for the aggregation of the Non-Life / Health NSLT Underwriting risk.

According to the Articles 114 – 135 and 144 - 163 of Delegated Act 2015/35 the Non-Life risk and Health NSLT risks consist of the following three risk sub-modules:

- ▶ Premium and Reserve Risk
- ▶ Lapse Risk
- ▶ CAT Risk

### **5.1.3.1 Premium and Reserve Risk Sub-module**

Premium risk relates to the uncertainty about the volume of business to be written and the sufficiency of the premium rates at which it will be written. Reserve risk relates to the uncertainty about the amount and timing of claim settlement for existing liabilities. The reviewer shall:

- ▶ Verify that for the Premium and Reserve risk calculation the direct business lines of business have been aggregated with the respective indirect proportional business.
- ▶ Verify that the non-proportional indirect business has been allocated to the three relevant lines of business in an appropriate way.
- ▶ Assess the appropriateness of the premium volume measures.
- ▶ Verify that the volume measures for the reserve risk calculation is the net of reinsurance BEL.
- ▶ Verify that the (re)insurance company uses the correct standard deviations for both Premium Risk and Reserve Risk.
- ▶ Verify the need for the non-proportional adjustment factor application taking into account the characteristics of the (re)insurance company's reinsurance structure.
- ▶ Verify that the Geographical diversification factor has been calculated appropriately.
- ▶ Verify that the appropriate correlation matrix has been used by the (re)insurance company.

### **5.1.3.2 Lapse Risk Sub-module**

Lapse risk relates to the risk that future profit already taken into account does not materialize. The reviewer shall:

- ▶ Verify the existence of multi-year contracts in order the lapse risk to be applicable.
- ▶ Verify that the lapse risk has been applied on the (re)insurance company's profitable business.
- ▶ Verify that the discontinuance of 40% of the insurance policies for which discontinuance would result in an increase of technical provisions (excluding risk margin).
- ▶ Verify that for inward reinsurance a decrease of 40% of the number of insurance or reinsurance contracts underwritten used in the calculation of technical provisions.

### **5.1.3.3 Non-Life CAT Risk Sub-module**

CAT risk relates to catastrophe risk which is defined as the risk of loss, or of adverse change in the value of

insurance liabilities, resulting from significant uncertainty of pricing and provisioning assumptions related to extreme or exceptional events. CAT risks stem from extreme or irregular events that are not sufficiently captured by the capital requirements for premium and reserve risk. CAT risk consists of the following risk sub-modules:

- ▶ Natural Catastrophe
- ▶ Non-Proportional property reinsurance
- ▶ Man-made CAT
- ▶ Other Non-Life CAT

The reviewer shall:

- ▶ Verify that the (re)insurer has established and documented that the SCR for non-life catastrophe risk has been calculated appropriately.
- ▶ Verify that the (re)insurer has established and that there is visible evidence that the input for the calculation has been reconciled to the policy and/or claims sub ledger systems and that differences have been explained and resolved.
- ▶ Verify that the (re)insurer has established and documented that the outcome of the calculation has been assessed for reasonableness by comparing it by the outcome for previous periods.
- ▶ Verify that the reinsurance mitigation is applied appropriately.

#### **5.1.3.4 Health CAT Risk**

The health catastrophe risk capital requirement covers the risk of loss, or of adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and provisioning assumptions related to outbreaks of major epidemics, as well as the unusual accumulation of risks under such extreme circumstances. The standardized scenarios for health catastrophes considered in the Quantitative Assessment are:

- ▶ Mass Accident
- ▶ Concentration Scenario
- ▶ Pandemic Scenario

The reviewer shall:

- ▶ Verify that the insurer has established and documented that the SCR for health catastrophe risk has been calculated appropriately.
- ▶ Verify that the insurer has established and documented that there is visible evidence that the input for the calculation has been reconciled to the policy and/or claims sub ledger systems and that discrepancies have been explained and resolved.
- ▶ Verify that the reinsurance mitigation is applied appropriately.

#### **5.1.4 Life / Health SLT Underwriting Risk**

The principles governing life and health SLT underwriting risk module shall be obtained according to the Articles 136 – 143, 151 - 163 of Delegated Act 2015/35, which establish the definitions, the formulas of calculation, the respective correlation matrix and the approved simplifications.

The following risk sub – modules are included in the life underwriting risk:

- Mortality risk sub-module
- Longevity risk sub-module
- Disability – morbidity risk sub – module
- Lapse risk sub – module
- Revision risk sub – module
- Life catastrophe risk sub - module

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented which sub - modules are considered applicable.
- ▶ Justification that the company has established and documented that the SCR for life underwriting risk has been correctly calculated based on the correct correlation matrix and calculation principles as described in the Delegated Act 2015/35.
- ▶ Justification that the company has established and documented that an assessment has been made in order to ensure that outcome of the SCR calculation is valid.
- ▶ Justification that the company has established and documented that the criteria for simplification have been met where simplified formulas are applied for one or several sub-modules.
- ▶ Identification of key internal controls in the whole process of calculating life underwriting risk.

#### **5.1.4.1 Mortality risk**

Mortality risk is the risk of loss, or of adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where an increase in the mortality rate leads to an increase in the value of insurance liabilities.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented which (re)insurance policies are subject to mortality risk.
- ▶ Justification that the company has established and documented that the life mortality risk sub-module has been calculated for all (re)insurance policies subject to the life mortality risk.
- ▶ Justification that the application of mortality scenario shock is consistent with the Delegated Act 2015/35.
- ▶ A statement exists that the “zero” floor is applied when the “natural” hedge per homogenous risk group is used in determining the mortality capital requirement in case the company provides benefits both in case of death and survival. If the “zero floor” is not applied, an assessment exists regarding the materiality impact of not applying it.
- ▶ Verification that the following requirements are met when using simplified methods:
  1. The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.

2. ☐The standard calculation of the mortality risk sub-module is an undue burden for the company.

- ▶ Verification that the correct formula of simplification has been used based on Delegated Act 2015/35.

#### 5.1.4.2 Longevity risk

Longevity risk is associated with the risk of loss, or of adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where a decrease in the mortality rate leads to an increase in the value of insurance liabilities.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented which (re)insurance policies are subject to longevity risk.
- ▶ Justification that the company has established and documented that the longevity risk sub-module has been calculated for all (re)insurance policies subject to longevity risk.
- ▶ Justification that the application of longevity scenario shock is consistent with the Delegated Act 2015/35.
- ▶ A statement exists that the “zero” floor is applied when the “natural” hedge per homogenous risk group is used in determining the longevity capital requirement in case the company provides benefits both in case of death and survival. If the “zero floor” is not applied, an assessment exists regarding the materiality impact of not applying it.
- ▶ Verification that the following requirements are met when using simplified methods:
  1. ☐The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.
  2. ☐The standard calculation of the longevity risk sub-module is an undue burden for the company.
- ▶ Verification that the correct formula of simplification has been used based on Delegated Act 2015/35.

#### 5.1.4.3 Disability – morbidity risk

Disability-morbidity risk is the risk of loss, or of adverse changes in the value of insurance liabilities, resulting from changes in the level, trend or volatility of disability and morbidity rates.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented that the disability-morbidity risk sub-module has been calculated for all (re)insurance policies subject to disability-morbidity risk.
- ▶ Justification that the application of disability – morbidity shock is consistent with the Delegated Act 2015/35.
- ▶ Verification that the following requirements are met when using simplified methods:
  1. ☐The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.
  2. ☐The standard calculation of the longevity risk sub-module is an undue burden for the company.
- ▶ Verification that the correct formula of simplification has been used based on Delegated Act 2015/35.

#### 5.1.4.4 Lapse risk

Lapse risk is the risk of loss or adverse change in liabilities due to a change in the expected exercise rates of policyholder options.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented that the life-lapse risk sub-module has been calculated for all (re)insurance policies subject to lapse risk.
- ▶ Justification that the application of lapse up scenario shock and lapse down scenario shock is consistent with the Delegated Act 2015/35 and calculated on a policy by policy basis.
- ▶ Verification that the following requirements are met when using simplified methods:
  1. ☐The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.
  2. ☐The standard calculation of the longevity risk sub-module is an undue burden for the company.
- ▶ An assessment/description exists regarding the exercise rate of the lapses due cancellation options in the contracts.
- ▶ Review of a list with the description of the existing policyholder options and whether these policyholder options are modelled.
- ▶ Review of the documentation that describes whether an increase or a decrease in the lapse assumption would lead to an increase or decrease in the technical provisions.
- ▶ Regarding the lapse mass, validation that the lapse mass scenario shock is applied to all insurance policies with positive surrender strain on a policy by policy basis.
- ▶ Justification that the floor of zero has been applied in case of the results of the scenario are favourable to the company.

#### 5.1.4.5 Expense risk

Expense risk arises from the variation in the expenses incurred in servicing (re)insurance contracts.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented that the life expense risk sub-module has been calculated for all (re)insurance policies subject to expense risk.
- ▶ Justification that the company has established and documented that the life expense risk sub-module has been calculated for all expenses considered to be relevant by the relevant management, taking account of realistic management action relating to capital restrictions.
- ▶ Justification that the application of expense scenario shock is consistent with the Delegated Act 2015/35.
- ▶ Performance of reconciliation is made in which the expense cash flows are allocated to fixed, adjustable and other. In case of adjustable expenses, management actions are determined.
- ▶ Verification that the following requirements are met when using simplified methods:



1. ☐The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.
2. ☐The standard calculation of the longevity risk sub-module is an undue burden for the company.

► Verification that the correct formula of simplification has been used based on Delegated Act 2015/35.

#### **5.1.4.6 Revision risk**

Revision risk is the risk of loss, or of adverse change in the value of (re)insurance liabilities, resulting from fluctuations in the level, trend, or volatility of revision rates applied to annuities, due to changes in the legal environment or in the state of health of the person insured.

The following procedures shall be performed by the reviewer:

- Justification that the company has established and documented which insurance policies are subject to revision risk.
- Justification that the company has established and documented that the life revision risk sub-module has been calculated for all (re)insurance policies subject to the life-revision risk.
- Justification that the company has established and documented that the shock, for the life-revision risk, as prescribed in the Delegated Act 2015/35 has been applied.

#### **5.1.4.7 Life catastrophe risk**

Life catastrophe risk is the risk of loss, or of adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and provisioning assumptions related to extreme or irregular events.

The following procedures shall be performed by the reviewer:

- Justification that the company has established and documented that the life catastrophe risk sub-module has been calculated for all (re)insurance policies subject to catastrophe risk.
- Justification that the application of CAT scenario shock is consistent with the Delegated Act 2015/35.
- Verification that the following requirements are met when using simplified methods:
  1. ☐The simplification is proportionate to the nature, scale and complexity of the risks that the company faces.
  2. ☐The standard calculation of the longevity risk sub-module is an undue burden for the company.
- Verification that the correct formula of simplification has been used based on Delegated Act 2015/35.

#### **5.1.5 Operational Risk**

The operational risk shall be obtained according to the Article 204 of Delegated Act 2015/35, which establishes the definition, the formula for the calculation of the operational risk and determination of its individual components.

Operational risk is the risk of loss arising from inadequate or failed internal processes, personnel or systems, or from external events.

The following procedures shall be performed by the reviewer:

- ▶ Justification that the company has established and documented that the required capital for operational risk is based on Article 204 of the Delegated Act 2015/35 (including among others the risk margin, reinsurance and SPVs).
- ▶ Performance of reconciliation of premiums and technical provisions as presented in the appropriate lines of business with the formula of calculation.
- ▶ Performance of reconciliation between the expense cash flows included in the best estimate of the unit linked type products and the factor  $Exp_{UL}$  based on the respective formula.
- ▶ Verification that the factor  $Exp_{UL}$  excludes acquisition expenses.
- ▶ Verification that the calculation of the technical provisions exclude the risk margin and without deduction of recoverables from reinsurance contracts and special purpose vehicles in order to avoid circularity issues.

## 5.2 Minimum Capital Requirements

According to the Articles 248 – 253 of the Delegated Act 2015/35 the Minimum Capital Requirements (MCR) calculation depends on the nature of the business of the (re)insurance company. The reviewer should:

- ▶ Understand the type of the (re)insurance company.
- ▶ Understand the business written by the (re)insurance company in order the Absolute floor of the MCR (AMCR) to be determined in accordance with the Article 248 of the Delegated Act 2015/35.
- ▶ Review the data used for the linear MCR calculation.
- ▶ Check that the selected MCR lies in the interval of 25% - 45% of the SCR.
- ▶ Verify for correctness and compliance with the regulatory requirements in regards to all calculations, providing the proper recalculations when deemed necessary.
- ▶ Form a view about the appropriateness of the IT tools used for the calculation of capital requirements

## 5.3 Loss Absorbing Capacity of deferred taxes – LAC of DT

According to the Article 108 of the Directive 2009/138/EC the adjustment for the loss-absorbing capacity of deferred taxes shall reflect potential compensation of unexpected losses through a simultaneous decrease in deferred taxes.

The reviewer shall perform the following procedures:

- ▶ Check the existence of the recoverability analysis.
- ▶ Review the projected shocked P&L statements for the business plan period and check the reasonability of the assumptions used for the projection.
- ▶ Check that for the determination of the loss-absorbing capacity of deferred taxes the deferred taxes amount already presented in the SII BS has been covered by the future profitability.

- ▶ Verify that the loss-absorbing capacity of deferred taxes does not exceed the tax amount resulting from the relevant profitability.
- ▶ Confirm that the adapted tax rate used is appropriate.
- ▶ Verify that the Solvency Capital Requirements used in the calculation of the loss absorbing capacity of deferred taxes is appropriate.
- ▶ Ensure that the maximum amount does not exceed (tax rate \* SCR).

## 5.4 Ring Fenced Funds

As introduced in the Delegated Act 2015/35, (37), Ring-Fenced Funds (RFF) are arrangements where an identified set of assets and liabilities are managed as though they were a separate undertaking and should not include conventional index-linked, unit-linked or reinsurance business. The reduced transferability of the assets of an RFF should be reflected in the calculation of the excess of assets over the liabilities of the (re)insurance company.

In accordance with the Articles 80-81, 216-217 of Delegated Act 2015/35, the reviewer shall perform the following procedures:

- ▶ Verify that the (re)insurance company has assessed whether any own fund items have a reduced capacity to fully absorb losses on a going concern basis due to their lack of transferability.
- ▶ Verify that the (re)insurance company has identified all assets, liabilities and own funds subject to the arrangement giving rise to a RFF.
- ▶ Verify that the basic own funds at the level of the RFF are set as restricted own-fund items.
- ▶ Ensure that the (re)insurance company has calculated a notional SCR for each ring- fenced fund in the same manner as if those RFF and the remaining part of the (re)insurance company were separate undertakings.
- ▶ Verify that the calculation of the RFF is in accordance with the methodology provided in the corresponding section.
- ▶ Ensure that the total SCR of the (re)insurance company is derived as the sum of the RFF and the non - RFF parts, in the sense that there is no diversification between those parts.
- ▶ Assess the materiality level of the RFF by considering the following:
  - The nature of the risks arising from or covered by the RFF.
  - The nature of the assets and liabilities within the RFF.
  - The amount of restricted own funds within the ring-fenced fund, the volatility of those amounts over time and the proportion of total own funds represented by restricted own funds.
  - The proportion of the (re)insurance company's total assets and capital requirements that the RFF represents, individually or combined with other RFF.
  - The likely impact of the RFF on the calculation of the SCR due to the reduced scope for risk diversification.
- ▶ In case that the RFF is considered immaterial, allow for exclusion of the total amount of restricted own-fund items from the amount eligible to cover the SCR and the MCR.

