INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS

Public

Instructions for the May 2018 Quantitative Data Collection Exercise of the Field Testing Project

("the Technical Specifications")

This is an IAIS working document used for 2018 Field Testing purposes. It does not purport to represent or prejudge the final proposals of the IAIS on ICS.

The Technical Specifications must be read in conjunction with the associated 2018 Field Testing Template, Questionnaire and yield curve documentation to provide an accurate and up-to-date understanding of the Field Testing exercise.

Notes:

1. The default reporting date used by Field Testing Volunteer Internationally Active Insurance Groups ("Volunteer Groups") was end-December 2017. Subject to previous discussion with the relevant group-wide supervisor, different valuation dates could be used for the purposes of this exercise, as long as the necessary efforts are made to ensure the internal consistency of the results. For example, with respect to key assumptions such as the reference date to determine currency exchange rates or yield curves.

2. Balance sheet items were valued in accordance with the specifications set out in the relevant sections

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1 Reporting Date and Context

1. The reporting date (or "balance date") to be used by all Volunteer Groups should be end December 2017. Subject to previous discussion with the relevant group-wide supervisor, different valuation dates can be used for the purposes of this exercise (e.g. 31 March 2017 for Volunteer Groups based in Japan), as long as the necessary efforts are made to ensure the internal consistency of the results. For example, with respect to key assumptions such as the reference date to determine currency exchange rates or yield curves.

2. Balance sheet items should be valued in accordance with the specifications set out in the relevant sections.

3. This exercise plays an important role in the IAIS' process of developing the Risk Based Global Insurance Capital Standard (ICS). The ICS will be one component of ComFrame, a comprehensive framework addressing qualitative as well as quantitative requirements for IAIGs. This framework may evolve and be refined over time. This exercise also fulfils the purposes of confidential reporting of the Basic Capital Requirements (BCR) and Higher Loss Absorbency (HLA) for Global Systemically Important Insurers (G-SIIs). To facilitate ongoing monitoring of the BCR and HLA, these calculations are requested of all Volunteer Groups.

2 Process and Timetable

4. The following table summarises the process and timetable to be followed:

Action	**Timeline**
Issuance of Technical Specifications, Template and Questionnaire for quantitative Field Testing	16 May 2018
Period in which Q&As will be published: - Refer to Q&A documents on https://fieldtesting.iaisweb.org	From 1 June 2018 to 10 August 2018
Deadline for the submission of the Field Testing Template and Questionnaire by the group-wide supervisors (GWS).	31 August 2018 in the eBIS system by the GWS
Analysis by the Field Testing Analysis Team & discussions of summary results by the IAIS.	September 2018 to February 2019
Launch of 2019 Field Testing	April 2019

3 Scope of Application

5. The starting point for scope of application should be the consolidated balance sheet of the insurance holding company of an insurance group or financial holding company of a financial conglomerate subject to the adjustments set out below.

6. To ensure comparability of results, when reporting Balance Sheet information under both valuation methods (Market Adjusted Valuation ("MAV"), and GAAP with Adjustments ("GAAP Plus") – see respective sections of this document), Volunteer Groups should apply the calculations to the same set of group entities. This may require adjustments to one or both of the valuation approaches to ensure a consistent consolidated approach.

7. The scope of the group should include all related entities within a group which may be a potential source of risk to the insurance operations, including all entities with exposures to non-traditional, non-insurance (NTNI) risks.

8. Non-insurance financial entities must be included in the consolidation. Capital requirements for non-insurance financial entities subject to specific sectoral supervision should be calculated separately according to the sectoral requirements as defined in the section on Baseline Current Regulatory Reporting (Section 5).

9. Entities in the group can be excluded from the scope only if they are immaterial, that is when they do not significantly contribute to the total group risk. It is important to note that materiality in this case relates to the materiality of the risks posed to the financial entities in the group, not the size of the operations.

10. Non-financial entities may be excluded from the consolidation if they are completely separate from the financial businesses in the group. This would mean no linkage to the holding company in terms of guarantees or other financial linkages, application of credit rating methodologies, shared treasury operations or shared resources such as IT platforms and buildings. The Volunteer Group must be able to establish that financial stress or bankruptcy of the non-financial business would have no financial or reputational effect on the financial entities, holding companies or ultimate holding company of the group.

11. The value of equity and debt owned by the Volunteer Group in entities that are excluded from the scope of the group should not be included in the capital resources of the group for solvency purposes.

12. The consolidation approach for entities should be as follows (this is a non-exhaustive list):

a) all insurance entities and insurance holding companies that are subsidiaries of the ultimate holding company should be fully consolidated according to prevailing accounting

consolidation rules. US stat only filers should follow the consolidation rules under the SAP example of GAAP Plus

b) any special purpose vehicles over which the ultimate holding company of the insurance group or the financial holding company has a dominant or significant influence should be fully consolidated according to prevailing accounting consolidation rules

c) joint ventures should be consolidated on a proportional basis according to prevailing accounting practices for joint ventures

d) all holdings in related insurance and insurance holding companies, that are not subsidiaries of the ultimate parent and that are not considered under points (a) and (c) above, should be consolidated on the basis of the equity method

e) holdings in related undertakings other than those referred to in points (a) to (d) above should be consolidated at market value

13. Where the consolidation approach used for the purpose of field testing differs from that set out above, that should be disclosed in the Questionnaire and, where material, an estimate of the quantitative impacts of the differences should be provided.

14. In order to understand the impact of different scopes of consolidation, detailed information regarding the scope of consolidation is also requested. Please see the section on Scope of Group (Section 17).

4 General Guiding Principles

4.1 Substance over Form

15. The economic substance of transactions and events should be recorded in the balance sheet rather than just their legal form in order to present a true and fair view of the risk profile of the entity. This may require the use of judgment when preparing the balance sheet and any material assumptions should be disclosed in the Questionnaire.

4.2 Proportionality / Best Effort

16. Calculations and valuation should be subject to the proportionality principle. When the Volunteer Group can demonstrate that taking into account a specific factor / rule in their calculation or valuation would lead to a significant increase in complexity, without material improvement to the quality of the figure produced, or to the assessment of risk linked to this figure, then this factor or rule can be ignored or simplified.

17. The materiality of the impact of using a simplification should be assessed with regard to:

a) The volume of the item valued

b) The overall volume of the group's business and capital resources

c) The assessment of risk

18. Moreover, even though the use of a simplification would lead to a figure possibly significantly different from the full fair value, it might nevertheless be used subject to appropriate adjustment, provided that no other applicable methodology would lead to a better proxy.

Example for best effort for MAV basis

Consider a portfolio of inflation indexed annuities. In theory, a full stochastic modelling of future inflation may be needed. However, considering:

- the complexity of such a modelling (and justification of the associated parameters)
- that inflation and mortality are assumed to not be correlated

Volunteer Groups can use a flat future level of inflation for deriving future annuity payments in the calculation of insurance liabilities.

Example

Consider a Volunteer Group with capital resources of 10, and insurance liabilities (savings contracts) of 100. The calculation of those insurance liabilities can be achieved either on a policy by policy basis, or by grouping all policies and using an average actuarial age and average lapse rates. The latter leads to a difference of 1% in the amount of insurance liabilities. Although such a difference can be considered as non-material with regard to the insurance liabilities, the relative impact on the capital resources is 10% (assuming the asset side is unchanged). This should be considered a material difference, and the simplification should be rejected. PLEASE NOTE THIS EXAMPLE IS IN NO WAY INTENDED TO MEAN THAT THE MATERIALITY THRESHOLD IS 10% OF CAPITAL RESOURCES.

