StandRe calculation documentation

31 October 2023

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| --- | --- |
| Year or one-year period of SST calculation | 2024 |
| Date at which this document was last filled out (dd.mm.yyyy) |  |
| Name of reinsurance company | [please insert name] |
| Name of contact person for the SST |  |
| Phone number of contact person |  |
| E-mail of contact person |  |

This document is the template for StandRe users to record, describe and explain how StandRe has been applied for the specific SST calculation applicable. The goal is that together with the completed StandRe spreadsheet template and the documentation of potential company-specific adjustments to StandRe, FINMA can follow and understand your StandRe calculation. The information given within this document is an integral part of the SST reporting requirements (in FINMA Circ. 2017/3 "SST", mainly Margin nos 171 and 174). Where useful, the SST report can refer to this document. For terminology and abbreviations used below, please refer to the StandRe model description document. The documents and files to be provided for StandRe to FINMA with the SST calculation are specified in the StandRe model description.

Please type your answers in the text boxes that follow each question. If not otherwise stated, section references refer to the StandRe model description document. Please use "NA" if a question is not applicable. If you refer to other documents that are part of the SST submission, please provide sufficiently precise references.

The following **changes need to be applied to the previous version of this document (31 October 2022)** to make it useable as the current version:

1. Update year in table and header to 2024.
2. Update your answers and explanations.

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# Reporting the non-life insurance portfolio

**StandRe template**: sheet "RE\_reserves\_and\_premiums"

This chapter concerns the reporting of the non-life portfolio in the StandRe template (not the StandRe modeling).

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Reporting the non-life insurance portfolio** | | | |
| Question | | Answer | Explanation |
|  | For the reserve figures reported, please describe and explain simplifications and approximations regarding allocation to   1. detailed LOBs 2. high level regions 3. proportional or non-proportional 4. application of outward retrocession to get net numbers from gross |  |  |
|  | For the premium figures reported, please describe and explain simplifications and approximations regarding allocation to   1. detailed LOBs 2. high level regions 3. proportional or non-proportional 4. application of outward retrocession to get net numbers from gross |  |  |
|  | List the reporting segments for the current year that contain business exposed to Nat Cat risk |  |  |
|  | Provide information on any (re)insurance business not included in the reporting figures (e.g. life reinsurance) and the size of this business |  |  |
|  | For business not in any of the admissible currencies (CHF, EUR, USD, GBP, JPY), provide currency, reporting segment(s) and premium and reserve amount(s) |  |  |
|  | Please provide information on nature (esp. LOBs), volume (esp. premium) and duration (years) of any multiyear contracts. |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the reporting of the portfolio. |
|  |

# Model structure

**StandRe template**: sheet "RE\_input\_parameters"

## **General information**

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **General information** | | | |
| Question | | Answer | Explanation |
|  | Please briefly describe your inward reinsurance portfolio and (where applicable) outward retrocession, with a view to understanding your risk situation and the implications on the model structure selected. (More detail can be provided in Section "2.2 Model stucture overview" below.) |  |  |
|  | Which company-specific adjustments (Margin no. 107-109 of FINMA Circ. 17/3 "SST") of StandRe do you use? |  |  |
|  | Are you explicitly modeling inward reinsurance structures in the AG component? If so, please briefly describe these structures and, where applicable, outward retrocession modeled in AG. |  |  |
|  | Are features of outward retrocession (or inward reinsurance) applied in the AG component? (More detail can be provided in Section "2.2 Model stucture overview" below.) |  |  |
|  | Where in StandRe have you considered variable premiums and/or expenses in the context of inward reinsurance or outward retrocession? |  |  |
|  | If there is an NE component, please describe its scope. |  |  |
|  | Are there portfolios that you only model in only one of AEP and IE1 and/or only one of AER and IE2? If so, please explain which ones and why. |  |  |
|  | Do you define AER and AEP in terms of accident years or underwriting years? Please explain your choice. Please confirm that accident/underwriting year is defined relative to the SST one-year period (typically calendar year) or provide description and detailed justification for the approach used. |  |  |
|  | Is the output of AER and IE2 net of outward retrocession? If not, please explain. |  |  |
|  | "Netgross" of outward retrocession is defined in StandRe as net of PEC & AC1 and gross of AC2. If you are using a different definition, please describe it here. |  |  |

## **Model structure overview**

The following table is to be used when features of outward retrocession (or inward reinsurance) are applied in the AG component of StandRe, i.e. if there are several model segments for AEP, IE1 or NE. In this case, explain in the table

* your current year outward retrocession (or inward reinsurance) structures (whether modeled or not),
* which structures are (not) modeled and where in StandRe (especially which ones are applied in AG)
* your definition of the model segments
* which features of outward retrocession (or inward reinsurance) apply to which model segment(s).