## 5.5 SCR at Group Level

According to the art 220 SII Directive, undertakings can use Method 1 (Accounting consolidation-based method), Method 2 (Deduction and aggregation method) or a combination of methods 1 and 2 where the exclusive application of method 1 would not be appropriate.

Both methods require the elimination of double use of eligible OF and elimination of intra-group creation of capital (see art 222 and 223 of SII Directive).

The consolidated data to be used (Method 1) consists of the following, depending on the group structure and specific circumstances, as outlined in the Article 335 of the DA:

“(a) full consolidation of data of all the insurance or reinsurance undertakings, third-country insurance or reinsurance undertakings, insurance holding companies, mixed financial holding companies and ancillary services undertakings which are subsidiaries of the parent undertaking;

(b) full consolidation of data of special purpose vehicles to which the participating undertaking or one of its subsidiaries has transferred risk and which are not excluded from the scope of the group solvency calculation pursuant to Article 329(3);

(c) proportional consolidation of data of the insurance or reinsurance undertakings, third-country insurance or reinsurance undertakings, insurance holding companies, mixed financial holding companies and ancillary services undertakings managed by an undertaking referred to in point (a) together with one or more undertakings not included in point (a), where those undertakings' responsibility is limited to the share of the capital they hold;

(d) on the basis of the adjusted equity method in accordance with Article 13(3), data of all holdings in related insurance or reinsurance undertakings, third-country insurance or reinsurance undertakings, insurance holding companies, mixed financial holding companies which are not subsidiaries of the parent undertaking and which are not covered by points (a) and (c);

(e) the proportional share of the undertakings' own funds calculated according to the relevant sectoral rules, as referred to in Article 2(7) of Directive 2002/87/EC, in relation to holdings in related undertakings which are credit institutions, investment firms and financial institutions, alternative investment fund managers, UCITS management companies, institutions for occupational retirement provision, non-regulated undertakings carrying out financial activities;

(f) in accordance with Article 13 of this Regulation, data of all related undertakings, including ancillary service undertakings, other than those referred to in points (a) to (e).

Notwithstanding point (d) of paragraph 1 data of related undertakings linked by a relationship referred to in Article 22(7) of Directive 2013/34/EU shall be included in accordance with points (a), (c), (d), (e) or (f) of the first paragraph on the basis of the determination of the proportional share by the group supervisor as referred to in Article 221(2)(a) of Directive 2009/138/EC”.

For the purpose of determination of consolidated data, the above mentioned data should be net of intra-group transactions.

- ▶ Method 2 involves the aggregation of the group eligible funds and adjustments to eliminate the impact of intra-group transactions where the impact of these transactions influences the best estimates of the undertakings in such way that the amount obtained by aggregating the items listed below is different depending on whether the intra-group transaction is eliminated in the calculation of that amount or not.

The amount consists of the sum of the best estimate of the participating undertaking and the proportional share (as referred to in Article 221(1)(b) of SII Directive) of the best estimate for each related insurance and reinsurance undertaking and related third-country insurance and reinsurance undertaking.

The calculation of the best estimate shall be made in all cases in accordance with Articles 75 to 86 of SII Directive.

The reviewer is required to perform the following procedures:

- ▶ Understand the process of data consolidation performed by the undertaking in accordance with SII framework by performing inquiry procedures and requesting supporting documents or information as applicable
- ▶ Obtain the data used by the undertaking in determination of group solvency
- ▶ Verify the accuracy of the computation and assess the compliance with SII framework
- ▶ Understand the valuation of the assets and liabilities other than technical provisions at group level and assess the consistency to the one performed at individual level
- ▶ In case of non-compliance, the reviewer is required to assess the impact on group solvency calculation review procedures and to propose the adjustments as needed

External independent reviewers should perform, regardless of the method, a verification/assessment of the value of assets and liabilities (other than TP) at group level consistent to the one required to be performed at individual level . Please refer to section B.5.2.

The most analytical method for the calculation of SCR at group level is the Accounting Consolidation. For the review of the SCR at group level based on that method the reviewer shall perform the following procedures:

- ▶ Verify that the data have been consolidated appropriately.
- ▶ Verify that the undertaking has established and documented that the SCR at group level has been calculated in line with the Delegated Act and how it deals with the risk sub-modules calculation.
- ▶ Verify that the adjustment of the loss absorbing capacity of deferred taxes has been estimated appropriately.
- ▶ Verify that the currency for the purposes of currency risk has been determined appropriately.
- ▶ Verify that the Group has established and documented the SCR at Group Level in line with the Article 336 of the Delegated Act 2015/35.

When using the Accounting Consolidation – based method or the combination of methods for the consolidated part (not when using the Deduction & Aggregation method exclusively) the reviewer should:

- ▶ Verify that the minimum consolidated group SCR is applied in line with the Article 341 of the Delegated Act 2015/35 and is equal to the sum of the following:
  - The MCR of the participating (re)insurance companies or the notional MCR of the insurance holding company or mixed financial holding company.
  - The proportional share of the MCR of the related (re)insurance companies and the proportional share of the notional MCR of the intermediate insurance and mixed financial holding company.

When the Deduction & Aggregation method is used for the SCR at Group Level, the reviewer should:

- ▶ Verify that in case that the Deduction & Aggregation method has been used by the Group the amount and quality of information available in relation to a related (re)insurance company is not sufficient for it to be subject to the Accounting Consolidation – based method.
- ▶ Verify that the use of Accounting Consolidation – based method in relation to a related undertaking – or several related undertakings - would be overly burdensome and the nature, scale and complexity of the risks of the group are such that the use of Deduction & Aggregation method in relation to a related undertaking – or several related undertakings – does not materially affect the results of the group solvency calculation.
- ▶ Verify that intra-group transactions are not significant both in terms of volume and value of the transaction.
- ▶ Verify that the SCR at Group Level is the sum of the following:
  - The SCR of the participating insurance or reinsurance undertaking or the notional SCR of the insurance holding company or mixed financial holding company.
  - ☐The proportional share of the SCR of the related (re)insurance company or the proportional share of the notional SCR of the intermediate insurance holding company or mixed financial holding company;
  - ☐The proportional share of the capital requirements for credit institutions, investment firms, financial institutions, alternative investment fund managers, asset management companies and institutions for occupational retirement provision within the meaning of Directive 2003/41/EC, calculated according to the relevant sectorial rules and the proportional share of the notional SCR of non-regulated undertakings

carrying out financial activities; for related third country undertakings the capital requirement should be calculated according to relevant sectorial rules in the Union.

- ▶ External independent reviewers should verify in both methods the proper elimination of the double use of eligible own funds and of intra-group creation of capital as required under Article 222 and 223 of Directive 2009/138/EC.

## **5.6 Transitional measures**

The transitional measures aim to provide a smoother transition between the old and new regulatory regime, phasing in the full impact of SII.

In case a (re)insurance company which applies transitional measures, fails to meet the SCR without their use, a recovery plan is required showing how it will achieve compliance at the end of the transitional period. The reviewer should check the existence of a realistic recovery plan according to which compliance with SCR will be restored within the timeframe defined and whether this has been submitted and approved by the supervisory authority.

### **5.6.1 Transitional measure on the risk-free interest rates**

In accordance to Article 308c and 308e of Omnibus II, a (re)insurance company may apply a transitional adjustment to the relevant risk-free interest rate term structure, interpolating between the SI and SII rate, with respect to (re)insurance obligations.

For each currency the adjustment shall be calculated as a portion of the difference between:

- (a) the interest rate as determined by the (re)insurance company in accordance with the SI laws, regulations and administrative provisions at the last date of the application of this regime
- (b) the annual effective rate, calculated as the single discount rate that, where applied to the cash flows of the portfolio of admissible (re)insurance obligations (as defined in the Article 308c of Omnibus II), results in a value that is equal to the value of the best estimate of the portfolio of admissible (re)insurance obligations where the time value of money is taken into account using the relevant risk-free interest rate term structure.

The following procedures shall be performed by the reviewer in order to check that the application of the transitional measure is in line with the necessary conditions:

- ▶ Ensure that the company has written approval for the use by the supervisory authority.
- ▶ Verify that the transitional measure is applied on risk-free yield curve per currency.
- ▶ Verify that the transitional measure is applied across the portfolio of admissible (re)insurance obligations.
- ▶ Ensure that the transitional adjustment to the relevant risk-free interest rate term structure has been calculated based on a transitional period of 16 years (until 2032).
- ▶ Verify that the adjustment is decreased linearly at the end of each year from 100% during the year starting from 1 January 2016 to 0% on 1 January 2032.
- ▶ Ensure that in case where the (re)insurance company has applied VA, the relevant risk-free interest rate term structure, referred to in point (b) above, shall also take into account VA.

- ▶ Verify that the amount of the transitional adjustment remains unchanged after the application of the shocks to the basic interest rate term structure, under the interest rate risk sub-module of the SCR standard formula.
- ▶ Verify that the applied SI rate is the one implied by the previous local regulation.
- ▶ Ensure that the SCR has been calculated and reported with and without the use of the transitional measure.
- ▶ Ensure that this measure is not applied in conjunction with transitional measure on technical provisions.

## 5.6.2 Transitional measure on technical provisions

In accordance to Article 308d and 308e of Omnibus II, a (re)insurance company may apply a transitional deduction to technical provisions.

This deduction may be applied at the level of homogeneous risk groups referred to in Article 80 of Omnibus II.

The transitional deduction shall correspond to a portion of the difference between the:

- (a) the technical provisions after deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles, calculated in accordance with the SI laws and regulations at the last date of the application of this regime
- (b) the technical provisions after deduction of the amounts recoverable from reinsurance contracts calculated in accordance with SII requirements

The following procedures shall be performed by the reviewer in order to check that the application of the transitional measure is in line with the necessary conditions:

- ▶ Ensure that the company has written approval for the use by the supervisory authority.
- ▶ Verify that the transitional measure is applied to homogeneous risk group level.
- ▶ Ensure that the transitional adjustment to the technical provisions has been calculated based on a transitional period of 16 years (until 2032).
- ▶ Verify that the maximum portion deductible is decreased linearly at the end of each year from 100% during the year starting from 1 January 2016 to 0% on 1 January 2032.
- ▶ Ensure that, in case the technical provisions under SI are higher than the requirements arising under SII, the transitional reduction is set equal to zero.
- ▶ Verify that the amount of the transitional deduction remains unchanged in scenario based calculations of the SCR standard formula.
- ▶ Verify that the calculation of the MCR and the capital requirement for operational risk, should be based on the amount of technical provisions before application of the transitional measure minus the maximum between the risk margin and the amount of the transitional deduction. In addition, where the amount of the transitional deduction is higher than the risk margin, the amount of the transitional deduction in excess of the risk margin should be apportioned across TPlife, TPlife-ul and TPnon-life according to each component's contribution to the overall amount of the transitional deduction.
- ▶ Verify that the SI and SII technical provisions have been calculated properly based on the requirements of each regime.

- ▶ Ensure that the SCR has been calculated with and without the use of a transitional measure.
- ▶ Ensure that this measure is not applied in conjunction with transitional measure on the risk-free interest rates.

### 5.6.3 Transitional measure on equities

In accordance to Article 308b of Omnibus II, a (re)insurance company may apply a transitional measure on equities.

The following procedures shall be performed by the reviewer in order to check that the application of the transitional measure is in line with the necessary conditions:

- ▶ Verify that the transitional measure is applied only on Type I equities.
- ▶ Verify that the transitional measure is applied only to those equities that were purchased before 1 January 2016.
- ▶ Verify that the stress rate for Type I equities is defined equal to 22%.
- ▶ Verify that rate increases at least linearly at the end of each year until it reaches 39% in 2023.
- ▶ Ensure that the SCR has been calculated with and without the use of a transitional measure.

This measure can be applied in conjunction with all other transitional measures and long-term guarantee measures.

### 5.6.4 Transitional measure on own funds

In accordance to Article 308b of Omnibus II, a (re)insurance company may apply a transitional measure on own funds regarding their classification into Tier 1 and Tier 2 and consequently on the coverage of SCR and MCR.

The following procedures shall be performed by the reviewer in order to check that the application of the transitional measure is in line with the necessary conditions:

- ▶ Ensure that the basic own-fund items shall be included in Tier 1 basic own funds for up to 10 years after 1 January 2016, provided that those items:
  - (a) were issued before 1 January 2016
  - (b) on 31 December 2015 could be used to meet the available solvency margin up to 50%, as in force on the last date before the application of SII
  - (c) would not otherwise be classified in Tier 1 or Tier 2 in accordance with Article 94 of Omnibus II
- ▶ Ensure that the basic own-fund items shall be included in Tier 2 basic own funds for up to 10 years after 1 January 2016, provided that those items:
  - (a) were issued before 1 January 2016
  - (b) on 31 December 2015 could be used to meet the available solvency margin up to 25%, as in force on the last date before the application of SII



## 6. Reinsurance – effectiveness of risk transfer

### Outward reinsurance

The following procedures are required to be performed:

- ▶ Obtain and read the internal policies, procedures and accounting policies for re-insurance operations, make inquiries of the persons responsible for the reinsurance in order to understand the accounting policies, principles and process for selecting and accepting the contracts (when such principles and/or process are not already apparent from the written procedures) and
- ▶ Assess whether the Undertaking's accounting policies are in compliance with the fair value principles in accordance with IFRS 13 and in accordance with Art 75 of Directive 2009/138/EC

In case of deviation from framework, the reviewer should evaluate the adjustment needed so that the undertaking complies with the required accounting framework as of 30 June 2016.

The paragraphs that follow should be applicable regardless the reviewer has found any non-compliance within the prior bullet points.