4.3 Look-through

19. In order to properly assess the risk inherent in collective investment funds and other indirect exposures, their economic substance needs to be taken into account. This should be achieved, to the extent possible, by applying a look-through approach in order to assess the risks of the assets underlying the investment vehicle. The application of a look-through approach should be done consistently with Section 13.2.1.

4.4 Use of Current Estimates

20. It is proposed, under the MAV approach as well as the GAAP Plus approach, that the use of current estimates will replace existing methodologies for calculation of insurance liabilities. See Section 6 in relation to the MAV approach and Section 7 in relation to the GAAP Plus approach. The term 'best estimate' is the same concept.

21. Any risk or prudence margins currently embedded in the valuation of insurance liabilities should therefore be re-attributed directly to capital resources under the revalued balance sheet as Insurance Liability/Reinsurance Adjustment Offset.

22. The IAIS is testing different types of consistent and comparable margin over current estimate (CC-MOCE). See Section 12 for details of the CC-MOCE approaches being considered. These are to be separately reported.

23. The main objective of the use of current estimates is to increase the comparability of insurance liabilities' valuation, for the purposes of the work on the BCR and ICS. This is because the degrees of safety embedded in risk and/or prudence margins vary widely across jurisdictions, constituting a significant source of lack of comparability in this area.

4.5 Segmentation

24. The allocation of insurance liabilities to the segments used in 2018 Field Testing should follow the principle of substance over form. This means insurance liabilities should be allocated to the segment that best reflects the nature of the underlying risks rather than the legal form of the contract. The Questionnaire should be used to identify important assumptions made in the allocations to the segments in field testing.

4.6 ICS Rating Categories

25. Volunteer Groups can use the agency ratings listed in the table below (and from A.M. Best for reinsurance exposures, see the Credit risk section on reinsurance exposures). Modifiers such as + or – do not affect the ICS Rating Category. Where two ratings are listed in a cell, the first rating represents a long-term rating, and the second rating represents the short-term rating mapped to the same ICS Rating Category (ICS RC). The short-term rating can only be used for instruments with a remaining maturity of one year or less.

Table 1. Mapping to ICS Rating Categories (for instruments not in default)

ICS RC	S&P	Moody's	Fitch	JCR	R&I	DBRS
1	AAA	Aaa	AAA	AAA	AAA	AAA
2	AA / A-1	Aa / P-1	AA / F1	AA / J-1	AA / a-1	AA / R-1
3	A / A-2	A / P-2	A / F2	A / J-2	A / a-2	A / R-2
4	BBB / A-3	Baa / P-3	BBB / F3	BBB / J-3	BBB / a-3	BBB / R-3
5	BB	Ba	BB	BB	BB	BB
6	B / B	B / NP	B / B	B / NJ	B / b	B / R-4
7	CCC / C and lower	Caa and lower	CCC / C and lower	CCC and lower	CCC / c and lower	CCC / R-5 and lower

26. Additionally, Volunteer Groups may use any ratings by a rating agency that the banking regulator in its jurisdiction (or for a subsidiary, in the subsidiary's jurisdiction) has recognised as an External Credit Assessment Institution (ECAI) under the Basel II framework. The ICS RC corresponding to a rating produced by such an agency is the Basel II rating category to which the supervisor has mapped the rating (the combined rating class AAA/AA corresponds to ICS RC 2). For the purposes of 2018 Field Testing, ICS RCs 1 to 4 in the table above are considered as investment grade.

27. Further guidance on the use of ratings by a rating agency can be found in Section 13.5 on Credit risk.

5 Baseline Current Regulatory Reporting

Relevant Worksheets in Template:	*FT18.Baseline*	*Due 31 August 2018*

28. Volunteer Groups are asked to report their existing group capital requirements and group capital resources, under the supervisory regime currently in force in their jurisdiction. This baseline information will be used to assess the impact of the BCR, HLA, and ICS (both in terms of capital requirements and capital resources) against existing or prospective group statutory requirements.

29. The *Baseline* worksheet is designed to obtain not only information about existing insurance-based group-wide capital requirements, but also other sectoral capital requirements.

30. Note that in addition, Volunteer Groups are asked to report their existing local capital requirements for each insurance legal entity (subsidiary) in the group in the *FT18.Baseline.Jurisdictional* worksheet. This is covered in a separate section.

5.1 Insurance-related Baseline

31. The Insurance related capital requirement is the existing group capital requirements and group capital resources, under the group-wide supervisory regime currently in force in the home jurisdiction of the Volunteer Groups. However, the following exception applies to Volunteer Groups based in the United States who should provide a proxy baseline requirement as follows:

a) The analysis should start by identifying the top tier of regulated (insurance) entities. These top-tier entities should then be grouped by regulatory jurisdiction. The capital requirements and available regulatory capital should then be determined for those top-tiered entities based on each jurisdiction's existing capital rules. In doing so, consideration should be given to whether stacking is appropriately reflected. For instance, Risk-Based Capital (RBC) as used in the state-based insurance regulatory regime in the United States is structure-neutral for U.S. entities, and assumes that the capital held for foreign subsidiaries is reasonable.

b) Several separate figures are to be aggregated as part of this process. The first is the firm's minimum regulatory capital requirement as described in the next paragraph. The second is the firm's available regulatory capital. In addition, for U.S. life insurers, the Asset Valuation Reserve (AVR) and Interest Maintenance Reserve (IMR), which are to be separately reported as memo accounts in the *Baseline* worksheet of the Template, should also be aggregated and provided.

c) For each of the top-tier U.S insurance entities in an insurance group, the RBC Company Action Level of each insurer would be re-calibrated to the point at which regulatory action can be taken in any state based on RBC alone, i.e., the point at which the trend test begins which is

one and a half times Company Action Level. The re-calibrated amounts for each top-tier U.S. insurance entity would then be added together to approximate a combined re-calibrated RBC. This would provide a combined company view of the level at which regulatory action is triggered under the U.S. approach to insurance regulation for the subject insurance legal entities domiciled in the United States. Thus, this aggregation approach is to be used rather than a fully detailed RBC calculation on the combined entities' annual statement data. This resulting aggregated level of required capital, in turn, would be combined with that of other jurisdictions as described above in paragraph a), pursuant to their respective existing capital requirements (as per the table below). For non-regulated entities, such as a U.S.-based holding company, there is no minimum regulatory capital requirement.

d) In addition to capital requirements, firms should aggregate available regulatory capital. For U.S.-domiciled insurers, this will be the statutory capital and surplus of each legal entity top-tier insurer per its year-end 2017 Annual Statement Balance Sheet. For insurers domiciled in other non-U.S. jurisdictions, and for other regulated financial sectors, this will be pursuant to each jurisdiction's/sector's respective rules. Additional guidance for the major non-U.S. jurisdictions is provided by the IAIS in the table below. For non-regulated entities, such as a U.S.-based holding company, available capital will be based on capital resources held within that entity, excluding the book value of its investment in insurance subsidiaries.

e) The total aggregated AVR and the total aggregated IMR should be reported with respect to all U.S. life insurance legal entities in the group.