To this end, start by selecting a base segmentation. The base segmentation should be selected so that you can express the different outward retrocession (or inward reinsurance) structures and so that any model segment is equal to one or several base segments. Insert a column for each base segment write in this row the name of the base segment. Depending on the number of columns, it is possible to fill out this table in a separate Excel sheet. In this case, insert below the name of the separate Excel file delivered to FINMA.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model structure overview** | | | | |
|  | Base segmentation of portfolio relevant to your current year outward retrocession (or inward reinsurance if partially modeled in AG) and model segments. (This segmentation must be at least as granular as the segmentation for model segments.)  Put the names of the base segments in the cells to the right. |  |  |  |
|  | PEC and AC1 of outward retrocession (or inward reinsurance if partially modeled in AG) (by segment) and where necessary their order of application.  Of these, which are not modeled?  For those that are modeled, in which StandRe component (AEP, IE1, NE, AG) are they modeled, specifically in AG, and for which model segments? For AEP, NE and IE1, are the PEC and AC1 applied before or after fitting? |  |  |  |
|  | AC2 of outward retrocession (or inward reinsurance if partially modeled in AG) (by segment) and where necessary their order of application.  Of these, which are not modeled?  For those that are modeled, in which StandRe component (AEP, IE1, NE, AG) are they modeled, specifically in AG, and for which model segments? For AEP, NE and IE1, are they applied before or after fitting? |  |  |  |
|  | AEP model segments (names, definition) (merge cells where needed).  Please provide   1. the quantity (gross, netgross or net) of the output of each AEP model segment; 2. the features of outward retrocession (or inward reinsurance if partially modeled in AG) that are applied in AEP and whether they are applied before or after fitting; 3. the features of outward retrocession (or inward reinsurance if partially modeled in AG) that are applied in AG. |  |  |  |
|  | IE1 model segments (names, definition) and IE1 modeling thresholds per IE1 model segment (merge cells where needed).  Please provide   1. the quantity (gross, netgross or net) of the output of each IE1 model segment; 2. the features of outward retrocession (or inward reinsurance if partially modeled in AG) that are applied in IE1 and whether they are applied before or after fitting; 3. the features of outward retrocession (or inward reinsurance if partially modeled in AG) applied in AG.   If it is not the case that the output for all IE1 model segments is either netgross or gross, please explain. |  |  |  |
|  | NE model segments (names, definition) (merge cells where needed).  Please provide   1. the quantity (gross, netgross or net) of the output of each NE model segment; 2. the features of outward retrocession (or inward reinsurance if partially modeled in AG) that are applied in NE and whether they are applied before or after fitting; 3. the features of outward retrocession (or inward reinsurance if partially modeled in AG) applied in AG. |  |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the model structure. |
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# Attritional events (AE)

## **AE reserve risk (AER)**

**StandRe template**: sheets "RE\_AER\_parameter\_segments"; "RE\_AE\_discount\_factors"; "RE\_AE\_segments\_mapping"; "RE\_AER\_output"