- ▶ Obtain the reinsurance program and agreements and provide a brief description of the main characteristics of the program and assess the compliance of the program with the requirements of Title I, Chapter V, section 10 of the Delegated Regulation as regards the following aspects :
  - the reinsurance program effectiveness by identification of the level of risk transfer appropriate to the undertaking's defined risk tolerance limits and the type of reinsurance arrangements which are most appropriate considering the undertaking's risk profile;
  - the reinsurance agreements in force including whether there is evidence of review and approval of the initial treatment (including transfer of risk) in accordance with the entity's policies and the relevant standards (e.g. inspect the agreement's key terms such as type of contract(i.e. quota share or excess of loss), contract period, coverage period, cancellation terms, loss coverage, accumulating retentions, additional premiums, profit sharing commissions, and loss settlement terms); assess the effective risk transfer and consideration of basis risk based on qualitative assessment of the reinsurance treaty (reading the reinsurance conditions whether there are triggers of non-traditional reinsurance treaties) and quantitative assessment of the reinsurance treaty and reassess the ceded technical reserves in accordance with the risk transfer conclusion;
- The reviewer is required to use professional judgment in selecting the most appropriate quantitative assessment method for analysis and concluding on the effectiveness of risk transfer. Quantitative assessment of the reinsurance treaties could be based on methods applied depending on line of business or risk insured, such as for example:
  - compare the present value of reinsurer net losses from the contract with the present value of reinsurance contract premiums;
  - Premium to Limit of Coverage Ratio: Under this criterion, the contract is unlikely to be a risk transfer, if the value of the ratio approaches or exceeds 1 (suggested threshold); or
  - The expected reinsurer's deficit method (suggested threshold 1%).
  - Use any available risk indicators in order to assess and verify the extend of reinsurance as well as the impact of reinsurance cover in the claims. An indicative, non-exhaustive list of indicators is presented in the Appendix 5 of this document

- ▶ Review a sample of signed reinsurance contracts in force and with effects on accounting balances as at 30 June 2016 covering minimum 80% of premiums ceded in passive (outward) reinsurance and claims ceded in reinsurance during the period 1 January 2016 – 30 June 2016 and compare them with the qualitative criteria requirements of Article 209 Title I, Chapter V, section 10 of the DA and the requirements of the effectiveness of risk transfer of Article 210 Title I, Chapter V, section 10 of the DA. Therefore for the contracts selected:
  - Review the quality of each reinsurer based on ratings where available or other market financial information and will compare the available information about the counterparty with the requirements of Art. 211 Title I, Chapter V, section 10 of the DA and conclude whether the protection offered by the reinsurer is appropriate recognized.
  - Make inquiries of persons responsible and document the types of policies and premiums volumes which are not included in any reinsurance agreement and document the reason behind (when such reasons are not already apparent from the written procedures).
  - Obtain (if available) and review the Undertaking analysis of the operational result from reinsurance per contract/lines of business.
  - Obtain and review the liquidity management procedures applied for any timing mismatch between claims' payments and reinsurance recoverable

Based on the analysis performed in case of any departure from requirements the reviewer will present findings and recommendations for remedial actions.

Further the reviewer is required to:

- ▶ Obtain the breakdown of the accounts balances (for reinsurance receivables and reinsurance payables separately) on each reinsurer as of 30 June 2016 and reconcile it with the respective accounts in the balance sheet. Any differences which are above RT must be reconciled. Differences which remain unreconciled must be adjusted.
- ▶ Select a sample of minimum 80% of the reinsurance balances as of 30 June 2016 (for reinsurance receivables and reinsurance payables separately) for which the reviewer will send confirmation letters. In cases of no replies from counterparties or differences found, the reviewer will request the reconciliations agreed between the Undertaking and the respective reinsurers as of 30 June 2016 or as of 31 December 2015. If the Undertaking does not have reconciliation procedure in place the reviewer should analyze the documents supporting the recognition of the payables/receivables from reinsurers, review correspondence with reinsurers where available and conclude if the amounts were appropriately recognized in accordance with the accounting policy.
- ▶ Perform analytical review by comparing the balances of reinsurance receivables/payables per counterparty and/or lines of business as at 30 June 2016 and as at 31 December 2015 or 31 December 2014, investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results.

In relation to reinsurance receivables the reviewer is required to:

- ▶ Obtain the management approach or the accounting policy related to allowance (impairment) for reinsurance receivables, obtain the computation for the impairment of reinsurance receivables as of 30 June 2016 and correlate the impairment policy of the undertaking with other available information and conclude whether is appropriate.
- ▶ Review subsequent collection/subsequent payments made until 31 July 2016, subsequent cancelations/write off of receivables/payments and other documents supporting the settlement of

receivables/payables from reinsurers and will obtain explanations for old unsettled receivables amounts and conclude whether the receivable collection is appropriately estimated.

- ▶ The reinsurance assets which are being in dispute or subject to arbitration or litigation shall be reviewed for possible uncollected amounts.

### **Sampling**

Depending on the types of reinsurance treaties (proportional/nonproportional) which are in force in the Undertaking the reviewer is required to verify the accuracy of calculations for a sample of the reinsurance transactions. The sample should be designed in a manner that at least 80% of the lines of business or reinsurer which fall under the reinsurance treaties, are covered (fronting operations should also be included in the sample):

- ▶ Select a sample 3 policies for each selected line of business and verify if the reinsurance premium amount is correctly computed and in accordance with the reinsurance treaty.
- ▶ Select a sample 3 policies for each selected line of business verify if the reinsurance claim amount is correctly computed and in accordance with the reinsurance treaty.
- ▶ Select a sample 3 policies for each selected line of business and verify if the reinsurance commission is correctly computed and in accordance with the reinsurance treaty.

In cases where errors are found the reviewer will estimate whether an extension of sample is required to evaluate if any adjustment is necessary.

For reinsurance treaties with minimum or deposits premiums or sliding scale commission's features the reviewer will assess the reasonability of the recognized amounts based on the estimations of 30 June 2016.

In cases where the reinsurance treaties contain adjustable features the reviewer will test the calculation of the adjustments to reinsurance premiums and/or commissions at the adjustment date closest to 30 June 2016. Agree details of the calculation to the reinsurance contract terms and determine that the adjustment has been properly accounted for.

The reviewer is required to benchmark ceded premiums/claims against the gross premiums/claims per line of business as of 30 June 2016 and 31 December 2015 and using the details of the reinsurance treaties to investigate unexpected deviations. The reviewer is required to use professional judgment to evaluate the results.

As regards deposits to/from reinsurers:

- ▶ Obtain the breakdown of the deposits to/from reinsurers as of 30 June 2016 and reconcile it with respective accounts from the trial balance.
- ▶ Examine terms and conditions under which these deposits fall and verify the appropriate classification of these deposits in respect to maturity.
- ▶ For the deposits to/from reinsurers the method applicable for valuation, will relate to a quoted market price for cash deposits not available. The reviewers are required to assess if an acceptable proxy of the fair value was used for valuation of cash deposits. (The valuation of reinsurance liabilities will follow the general principles and hence no adjustment will be taken into account for the own credit standing of the insurance or reinsurance undertaking).

### **Inward reinsurance**

The procedures which are applicable for outward reinsurance will be performed also for inward reinsurance.

In addition the reviewer is required to perform the following procedures:

- ▶ Obtain an understanding of the underwriting internal processes and procedures of the reinsurance company with specific focus on: procedures for accepting direct writers and subsequent monitoring of compliance with treaties based on a risk assessment process :
  - Review whether before entering into new contractual arrangement, information is obtained on the ceding insurer and on assumed insurance contracts, and whether there is any analysis of the profitability and risks of those reinsurance contracts
  - Understand if there is any analysis regarding the forecast maximum insurance loss amount in major concentrated risks
  - Understand whether there is appropriate monitoring after signing an assumed reinsurance contract
  - Whether the reinsurer relies on the assessment of the direct writer or perform own assessment),
  - Whether there is any monitoring of programs that might give underwriters latitude to make exceptions,
  - whether the reinsurance treaties contain clauses that allow the reinsurer to audit the work of the direct writer (reinsurance administration, claims and underwriting)
  - Select a sample of top 10 reinsurance treaties in term of premiums accepted and review if the above procedures were applied
- ▶ Assess whether the accounting policy for technical provisions is appropriate, considering that reinsurance underwriting risk should not be treated in a similar manner with ordinary underwriting risk, due to the complexity of treaties.
- ▶ For the technical provisions concerning inward reinsurance which are underwritten for overseas insurers, assess whether the differences in the accounting system of the countries of the ceding parties are taken into account by the undertaking

**Output:**

- Findings and recommendations for remedial actions
- Conclusion (quantitative and qualitative) regarding the effectiveness of the risk transfers to third parties of risks stemming from (re)insurance contracts written by the insurance undertakings including finite reinsurance contracts

## 7. Related parties' transactions review

Related parties are defined in accordance with International Financial Reporting Standards as adopted by EU, respectively in accordance with IAS 24 "Related parties disclosures". The scope of this review is to review accuracy of the identification of related parties of the undertaking as well as the nature of the relationship between the Undertaking and these related parties, the type and scope of the transactions performed between these parties, and controls in order to identify and disclose the intra-group relations.

The reviewer may request any other appropriate information, details or supporting documents based on their professional judgment in order to be able to conclude and to quantify any potential impact from related parties' transactions.

In order to perform the review, the reviewers are required to perform the following procedures:

- ▶ Obtain the list of related parties of the undertaking
- ▶ Interview the management concerning: the identity of the undertaking's related parties, including changes from prior periods, the nature of the relationship between the undertaking and these related parties and the type and purpose of the transactions performed with these parties
- ▶ Interview the management and other key personnel in the undertaking concerning the existing controls in order to identify the related party relations and transactions according to the applicable financial reporting framework, the authorization and approval of these related party transactions and agreements, authorization and approval of related party transactions outside the undertaking's scope of business.
- ▶ Use its professional judgment in order to identify any other related party and transactions:
  - by inspecting the available information and documents throughout the procedures performed during the review period, by reading the minutes of the general shareholders' meetings, board of directors and any other committees or boards that are relevant for the management of the undertaking's activity
  - performing independent research using information publicly available in order to review the list of shareholdings of key management personnel, administrators or any other relevant person to the undertaking and its activity
- ▶ Obtain the details regarding the outstanding balances with related parties as at 31 December 2015 and 30 June 2016, and the details of all transactions during 2015 year and Jan-Jun 2016
- ▶ Obtain the details concerning guarantees received or given to/from related parties as at 30 June 2016 and 31 December 2015.
- ▶ Reconcile all breakdowns/details obtained from the undertaking with the corresponding trial balance accounts/extracts from accounts at the respective dates, as applicable
- ▶ Understand and review the reconciliation process with related parties of the undertaking at the respective dates, as well as to investigate any material differences between the amounts reported by the undertaking and the ones reported/confirmed/reconciled by the related party
- ▶ Request confirmation letters from all related parties with which the undertaking had transactions during 2015 and 2016 and compare the confirmation letters with the details received from the undertaking. Investigate any differences over RT
- ▶ Understand and review the transactions performed with the related parties regarding the sale of the investments or other assets and purchase/repurchase of investments or other assets

- ▶ For the top 10 related parties outstanding balances as at reference date and top 10 related parties transactions during the period 2015-2016 until the reference date, the reviewer is required to inspect and review the underlying contracts and agreements and to assess the business reasoning (or its absence) within the transactions, the transaction terms and whether the transactions are performed on terms equivalent to the market ones, whether the transactions were appropriately booked and disclosed in accordance with the applicable financial reporting framework and whether the transactions were appropriately authorized and approved. In cases when this selection does not cover at least 50% from outstanding balances and at least 50% from the total transactions performed in the period Jan 2015 – Mar 2016, the reviewer is required to supplement the selection in order to achieve the minimum coverage
- ▶ Assess recoverability of the balances with related parties taking into account the ageing, subsequent settlement, the existing information about the financial situation of the counterparty, other public information, if available
- ▶ Consider any subsequent event relevant to the analysis performed, including subsequent settlement of transactions, correspondence with related parties, or any other relevant information as applicable

**Output:**

- Findings and recommendations for remedial actions
- Conclusion regarding impact of operations and transactions of natural and legal persons with close links to the insurance undertaking

## 8. Main risks and vulnerabilities of the insurance sector

The reviewers are required that, based on the performed procedures, to conclude in each case, based on their best knowledge of the Bulgarian market and of the international practices, which key risks each undertaking faces and how some of them may affect the entire insurance sector or financial market.

Such analysis require identification of root causes for the main findings, that could be the result of existing local legislation, market practices or constraints (for example: liquidity, concentration, pricing, risks specific to certain lines of business or related to national regulations and international regulations) or any other causes.

Special focus is required in the areas of assets valuation, related parties transactions, technical provisions, re-insurance practices.

### Output

- ▶ View on the risk profile of each undertaking based on Solvency II, and provide appropriate information enabling the PM to form a recommendation on the main risks and vulnerabilities including possible effect on the entire insurance sector and whether potential contagions to the rest of the financial sector and the real economy exists

## 9. Quality assurance and progress tracking

The reviewers are expected to design quality assurance and control procedures to ensure that the intended results are effectively achieved to the satisfaction of the FSC. Quality assurance and progress tracking are two complementary processes with a joint goal to ensure accurate and timely delivery of the Project results in a standardized manner.

The PM in coordination with the SC aims to ensure a harmonized application of the methodology by the reviewers as well as a similar treatment of the participating undertakings by the respective reviewers through:

- ▶ Reviewing the Blueprints and progress reports and providing timely feedback
- ▶ Reviewing the Conclusion reports and provide feedback
- ▶ Asses significance of issues reported by the reviewers and the remedial actions proposed
- ▶ Delivering answers through the Q&A tool

The reviewers are expected to inform the PM immediately on any significant issues and propose remedial actions in order for the PM to bring them to the attention of the Steering Committee for discussion and resolution.

The templates as presented will be used consistently across the exercise to ensure efficiency and effectiveness of reporting. The reviewers are expected to provide to the PM all documents, final and summary reports in electronic format, each of which contains at least an English version. Final reports shall be submitted in Bulgarian and English language in soft and hard copy.

### Blue print

At the beginning of the reviews, each reviewer will submit to the PM a blueprint which will describe:

- ▶ the work plan proposed for performing the review including a description of any deviations compared to this methodology
- ▶ timing
- ▶ the estimated number of hours needed to complete each stage of the review
- ▶ any expected limitations
- ▶ materiality computation and selected accounts for review
- ▶ other information as considered relevant for the specific undertaking

Please refer to template R1.

The blueprints will be submitted to the PM and SC after 14 days from the starting date of the BSR. Each reviewer will participate at a preparatory meeting with the PM and the SC to provide an overview of the proposed work.

### Progress reports

During the BSR exercise reviewers:

- ▶ will submit twice a month to the PM and SC a progress report in English. This shall clearly identify the implementation stage, relevant findings and concerns. Please refer to template R3.



- ▶ may at any time during the review draw up a complementary letter if it considers that the PM and the SC should be informed about facts and issues that are or may be urgent or of particular interest and importance to the successful completion of the BSR.
- ▶ need to be available to discuss with the PM and SC the interim results during the monthly meetings of the SC and during conference calls.

In cases where the information is not available due to time constraints or has a poor quality the reviewer should determine where assumptions or proxies could be used to perform the tests required and propose remedial actions to the PM and SC.

### **Conclusion report**

The type of report to be provided is a proposed Agreed Upon Procedures format in accordance with ISRS 4400.

The objective of the particular engagement is for the reviewers to carry out procedures of an audit nature as will be described at the methodology that will be provided and to report on factual findings. The findings will refer to the financial information of insurer's assets and liabilities as well as to non-financial information relating to applicable regulatory framework and of the risks of the sector.

The report shall contain the items and statement as described at ISRS 4400 including

- ▶ Identification of specific financial and non-financial information to which the agreed-upon procedures have been applied
- ▶ A statement that the procedures performed were those agreed upon with the recipient
- ▶ A listing of the specific procedures performed
- ▶ A description of the reviewer's factual findings including sufficient details of errors and exceptions found

Template R7 - requests the reviewers to include comments, conclusions as well as judgment over the different findings and the necessary quantitative assessments.

## 10. Appendix

### 10.1 Appendix 1 - Actuarial methods

List of the approved underlying methodologies for the SII valuation and SCR calculations:

#### Simulation techniques

This is a technique in which all possible outcomes are generated using all possible cash flows under all possible scenarios.