32. Other examples of Group PCRs or entity PCRs for the purposes of an aggregated group PCR are provided in the table below. If a specific jurisdiction is not listed within this table, and you are uncertain as to what is expected, please consult with your Supervisory Authority.

Table 2. Examples of jurisdictional group PCRs

Jurisdiction	Information provided
Australia	APRA's "Prudential Capital Requirement", as set out in prudential standards is the legal entity "MCR" under the ICPs. Groups also have to hold the "Prudential Capital Requirement" as set out in the prudential standards, again an MCR. The PCR is target capital as set by the insurer/group in accordance with APRA requirements. Effectively, this would be "Target capital under ICAAP". PCR is not a set multiple of MCR.
Bermuda	The Legal Entity PCR in Bermuda for medium and large commercial insurers is called "Enhanced Capital Requirement" (ECR) and is calibrated to Tail-VaR at 99% confidence level over a one year time horizon.
Canada	The PCR for Life Groups is 100% of the LICAT Solvency Buffer. The PCR for P&C Groups is the MCT capital requirement at target level.
China	The PCR is 100% of the C-ROSS total capital.

Hong Kong	For Hong Kong, under the current rule-based capital regime, if applied similar to the concept of PCR of the IAIS Field Testing exercise, the regime's PCR would be 150% of MCR for life insurers and 200% of MCR for non-life insurers.
Japan	200% of solvency margin ratio is deemed as PCR.
Korea	100% of risk-based solvency margin ratio is deemed as PCR.
Singapore	Regarding Early Warning CAR (Equivalent of PCR) for Singapore under the current regime, the regime's PCR would be 120% of total risk requirement (i.e. capital requirement) for all licensed insurers. In practice, insurers are expected to have capital management plans in place and hold a target CAR of more than 120%.
South Africa	The PCR is 100% of the SAM group SCR.
Chinese Taipei	The Chinese Taipei FSC does not impose a group PCR, and the capital requirement system for insurers (incl. Life, P&C, and Reinsurer) in Chinese Taipei is named "Risk-based Capital (RBC) System". The PCR level is set at 200% of RBC ratio, where RBC ratio = capital resources / risk-based capital requirement (based on a factor-approach).

33. *Qualifying Capital Resources* is the capital available to meet the capital requirement reported on the worksheet. Therefore, this should be reported on the same basis as the capital requirement.

34. *Equity*: Report the amount of equity that qualifies as capital resources within the jurisdictional capital framework.

35. *Deductions/exclusions from qualifying capital resources* is the amount deducted from capital resources within the jurisdictional capital framework and should be reported as a negative figure.

36. *Liabilities counted towards qualifying capital resources* is the amount of liabilities that qualifies as capital resources within the jurisdictional capital framework.

5.2 Securities-related Baseline

37. The securities-related capital requirement is any capital requirement imposed by a securities regulator on securities business within the group. The securities-related qualifying capital resources is the regulatory capital available to meet the capital requirement reported on the worksheet. Therefore, this should be reported on the same basis as the securities-related capital requirement.

5.3 Banking-related Baseline

38. For capital requirements related to banking activities, a separate table is provided in order to collect the total risk-weighted assets according to the Basel III Framework[1] (using the approach within

[1] http://www.bis.org/bcbs/basel3.htm

the Basel III Framework that is used for regulatory reporting by banking entities in the group) and the total exposure measure for the Basel III leverage ratio framework.

39. The method of calculating risk-weighted assets (RWA) for regulated banking activities should be the same as that for reporting to the banking supervisor(s).

40. For unregulated banking business, Volunteer Groups should apply the Basel III leverage ratio framework and the full RWA calculation under the Basel III Framework. The Basel III monitoring workbook is available to calculate these figures at http://www.bis.org/bcbs/qis/index.htm.

5.4 Assets under Management

41. The collection of baseline data on asset management business will serve two purposes. The first is to understand the amount of capital required to be held for that business under existing regulatory regimes. The second is to allow the IAIS to calculate the non-insurance component of the BCR, which mirrors the Basel II standardised approach for determining the Operational risk charge.

42. There are two columns, one for asset management business that is subject to a capital requirement from a banking supervisor and one for asset management business not related to banking (i.e. where a banking supervisor does not apply a capital requirement in relation to that business). These columns are: *'Regulated Banking Business'* and *'Not related to Banking'*.

43. For both types of asset management business, the last 3 years of positive gross annual income must be reported. This income should relate only to third-party asset management, not the management of the Volunteer Group's own assets. Gross annual income is defined in paragraph 650 of the Basel II Comprehensive version[2].

44. For asset management business not related to banking, if any capital requirement is imposed by another supervisor (including an insurance supervisor[3]) this should be reported so as to facilitate a comparison to the calculation according to the Basel II standardised approach.

45. For asset management business subject to a capital requirement from a banking supervisor, the actual Operational risk charge reported to the banking supervisor(s) must be reported. If the banking supervisor(s) requires or allows the use of the standardised approach under Basel II, then this figure should be the same as that calculated from the input of the last 3 years of positive gross annual income from asset management business.

[2] http://www.bis.org/publ/bcbs128.pdf

[3] Only relevant where the asset management business is conducted 'off-balance sheet' as it is not included in the capital requirement reported on the Current Regulatory Baseline.

6 Market Adjusted Valuation (MAV) Approach

Relevant Worksheets in Template:	*FT18.BCR & ICS Balance Sheet* *FT18.Valuation assets* *FT18.Insurance portfolios* *FT18.Model Portfolio*	*Due 31 August 2018*

46. Under the MAV approach, the Volunteer Group starts with the amounts as reported on its audited, consolidated, general-purpose balance sheet, whether that is on an IFRS or GAAP basis, and performs adjustments to get to a consolidated MAV Balance Sheet following these Technical Specifications.

6.1 Valuation Principles

47. Volunteer Groups are not required to revalue every balance sheet item to a market-based methodology. The valuation of assets and liabilities other than insurance liabilities and financial instruments should generally be based on IFRS or GAAP valuations, as applicable for consolidated audited general-purpose financial statements (or statutory amounts in the case of US mutuals). Section 6.2 provides guidance for various balance sheet items.

48. The Volunteer Group should make adjustments to the following items:

a) Insurance liabilities and reinsurance balances should be adjusted to comply with the sections on current estimate and MOCE. Existing provisions, such as unearned premium provisions or provisions for unexpired risk, should be replaced by the current estimate calculation. Separate account/unit-linked liabilities, where the policyholder bears the investment risks, may be valued according to Section 6.7 (Obligations Replicable by a Portfolio of Assets), where appropriate.

b) Financial instruments, both assets and liabilities, including derivatives and mortgages/ loans made[4], should be adjusted to fair value using the fair value specification determined under the Volunteer Group's applicable IFRS or GAAP standards for reporting and public disclosure purposes.

c) Notwithstanding paragraph b) above, non-insurance liabilities (including debt instruments issued by the Volunteer Group) should be adjusted to a value that does not take into account changes in the credit standing of the Volunteer Group.

[4] In this context, mortgages/loans made means mortgages/loans that the Volunteer Group has invested in or itself written as the offeror.

Example

Subordinated debt issued by the Volunteer Group should not be revalued to market prices. However, the present value of the liability should be updated to reflect changes in the time value of money (update of yield curves).