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **AER overview** | | | |
| Question | | Answer | Explanation |
| Selection of AER parameter segments [StandRe template: sheet "RE\_AER\_parameter segments"] | | | |
|  | Please provide the number of material, respectively non-material AER parameter segments and explain their selection in view of the requirements from Section 5.5.1 (specifically materiality and homogeneity) and how contracts are assigned to parameter segments. Specifically, if applicable, please provide the assignment of non-material business to the material parameter segments.  Explain their relationship with StandRe segments (with reference to "RE\_AE\_segments\_mapping"). |  |  |
|  | Describe and explain deviations from the default approach (e.g. if several non-material parameter segments are used). |  |  |
|  | Describe and explain any changes in the selection of AER parameter segments compared to the previous SST calculation. |  |  |
| Input data preparation [StandRe template: sheet "RE\_AER\_parameter segments"] | | | |
|  | Please explain the derivation of the best estimate of outstanding losses (non-discounted, net of retrocession), in particular the transition from gross to net. |  |  |
|  | Have you used net development triangles? If not, please describe and justify the approach used. |  |  |
|  | Describe the basis of the input data for AER as specified in Section 5.5.3 (net or gross, paid or incurred/reported, time period of years). |  |  |
|  | Does the input data contain expenses or premiums in addition to losses? If so, please describe and explain. |  |  |
|  | Explain data quality (e.g. to get the required granularity) and any simplifications or workarounds applied to derive the input data. |  |  |
| Parameters by parameter segment [StandRe template: sheets "RE\_AER\_parameter segments", "RE\_AE\_discount\_factors"] | | | |
|  | For each AER parameter segment, if the underlying currencies different from the parameter segment currency sum up to more than 33% of the best estimate of outstanding losses (non-discounted, net of outward retrocession), please explain the approach used (e.g. exchange rate used). |  |  |
|  | For each AER parameter segment, describe and explain the approach used for the benchmark method (including the parameter "number of years for which Bornhuetter-Ferguson method has been used"). |  |  |
|  | For each AER parameter segment,   1. describe the method and data used to derive the selected standard deviation/CV; 2. compare the results to the results of the benchmark method in terms of mean and standard deviation/CV; 3. explain the reasons for selecting/not selecting the results of the benchmark method; 4. compare the selected standard deviation/CV to the selection from the previous SST calculation, and explain. |  |  |
|  | Explain the derivation of the payment patterns for the AER parameter segments. |  |  |
| Parameters by StandRe segment [StandRe template: sheet "RE\_AER\_output"] | | | |
|  | Describe and explain the derivation of the CVs for StandRe segments from the CVs for AER parameter segments through aggregation and disaggregation and the correlation assumptions used. |  |  |
|  | Explain how you have checked that the correlations used are consistent with the prescribed correlations between StandRe segments. |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the AER modeling. |
|  |

## **AE premium risk (AEP)**

**StandRe template**: sheets "RE\_AEP\_parameter\_segments"; "RE\_AE\_discount\_factors"; "RE\_AE\_segments\_mapping"; "RE\_AEP\_output" (respectively for several AEP model segments: "RE\_AEP\_output\_ms1", "RE\_AEP\_output\_ms2" etc., "RE\_AEP\_model\_parameters")

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **AEP overview** | | | |
| Question | | Answer | Explanation |
| Selection of parameter segments [StandRe template: sheet "RE\_AEP\_parameter segments"] | | | |
|  | Please provide the number of material, respectively non-material AEP parameter segments and explain their selection in view of the requirements from Section 5.5.1 (specifically materiality and homogeneity) and how contracts are assigned to parameter segments. Specifically, if applicable, please provide the assignment of non-material business to the material parameter segments.  Explain their relationship with StandRe segments (with reference to "RE\_AE\_segments\_mapping"). |  |  |
|  | Describe and explain deviations from the default approach (e.g. if several non-material parameter segments are used). |  |  |
|  | Describe and explain any changes in the selection of AEP parameter segments compared to the previous SST calculation. |  |  |
| Input data preparation [StandRe template: sheet "RE\_AEP\_parameter segments"] | | | |
|  | Please explain the estimation of the expected premiums (non-discounted, netgross of retrocession), in particular the transition from gross to netgross. |  |  |
|  | Please describe and explain the exclusion of losses in scope of IE1 and NE from the data used for AEP. Comment on the quality of the information used for this. |  |  |
|  | Describe the derivation of AEP input data (Section 5.5.4) and data quality, including any simplifications or workarounds applied, specifically to get loss ratios and netgross figures. |  |  |
| Parameters by parameter segment [StandRe template: sheets "RE\_AEP\_parameter segments", "RE\_AE\_discount\_factors"] | | | |
|  | For each AEP parameter segment, if the underlying currencies different from the parameter segment currency sum up to more than 33% of the expected premiums (non-discounted, netgross of outward retrocession), please explain the approach used (e.g. exchange rate used). |  |  |
|  | For each AEP parameter segment,   1. describe and explain the method used to derive the selected standard deviation/CV; 2. compare the selected standard deviation/CV to the benchmark data, specifically the historical results, and explain; 3. compare the selected standard deviation/CV to the selection from the previous SST calculation, and explain. |  |  |
|  | Explain the derivation of the payment patterns for the AEP parameter segments |  |  |
| Parameters by StandRe/AEP model segment [StandRe template: sheets "RE\_AEP\_output" (respectively "RE\_AEP\_output\_ms1", "RE\_AEP\_output\_ms2" etc., "RE\_AEP\_model\_parameters")] | | | |
|  | Describe and explain the derivation of the standard deviations/CVs for the StandRe segments intersected with AEP model segments from the AEP parameter segments through aggregation and disaggregation and the correlation assumptions used.  Explain how you have checked that the correlations used are consistent with the prescribed correlations between StandRe segments. |  |  |
|  | If there are several AEP model segments, please explain the derivation of the correlations between these segments. Explain how you have checked that the correlations used are consistent with the prescribed correlations between StandRe segments. |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the AEP modeling. |
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# Individual events