For certain life insurance liabilities, in particular the future discretionary benefits relating to participating contracts or other contracts with embedded options and guarantees, simulation may lead to a more appropriate and robust valuation of the best estimate liability.

A simulation technique seem more appropriate to be used for the valuation of cash flows, if one or more than one of following factors have a material impact on the value of the insurance liability:

- ▶ The cash flows are highly path dependent
- ▶ Qualitative evidence should be requested to justify the dependency
- ▶ There are significant non-linear inter-dependencies between several drivers of uncertainty
- ▶ Qualitative evidence should be requested to justify the dependency
- ▶ Future management actions materially affect the cash flows
- ▶ Risks have a significant asymmetric impact on the value of the cash flows, in particular if contracts include material embedded options and guarantees or if there are complex reinsurance contracts in place
- ▶ The value of options and guarantees is affected by the policyholder behavior assumed in the model

A list of examples of simulation techniques is indicated below:

- ✓ Monte-Carlo simulations: the value of the liabilities is calculated in a large number of scenarios where one or more assumptions are changed in each scenario. By simulating the behavior of the random variable(s) in a very large number of scenarios, the model produces a distribution of possible outcomes so that a probability weighted average can be calculated ("mean of the distribution").
  - For example, the nature of the financial options and guarantees embedded in some life (re)insurance contracts, particularly those with profit participation, is such that a set of deterministic best estimate assumptions may not be sufficient to produce a best estimate liability. The application of closed form analytical solutions to value the options and guarantees may also be limited, if it is difficult to find market hedges that replicate the cash-flows under the contract, for example to reflect the use of management actions or the effects of path dependency. A deterministic or an analytical technique may therefore not be suitable for valuing such contracts, and a simulation technique may be needed.
  - Stochastic variation in non-market assumptions such as lapses and option take-up rates can have a material influence on the valuation of options and guarantees. One possible approach used is to assume

that they are highly correlated with interest rates/market value which allows the insurer to include the relationship within the liability models without an additional stochastic variable.

- ✓ Bayesian approaches, where explicit prior assumptions are blended with observations resulting in an estimate for the ultimate claim.

### **Analytical techniques**

An analytical technique uses a mathematical formula (also called closed formula) which reflects the characteristics of the insurance liability under various conditions. This technique is based on the distribution of the future cash flows. Commonly, the formula captures the uncertainty of the cash flows and gives the mean as a result.

For the estimation of life insurance liabilities that do not need simulation techniques, deterministic and analytical techniques can be more appropriate.

- ✓ Stochastic variation in non-market assumptions (such as mortality).
- ✓ The time value of options and guarantees may be captured by reference to the market costs of fully hedging the option or guarantee; if the market price is not directly observable, it may be approximated using option pricing techniques, for example closed form solutions such as the Black-Scholes formula.
- ✓ Techniques which use an assumption that future claim amounts follow a given mathematical distribution (e.g. Bayesian). These techniques calculate an undiscounted probability weighted average set of cash-flows without explicitly considering each potential scenario.

### **Deterministic techniques**

The deterministic approach relies on the projection of the cash flows is based on a fixed set of assumptions. This type of technique is used where a single scenario or single set of assumptions is used to generate a single result. In order to arrive at the probability weighted average a series of deterministic projections with attributed probabilities can be used. Alternatively, the uncertainty in the cash flows can be covered via the determination of the assumptions and/or the method to project the future cash flows.

A list of examples of deterministic techniques is indicated below:

- ✓ Traditional life actuarial techniques to calculate the best estimate can be described as techniques that based on discounted cash-flow models, generally applied on a policy-by-policy basis, which take into account in an explicit manner risk factors such as mortality, survival and changes in the health status of the insured person(s)
- ✓ Stress and scenario testing: for example, adjusting data for inflation and allowing inflation to vary, thus producing sensitivities around this parameter.
- ✓ Influential observations or outliers have been allowed for appropriately, for example via case by case reserving.
- ✓ Systematic as well as other random features are being captured through sensitivity testing, diagnostics or other techniques (this could be stochastic).
- ✓ Where a calculation relies on assumptions of an even spread of risk over the policy year and this is not the case (e.g. seasonality such as due to weather or hurricane season) the proportions should be adjusted.
- ✓ The use of relevant assumptions or other external/portfolio specific data as an input to the calculation when there is lack of data or as a benchmark for comparison.

- ✓ Embedded options may be captured by considering different scenarios chosen to capture, as far as possible, the full range of future scenarios. An appropriate average or worst-case technique could be used to derive an initial estimate of the value of options embedded in the life insurance portfolio. A deterministic-to-stochastic adjustment could then be applied. This adjustment may be derived from any standardized method including flat benchmarked percentages.

### **Combination of techniques**

A (re)insurance company may use a combination of approaches when calculating the best estimate. For example:

- a) The (re)insurance company may use a valuation technique which fails to include one or more causes of uncertainty. The excluded/additional cause of uncertainty could then be valued accurately as a separate set of cash-flows or measured through the use of validation tools and appropriate adjustments made.
- b) The (re)insurance company may identify that much of the cause of uncertainty arises from one or more risk (e.g. investment returns) with the remaining risks making a much smaller contribution to the uncertainty (e.g. mortality experience). In this example, the (re)insurance company may choose to use a valuation technique which combines a simulation approach for investment returns with either a deterministic or analytical approach for mortality experience provided the loss of accuracy is sufficiently small.

### **Special case of pure unit-linked contracts**

Pure unit-linked contract [for these purposes] refers to case of a pure financial savings product, linked to the performance of a particular portfolio, with no financial guarantees attached, but which pays the market value of the units at the earlier of maturity, death or surrender. The underlying portfolio (used as reference to set out the amount to be paid in case of maturity, death or surrender), is composed of assets which are not traded on a deep, liquid and transparent market.

The calculation of technical provisions for these type of contracts will require modelling the assets set out as reference according the three building block scheme (discounted projected cash flows), considering that non traded assets need in any case a mark to model (which in most of cases implies stochastic modelling, at least to incorporate the non-trade feature passed on to policyholders).

Where the proportionality principle is applicable, the guarantees of these contracts exclusively dependent on the value of the non-traded assets might be valued in a simplified manner, directly allowing for the valuation derived from an appropriate mark-to-model approach of the assets used as a reference.

## **10.2 Appendix 2 - Proportionality assessment**

The procedures below shall be followed in order to determine the most proportionate actuarial method following an assessment based on the nature, scale and complexity of the risk profile of the company.

The walkthrough of three steps defines the above assessment:

- ▶ Step 1: Assessment of the nature, scale and complexity of underlying risks
- ▶ Step 2: Check whether valuation methodology is proportionate to risks as assessed in step 1, having regard to the degree of model error resulting from its application. The model error has to be within the limits of materiality
- ▶ Step 3: Back testing and review of the assessment carried out in steps 1 and 2

## **Step 1**

### **Assessment of nature and complexity**

Nature and complexity of risks are closely related, and for the purposes of an assessment of proportionality could best be characterised together. Complexity could be seen as an integral part of the nature of risks, which is a broader concept.

In mathematical terms, the nature of the risks underlying the insurance contracts could be described by the probability distribution of the future cash flows arising from the contracts. This encompasses the following characteristics:

- The degree of homogeneity of the risks
- The variety of different sub-risks or risk components of which the risk is comprised
- The way in which these sub-risks are interrelated with one another
- The level of certainty (the extent to which future cash flows can be predicted)
- The nature of the occurrence or crystallization of the risk in terms of frequency and severity
- The type of the development of claims payments over time
- The extent of potential policyholder loss, especially in the tail of the claims distribution

The first three bullet points in the prior section are in particular related to the complexity of risks generated by the contracts, which in general terms can be described as the quality of being intricate and compounded.

When assessing the nature and complexity of the insured risks, additional information in relation to the circumstances of the particular portfolio should be taken into account. This could include:

- The type of business from which the risks originate (e.g. direct business or reinsurance business)
- The degree of correlation between different risk types, especially in the tail of the risk distribution
- Any risk mitigation instruments (such as reinsurance or derivatives) applied, and their impact on the underlying risk profile

The company should also seek to identify factors which would indicate the presence of more complex and/or less predictable risks. This would be the case, for example, where:

- The cash-flows are highly path dependent
- There are significant non-linear inter-dependencies between several drivers of uncertainty
- The cash-flows are materially affected by the potential future management actions
- Risks have a significant asymmetric impact on the value of the cash-flows, in particular if contracts include material embedded options and guarantees or if there are complex reinsurance contracts in place
- The value of options and guarantees is affected by the policyholder behaviour assumed in the model
- Use of a complex risk mitigation instrument, for example a complex non-proportional reinsurance structure

- A variety of covers of different nature is bundled in the contracts
- The terms of the contracts are complex (e.g. in terms of franchises, participations, or the in- and exclusion criteria of cover)

The degree of complexity and/or uncertainty of the risks is associated with the level of calculation sophistication and / or level of expertise needed to carry out the valuation. In general, the more complex the risk, the more difficult it will be to model and predict the future cash flows required to settle the obligations arising from the insured portfolio.

Therefore, to appropriately analyse and quantify more complex and/or less predictable risks, more sophisticated and elaborated tools will generally be required as well as sufficient actuarial expertise.

### **Assessment of scale**

Assigning a scale introduces a distinction between “small” and “large” risks. The company may use a measurement of scale to identify (sub-) risks where the use of simplified valuation methods would likely to be considered proportionate to the underlying risks, provided this is also commensurate with the nature and complexity of the risks.

A measurement of scale may also be used to introduce a distinction between material and non-material risks. Introducing materiality in this context would provide a threshold or cut-off point below which it would be regarded as justifiable to use simplifications for certain risks.

To measure the scale of risks, further than introducing an absolute quantification of the risks the company will also need to establish a benchmark or reference volume which leads to a relative rather than an absolute assessment. In this way, risks may be considered “small” or “large” relative to the established benchmark. Such a benchmark may be defined, for example, in terms of a volume measure such as premiums or technical provisions that serves as an approximation for the risk exposure.

To determine an appropriate benchmark for a relative measurement of scale, it is important to specify at which level the assessment is carried out: a risk which is small with regard to the business of the company as a whole may still have a significant impact within a smaller segment, e.g. a certain line of business.

At least the following four different levels may usefully be distinguished in the context of a calculation of technical provisions:

- Contract level;
- The individual homogeneous risk group (HRG);
- The individual line of business (LOB);
- The business as a whole
- The group to which the company belongs.

Following this principles-based framework, companies would be expected to use an interpretation of scale which is best suited to the specific circumstances of each managed syndicate and to the risk profile of their portfolio. Whatever interpretation of scale for risks or obligations is followed, this should lead to an objective and reliable assessment.

### **Step 2**

The company shall assess whether a specific valuation method can be regarded as proportionate to the nature, scale and complexity of the risks analysed in step 1.

Where simplified approaches are used to value technical provisions, this could introduce additional model error. The higher the model error, the more difficult it will be to rely on the estimation and on the suitability to achieve the objective of deriving a market-consistent valuation.

When determining how to address materiality, the company should have regard to the purpose of the work and its intended users. For a valuation of technical provisions and more generally for a qualitative or quantitative assessment of risk for solvency purposes, this should include the supervisory authority which uses the information when performing the SRP.

Regardless of what methods shall be applied for the valuation of technical provisions, it is important that an assessment of their appropriateness should in general include an assessment of the model error implicit to the calculations. Such an assessment may be carried out, for example, by:

- Sensitivity analysis in the framework of the applied model: this means to vary the parameters and/or by varying the data (for instance using more or less historical data) thereby observing the range where a best estimate might be located.
- Comparison with the results of other methods: applying different methods gives insight in potential model errors. These methods would not necessarily need to be more complex.
- Descriptive statistics: in some cases the applied model allows the derivation of descriptive statistics on the estimation error contained in the estimation. Such information may assist in quantitatively describing the sources of uncertainty.
- Back-testing: comparing the results of the estimation against experience may help to identify systemic deviations which are due to deficiencies in the modelling.

The company is not required to quantify the degree of model error in precise quantitative terms, or to recalculate the value of its technical provisions using a more accurate method in order to demonstrate that the difference between the result of the chosen method and the result of a more accurate method is immaterial. Instead, it would be sufficient for the company to demonstrate that there is reasonable assurance that the model error implied by the application of the chosen method (and hence the difference between the two amounts) is immaterial.

Where several valuation methods are appropriate, the company should normally apply the one which is most appropriate, but retain a regard for consistency over time. Where a valuation technique is expected to lead to a significant degree of model error then, where practicable, an alternative, more appropriate method should be applied instead.

In some circumstances, it may be unavoidable to apply a valuation method that has material model error. In such cases, the company should document that this is the case and consider the implications with regard to the reliability of the valuation and its overall solvency position. In particular, it should assess whether the increased level of estimation uncertainty is adequately addressed in the determination of the SCR and the setting of the risk margin in the technical provisions.

### **Step 3**

As part of the actuarial function, it should be checked annually whether the best estimates calculated in past years turn out to be appropriate in subsequent years. Where the back testing identifies systematic deviation between experience and the best estimate calculations, the first two steps of the proportionality process described above should be re-performed to check whether in regard to nature, scale and complexity it would still seem appropriate to use the chosen valuation method. If it is found that the previously chosen method is no longer appropriate, the company should switch towards a more appropriate method. Such a check should also be performed where the risk profile has significantly changed. The scope and the frequency of back testing should be proportionate to the materiality of assumptions and the size of the deviation.

According to Article 83 of the Directive 2009/138/EC, insurance companies should compare the outcome of the best estimation of the technical provisions against actual experience.

Therefore, the reviewer shall examine whether material deviations occur between the actual results and the earlier predictions of technical reserves in order to propose appropriate adjustments to the actuarial techniques used and / or the underlying assumptions. Moreover, it should be ensured that the frequency of the back testing is proportionate to the materiality of assumptions and the size of the deviation, as well as it is also performed each time that the risk profile of the company significantly changes.

### 10.3 Appendix 3 – Lines of business (LoB)

Number	LoB name	Category
1	Medical expense insurance	Health NSLT
2	Income protection insurance	Health NSLT
3	Workers' compensation insurance	Health NSLT
4	Motor vehicle liability insurance	Non - life
5	Other motor insurance	Non - life
6	Marine, aviation and transport insurance	Non - life
7	Fire and other damage to property insurance	Non - life
8	General liability insurance	Non - life
9	Credit and suretyship insurance	Non - life
10	Legal expenses insurance	Non - life
11	Assistance	Non - life
12	Miscellaneous financial loss	Non - life
13-15	Proportional non-life reinsurance obligations	Health NSLT
16-24	Proportional non-life reinsurance obligations	Non - life
25	Non-proportional health reinsurance	Health NSLT
26	Non-proportional casualty reinsurance	Non - life
27	Non-proportional marine, aviation and transport reinsurance	Non - life
28	Non-proportional property reinsurance	Non - life
29	Health insurance	Health SLT
30	Insurance with profit participation	Life
31	Index-linked and unit-linked insurance	Life
32	Other life insurance	Life
33	Annuities stemming from non-life insurance contracts and relating to health insurance obligations	Health SLT
34	Annuities stemming from non-life insurance contracts and relating to insurance obligations other than health insurance obligations	Life
35	Health reinsurance	Health SLT
36	Life reinsurance	Life

#### A. Non-life insurance obligations

##### (1) Medical expense insurance

Medical expense insurance obligations where the underlying business is not pursued on a similar technical basis to that of life insurance, other than obligations included in the line of business 3.