6.2 Guidance for Specific Balance Sheet Items

49. Volunteer Groups should apply the following adjustments to these specific balance sheet items for purposes of the 2018 Field Testing:

a) Goodwill and other intangibles: the valuation of goodwill and other intangibles should be based on the Volunteer Group's reported IFRS or GAAP valuations, as applicable for consolidated audited general-purpose financial statements in each Volunteer Group's respective home jurisdiction. However, goodwill and other intangibles are subject to adjustments in deriving the value of capital resources.

b) Property for own use: for consistency with the treatment of investment property, the valuation of these items should be adjusted to fair value as determined under the Volunteer Group's IFRS or GAAP valuations.

c) Mortgages and loans made: See paragraph 48.b) above on financial instruments.

d) Reinsurance recoverables: these items should be reported on a basis consistent with the determination of insurance liabilities (refer to Section 6.3). Recoverables on paid and unpaid balances should be reported net of allowances for estimated uncollectable amounts.

e) Pension assets/liabilities: Pension assets/liabilities should be based on the Volunteer Group's reported IFRS or GAAP valuations. However, pension assets are subject to adjustment in deriving the value of capital resources.

f) Deferred taxes (assets/liabilities) should be treated according to the following specification:

   i. Deferred tax assets/liabilities should be adjusted consistently with the relevant tax rules, to reflect the potentially new temporal differences between the MAV Balance Sheet and the Tax Balance Sheet. Further details are provided on Section 14.4 (Adjustments arising from the differences in valuation between the GAAP and ICS Balance Sheets).

   ii. The adjusted numbers should then form the basis for the application of the criteria for the determination of qualifying capital resources, as well as the determination of the ICS risk charges.

g) Deferred acquisition costs, other deferred expenses (including value of business acquired), and future acquisition costs (within contract boundaries): deferred acquisition costs and other

deferred expenses which are on the balance sheet at the reference date should be adjusted to zero. Future acquisition costs related to future premiums (within contract boundaries) should be reflected in the value of insurance liabilities.

h) Premium receivables related to contracts which are included in the current estimate calculation (receivables on premiums due or future premium receivables within the contract boundaries) should be adjusted to zero, as the respective cash flows should be reflected in the valuation of insurance liabilities (as negative cash flows). Agents' balances should be included in "Other Insurance-Related Assets".

i) Loans to policyholders should be reported in the appropriate row under "Investments", rather than being netted against insurance liabilities.

j) Other assets (including Other Reinsurance and Other Insurance-Related Assets): the valuation of these items should be based on the Volunteer Group's reported IFRS or GAAP valuation.

k) Provisions other than insurance liabilities: the valuation of these items should be based on the Volunteer Group's reported IFRS or GAAP valuation.

l) Financial liabilities: upon initial recognition the valuation of these items should be based on the Volunteer Groups' reported IFRS or GAAP valuations, but there should be no subsequent adjustment to take account of changes to the Volunteer Group's own credit standing. See paragraph 48.c).[5]

m) Contingent liabilities: the valuation of contingent liabilities should be based on the Volunteer Group's reported IFRS or GAAP valuation. Many contingent liabilities are disclosed in the notes to financial statements because estimates are not reliable and/or the IFRS/GAAP definition of a liability to be reported on the balance sheet is not met.

n) Other non-financial liabilities: the valuation of other non-financial liabilities should be based on the Volunteer Group's reported IFRS or GAAP valuation.

6.3 Methodology for Calculation of Current Estimate

6.3.1 Basis for calculation

50. The current estimate should correspond to the probability-weighted average of the present values of the future cash flows associated with insurance liabilities using IAIS specified yield curves[6].

[5] ICP Standard 14.6: "The value of insurance liabilities and other liabilities does not reflect the insurer's own credit standing."

[6] IAIS specified yield curves include the 35 specified yield curves in the Template and other yield curves derived using the methodology in Section 6.3.15.1.

51. This entire section applies equally to the calculation of reinsurance recoverables. Reinsurance recoverables should be calculated so that they are consistent with the current estimates of insurance liabilities. Therefore the same assumptions and inputs should be used.

52. The calculation of the current estimate should be based upon up-to-date and credible information and realistic assumptions. Implicit or explicit margins are not part of the current estimate. The determination of the current estimate has to be objective, comprehensive, and use observable input data where possible.

53. Uncertainty in future cash flows should be captured in the current estimate. Uncertainty in cash flows can arise from a number of sources, namely: (1) the timing, frequency and severity of claim events; (2) claim amounts, including uncertainty in claim inflation, and the period needed to settle claims; (3) the amount of expenses; (4) the value of an index/market values used to determine claim amounts; (5) policyholder behaviour; and, (6) path dependency. The calculation should consider the variability of cash flows in order to ensure that the current estimate represents the mean of the distribution of cash flow values.

54. By definition, the current estimate is the average of the outcomes of all possible scenarios, weighted according to their respective probabilities. However, it may not be necessary or even possible to explicitly incorporate all possible scenarios in the valuation of insurance liabilities, or to develop explicit probability distributions in all cases. This depends mainly on the type of risks affecting the scenarios and the expected materiality of their financial impact in the overall calculation.

55. When valuing insurance liabilities, no adjustment should be made to take into account the own credit standing of the Volunteer Group.

6.3.2 Cash flow projections

56. Cash flow projections should reflect expected realistic future demographic, legal, medical, technological, social or economic developments. Appropriate inflation assumptions should also be incorporated in the cash flow projections, recognising the different types of inflation to which the entity can be exposed (e.g. consumer price index, medical inflation and salary inflation). Premium adjustment clauses, where relevant, may also need to be considered.

57. The current estimate should be calculated gross of reinsurance and special purpose vehicles. Recoverables from reinsurance or special purpose vehicles should be separately calculated and recognised as an asset.

58. The cash flows to be included in the calculation of current estimate should include, at a minimum, the following:

a) benefit and claim payments

b) direct and indirect expenses incurred (a non-exhaustive list of examples includes: administrative expenses, investment management expenses, claim management expenses, handling expenses and overhead expenses)

c) premiums received, provided they are included within the contract boundaries

d) subrogation payments and recoveries other than from reinsurance and special purpose vehicles

e) other payments made necessary in order to settle the claims

59. All expenses (including both acquisition expenses and administrative expenses) related to in-force contracts should be included in future cash flows for the current estimate. The expense assumptions should be estimated on a going concern basis (including, but not limited to, all overhead and underwriting expenses for the coming financial year) and fully allocated to policies which are included in the balance sheet.

Calculation Example (Non-life)

Allocate the overhead to premiums/claims by determining a per policy/claim on a going concern basis and multiply by the policies/claims. The end result is that overhead is recognised consistently with premiums/claims.

6.3.3 Non-life premium liabilities

60. The current estimate of premium liabilities should reflect the following cash flows:

- Cash flows from future premiums falling within the contract boundary
- Cash flows resulting from future claim events (taking into account the potential for claims that have very high severity but with a low probability of occurrence)
- Cash flows arising from underwriting and other expenses (both allocated expenses and overhead expenses). Allocated expenses are those expenses which could be directly assignable to the source of expense that will be incurred in servicing insurance and reinsurance liabilities. Overhead expenses comprise all other expenses which the insurer incurs in servicing insurance and reinsurance liabilities
- Cash flows arising from ongoing administration of in-force policies, including any commission payments, any premium collection costs and investment related expenses

61. Acquisition costs should be included in the premium liabilities valuation and not reflected as an asset on the balance sheet.