## **Experience scenarios**

**StandRe template**: sheets "RE\_IE1\_experience\_scen\_info";"RE\_IE1\_exp\_scen\_hist\_losses"; "RE\_IE1\_experience\_scenarios"

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Experience scenarios** | | | |
| Question | | Answer | Explanation |
| Input data and set-up [StandRe template: sheets "RE\_IE1\_exp\_scen\_hist\_losses", "RE\_IE1\_experience\_scenarios"] | | | |
|  | Please provide the source of the historical large loss information used (company-own, other source, etc.). If not company-own, please provide justification. |  |  |
|  | Are historical large losses aggregated by IE1 info event? What definition of event did you use? Do you aggregate large losses by IE1 info event over programs/cedants/LOBs affected? |  |  |
|  | Do the historical large losses include any amounts of premiums and/or expenses (e.g. reinstatement premiums) and, if so, what is the reason? |  |  |
|  | Is the following information available for all historical large losses: affected LOBs, number of affected cedants by LOB, accident year and reporting year of loss and affected underwriting years? If not, please explain. |  |  |
|  | Please explain the choice of the observation period. Where applicable, justify the exclusion of historical years. |  |  |
|  | Please explain how the reporting thresholds per IE1 model segment and occurrence year in the observation period are determined. Are all losses whose severity exceeds the corresponding reporting threshold (up to IBNyR) known? If not, please explain. |  |  |
|  | If there are several IE1 model segments, is the breakdown of historical losses into IE1 model segments always available? If not, please explain. |  |  |
|  | Please explain any data limitations and simplifications/workarounds applied to get the required input data. |  |  |
| As-if adjustments and IBNyR [StandRe template: sheets "RE\_IE1\_experience\_scen\_info", "RE\_IE1\_experience\_scenarios"] | | | |
|  | Severity as-if adjustments: please describe and explain   1. your selection of severity as-if adjustment segments; 2. the changes over time considered for the severity as-if adjustment; 3. the derivation of the severity as-if adjustment factors per segment and occurrence year; 4. any simplifications/workarounds applied. |  |  |
|  | Frequency as-if adjustments and frequency uplift: please describe and explain   1. your selection of frequency as-if adjustment segments and the choice of the exposure measures per segment; 2. the derivation of the as-if adjusted frequencies incl. IBNyR and frequency uplift; 3. any simplifications/workarounds applied. 4. If you have manually changed the frequency uncertainty uplift, please provide justification. |  |  |
|  | Where applicable, have the current year PEC of outward retrocession been applied correctly, to as-if adjusted historical losses and especially to as-if adjusted reporting thresholds? If not, please explain. |  |  |
|  | Please provide the IE1 modeling thresholds per IE1 model segment and explain their selection (considering the as-if adjusted reporting thresholds and as-if adjusted historical large IE1 info event losses). |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the derivation of the experience scenarios. |
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## **Portfolio structure scenarios**