##### (2) Income protection insurance

Income protection insurance obligations where the underlying business is not pursued on a similar technical basis to that of life insurance, other than obligations included in the line of business 3.



*(3) Workers' compensation insurance*

Health insurance obligations which relate to accidents at work, industrial injury and occupational diseases and where the underlying business is not pursued on a similar technical basis to that of life insurance.

*(4) Motor vehicle liability insurance*

Insurance obligations which cover all liabilities arising out of the use of motor vehicles operating on land (including carrier's liability).

*(5) Other motor insurance*

Insurance obligations which cover all damage to or loss of land vehicles (including railway rolling stock).

*(6) Marine, aviation and transport insurance*

Insurance obligations which cover all damage or loss to sea, lake, river and canal vessels, aircraft, and damage to or loss of goods in transit or baggage irrespective of the form of transport. Insurance obligations which cover liabilities arising out of the use of aircraft, ships, vessels or boats on the sea, lakes, rivers or canals (including carrier's liability).

*(7) Fire and other damage to property insurance*

Insurance obligations which cover all damage to or loss of property other than those included in the lines of business 5 and 6 due to fire, explosion, natural forces including storm, hail or frost, nuclear energy, land subsidence and any event such as theft.

*(8) General liability insurance*

Insurance obligations which cover all liabilities other than those in the lines of business 4 and 6.

*(9) Credit and suretyship insurance*

Insurance obligations which cover insolvency, export credit, instalment credit, mortgages, agricultural credit and direct and indirect suretyship.

*(10) Legal expenses insurance*

Insurance obligations which cover legal expenses and cost of litigation.

*(11) Assistance*

Insurance obligations which cover assistance for persons who get into difficulties while travelling, while away from home or while away from their habitual residence.

*(12) Miscellaneous financial loss*

Insurance obligations which cover employment risk, insufficiency of income, bad weather, loss of benefit, continuing general expenses, unforeseen trading expenses, loss of market value, loss of rent or revenue, indirect trading losses other than those mentioned above, other financial loss (non-trading) as well as any other risk of non-life insurance not covered by the lines of business 1 to 11.

**B. Proportional non-life reinsurance obligations**

The lines of business 13 to 24 shall include proportional reinsurance obligations which relate to the obligations included in lines of business 1 to 12 respectively.

**C. Non-proportional non-life reinsurance obligations**

*(25) Non-proportional health reinsurance*

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 1 to 3.

*(26) Non-proportional casualty reinsurance*

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 4 and 8.

*(27) Non-proportional marine, aviation and transport reinsurance*

Non-proportional reinsurance obligations relating to insurance obligations included in line of business 6.

*(28) Non-proportional property reinsurance*

Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 5, 7 and 9 to 12.

**D. Life insurance obligations**

*(29) Health insurance*

Health insurance obligations where the underlying business is pursued on a similar technical basis to that of life insurance, other than those included in line of business 33.

*(30) Insurance with profit participation*

Insurance obligations with profit participation other than obligations included in line of business 33 and 34.

*(31) Index-linked and unit-linked insurance*

Insurance obligations with index-linked and unit-linked benefits other than those included in lines of business 33 and 34.

*(32) Other life insurance*

Other life insurance obligations other than obligations included in lines of business 29 to 31, 33 and 34.

*(33) Annuities stemming from non-life insurance contracts and relating to health insurance obligations*

*(34) Annuities stemming from non-life insurance contracts and relating to insurance obligations other than health insurance obligations*

**E. Life reinsurance obligations**

*(35) Health reinsurance*

Reinsurance obligations which relate to the obligations included in lines of business 29 and 33.

*(36) Life reinsurance*

Reinsurance obligations which relate to the obligations included in lines of business 30 to 32 and 34.

**10.4 Appendix 4 – Please refer to templates : R1, R2, R3, R4, R5, R6, R7**

## 10.5 Appendix 5 – Risk Indicators

### ILLUSTRATIVE ANNEX ON RISK INDICATORS

#### 1.1.1 Data Checks

##### 1. Correctness of premium provision

Segmentation: by LoBs (direct business and proportional reinsurance together within the LoB) and Total

$$\frac{\text{Gross BE Premium Provision}}{\text{Gross expected cash outflows (BE PP) – Gross expected cash inflows (BE PP)}}$$

Result should be close to 1, unless a stochastic method was used for the cash-flows projection.

*Template: S.17.01*

*Numerator: R0060*

*Denominator: cash outflows = R0370 + R0380; cash inflows = R0390 + R0400*

##### 2. Correctness of claims provision

$$\frac{\text{Gross BE Claims Provision}}{\text{Gross expected cash outflows (BE CP) – Gross expected cash inflows (BE PP)}}$$

Result should be close to 1, unless a stochastic method was used for the cash-flows projection.

*Template: S.17.01*

*Numerator: R0160*

*Denominator: cash outflows = R0410 + R0420; cash inflows = R0430 + R0440*

#### 1.1.2 Performance of the undertaking's Business (underwriting results)

This section provides information about the performance of the undertaking's business (underwriting results) which is a useful context when assessing the adequacy of the undertaking's reserves.

##### 3. Gross Loss ratio (note: based on local GAAP information not Solvency II information)

Timing: depends if short- or long-term line of business, at least over a few years.

Segmentation: Line of business and total

$$\frac{\text{Gross Claims Incurred}}{\text{Gross Earned Premium}}$$

(N.B.: claims incurred are defined in the templates as the sum of claims paid and the delta of the outstanding amounts).

This ratio gives an indication on the adequacy of the premium and on the loss distribution. It also may inform the external reviewers about the existence of the underwriting cycle. It can be calculated per line of business and compared with peers. External reviewers are invited to take into account any specific events (such as natural catastrophes) which can have an impact on this ratio.

The type of business should be considered before making judgements about loss ratios, however it could be concerning if a high proportion of gross earned premium is needed to cover claims.

*Template: S.05.01*

*Numerator: R0310/C0010:C0120 (relevant item for particular direct insurance LoB) or R0320/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0330/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0310+R0320+R0330)/C0200 (total)*

*Denominator: R0210/C0010:C0120 (relevant item for particular direct insurance LoB) or R0220/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0230/C0130:C0160 (non-proportional reinsurance LoB) or (R0210+R0220+R0230)/C0200 (total)*

#### **4. Gross Combined ratio** (note: based on statutory accounts information not Solvency II information)

Timing: depends if short- or long-term line of business, at least over a few years.

Segmentation: Line of business and total

$$\frac{\text{Gross Expenses Incurred} + \text{Gross Claims Incurred}}{\text{Earned Premium}}$$

This ratio gives an indication on the profitability of a given line of business. It also may inform the external reviewers about the existence of the underwriting cycle.

*Template: S.05.01*

*Numerator: (R0310+R0610+R0710+R0810+R0910+R1010)/C0010:C0120 (relevant item for particular direct insurance LoB) or (R0320+R0620+R0720+R0820+R0920+R1020)/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or (R0330+R0630+R0730+R0830+R0930+R1030)/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0310:R0330+R0610:R0630+R0710:R0730+R0810:R0830+R0910:R0930+R1010:R1030)/C0200 (total),*

*Denominator: R0210/C0010:C0120 (relevant item for particular direct insurance LoB) or R0220/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0230/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0210+R0220+R0230)/C0200 (total)*

*Other elements – see description of Gross Loss Ratio*

#### **5. Pure Net Claims Ratio** (note: based on mixed SII and statutory accounts information, works only for LoBs where AY basis is used)

Timing: Over a few years (short- or long-term LoB)

Segmentation: LoBs and total Business (only if for all LoBs and currencies AY basis is used)

This is the pure claims ratio as reported at the end of the accident year. It works only for those LoBs, where claims and provisions for all currencies are reported on an accident year basis.

In this case, it shows the measure of the total net ultimate claims divided by the net earned premium. It does not make any allowance for movements in prior year reserves.

$$\frac{\text{Net BE Claim Provisions} + \text{Net Claims Paid}}{\text{Net Earned Premium}}$$

An increasing trend in the claims ratio could mean that the *undertaking's* recent underwriting has not been as good as in the past. (However a significant decrease in the claims ratio could be a sign that the undertaking is under-reserving and vice-versa.) Also the presence of any trend may be the result of underwriting cycle. The indicator may be calculated in the basis of discounted or undiscounted data.

*Templates: S.05.01 and S.19.01*

*Numerator (S.19.01): in case of undiscounted approach: R0650/C1400 + R0650/C1370 or in case of discounted approach: R0650/C1560 + R0650/C1370*

*Denominator (S.05.01): R0300/C0010:C0160 (relevant item for particular LoB) or R0300/C0200 (total)*

## 6. Expense Ratio (based on statutory accounts)

Timing: Over a few years (short- or long-term LoB?)

Segmentation: LoBs and total Business

This shows the expenses incurred during the year as a proportion of net earned premiums.

$$\frac{\text{Net Expenses incurred}}{\text{Net Earned Premium}}$$

An increasing trend could imply that the undertaking is not controlling its expenses.

*Template: S.05.01*

*Numerator: R0550/C0010:C0160 (relevant item for particular insurance LoB) or R0550/C0200 (total)*

*Denominator: R0300/C0010:C0160 (relevant item for particular direct insurance LoB) or R0300/C0200 (total)*

## 7. Pure Net Combined Ratio (note: works only for LoBs where AY basis is used)

Segmentation: LoBs 1 to 11 (insurance) and total Business

It is an indicator of whether the business has made an underwriting profit, i.e. whether the premium has been able to cover the claims and expenses of the undertaking.

$$\frac{\text{Net BE Claim Provisions} + \text{Net Claims Paid}}{\text{Net Earned Premium}} + \frac{\text{Expenses (N; risks covered during period)} + \text{Expenses (N; risks covered prior to period)}}{\text{Premium earned during the period (N)}}$$

If an undertaking has a high combined ratio (in excess of 100%) the premium charged may not be sufficient to cover the claims and expenses of the *undertaking*. Also the presence of any trend in that indicator may be the result of underwriting cycle. Similarly to Pure Net Claims Ratio, it may be calculated on discounted or undiscounted basis.

*Templates: S.19.01, S.29.04*

*Numerators (S.19.01, S.29.04): see Pure Net Claims Ratio (7) + S.29.04.R0100/C0040 + S.29.04.R0100/C0050*

*Denominators (S.05.01, S.29.04): see Pure Net Claims Ratio (7) + S.29.04.R0080/C0040*

### **1.1.3 Adequacy of claims outstanding**

#### **8. RBNS as percentage of incurred (paid+RBNS)**

Timing: Trend over several years and change in metric over a year. This can be done for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N}

Segmentation: Line of business and as Total

$$\frac{\text{Gross RBNS}}{\text{Gross Claims Paid EoY} + \text{Gross RBNS}}$$

This indicator is to be calculated over several years and a downward trend may be an indication of inadequate RBNS reserves.

*Templates: S.19.01*

*Numerator: Sum{R0100:R0250}/C0560*

*Denominator: Sum{R0100:R0250}/C0170 + Sum{R0100:R0250}/C0560*

#### **9. Incurred loss ratio in year** (note: based on mixed SII and statutory accounts information; it works only for LoBs with AY basis)

Timing: Results over a few years (short- or long-term)

Segmentation: LoBs and Total

$$\frac{\text{Net Claims Paid Cum EoY(AY)} + \text{Net RBNS Claims EoY(AY)}}{\text{Net Earned Premium(AY)}}$$

*Templates: S.19.01 and S.05.01*

*Numerator (S.19.01): Rxxxx /C1370 + Rxxxx /C1760*

*Where Rxxxx = R0500:R0650 for relevant accident year (in case of Total business a sum of relevant item over all LoBs)*

*Denominator (S.05.01 reported in relation to reporting year which corresponds to relevant accident year): R0300/C0010:C0160 (relevant item for particular LoB) or R0300/C0200 (for total) –(meaning taking values from historical reports e.g. if you need Net Earned Premium for 2011 AY you need to take it from QRT based on 2011)*

#### **10. Average provision/paid amounts per claim**

Timing: EXTERNAL REVIEWERSs are recommended to calculate those indicators over at least two years. For long-term lines of business, more years might be necessary, as at the number of outstanding claims might increase over the years.

Segmentation: LoBs 1 to 12

$$\frac{\text{Gross RBNS at the end of the period}}{\text{Number of claims at the end of the year}}$$

Template: S.20.01.

Numerator:  $Rxxxx/C0050 + Ryyyy/C0130 + Rxxxx/C0190$

Denominator:  $Rxxxx/C0020 + Ryyyy/C0110 + Rxxxx/C0170$

Where  $Rxxxx = R0160$  for “total previous year” and “Total” and  $R0010:R0150$  for relevant AY/UY year

Where  $Ryyyy = R0160$  for “total previous year” and  $R0010:R0150$  for relevant AY/UY year and  $R0170$  for “Total”

$$\frac{\text{Amount paid for closed claims during the year}}{\text{Number of closed claims paid during the year}}$$

Template: S.20.01.

Numerator:  $Rxxxx/C0080 + Ryyyy/C0150 + Rxxxx/C0210$

Denominator:  $Rxxxx/C0060 + Ryyyy/C0140 + Rxxxx/C0200$

Where  $Rxxxx = R0160$  for row “total previous year” and  $R0010:R0150$ ; for particular AY/UY year

Where  $Ryyyy = R0160$  for row “total previous year” and  $R0010:R0150$  - for particular AY/UY year and  $R0170$  for “Total”

The second ratio can be used to control the value of the first one. If the value of claims outstanding provision is underestimated, then the first ratio will probably be below the second one.

## 11. Ratio of incurred claims to paid claims (gross and net)

Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N}

Segmentation: Line of business and as Total

$$\frac{\text{Claims Paid Curr Year} + \text{RBNS EoCurrYear} - \text{RBNS BoCurrYear}}{\text{Claims Paid Curr Year}}$$

A swing in the ratio from above to below 1 may be for example a result of the undertaking changing its RBNS reserving methodology or assumptions. External reviewers need to be aware of the method being applied. The issues may be as a result of the ‘auto-reserving’, not putting a sufficient tail where the data is truncated.

Template: S.19.01.

*(incurred gross)*

*Numerator:  $\text{Sum}\{R_{xxxx}/C0170 + R_{xxxx}/C_{yyyy} - R_{xxxx}/C_{yyxy}\}$*

*Denominator:  $\text{Sum}\{R_{xxxx}/C0170\}$  (paid gross)*

*Where  $R_{xxxx} = R0110:R0240$ ,  $C_{yyyy} = C0540:C0410$  and  $C_{yyxy} = C0530:C0400$*

*or (incurred net)*

*Numerator:  $\text{Sum}\{R_{xxxx}/C1360 + R_{xxxx}/C_{yyyy} - R_{xxxx}/C_{yyxy}\}$*

*Denominator:  $\text{Sum}\{R_{xxxx}/C1360\}$  (paid net)*

*Where  $R_{xxxx} = R0510:R0640$ ,  $C_{yyyy} = C1740:C1610$  and  $C_{yyxy} = C1730:C1600$*

## **12. Adequacy of claims outstanding estimation in RBNS**

Timing: AY/UY and Total previous years

Segmentation: Total and each LoB

$$\text{Gross RBNS}_{\text{Beginning of year}} - \text{Gross RBNS}_{\text{End of year}} - \text{Gross Payments}_{\text{during year}}$$

This indicator is calculated for claims that were open at the beginning of the year and that are still open at the end of the year.