6.3.3.1 Non-life premium liabilities data collection

62. Previous field testing exercises highlighted significant divergences in the values of non-life premium liabilities (provisions) reported by Volunteer Groups (e.g. materially negative figures or zero figures).

63. In 2018 Field Testing, Volunteer Groups are asked to provide more detailed reporting of the components of their premium liabilities. If this detail is not possible to provide on a best efforts basis, then one of the two simplifications below should be used to calculate the premium liabilities.

64. To increase the understanding of how the specifications for premium liabilities are being interpreted, the IAIS is collecting data using one supporting table with more granular quantitative information. This information will also support the analysis concerning a "profitability adjustment" which is being carried out in relation to Non-Life Premium risk. Instructions on how to complete the table for this data collection can be found in Section 13.3.7.6.

65. The table is a "breakdown" of the components of future cash flows underlying the reported non-life premium liabilities. These components should be broken down into four categories: premiums, loss plus allocated expenses, acquisition expenses, and underwriting/other expenses. Any future cash flows that do not fit into any of these categories, should be put in the Other Adjustments column (this is expected to be used in exceptional cases only and any positive amounts will be deducted from the total premium liability). It is understood that some of the terms may be interpreted in different ways by different Volunteer Groups. Input on such differences are sought in the Questionnaire.

6.3.3.2 Simplifications for non-life premium liabilities

66. In previous Field Testing exercises, some Volunteer Groups have reported that the application of a full cash flow projection to determine the Non-Life Premium Liabilities (Provision) is disproportionately complex. For 2018 Field Testing, two possible simplifications are included.

67. The first simplification attempts to approximate the concept of a current estimate, through the application of a formula composed of several elements:

PL = (CR – AER) * UPR + (CR – 1) * PVFP

Where,

PL – Premium Liability

CR – Combined ratio (including all claims, underwriting expenses, acquisition expenses, and other expenses

UPR – Unearned premiums (difference between written premiums and earned premiums)

PVFP – Present value of future premiums (within contract boundaries)

AER – Acquisition expense ratio

68. A second simplification may be used if, for materiality or other reasons, the Volunteer Group needs to further simplify the calculation:

PL = UPR = Premiums Written less Premiums Earned

6.3.4 Recognition / derecognition of insurance liabilities

69. Without prejudice to the specifications set in the section on Contract Boundaries, a liability should be recognised and valued as soon as the Volunteer Group becomes party to a contract, without any possibility to amend or cancel it, even though the insurance coverage has not started yet.

70. A contract should be derecognised when all possible claims linked to this contract have been completely settled, and all future cash flows are nil.

Example

Consider a contract providing a health coverage starting on 1 March N+1. The contract has been underwritten on 20 December N, with no possibility to change the terms of the contracts before the coverage starts. On 31 December N, this contract should be recognised in the balance sheet.

6.3.5 Contract boundaries

71. Only contracts existing at the valuation date, and recognised according to the section on Recognition / Derecognition of Insurance Liabilities, should be taken into account. This provision implies that no future business should be taken into account for the calculation of insurance liabilities.

72. Any obligations, including future premiums, relating to the contract shall belong to the contract. However, future premiums (and associated claims and expenses) relating to an existing and recognised contract beyond the following dates should not be considered in insurance liabilities, unless the Volunteer Group can demonstrate that they are able and willing to compel the policyholder to pay the premiums:

a) The future date where the Volunteer Group has a unilateral right to terminate the contract or reject the premiums payable under the contract; or

b) The future date where the Volunteer Group has a unilateral right to amend the premiums or the benefits payable under the contract in such a way that the premiums fully reflect the risks.

73. For group policies, similar rules apply. If premiums can be amended unilaterally for the entire portfolio in a way that fully reflects the risks of the portfolio, the second condition above will be fulfilled for group policies.

Example

Consider an annually renewable life protection policy sold on a group basis. The Volunteer Group does not manage this portfolio on a contract-by-contract basis, but can freely adjust the premiums for the entire portfolio at the policy anniversary date, to fully reflect the risks stemming from that portfolio. In this case, the conditions defined in paragraph 72 are deemed applicable. The calculation of current estimates should not include any premiums beyond the next future anniversary date where such adjustment is possible, along with the related claims and expenses.

Example

Consider a whole life policy, with a level premium. According to the terms of the insurance contract, the Volunteer Group cannot reject any premium, and the premium is constant throughout the life of the contract. Therefore, all (probability-weighted) future premiums of this contract should be taken into account in the insurance liabilities, along with the related claims and expenses.

Example

Consider a health policy (medical expenses), starting on 1 July N, with a premium paid monthly. Premium indexation is possible at each anniversary date, and the Volunteer Group has no right to cancel the policy during the first 12 months. On 31 December N, insurance liabilities should include 6 months of future premiums (January – June N+1), along with the related claims and expenses.

6.3.6 Time horizon

74. The projection horizon used in the calculation of the current estimate should cover the full lifetime of all the cash in- and out-flows required to settle the obligations (within contract boundaries) related to existing insurance and reinsurance contracts on the date of the valuation.

6.3.7 Data quality and setting of assumptions

75. When selecting data for the calculation of the current estimate, Volunteer Groups should consider:

a) the quality of data, for different data sets, based on the criteria of accuracy, completeness and appropriateness

b) the use and setting of assumptions made in the collection, processing and application of data

c) the frequency of regular updates and the circumstances that trigger additional updates

76. In some cases, only limited or unreliable data may be available from the Volunteer Group's own experience of a particular type of contract or claim from which to base an assumption for that contract or claim. Historical data about the Volunteer Group's own experience should be supplemented when necessary with data from other sources. Adjustment should be made to these alternatives sources so that they are more consistent with the risk characteristics of the portfolio considering in particular whether:

a) The characteristics of the portfolio differ (or will differ, for example because of adverse selection) from those of the population that has been used as a basis for the historical data;

b) There is evidence that historical trends will not continue, that new trends will emerge or that economic, demographic and other changes may affect the cash flows that arise from the existing insurance contracts; or

c) There have been changes in items such as underwriting procedures and claims management procedures that may affect the relevance of historical data to the portfolio of insurance contracts.

d) The assumptions used to calculate the current estimate should reflect current expectations based on all information currently available. Rather than simply relying on recent historical or current experience, an assessment of expected future conditions should be made.

e) In particular, when calculating the current estimate consideration should be given to events not captured by the data that can impact the current estimate.

f) Consistency across assumptions is important to consider, e.g. the relationship between inflation and interest rates.

6.3.8 Possible methodologies

77. The calculation of insurance liabilities is typically based on valuation models. Where this is the case, these models should be comprehensive, transparent, be based on current and reliable data, and use appropriate actuarial and statistical methods. Valuation models and their parameters should be calibrated as much as possible on the basis of objective, observable data.

78. Volunteer Groups should use actuarial and statistical techniques for the calculation of the current estimate that appropriately reflect the risks that affect the cash flows. These may include simulation methods, deterministic techniques and analytical techniques. Following the application of the proportionality principle (Section 4.2), in the case of more complex cash flow projections (e.g. future discretionary benefits relating to participating contracts or embedded options and guarantees),

simulation techniques may lead to more robust valuation results. In other cases, deterministic and analytical techniques may be more appropriate.