**StandRe template**: sheet "RE\_IE1\_non-experience\_scenarios"

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Portfolio structure scenarios** | | | |
| Question | | Answer | Explanation |
|  | Have you calculated all portfolio structure scenarios stipulated in the StandRe model description, Section 6.8 and reported them in the sheet "RE\_IE1\_non-experience\_scenarios"? If not, which scenarios are not calculated and for what reason?" |  |  |
|  | Which method (e.g. default approach for XoL towers) and which tool have you used to calculate the portfolio structure scenarios. |  |  |
|  | Did you take into account contracts other than XoL towers? If so, please describe the method used. |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the derivation on the portfolio structure scenarios. |
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## **Damage event and other event scenarios**

**StandRe template**: sheet "RE\_IE1\_non-experience\_scenarios"

|  |  |  |  |
| --- | --- | --- | --- |
| **Event-based scenarios** | | | |
| Question | | Answer | Explanation |
|  | List the damage event scenarios you have not calculated and explain why. |  |  |
|  | List the other event scenarios you have not calculated and explain why. |  |  |

**Please provide the descriptions for the individual damage event and other event scenarios in Section 6.1 of this document.**

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| 1. Please provide as applicable any additional comments or explanations on the damage event and other event scenarios. |
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## **Own scenarios**

**StandRe template**: sheet "RE\_IE1\_non-experience\_scenarios"

|  |  |  |  |
| --- | --- | --- | --- |
| **Overview of own scenarios** | | | |
| Question | | Answer | Explanation |
|  | Please describe and explain how you have selected your own scenarios, starting from an explanation of the relevant features of your business model, the corresponding risk concentrations, and the reasons why the selected own scenarios are not covered by the prescribed scenarios. Please explain how this fully covers your material risk situation. |  |  |

**Please provide the descriptions for the individual own scenarios in Section 6.2 of this document.**

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| 1. Please provide as applicable any additional comments or explanations on the own scenarios. |
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## **Frequency-severity model for IE1**

**StandRe template**: sheets "RE\_IE1\_calibr\_to\_scen\_results" (respectively "RE\_IE1\_severity\_comp\_ms1", "RE\_IE1\_severity\_comp\_ms2" etc., "RE\_IE1\_model\_parameters", "RE\_IE1\_calibr\_to\_scen\_results")

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency-severity model for IE1** | | | |
| Question | | Answer | Explanation |
|  | Are you estimating the expected frequency for the IE1 model from the experience scenarios as outlined in the StandRe model description in Section 6.7? If not, please explain why and describe and explain the alternative approach used.  If there are several IE1 model segments, please explain for each IE1 model segment. |  |  |
|  | IE1 severity fitting:   1. Please briefly describe the process for the selection of the Gen Pareto severity parameters for the IE1 model, incl. fitting method(s) and expert judgement used. (More detail in following points.) 2. Describe in detail the method(s) used. Provide explicit formulas where possible, e.g. if you are using a mean square estimator (MSE). Address whether and if so how you have considered that not all scenarios have the same expected frequency. 3. Explain the rationale for selecting the method(s) used, as compared to other available methods. 4. Describe in detail the expert judgment applied, including relative to the scenario results. Which analyses have you used to decide whether the fit derived by the method is appropriate or needs to be adjusted and, if so, how have you derived the adjustment (e.g. by any specific judgments about specific scenarios)? 5. Please explain whether the fitted severity is more or less conservative than the severity given by the scenarios and justify the relationship. 6. Have you assessed the stability of the fitting method for your concrete case, i.e. how the fit would change if specific scenarios were excluded?   If there are several IE1 model segments, please explain for each IE1 model segment. |  |  |
|  | Have you capped the IE1 severity (if there are several IE1 model segments: of one or several IE1 model segments) at some maximal amount? If so, please provide detailed justification. |  |  |
|  | Question only applicable if there are several IE1 model segments:  Please describe and explain how you have derived the probabilities for the dependent Bernoulli random variables, starting from the prior probabilities, the empirical observations and the posterior probabilities, and potential adjustments. If you have adjusted posterior probabilities, why and how?  Did you apply the "reduction of parameters if there are many IE1 model segments"? If so, describe the disjoint groups used and justify why no IE1 info event can produce losses to several of these groups. |  |  |
|  | Question only applicable if there are several IE1 model segments:  Explain how you have assessed the reasonableness of the overall IE1 frequency-severity model, especially relative to the scenario results. Have you adjusted the IE1 model because of the comparison from the sheet "RE\_IE1\_calibr\_to\_scen\_results", and if so, how and why? Did you use graphical comparisons or also other approaches? |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the IE1 modeling. |
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## **Frequency-severity model for IE2**