If this indicator is negative, it shows that provisions for claims outstanding in RBNS were not sufficient in the beginning of the year accordingly with the current estimate.

*Template: S.20.01*

*$R0010:R0150/C0030$  (relevant item for particular AY/UY) -  $R0010:R0150/C0050$  (relevant item for particular AY/UY) -  $R0010:R0150/C0040$  (relevant item for particular AY/UY) or  $R0160/C0030$  -  $R0160/C0050$  -  $R0160/C0040$  (for Total)*

## **13. Adequacy of claims closed with payment estimation in RBNS**

Timing: AY/UY and Total

Segmentation: Total and each LoB

$$\text{Gross RBNS}_{\text{Beginning of year}} - \text{Gross Payments}_{\text{during year}}$$

This indicator is calculated for claims that were open at the beginning of the year and that are closed at the end of the year.



If this indicator is negative, it shows that provisions for claims closed in RBNS were not sufficient in the beginning of the year accordingly with the current estimate.

*Template: S.20.01*

*R0010:R0150/C0070 + R0010:R0150/C0100 – R0010:R0150/C0080 (relevant item for particular AY/UY) or R0160/C0070 + R0160/C0100 - R0160/C0080 (for Total)*

One can also calculate a unique indicator by summing RI\_14 and RI\_15.

#### **14. IBNR as percentage of claims incurred**

Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N}

Segmentation: Line of business and as Total

$$\frac{\text{Gross BE Claims Provision EoY} - \text{Gross RBNS EoY}}{\text{Gross Claims Paid EoY} + \text{Gross RBNS EoY}}$$

This indicator may be calculated on undiscounted or discounted basis.

The numerator represents the estimate of the IBNR provisions which is not directly reported in the quantitative reporting templates and is then estimated as difference between the Gross undiscounted Best Estimate of Claims provisions (which includes IBNR provisions) and the Gross RBNS provisions (which exclude IBNR provisions). External reviewers should bear in mind the difference stemming from the different calculation basis, i.e. the Best Estimate of Claims Provisions is estimated taking into consideration Solvency II valuation principles (i.e. probability-weighted average of future cash flows except for the discounting effects) while the Gross RBNS provisions is expected not to be (typical example is when RBNS is calculated on a case-by-case basis).

This indicator is to be calculated over several years and a downwards trend may be an indication of inadequate IBNR reserves if RBNS reserves are correct, upward trend might be an indication of inadequate RBNS reserves if IBNR is correct.

*Template: S.19.01*

*Numerator:*

*(undiscounted basis)*

*Sum{Rxxxx/Cyyyy - Rxxxx/C0560} main diagonal of BE Claims Provision triangle*

*Or*

*(discounted basis)*

*Sum{Rxxxx/C0360 - Rxxxx/C0560}*

*Denominator: Sum{Rxxxx/C0170 + Rxxxx/C0560}*

Where Rxxxx = R0100:R0250, Cyyyy = C0350:C0200

#### 15. Paid claims as percentage of ultimate claims

Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N}

Segmentation: Line of business and as Total

$$\frac{\text{Gross Claims paid Cum}}{\text{Gross BE Claim Provision EoY} + \text{Gross Claims Paid Cum}}$$

This indicator may be calculated on undiscounted or discounted basis i.e. Gross BE Claims Provision may be the sum of future undiscounted cash flows or discounted cash flows.

The denominator is equal to the sum of discounted (or undiscounted) future cash flows arising from IBNR and RBNS claims and expenses, increased by claims already paid.

This indicator is to be calculated over several years and an upward trend may be either an indication of inadequate RBNS or IBNR reserves or a change in the policy of the claims management unit, affecting how quick the undertaking is paying claims. The upward trend may be the consequence of the continuous increase of discounting rates (in the discounted version of the indicator).

Template: S.19.01

Numerator:

$$\text{Sum}\{Rxxxx/C0180\}$$

Denominator:

(undiscounted basis)

$$\text{Sum}\{Rxxxx/Cyyyy + Rxxxx/C0180\} \text{ main diagonal of BE Claims Provision triangle}$$

Or

(discounted basis)

$$\text{Sum}\{Rxxxx/C0360 + Rxxxx/C0180\}$$

Where Rxxxx = R0100:R0250, Cyyyy = C0350:C0200 - relevant item for particular AY/UY

#### 16. Incurred claims as percentage of ultimate claims

Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N}

Segmentation: Line of business and as Total

This indicator may be calculated on undiscounted or discounted basis i.e. Gross BE Claims Provision may be the sum of future undiscounted cash flows or discounted cash flows.

This indicator is to be calculated over several years. Ultimates should remain constant. An upward trend (i.e. the gap between incurred and ultimate not closing despite incurred increasing) is an indication of previous underestimations of ultimate claims and under reserving. If the most recent ultimate claims is lower than any previous incurred claims this might indicate historical over reserving.

Template: S.19.01

Numerator:

$Sum\{Rxxxx/C0180 + Rxxxx/C0560\}$

Denominator:

(undiscounted basis)

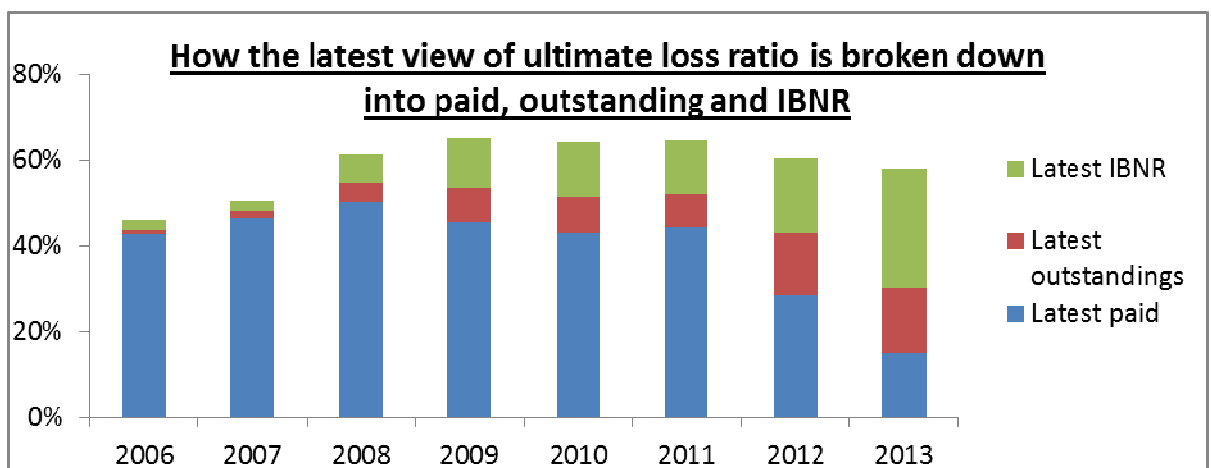
$Sum\{Rxxxx/C0180 + Rxxxx/Cyyyy\}$  main diagonal of BE Claims Provision triangle

Or

(discounted basis)

$Sum\{Rxxxx/C0180 + Rxxxx/C0360\}$

Where  $Rxxxx = R0100:R0250$ ,  $Cyyyy = C0350:C0200$



**17. Total Best Estimate Provision for Claims Outstanding as percentage of Earned Premium**(note: based on mixed SII and local GAAP information)

Timing: Over several years

Segmentation: Line of business and as Total

$$\frac{\text{Gross Claim Provisions [Future Benefits and claims + Future Expenses and other outflows]}}{\text{Gross Premiums Earned}}$$

This indicator is to be calculated over several years. A downwards trend might be an indication of inadequate RBNS or inadequate IBNR reserves. Any trend may also inform the external reviewers about the existence of the undertaking cycle. This indicator is built only with cash out-flows. If significant, the amount of salvage and subrogation could influence the value of the indicator (if needed, they can be taken into account from S.17.01, row R0440).

*Templates: S.17.01 and S.05.01*

*Numerator (S.17.01): R0410/C0020:C0170 (relevant item for particular LoB) + R0420/C0020:C0170 (relevant item for particular LoB) or R0410/C0180 + R0420/C0180 (for Total)*

*Denominator (S.05.01): R0210/C0010:C0120 (relevant item for particular LoB 1-12) + R0220/C0010:C0120 (relevant item for particular LoB 1-12) or R0210/C0010:C0120 (relevant item for particular LoB 13-16) + R0230/C0130:C0160 (relevant item for particular LoB 13-16) or (R0210/ + R0220 + R0230)/C0200 (for Total)*

#### **18. Paid loss ratio in accident year** (note: based on mixed SII and local GAAP information)

Timing: Results over several years for each accident year

Segmentation: for LoBs and Total

$$\frac{\text{Net Claims Paid Cum EoY (AY)}}{\text{Net Earned Premium(AY)}}$$

This indicator helps in assessing the length of tail for each LoB.

*Templates S.19.01 and S.05.01*

*Numerator (S.19.01): Rxxxx/C1370 for relevant AY, where Rxxxx = R0510:R0650*

*Denominator (S.05.01, reported in relation to reporting year which corresponds to relevant accident year): R0300/C0010:C0160 (for each LoBs) or R0300/C0200 (total) – for each historical AY (meaning taking values from historical reports e.g. if you need Net Earned Premium for 2011 AY you need to take it from QRT based on 2011)*

### **1.1.4 Adequacy of Claim Provisions**

*This section provides analytics to support the assessment of the adequacy of the undertakings claim provisions. As Solvency II requires reserves to be set at best estimate analysis resulting from this section could indicate under or over reserving issues.*

#### **19. Reserve releases (broken down by line of business)**

Timing: Over several years depending on the LoBs and available data

Segmentation: for LoBs and Total

It is the company's own assessment of how good its reserving was last year. Values less than 1 indicate release of reserves.

The indicator measures if claims provision settled at the end of the previous year for losses incurred up to the end of the previous year reflects the value of claims paid during the year from losses incurred up to the end of the previous year and the value of claims provisions settled at the end of the year for losses incurred up to the end of the previous year.

The brought forward reserves are the total claims outstanding plus IBNR and IBNER relating to all years.

The movement due to prior years is the balance of all adjustments for prior years (i.e. all years except the current year), after removing adjustments for discounting. Therefore this movement also includes changes to premiums, expenses and other income, but is mainly made up of changes to the ultimate claims.

$$\begin{aligned} & [BE_{\text{of Claims Provisions}}(N)_{\text{related to opened claims}}(N-1) \\ & \quad + (1+r)^{0.5} \cdot \text{Claims paid}(N)_{\text{related to opened claims}}(N-1) \\ & \quad + \text{Expenses}(N; \text{risk covered prior to period}) \cdot (1+r)^{0.5}] \\ & \quad \times \frac{1}{BE_{\text{of Claims Provisions}}(N-1)} \end{aligned}$$

This indicator may be calculated on both: discounted and undiscounted basis.

In case of discounted AY basis:

*Templates S.19.01 and S.29.04*

*Numerator: Sum(R0100:R0240/C0360 of S.19.01) +  
(1+r)^0.5 x Sum(R0100:R0240/C0170 of S.19.01) +  
(1+r)^0.5 x R0100/C0050 of S.29.04 (gross)  
or Sum(R0500:R0640/C1560 of S.19.01) +  
(1+r)^0.5 x Sum(R0500:R0640/C1360 of S.19.01) +  
(1+r)^0.5 x R0100/C0050 of S.29.04 (net)*

*Denominator (S.19.01 of the previous reporting year): Sum(R0100:R0240/C0360 of S.19.01) (gross) or  
Sum(R0500:R0640/C1560 of S.19.01) (net)*

In case of UY basis, the value of expenses in the numerator is taken from cell R0030/C0020 of S.29.04.

In case of undiscounted basis, there is Sum(R0100:R0240/C0340:C0200 of S.19.01) (or Sum(R0500:R0640/C1550:C1410 of S.19.01) in net case) instead of Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01)), i.e. the sum of value from main diagonal of the triangle of the BE claims provision.

## 20. BE of claims provisions movements

Timing: Over several years depending on the LoBs and available data

Segmentation: for LoBs and eventually split by different currencies (if material) and Total

$$(1+r) \times BE_{of\ Claims\ Provisions}(N-1) - BE_{of\ Claims\ Provisions}(N)_{related\ to\ opened\ claims\ (N-1)} \\ - (1+r)^{0.5} \times Claims\ paid\ (N)_{related\ to\ opened\ claims\ (N-1)} \\ - Expenses(N; risk\ covered\ prior\ to\ period) \cdot (1+r)^{0.5}$$

Where  $r$  is the one year risk free interest rate.

This indicator aims to give an indication on whether the claims have been estimated correctly. It takes into account the discounting effect, in an approximate but simple manner. If this indicator is regularly negative, it could mean that the undertaking is underestimating its claims and its best estimate.

This indicator may be calculated on both: discounted and undiscounted basis.

*Templates: S.19.01 and S.29.04.*

- *BE (N-1): the penultimate diagonal of the Gross/Net undiscounted BE CP triangle of S.19.01: Sum(R0100:R0240/C0350:C0200 of S.19.01) (or Sum(R0500:R0640/C1550:C1400 of S.19.01) in net case) (undiscounted basis) or Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01) in the net case) from the reporting template of previous reporting year (discounted basis);*
- *BE (N): the last diagonal of Gross/Net undiscounted BE CP triangle less the value related to year N of S.19.01: Sum(R0100:R0240/C0350:C0210 of S.19.01) (or Sum(R0500:R0640/C1550:C1410 of S.19.01) in net case) (undiscounted basis) or Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01) in the net case) (discounted basis);*
- *Claims Paid (N): the last diagonal of Gross/Net Claims Paid triangle less the value related to year N of S.19.01: Sum(R0110:R0240/C0170) (or Sum(R0510:R0640/C1360 in net case) ;*
- *Expenses : value from S.29.04: R0100/C0050 (AY basis) or R0030/C0020 (UY basis)*

## 21. Adequacy of claims provisions over m years

Timing: Over several years depending on the LoBs and available data

Segmentation: for LoBs and eventually split by different currencies (if material) and Total

$$\sum_{i=1}^m \left( \frac{BE_{Claims\ Provisions}(N-m+i) + Claims\ paid\ (N-m+i)_{opened\ claims\ (N-1-m+i)} \cdot (1+r_{N-m+i}(1))^{\frac{1}{2}}}{BE_{Claims\ Provisions}(N-1-m+i) \cdot (1+r_{N-1-m+i}(1))} + \frac{Expenses(N-m+i; risk\ covered\ prior\ to\ period) \cdot (1+r)^{0.5}}{BE_{Claims\ Provisions}(N-1-m+i) \cdot (1+r_{N-1-m+i}(1))} \right) \cdot \omega_i$$

where:

$r_{N-m+i}(1)$  is the basic risk free rate for maturity 1 from the RFR curve given for reporting year  $N-m+i$ ,  $i = 1, \dots, m$ .