6.3.9 Insurance liabilities expressed in different currencies

79. The discounting of insurance liabilities should be performed with the IAIS specified yield curves relevant to the particular currency. Please refer to the section on Discounting (Section 6.3.15).

80. The conversion to the reporting currency, from other currencies, should be carried out according to the jurisdictional GAAP for consolidated group reporting. This will usually result in conversion at the currency conversion spot rate at the balance date.

6.3.10 Valuation of options and guarantees

81. Insurance contracts often include embedded options and guarantees, such as guarantees of minimum investment returns (including as part of death benefits), maximum charges for mortality, surrender options, or options for the policyholder to reduce or extend coverage. Expected cash flows for these options and guarantees should be included in the cash flows to determine the current estimate. Expected cash flows related to these contracts should reflect expected policyholder behaviour (Section 6.3.11). For the calculation of the time value of options and guarantees all payments connected to the risks insured have to be considered, especially profit participations.

82. Variable annuities may contain guaranteed living benefits (e.g. minimum maturity or withdrawal benefits) tied to the performance of specific assets. All these guarantees should be valued using techniques (such as risk neutral valuation) that do not allow for the possibility of arbitrage. The parameters used for the valuation of variable annuities should be consistent with the prices of options and other financial instruments observed in the market (for example, volatility assumptions should be based on implied volatilities).

83. Options and guarantees should be valued using stochastic approaches. However, for the purposes of 2018 Field Testing and subject to a materiality assessment, simplified deterministic approaches can be used. Where a yield curve is needed as input to assume future financial market parameters and the future returns of the assets, Volunteer Groups are asked to use the relevant IAIS specified yield curves with adjustment.

6.3.11 Policyholder behaviour

84. Expected cash flows should reflect expected policyholder behaviour, particularly where the options or guarantees allow policyholders to take actions to change the amount, timing or nature of the benefits they will receive. In the case of long-term contracts, options available to policyholders can include the termination of a contract, guaranteed living benefits, guaranteed income benefits or any other contractual options.

85. The likelihood that policyholders will exercise contractual options should be taken into account, considering in particular:

a) past behaviour of policyholders

b) how beneficial the exercise of options would be to policyholders under specific circumstances

c) economic conditions

d) past management actions

86. The likelihood that policyholders will exercise contractual options, including lapses and surrenders, shall be based on a prospective view of expected policyholder behaviour that makes appropriate and justified assumptions about the elements mentioned above.

87. To the extent that it is deemed representative of the future expected behaviour, the assumptions on policyholder behaviour should be based on appropriate statistical and empirical evidence.

88. Realistic current expectations would typically incorporate at least some policyholder action or inaction consistent with observed policyholder behaviour and not only with expected economic best interest.

89. The assumptions concerning policyholder behaviour should be consistent with the assumptions for investment returns and should not, in general, be assumed to be independent of financial markets (it is expected that assumptions for investment returns are consistent with the IAIS specified yield curves with the adjustments referred to in the section on Discounting). For instance policyholder behaviour may be linked to the interest rate scenario and associated assumptions.

90. The quantification of the impact on the current estimate of optionality or other non-symmetric cash flows could be done using a stochastic method considering the entire range of scenarios.

6.3.12 Valuation of future benefits

91. All future benefits that are non-discretionary should be included within the projection of cash flows according to the contractual obligation of the Volunteer Group and the economic or loss scenarios applicable for the current estimate.

92. For discretionary amounts such as bonuses or crediting rates, the current estimate should recognise the amounts expected to be paid consistent with expected future experience, the economic scenarios on which the liability valuation is based and policyholders' reasonable expectations[7]. For example, if a reference group of assets are expected to earn a greater amount than the contractual crediting rate and additional discretionary credit rates can be declared, the expected discretionary crediting rate should be taken into account.

[7] In the context of 2018 Field Testing, "discretionary amounts" (Future Discretionary Benefits – FDB) should include all non-guaranteed amounts, including those bonuses linked to a legal or contractual obligation to distribute a portion of the financial / underwriting profits to policyholders.

93. This projection should be consistent with the yield curve applicable to the contract, with the adjustments referred to in the section on Discounting (Section 6.3.15).

94. Discretionary benefits and the exercise of policyholder options are usually connected in the projection of cash flows. Discretionary benefits often drive policyholder behaviour and so must be considered along with options and guarantees embedded within policies. The current estimate will include the value of cash flows as a result of the exercise of discretionary benefits consistent with the expected policyholder behaviour.

Example

For participating products which have benefits paid linked to the investment returns of the insurer's asset portfolio, currently held assets should be reflected in the projection of participating cash flows. As new investments occur in the projection, these new investments should be assumed to earn a yield consistent with the prescribed discount curve. As a result, the asset portfolio rate will begin at the company's current assumed book portfolio rate used in the calculation of participating cash flows and converge with the prescribed yield curve as inforce assets mature and new investments are made.

Similarly, where stresses require valuations assuming a different yield curve, liability cash flows should be re-projected to reflect convergence of the returns of the asset portfolio to the prescribed stressed yield curve and participating cash flows should reflect the expected amount of pass through that would occur under the stress given the resulting portfolio investment returns.

Consider a simplified example: assume a participating product passes through company investment experience without a spread or guaranteed minimum crediting rate. Assume the portfolio yield on a book basis of assets held at the valuation date is 5% and the prescribed yield curve is consistent with a flat 2% for all years. 20% of the initial assets mature each year until all starting assets have matured by the end of year 5. Application may look as follows:

Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Asset Book Portfolio Rate	5.0%	4.4%	3.9%	3.4%	2.9%	2.0%	2.0%	2.0%
Projected Liability Crediting Rate	5.0%	4.4%	3.9%	3.4%	2.9%	2.0%	2.0%	2.0%
Prescribed Market Rate/Discount Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

*Note that based upon the rate of asset turn-over, the degree of cash flow matching and the type of assets held, the pattern may evolve differently.

The initial asset portfolio rate turns over to the prescribed yield curve and the yield of assets held at the valuation date is explicitly included.

6.3.13 Management actions

95. Management actions should be objective, realistic and verifiable. They cannot be contrary to the Volunteer Group's obligations to policyholders or to legal provisions applicable to the Volunteer

Group. Assumed future management actions should be consistent with the Volunteer Group's current business practice and business strategy unless there is sufficient evidence that the Volunteer Group will change its practices or strategy.

96. When calculating the current estimate, a Volunteer Group's future management actions could be taken into account if they can reasonably be expected to be carried out under the specific circumstances to which they apply.

97. Assumed future management actions should be consistent with each other. The assumptions about future management actions should take into account the time needed to implement the actions and any resulting incremental expenses.

6.3.14 Simplifications/approximations and appropriate adjustments

98. Where an existing approach (GAAP or economic valuation) provides a reasonably close approximation to the valuation principles outlined above for the MAV approach, it is acceptable to use these valuation frameworks as starting points and apply adjustments.

99. Possible adjustments could include approximating the MAV value by using sensitivities of economic values to using different yield curves for discounting.