**StandRe template:** sheet "RE\_IE2\_calibr\_to\_scen\_results"

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency-severity model for IE2** | | | |
| Question | | Answer | Explanation |
|  | Please provide the IE2 modeling threshold and explain and motivate its selection, providing also the two benchmark quantities calculated (the minimal IE2 scenario severity and the quantity calculated from the AER distribution, see Section 6.13.2). |  |  |
|  | IE2 severity fitting:   1. Please briefly describe the process for the selection of the Gen Pareto severity parameters for the IE2 model, incl. fitting method(s) and expert judgement used. (More detail in following points.) 2. Describe in detail the method(s) used. Provide explicit formulas where possible, e.g. if you are using a mean square estimator (MSE). Address whether and if so how you have considered that not all scenarios have the same expected frequency. 3. Explain the rationale for selecting the method(s) used, as compared to other available methods. 4. Describe in detail the expert judgment applied, including relative to the scenario results. Which analyses have you used to decide whether the fit derived by the method is appropriate or needs to be adjusted and, if so, how have you derived the adjustment (e.g. by any specific judgments about specific scenarios)? 5. Please explain whether the fitted severity is more or less conservative than the severity given by the scenarios and justify the relationship. 6. Have you assessed the stability of the fitting method for your concrete case, i.e. how the fit would change if specific scenarios were excluded? |  |  |
|  | Have you capped the IE2 severity at some maximal amount? If so, please provide detailed justification, including consideration that IE2 info events can affect many accident years and can correspond to many contract events as defined by outward retrocession. |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the IE2 modeling. |
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# Non-life insurance risk aggregation

**StandRe template:** sheet **"**RE\_distributions"

## **Non-life insurance risk aggregation overview**

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Non-life insurance risk aggregation overview** | | | |
| Question | | Answer | Explanation |
|  | Please provide the IT application in which you have implemented the Monte Carlo simulation (mention if proprietary). |  |  |
|  | Please explain how you have implemented the dependency structure (in particular, if you have used sample reordering) |  |  |
|  | Please describe any simplifications/workarounds used |  |  |
|  | Please describe any plausibility checks performed to ensure correct calculation in the IT application used |  |  |
|  | Please explain the calculation of the expected non-life insurance result, addressing premiums, losses and expenses (data, assumptions, methods) including consideration of variable premiums and expenses |  |  |

## **Explicit modeling of outward retrocession (or inward reinsurance) in AG**

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Explicit modeling of outward retrocession (or inward reinsurance) in AG** | | | |
| Question | | Answer | Explanation |
|  | Do you model in AG outward retrocession contracts that (also) cover prior accident or underwriting years? If so, please describe and justify the approach used. |  |  |
|  | If applicable, for which outward retrocession contracts and how have you implemented top-down disaggregation by info event for IE1 or NE? Please provide the assumptions, parameters and simplifications applied. |  |  |
|  | If applicable, for which outward retrocession contracts and how have you implemented top-down disaggregation for annual aggregates for AEP, IE1 or NE? Please provide the assumptions, parameters and simplifications applied |  |  |

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| 1. Please provide as applicable any additional comments or explanations on the AG modeling. |
|  |

## **Model results overview**

**StandRe template**: sheet "RE\_one-year\_risk\_capital"

The following questions refer to the table "mean comparison" in the sheet of the StandRe template indicated above. Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Model results overview** | | | |
| Question | | Answer | Explanation |
|  | Please explain any differences in amounts in the "mean comparison" table that have the same characteristics ("gross/netgross/net", "(non-)discounted", "scope", "source") or where there is no difference between e.g. gross and netgross or that differ only with respect to discounting. |  |  |
|  | 1. Please compare in the "mean comparison" table for "CY premiums" the amount with source "expected result" with all other amounts for "CY premiums" and explain differences. 2. Please compare in the "mean comparison" table for "CY losses" the amount with source "expected result" with the amount with source "AEP+IE1+NE" and explain differences. 3. Please compare in the "mean comparison" table for "CY losses" the amount with source "expected result" with the amounts from the remaining other sources and explain whether differences are reasonable. |  |  |
|  | Please explain any potentially surprising differences in amounts in the "mean comparison" table not explained in the above questions. |  |  |