$BE_{Claims\ Provisions}(N-1-m+i)$ : the diagonal of the Gross undiscounted BE CP triangle corresponding to the reporting year  $N-1-m+i$  (then the sum of accident/underwriting year and development year equals  $N-1-m+i$ );

$BE_{of\ Claims\ Provisions}(N - m + i)$ : the diagonal of the Gross undiscounted BE CP triangle corresponding to the reporting year  $N - m + i$  (then the sum of accident/underwriting year and development year equals  $N - m + i$ );

$Claims\ paid\ (N - m + i)_{opened\ claims\ (N-1-m+i)}$ : the diagonal of Gross Claims Paid triangle corresponding to the reporting year  $N - m + i$  (then the sum of accident/underwriting year and development year equals  $N - m + i$ ) less the value related to accident/underwriting year  $N - m + i$ ;

$Expenses(N - m + i; risk\ covered\ prior\ to\ period)$  – expense cash-flows from year  $N - m + i$

$N$  – a given year, for which the ratio is calculated;

$m$  – the number of years, over which the average is calculated.

$\omega_i = \frac{i}{\frac{m+1}{2}m}$  is the weight corresponding to BE of claims provision settled at the end of the year  $N - m + i$ ,  
 $i = 1, \dots, m$

The indicator is examination of the sufficiency of claims provisions over a few years ( $m$  years). It allows to assess if the value of claims outstanding provision is underestimated or overestimated.

The element of the average for reporting year  $N - m + i$ :

$$\frac{BE_{of\ Claims\ Provisions}(N - m + i) + Claims\ paid\ (N - m + i)_{opened\ claims\ (N-1-m+i)} \cdot (1 + r_{N-m+i}(1))^{\frac{1}{2}}}{BE_{of\ Claims\ Provisions}(N - 1 - m + i) \cdot (1 + r_{N-1-m+i}(1))}$$

and this is the same as indicator “reserve releases” reporting year  $N - m + i$ , which measures if claims provision settled at the end of the previous year for losses incurred up to the end of the previous year reflects the value of claims paid during the year from losses incurred up to the end of the previous year and the value of claims provisions settled at the end of the year for losses incurred up to the end of the previous year.

The indicator is a weighted average of the elements described above – more current year has higher weight ( $\omega_i$ ).

The number  $m$  of years can be adapted according to short-term or long-term lines of business.  $m$  should be at least equal to the number of years it takes for the cumulated claims to be stable (see triangle of claims paid). The average over  $m$  exclude sensitivity of the ratio to the events specific to the one chosen year like cumulation of claims or unique events, which does not necessary mean the inadequacy of claims provision.

*Templates: S.19.01 and S.29.04 (R0100/C0050 (AY basis) or R0030/C0020 (UY basis))*

## 22. Correctness of the future benefits projection for claims provision

Timing: Over several years

Segmentation: Total

$$\frac{\sum_{k=1}^{14} Claims\ Paid\ in\ current\ year_{N-k}}{Future\ benefits_{N-1}(BE\ Claims\ Provision; Year\ 1)}$$

This indicator examines the ability of the insurance undertaking to forecast benefits from past exposure for one year ahead. EXTERNAL REVIEWERS should be careful when applying this indicator to an undertaking having long-term lines of business.

*Templates: S.19.01 and S.18.01*

*Numerator (S.19.01): Sum{Sum(R0100:R0240/C0170) for all LoBs}*

*Denominator (S.18.01 reported in relation to previous reporting year): R0010/C0050*

### 1.1.5 Adequacy of Premium Provisions

*This section provides analytics to support the assessment of the adequacy of the undertakings premium provisions. As Solvency II requires reserves to be set at best estimate analysis resulting from this section could indicate both under and over reserving issues.*

**23. Solvency II Loss Development Ratio** (it works only for LoBs where for the whole LoB the same convention is used (meaning either AY or UY basis))

Timing: Results over few years

Segmentation: LoBs and Total

*Numerator*

$$= \text{Net BE Claims Prov}(X = N; Y = 0) + (1 + r_N(1))^{1/2} \\ \times \text{Net Claims paid}(X = N; Y = 0) + \text{Expenses}(N; \text{risk covered during period})$$

*Denominator*

$$= (1 + r_N(1)) \times \text{Net BE Prem Prov}_{N-1} + (1 + r_N(1))^{1/2} \\ \times \text{Net WP last 12 mths}_N - \text{Net BE Prem Prov}_N$$

$$\text{SII loss development ratio} = \frac{\text{Numerator}}{\text{Denominator}}$$

With:

- X = the accident/underwriting year (N-14, N-13, ..., N)
- Y = the development year Y (0, 1, ..., 15)
- N – a given year, for which the ratio is calculated
- $r_N(1)$  = risk free rate in year N

The indicator is similar to the Pure Net Combined Ratio, but it concerns future claims development. It is the ratio of two measures of exposure to losses incurred in the year N.

The denominator of the ratio is a measure of exposure of the claims (and expenses) to be paid (in the future) from losses incurred in the year N (including losses from the new business of the year N).



The numerator is the sum of all claims incurred and paid during the year N and of the provision for claims incurred in year N but not settled yet.

The numerator is equal to the sum of claims already paid and estimate of future claims corresponding to unearned part of premium already paid, adjusted by the difference between “a posteriori” estimation and “a priori” estimation of future risk corresponding to future unpaid premium from existing contracts (“a priori” measure is simply the premium and “a posteriori” measure is the estimate of future claims after some claims having already been paid). If it is smaller than the value of claims paid, it may mean the overestimation of the premium or incorrect earning pattern applied.

The denominator is equal to the estimate of the same value as the numerator, but the estimate in denominator is made earlier to the estimate from numerator. The trend in that ratio over time may mean incorrect estimation of claims within the premium tariffs and premium provision. It may also stem from inconsistency in methods used in tariffs, premium reserving and claims reserving but also it might be the result of the underwriting cycle.

*Templates: S.17.01, S.28.01/02, S.19.01*

*Numerator:*

- *Net BE CP: S.19.01: in case of undiscounted basis: R0650/C1400 or in case of discounted basis: R0650/C1560*
- *Net Claims Paid: S.19.01: R0650/C1360*
- *Expenses: S.29.04: R0030/C0010 (UY basis) or R0100/C0040 (AY basis)*

*Denominator:*

- *Net BE PP: S.17.01: R0150/C0020:C0180*
- *Net WP: S.28.01: R0020:R0170/C0030 (for relevant LoB) and sum of them (for total) or in case of composite: S.28.02: R0020:R0170/C0060 (for relevant LoB) and sum of them (for total)*

#### **1.1.6 Adequacy of Risk Margin**

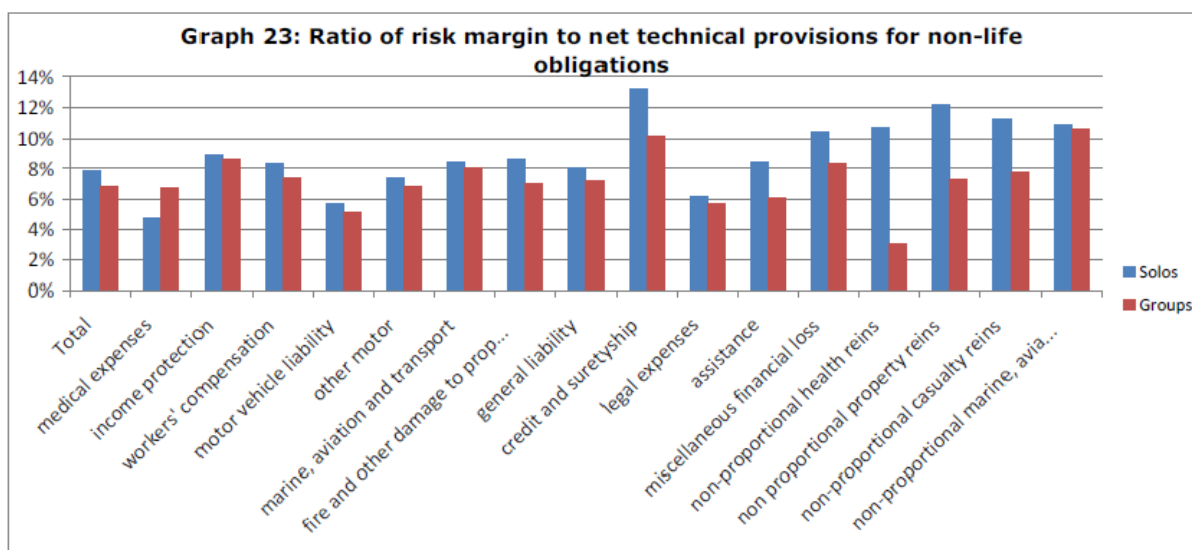
##### **24. Weight of the risk margin vs. TPs**

Timing: one year

Segmentation: LoBs and total

$$\frac{\text{Risk Margin}}{\text{Total net Best Estimate}}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation. The following figures are extracted from the QIS 5 final report. Those are just first indications.



Template: S.17.01

Numerator: R0280/C0020:C0180 (for relevant LoB);

Denominator: R0270/C0020:C0180 (for relevant LoB);

## 25. Weight of the risk margin vs. SCR

Timing: One year

Segmentation: Total

$$\frac{\text{Risk Margin}}{\text{SCR}}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation. The risk margin is 6% of the future SCRs so using the mean term of the liabilities (from below) it is possible approximate what the risk margin should be.

*Disclaimer:* The value of the indicator may be distorted by the fact that projected SCRs used in the RM calculation do not include SCRs for catastrophic risk and market risk. So for companies with large values of SCR for those risks the value of that ratio will be lower.

Templates: S.17.01 and S.25.01/S.25.02/S.25.03

Numerator (S.17.01): R0280/C0180

Denominator S.25.01 (SCR calculated with Standard Formula) or S.25.02 (SCR calculated with partial internal model) or S.25.03 (SCR calculated with internal model): R0220/C0100

## 26. Weight of the risk margin vs. underwriting risk SCR (note: only for standard formula users)

Timing: One year

Segmentation: Total

$$\frac{\text{Risk Margin}}{\text{UW risk SCR}}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation. When the risk margin is calculated using a percentage of the Best Estimate, the comparison with the underwriting risk makes the most sense: it shows the technical risk.

*Templates: S.17.01 and S.25.01/S.25.02/S.25.03*

*Numerator (S.17.01): R0280/C0180*

*Denominator (S.25.01): R0050/C0030 (net SCR, SF) or R0050/C0040 (gross SCR, SF).*

*In case of PIM or IM, supervisors need to understand first the components reported in S.25.02 and S.25.03 to understand if similar ratios could be performed.*

### 1.1.7 Reinsurance

#### 27. The extend of reinsurance cover

$$\frac{\text{Reinsurance Recoverables} + \text{Reinsurance receivables} - \text{Reinsurance payables}}{\text{Gross Technical provisions: sum (life and non - life)}}$$

The above ratio measures the exposure of the insurance undertaking to the reinsurance cover for both life and non-life business

*Templates: S.02.01*

*Numerator: R0270/C0010 + R0370/C0010 – R0830/C0010*

*Denominator: R0510/C0010 + R0600/C0010 + R0690/C0010*

In case of composite insurance undertakings, it is not possible to calculate the above ratio separately for life and non-life business as reporting templates don't require reinsurance receivables/payables to be reported separately for life and for non-life business. Therefore, it is recommended to consider the following two ratios separately for life and non-life business which exclude reinsurance receivables/payables:

$$\frac{\text{Reinsurance Recoverables (non - life and NSLT health)}}{\text{Gross Technical provisions (non - life and NSLT health)}}$$

*Templates: S.02.01*

*Numerator: R0280/C0010,*

*Denominator: R0510/C0010.*

$$\frac{\text{Reinsurance Recoverables (life and SLT health + life unit/index linked)}}{\text{Gross Technical provisions (life and SLT health + life unit/index linked)}}$$

*Templates: S.02.01*

*Numerator: R0310/C0010 + R0340/C0010*

*Denominator: R0600/C0010 + R0690/C0010.*

## **28. Impact of reinsurance cover in the claims**

Timing: one year

Segmentation: LoBs and Total

*Numerator = Total Reinsurance Recoveries received in current year<sub>LoB</sub>  
+ BE Claims Provision Reinsurance recoverable year end discounted<sub>LoB</sub>*

*Denominator  
= Gross Claims Paid in current year<sub>LoB</sub>  
+ Gross BE Claims Provision year end discounted<sub>LoB</sub>*

$$KRI = \frac{\text{Numerator}}{\text{Denominator}}$$

The above ratio measures the impact of reinsurance cover in the current claims costs.

*Templates: S.19.01*

*Numerator: R0460/C0760 + R0460/C0960,*

*Denominator: R0260/C0170 + R0260/C0360*

## **1.2 Other quantitative analysis**

### **29. Additional analysis for RBNS**

Speed of payment (numbers):

Timing: Over few years

Segmentation: LoBs 1 to 12

$$\frac{\text{Number of claims ended with payments}}{\text{Number of claims ended with payments} + \text{Number of outstanding claims}}$$

*Template: S.20.01*

*Numerator: R0160/C0060 + R0160/C0200 + R0180/C0140*

*Denominator: R0160/C0060 + R0160/C0200 + R0180/C0140 + R0180/C0110 + R0160/C0170 + R0160/C0020*

Speed of payment (amounts):

Segmentation: LoBs 1 to 12

$$\frac{\text{Gross payments made during the current year}}{\text{Gross payments made during the current year} + \text{Gross RBNS at the end of the period}}$$

Template: S.20.01

Numerator: R0160/C0040 + R0160/C0080 + R0180/C0120 + R0180/C0150 + R0160/C0180 + R0160/C0210

Denominator: (R0160/C0040 + R0160/C0080 + R0180/C0120 + R0180/C0150 + R0160/C0180 + R0160/C0210) + (R0160/C0050 + R0180/C0130 + R0160/C0190)

For a more in-depth analysis the two above indicators (that vary from 0 to 1) may be calculated also for each development year where data has been reported (i.e. for R0010, R0020, ..., R0150)

The two ratios measure the portion of the claims that are in charge of the undertaking during the year “N” that the undertaking itself has paid in that year (both in terms of amounts and numbers). The ratio on the numbers of claims measures the portion of claims that the undertaking has been able to close with a definitive payment.

One can compare the speed for the same development year over different years to have a hint on whether the policy of payment has changed over years. The ratios can also be seen as a measure of the efficiency of the claims management units (assuming all the other factors that impact the speed of payment are stable: the type of claims, the specificity of the LoB, etc.). This can be seen through a comparison with peers.

Normally these indicators (calculated for the first development years) would be higher for short-term LoB and lower for the long-term ones. In addition, especially for row “N”, the ratio on numbers is higher than the ratio on amounts (since one pays a lot of claims of low amount in the first year of development (in year “N”)).

The stability of these indicators during different calendar years could also be a hint on the appropriateness of applying a chain-ladder technique (which is based on the assumption of a stable policy of payments during the years).

A (sharp) decrease in indicators could mean that the undertaking is facing some liquidity problems.

A (sharp) increase in indicators could mean that the undertaking has done a thorough revision of its claims (paying and closing without payment the claims that were entitled to).

A general change in indicators (increase/decrease) could mean that the undertaking has reviewed its management claim unit (it is often observed after a merger).