100. For insurance business not including embedded options and guarantees (in particular insurance liabilities related to non-life insurance), there might be no need to perform stochastic valuations. In that case, the adjustment of GAAP values based on management's best estimates for determining MAV values could be limited to applying discounting to the insurance liabilities which were determined according to GAAP.

101. For 2018 Field Testing, specific simplifications are proposed for the calculation of non-life premium liabilities, under Section 6.3.3.

6.3.15 Discounting

102. Current estimates of insurance liabilities (and related reinsurance recoverables) should be calculated using the approach specified in the following sections.

6.3.15.1 Determination of yield curves for current estimate discounting

103. The approach chosen for 2018 Field Testing does not pre-empt the future development of alternative comparable approaches to discounting the current estimate that may better reflect the long term nature of insurance liabilities and that could be eventually used as part of IAIS capital standards. That applies to both the mechanics of the curve as well as any factors used in the calculation for the purposes of field testing.

104. The IAIS has developed a methodology which aims to address all the components relevant for the determination of the base yield curve, to ensure consistency among the 35 curves provided[8].

105. Volunteer Groups should discount their insurance liabilities using an adjusted curve. The curve is based on:

a) risk adjusted liquid interest rate swaps or government bonds; and

b) an adjustment (as explained below).

106. In 2018 Field Testing, the IAIS is focusing on the refinement of the Three-Bucket Approach for the design of the adjustment. This is because the IAIS wants to focus on developing a discounting method that has appropriate supervisory constraints. To this end, additional information will be collected on other discounting methods with the aim support the future refinement of the Three-Bucket Approach for ICS Version 2.0. The detailed methods of determining the adjusted curve are set out below.

107. In 2018 Field Testing the IAIS is testing technical solutions for the adjustment under different market conditions to assess their effectiveness in the mitigation of excessive volatility of capital resources. The adjustment is predominantly applied to the first segment of the yield curve (see Figure 1 below) until the start of extrapolation, though in some instances its application can be extended beyond the Last Observed Term. There is then an extrapolation to the Long-Term Forward Rate (LTFR) for each currency which, for 2018 Field Testing, also includes a 10 basis points adjustment to reflect credit spread that can be earned in the long term. The 10 basis points continue to be established as a placeholder which the IAIS will review in the future.

108. For the assumed return on assets, the same basis as the discounting approach should be used. That is, cash flows related to asset returns should be consistent with the differences in discounting spreads.

6.3.15.2 Methodology for the determination of risk-free yield curve

109. For 2018 Field Testing, the methodology used is based on a three-segment approach:

a) Segment 1: based on market information from government bonds or swaps (applying an appropriate adjustment where swaps are used to remove the Credit risk included in the pricing of these instruments)

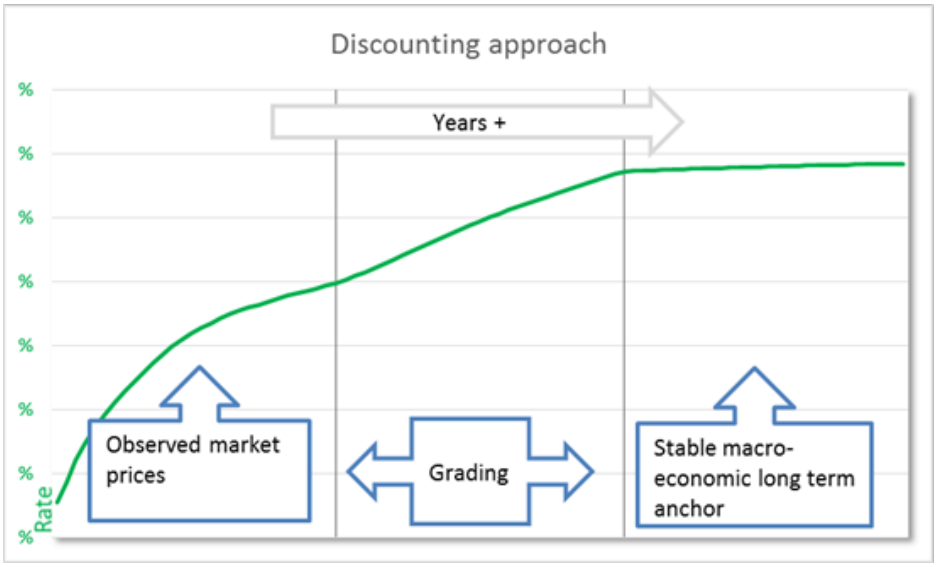
b) Segment 2: extrapolation using the Smith-Wilson method

c) Segment 3: based on a stable LTFR

[8] The IAIS Base Yield Curve Methodology has been released as part of the 2018 Field Testing package (IAIS Base Yield Curve Methodology for ICS Version 2.0).

110. For each currency, the transition from the first to the second segment will occur at the last maturity for which market information can be observed in deep, liquid and transparent financial markets (the Last Observed Term – LOT).

Figure 1 Discounting approach



111. For all currencies, the start of the third segment will occur 30 years after the LOT, but never before a maturity of 60 years (at the maximum of the two). At this maturity, the forward rates implicit in each currency's spot curve should have largely converged to a LTFR.

112. The LTFR is currency-specific and the methodology for its calculation has been modified compared to 2017 Field Testing. These rates used to be determined following a macroeconomic approach using OECD information. For 2018 Field Testing, the IAIS retained the macroeconomic approach, but the components have been modified.

113. Under the revised methodology, the LTFR is the sum of:

a) Historical real interest rate (in light of the difficulties in obtaining currency-specific information for all 35 currencies in the sample of IAIS, this figure is set at 1,8% for Developed Markets and 3% for Emerging Markets)

b) Inflation target set by the Central Bank (or an approximation to this figure based on historical information, where such target does not officially exist)

Table 3. Long term forward rates

Currency		Observed Instrument	Cut-off for extrapolation (in years)	Long Term Forward Rate
AUD	Australian Dollar	Government Bonds	30	3.8%
BRL	Brazilian Real	Government Bonds	10	7.0%
CAD	Canadian Dollar	Government Bonds	30	3.8%
CHF	Swiss Franc	Swaps	20	2.8%
CLP	Chilean Peso	Swaps	10	5.0%
CNY	Yuan Renminbi	Government Bonds	10	6.0%
COP	Colombian Peso	Swaps	10	6.0%
CZK	Czech Koruna	Swaps	15	3.8%
DKK	Danish Krone	Swaps	20	3.8%
EUR	Euro	Swaps	20	3.8%
GBP	Pound Sterling	Swaps	50	3.8%
HKD	Hong Kong Dollar	Swaps	15	3.8%
HUF	Forint	Government Bonds	15	6.0%
IDR	Rupiah	Swaps	10	8.0%
ILS	New Israeli Sheqel	Swaps	20	3.8%
INR	Indian Rupee	Swaps	10	7.0%
JPY	Yen	Government Bonds	30	3.8%
KRW	Won	Government Bonds	20	3.8%
MXN	Mexican Peso	Government Bonds	20	5.0%
MYR	Malaysian Ringgit	Government Bonds	15	5.0%
NOK	Norwegian Krone	Swaps	10	5.0%
NZD	New Zealand Dollar	Swaps	20	4.8%
PEN	Sol	Swaps	10	6.0%
PHP	Philippine Peso	Swaps	10	7.0%
PLN	Zloty	Government Bonds	10	5.0%
RON	Romanian Leu	Government Bonds	10	5.0%
RUB	Russian Ruble	Swaps	10	7.0%
SAR	Saudi Riyal	Swaps	15	6.0%
SEK	Swedish Krona	Swaps	10	3.8%
SGD	Singapore Dollar	Government Bonds	20	3.8%
THB	Baht	Government Bonds	10	5.0%
TRY	Turkish Lira	Government Bonds	10	7.0%