# MVM calculation

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Market value margin (MVM) calculation** | | | |
| Question | | Answer | Explanation |
|  | With respect to your MVM calculation:   1. Have you used the standard method for the MVM component for non-life insurance risk, retrocession credit risk and scenarios? If no, please describe the method used or provide a precise reference. 2. Have you used the standard method with the StandRe figures or with your own input? If the latter, please describe the approach used or provide a precise reference. 3. Have you calculated an MVM component for a part of the URR split off (URR SPEC)? If not, why not? If yes, please explain approach and reasons. |  |  |
|  | If applicable, please describe and explain:   1. The selection of the run-off factors used for the retro credit risk; 2. The selection of the run-off factors used for each of the scenarios considered; 3. The derivation of the earnings pattern; 4. The derivation of the expected URR at time (). 5. The derivation of the parameters (best estimate, risk intensity, earnings pattern, payment pattern) for URR SPEC. |  |  |
|  | Please describe and explain any simplifications or workarounds used in the standard method for the MVM component for non-life insurance risk, retrocession credit risk and scenarios. |  |  |

|  |
| --- |
| 1. Please provide as applicable any additional comments or explanations on the MVM calculation. |
|  |

# Insurance cash flows for market risk

**StandRe template**: sheet "RE\_insurance\_cash\_flows"

Please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Insurance cash flow calculation** | | | |
| Question | | Answer | Explanation |
|  | In your insurance cash flow calculation:   1. Have you used the default method for the short term cash flows (i.e. all short term cash flows in SST currency)? If not, please describe, explain, and justify your own currency split selected for short term cash flows. 2. Have you used the standard method for the longer term cash flows? If not, please describe, explain, and justify your method. |  |  |

# Appendix - scenarios

## **Damage event and other event scenarios**

**StandRe template**: sheet "RE\_IE1\_non-experience\_scenarios"

Please copy and fill out the following table for each damage event and other event scenario you have calculated and enter the name of the scenario in the top row. Then, please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Damage event/other event scenario – [please insert name of scenario]** | | | |
| Question | | Answer | Explanation |
|  | Please describe and explain (with reference to your risk situation) if you have changed the narrative of the scenario or adjusted the scenario frequency. |  |  |
|  | Please describe the assumptions made in the calculation of the scenario and explain the rationale for them, e.g. about   1. regions or industries, 2. affected LOBs and which damaged risks they cover; 3. where applicable, number of affected cedants; 4. where applicable, loss to reinsurer in proportion of maximal possible loss; 5. etc. |  |  |
|  | Describe and explain the corresponding calculations and results, following and referring to the steps from the "calculation of scenario by reinsurer" from the scenario description, see Section 9.  For scenarios assigned to IE1, please describe and explain in particular the calculation of the net figures. |  |  |
|  | In particular, for scenarios assigned to IE1, please explain how you have determined the corresponding number of contract events. |  |  |
|  | Describe and explain any simplifications/workarounds made in the calculation of the scenario. |  |  |

## **Own scenarios**

**StandRe template**: sheet "RE\_IE1\_non-experience\_scenarios"

Please copy and fill out the following table for each own scenario and enter the name of the scenario in the top row. Then, please answer the following questions and provide as applicable descriptions, explanations and justifications in the "explanation" column.

|  |  |  |  |
| --- | --- | --- | --- |
| **Own scenario – [please insert name of scenario]** | | | |
| Question | | Answer | Explanation |
|  | Describe and explain the assignment to IE1 or IE2 and the type of scenario (damage event, other event, portfolio structure, etc.).  Describe and explain the narrative of the scenario, the damaged insured risks, the LOBs affected etc. |  |  |
|  | Describe all other assumptions and parameters used and explain their derivation including evidence (e.g. data and sources). |  |  |
|  | Describe and explain the calculation of the scenario including intermediate results and the resulting scenario frequency and severity. |  |  |