Percentage of reopened claims (numbers):

Segmentation: LoBs 1 to 12

$$\frac{\text{Number of Reopen Claims during the year}}{\text{Total number of Open Claims at the end of the year}}$$

Template: S.20.01

Numerator: R0160/C0170 + R0160/C0200 Denominator: R0160/C0060 + R0160/C0090 + R0180/C0140 + R0180/C0160 + R0160/C0020 + R0180/C0110 + R0160/C0170 + R0160/C0200

This indicator can signal an abnormal number of reopened claims compared with the market average. This is based on the assumption that in each market and for each LoB there will be a certain level of reopened claims that is unavoidable. If one observes a higher level than the market one it can signal that the undertaking is potentially managing its account with de-recognition of some claims and the related amount of claims provisions with a positive variation in the P&L. Comparison of this indicator with peers or with the historical data of the same company can help recognize this bad practice.

The indicator should be quite stable over time. A sharp increase could signal the possibility that the undertaking has hidden its claims during past years and that, for this reason, Claims Provisions could be underestimate.

Percentage of claims closed without any settlement (numbers):

Segmentation: LoBs 1 to 12

$$\frac{\text{Number of claims ended without any payments}}{\text{Total number of claims open at the end of the year}}$$

*Template: S.20.01*

*Numerator: R0160/C0090 + R0180/C0160*

*Denominator: R0160/C0060 + R0160/C0090 + R0180/C0140 + R0180/C0160 + R0160/C0020 + R0180/C0110 + R0160/C0170 + R0160/C0200*

The indicator should be quite stable over time. A sharp increase could signal the possibility that the undertaking is hiding claims and that, for this reason, Claims Provisions could be underestimate.

## **10.6 Appendix 6 - Insurance undertakings participating in the BSR**

### **List of domestic authorised non-life insurers**

1. ARMEEC INSURANCE JOINT STOCK COMPANY
2. BULGARIA INSURANCE AD
3. BULGARIAN EXPORT INSURANCE AGENCY \BAEZ\
4. BULSTRAD VIENNA INSURANCE GROUP
5. BUL INS
6. DZI - GENERAL INSURANCE
7. EUROINS - HEALTH ASSURANCE LLC
8. EUROINS INSURANCE PLC
9. Fi Health Insurance AD
10. GENERALI INSURANCE AD
11. "GROUPAMA ZASTRAHOVANE" EAD
12. EIG Re PLC (former name HDI Zastrahovane)
13. HEALTH INSURANCE COMPANY PLANETA JSC
14. Health Insurance Institute JSC
15. INSURANCE COMPANY "ASSET INSURANCE" AD
16. Insurance Company DallBogg: Life and Health Inc
17. Insurance Company Medico - 21 JSC
18. Insurance company "Nadejda"
19. Insurance Company "OZOK Ins" AD
20. JSIC OZK - INSURANCE JSC
21. LEV INS
22. SAGLASIE INSURANCE JSC
23. TOKUDA HEALTH INSURANCE
24. Nova Ins PLS (former name UBB - AIG INSURANCE COMPANY|
25. UNITED HEALTH INSURANCE FUND DOVERIE INSURANCE AD
26. UNIQA INSURANCE
27. ZAD "ALLIANZ BULGARIA"
28. ZAD "ENERGY"
29. ZAD European Health Insurance Fund

### **List of domestic authorised life insurers**

30. Allianz Bulgaria Life
31. "BULSTRAD LIFE VIENNA INSURANCE GROUP" JOINT STOCK COMPANY
32. CCB LIFE
33. DZI - LIFE INSURANCE JSC
34. GENERALI LIFE INSURANCE AD – in liquidation
35. GRAWE Bulgaria Jivotozastrahovane
36. GROUPAMA ZHIVOTOZASTRAHOVANE EAD
37. INSURANCE COMPANY EUROINS LIFE
38. Life Insurance Company Saglasie EAD
39. LIFE INSURANCE INSTITUTE
40. SIVZK
41. SOGELIFE BULGARIA IJSC
42. UBB-METLIFE ZHIVOTOZASTRAHOVATELNO DRUJESTVO AD
43. UNIQA LIFE INSURANCE
44. VZAIMOZASTRAHOVATELNA KOOPERACIA - DOBRUDJA-M-ZHIVOT

### **List of domestic reinsurers**

#### 45. GP REINSURANCE

##### **List of Bulgarian insurance groups**

- 46. Armeec Insurance (The company has a subsidiary Armeecstil, Russia)
- 47. Euroins Insurance Group (Insurance holding company) and Eurohold Bulgaria (mixed financial holding company identified as financial conglomerate)
- 48. Lev Corporation (The company is a participating undertaking in Lev Ins, Health Insurance Institute and Life Insurance Institute) and Lev Ins (The company is a participating undertaking in Health Insurance Institute and Life Insurance Institute)
- 49. OZK Insurance (The company has a subsidiary OZOK Ins)
- 50. DOVERIE - United Holding (The company's subsidiaries are Insurance Company Medico – 21 and United Health Insurance Fund Doverie Insurance)

##### **List of Bulgarian insurance sub-groups**

- 51. BULSTRAD Vienna Insurance Group
- 52. DZI LIFE INSURANCE
- 53. Generali Bulgaria Holding – in liquidation
- 54. UNIQA Insurance



## 10.7 Appendix 7 – List of minimum information to be obtained by the reviewers

The lists below are considered indicative; the independent external reviewer shall consider additional information where considered relevant or where information is not available assess impact, if any, on the requested procedures and propose alternative approach.

Requirement
<i>Information/supporting documents regarding the following aspects:</i>
<b>Claims management</b>
o Allocation and segregation of responsibilities needed to ensure independent scrutiny and validation of the calculation; cross referenced to the procedures in place
o Claims opening system;
o IT systems and type of data available on the IT systems;
o Claims payment process including reimbursements' management;
o Claims management outsourcing;
o Litigations management; cross referenced to the procedures in place
o Claims revision frequency; cross referenced to the procedures in place
o Claims closing/re-opening practices; cross referenced to the procedures in place
o Internal analysis of claims' management, if available.
<b>Claims outstanding provision practices</b>
o Methodology for creating the claim provision at the opening
o Revaluations;
o Allocation and segregation of responsibilities including in terms of limits for opening/increasing the TP as well as for the approval of payments;
o Analysis made by the Company (if the case) in regards TP : figures used in the analysis should be reconciled with the operational and accounting data
§ Claims rate;
§ Average costs;
§ Readjustments analysis;
o Analysis made for estimation of TP based on statistic methodologies;
o Analysis made for the TP linked to litigation's files;
o Analysis made for the management costs' provision.
<b>Internal controls in place</b>
o Controls in place in regards the underwriting process; with reference to procedures
o Controls in place for verifying the quality of data;
o Controls in place for the claims management system namely the automated alerts;
o Controls in place in regard of opening and use of the claims' provision.
<b>Premiums and receivables (including collections) at policy level as of 30 June 2016:</b>
o Gross written premium –currency value, currency , value;
o Cashed premium – currency value, currency code, value;
o Date of the last received premium;
o Date of the last due premium installment;
o Due and unreceived premium – currency value, currency code, value;
o Number of the due and unreceived premium rates;
o Premium Receivables – currency value, currency code, value;
o Subsequent cash receipts (can be a separate detail at policy level)
o Allowance for unreceived premiums (doubtful receivables) - currency value, currency code, value (can be a separate detail at policy level);
o Days past due as at 30 June 2016
<b>Commissions at policy level:</b>
o Total commission expenses related to the policy (acquisition costs)
o Due commission – currency value, currency code, value;
<b>Reserves at policy level :</b>
o Unearned premium reserve – currency value, currency code, value;

o Mathematical/unit-linked reserve – currency value, currency code, value;
o Reserve for benefits and rebates – currency value, currency code, value;
o Reserve for unallocated premium – currency value, currency code, value;
o Assured sum – currency value, currency code, value;
o Surrender value – currency value, currency code, value;
o Other, as per actuarial requirements (point 3.)
<b>For life insurance policies</b>
o Age of the insured on the enforcement date;
o Deferred acquisition costs – currency value, currency code, value;
o Rider code
o Rider name
o GWP for each rider at policy level
o Mention where applicable if the policies are in WOP or/and holiday status (meaning the policies which are due, but for which the company waived the right to claim the premium from insured persons for a certain amount of time)
<b>List of recourses receivables as at 30 June 2016 and as at 31 December 2015</b>
o Recourse file number
o Recourse file description
o Recourse file counterparty
o Claim file no to which it refers
o Insurance contract no.
o Insurance product
o Recourse file - date for opening the Recourse file
o Recourse file amount - currency value, currency code, value
o Days past due as at 30 June 2016
o Days past due for receivables as at 30 Jun 2016
o Related claim file number
o Related claim amount (paid and/or RBNS at 30 Jun 2016)
o Allowance for outstanding Recourse receivables (doubtful receivables) - currency value, currency code, value;
o Subsequent cash receipts between 1.07.2016 -31.08.2016
<b>List of receivables from intermediaries as at 30 June 2016</b>
o Policy number;
o Policyholder ID
o Policyholder name
o Product code
o Product name
o Insurance class;
o Insurance product type (life/non life);
o Intermediary network used for the marketing (e.g. brokers...)
o Intermediary name
o Intermediary code
o Amount receivable - currency value, currency code, value
o Days past due as at 30 June 2016
o Allowance for unreceived receivables from intermediaries (doubtful receivables) - currency value, currency code, value;
o Subsequent cash receipts between 1.07.2016 -31.08.2016
List of other receivables as at 30 June 2016 containing the identification of the respective receivable, description, counterparty, amount, DPD and subsequent cash receipts (1.07.2016-31.08.2016)
• <b>List of pending claims at 31.12.2015</b>
• <b>List of pending claims at 30.06.2016</b>
o Number claim (year)/Number file;
o Dates of occurrence, participation and opening;
o Paid amounts ;
o Claims outstanding provision at 30.06.2016;
o Claims outstanding provision at the opening;
o Claims costs (provision + payments) at 30.06.2016;
o Claims costs at the opening;
o Readjustments.

o Subsequent payments between 1.07.2016-31.07.2016
o Status of the claim as at 31.07.2016 (closed/open)
o Insurance class
o Product name
• <b>List of claims closed during 30.06.2015-30.06.2016</b>
o Number claim (year)/Number file;
o Dates of occurrence, participation and opening;
o Claims costs at the opening;
o Final claims costs;
o Readjustments.
o Insurance class
o Product name
• <b>List of claims re-opened during 30.06.2015-30.06.2016</b>
o Number claim (year)/Number file;
o Policy number
o Dates of occurrence, participation and opening;
o Closing date;
o Re-opening date;
o Claims costs at the date of closing;
o Payments after re-opening and until 30.06.2016
o Claim provision at 30.06.2016.
o Claim in litigation - i.e. if there were amounts claimed in court related to the file
o Insurance class
o Product name
• <b>List of claims in litigation at 30.06.2016</b>
o Number claim (year)/Number file;
o Number of legal file (reference from legal department)
o Dates of occurrence, participation and opening;
o Date of the opening of the litigation;
o Claims outstanding provision created at the date of the opening of the file (identifying the part referring to the litigation and any remaining part);
o Paid amounts (identifying the part referring to the litigation and any remaining part);
o Claims outstanding provision at 30.06.2016 (identifying the part referring to the litigation and any remaining part);
o Amount being asked in the litigation.
o Insurance class
o Product name
• <b>List of claims closed through litigation between 31.12.2014- 30.06.2016</b>
o Number claim (year)/Number file;
o Dates of occurrence, participation and opening;
o Date of the opening of the litigation;
o Closing date;
o Final claims costs (identifying the part referring to the litigation and any remaining part);
o Amount being asked in the litigation;
o Closing manner (agreement/court ruling);
o Claim provision at 30.06.2016 (identifying the part referring to the litigation and any remaining part).
o Insurance class
o Product name
• <b>Claims management costs at 30.06.2016</b>
o Claims management costs - total by year of occurrence;
o Amounts paid (excluding claims reimbursed and management claims costs) - total by year of occurrence;
o Provision for claims management costs - total by year of occurrence;
o Claims outstanding provision - total by year of occurrence, including computation details
• <b>List of pending claims at 28.02.2015</b>
• <b>List of claims closed during 30.06.2016-31.07.2016</b>
• <b>Payments for claims during 1.01.2015-30.06.2016</b>

o Number claim (year)/Number file;
o Dates of payment;
o Amount;
<b>Payments for claims during 1.07.2016-31.07.2016</b>
<b>Reinsurance</b>
o Identification of reinsurers including close links with the Company and the quality (e.g. rating) of the reinsurer;
o RI program summary, including for each contract:
o Coverage period;
o Retention (proportional reinsurance)/ priorities (non-proportional reinsurance)/ intervention point (stop-loss);
o Number of layers (surplus reinsurance);
o Maximum capacity and other applicable responsibility's limits of the reinsurers;
o Information on coverage, outstanding amounts, payments, etc with reinsurers;
o Communication lines/structure with reinsurers;
o Analysis made by the Company
Reconciliation with reinsurers as at 30 Jun 2016 (if applicable) or 31 December 2015
Example of breakdown at policy level which contains all the premiums ceded in reinsurance during the period Jan-Jun 2016 for life and non life business , reconciled with the trial balance. (Proposed detail : Policy_No,Policy_Start_Date, Contract_Name, Category, Reinsurer, Event_Date, Product_Code, Currency, Gross premium, Net premium , Line of Business Ro, Line of Business Co, Client_Name)
Example of breakdown at policy level (where available) which contains all the claims ceded in reinsurance during the period Jan-Jun 2016 for life and non life business , reconciled with the trial balance. In case not available at policy level ,the claims per Line of business. (Proposed details for claims ceded: File_ID, Open_Date, Report_Date, Policy_No,Policy_Start_Date, Reinsurance Contract_Name, Category (RI Type), Reinsurer, Event_Date, Product_Code, Currency, Gross claim BGN,Net claim BGN, Line of Business Ro (insurance class), Line of Business Co)
Example of breakdown of all the reserves ceded in reinsurance (reinsurance recoverables) as of 30 June 2016 reconciled with the trial balance. (Proposed details for Reported claims (RBNS): File_Id, Open_Date, Report_Date, Policy_No,Policy_Start_Date, Contract_Code, Contract_Name, Category, Reinsurer, Event_Date, Product_Code, Currency, Rbns_Gross, Insured_Sum, Rbns_Ceded, Ceded_Percentage (where applicable), Retention_Percentage, Local retention value for XoL, Limit_Max, Line of Business , Line of Business Co, Client_Name, Annuities, Recourse) (Proposed details for premium reserve (UPR): Policy_No, Product_Code, Policy_Start_Date, Policy_End_Date, Premium, Ceded Premium, Currency, UPR Gross, UPR Ceded, Reinsurer, Client_Namer, CATEGORY (RI type), Line of Business, Line of Business Co)
Breakdown of the accounts balances on each reinsurer as of 30 June 2016 and as of 31 Dec 2015 on intervals of days past due as follows: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD and 91+DPD,. reconciled with the trial balance. Cash collected up to 31 July 2016, matched on each interval.
Computation of the impairment of receivables from reinsurance as of 30 June 2016.
Breakdown of the deposits from reinsurers as of 30 June 2016 reconciled with the trial balance. Deposits computation appendix to contract for each item.

## 10.8 Appendix 8 – Information on financial assets valuation