TWD	New Taiwan Dollar	Government Bonds	10	3.8%
USD	US Dollar	Government Bonds	30	3.8%
ZAR	Rand	Government Bonds	30	7.0%

6.3.15.3 Methodology for the determination of the adjustment to the risk-free yield curve

114. The IAIS yield curves include an adjustment to the basis risk-free curves meant to deal with the volatility of capital resources in periods where the widening of spreads affects the value of spread-sensitive assets. 2018 Field Testing focuses on the Three-Bucket Approach, which will serve as a basis for the calculation of the ICS capital requirement. Additional balance sheet information on three other discounting methods will be collected with the aim to support the future refinement of the Three-Bucket Approach for ICS Version 2.0. The approach tested does not necessarily reflect the final design of the adjustment that will be included in the MAV approach for ICS Version 2.0.

115. The Three-Bucket Approach and all additional discounting methods, except the risk-free balance sheet, are based on an average spread corrected for Credit risk and any other risks, allowing the isolation of the illiquidity premium. The spread is defined as the difference between the interest rate that could be earned from assets included in a representative portfolio and the corresponding risk-free interest rate.

116. Compared to the options tested for the adjustment in 2017 Field Testing, the Three-Bucket Approach aims to further refine and improve the risk-sensitivity of the adjustment, to reflect the different perspectives on how this issue should be handled as well as the diversity in the nature of insurance liabilities across the world.

117. The Three-Bucket Approach and the additional discounting methods can be summarised as follows:

a) Three-Bucket Approach is an attempt to reconcile the different points of view in a single approach, constituted by three buckets using different methodologies to calculate the spread adjustment (Top, Middle and General Buckets), as well as different application ratios (100%, 90% and 80%, respectively).

b) Revised Blended Method is designed as a refinement of the Blended option tested in 2017 Field Testing. It continues to be composed of two buckets of insurance and reinsurance liabilities (General Bucket and Top Bucket), but some changes are introduced in the specification of the Top Bucket, and the application ratio of the General Bucket is changed to 65%.

c) Revised Own Assets with Guardrails Method ("OAG 2.0") is an adjustment methodology which, as the name indicates, is based on the use of the spreads inherent to the asset portfolio of the Volunteer Group, subject to quantitative and qualitative guardrails.

d) Risk-free Method information is also collected as an additional balance sheet, which will be used to support the further assessment and refinement of the Three-Bucket Approach.

118. To assess the effectiveness and behaviour of the approach tested and the different additional methods under different market conditions, calculations should be performed under both the following scenarios:

a) current market conditions as at the balance date; and

b) stressed spread conditions that are specified by the IAIS for the different currencies, in a consistent manner. The stresses are constructed with the aim to define an adverse scenario which allows testing of the effectiveness of the adjustment. The stress scenario is not specifically linked to any reference date or historical scenario.

119. The following table summarises the Three-Bucket Approach and the three additional discounting methods that Volunteer Groups are requested to calculate, for each of the two scenarios. In total, Volunteer Groups are asked to produce eight different MAV Balance Sheets in 2018 Field Testing.

Table 4. Three-Bucket Approach and additional methods

	Three-Bucket Approach	Additional Discounting Methods		
		Blended	OAG 2.0	Risk-free
Liability segmentation (buckets)	3	2	2	1
Portfolio Composition	Own Assets/ WAMP/ Representative portfolio per currency	Own Assets/ Representative portfolio per currency	Own assets/ Representative portfolio per currency	N/A
Default Deduction	Risk Correction	Risk Correction	Risk Correction	N/A
Scope of Assets	Only eligible assets	Only eligible assets	All assets except cash/ Only eligible assets	N/A
Quantitative Guardrail	ICS RC 4	ICS RC 4	ICS RC 4	N/A
Application Ratio	100% (Top) 90% (Middle) 80% (General)	100% (Top) 65% (General)	100% (OAG 2.0) 80% (General)	N/A

120. The information provided by the IAIS and the calculations that Volunteer Groups are required to perform in order to derive the adjusted yield curves applicable in each scenario are summarised in Table 5 below.

Table 5. Summary of information provided by IAIS and calculations by Volunteer Group (applicable for both scenarios)

	Provided by IAIS	**Calculations by Volunteer Group to derive adjusted yield curve**
Risk-free	Risk-free yield curves	None
General Bucket (Three-Bucket/ Revised Blended/ OAG 2.0)	Risk-free yield curves Adjustment by currency/jurisdiction based on representative portfolio	None
Middle Bucket (Three-Bucket)	Risk-free yield curves Set of adjustments based on currency/jurisdiction, asset type and rating Risk corrections by asset type and rating	Calculation of the average risk-corrected spread on the basis of the firm-specific weighted average of representative portfolios
Top Bucket (Three-Bucket/ Revised Blended/ OAG 2.0)	Risk-free yield curves	Calculation of the own risk-corrected spread on the basis of the Volunteer Group's own asset earning rate –risk correction based on IAIS specification for WAMP

6.4 Specifications for the 2018 Field Testing Approach and Additional Discounting Methods

6.4.1 Three-Bucket Approach

121. Under the Three-Bucket Approach, the Volunteer Group is requested to split its liabilities into three buckets, the General Bucket, the Middle Bucket and the Top Bucket, to which different methodologies are applied. This increased granularity aims to deliver a more balanced solution that is more appropriately tailored for different types of insurance liabilities.

122. The three buckets are identified as follows:

a) Top Bucket: only liabilities which meet the specified criteria can be allocated to the Top Bucket.

b) Middle Bucket: only liabilities which meet the specified criteria can be allocated to the Middle Bucket. The criteria for the Middle bucket resemble that of the Top bucket, but several relaxations are introduced on key elements.

c) General Bucket: all other insurance liabilities which are not eligible for either the Top Bucket or the Middle Bucket should be allocated to the General Bucket.

123. To be eligible for the Top Bucket insurance liabilities should meet the following criteria:

a) Life insurance liabilities and disability annuities in payment with no cash benefits on withdrawal are eligible, taking into account e), below.

b) The portfolio of assets to cover Top Bucket insurance liabilities should be identified and, together with the corresponding liabilities, it should be managed separately, without being used to cover losses arising from other business of the Volunteer Group.

c) The expected cash flows of the identified portfolio of assets replicate the expected cash flows of the portfolio of insurance liabilities in the same currency, up to the LOT of the risk-free yield curve for the relevant currency. Any mismatch, which should be addressed through the carry forward of cash generated from excess of asset cash flows at previous maturities, does not give rise to material risks. For 2018 Field Testing purposes, carry forward of cash should be limited to 10% of the total undiscounted liability cash flows up to the LOT.

d) The contracts underlying the insurance liabilities do not include future premiums.

e) The portfolio of insurance liabilities include no surrender option for the policyholder or only a surrender option where the surrender value does not exceed the value of the assets covering the insurance liabilities at the time the surrender option is exercised.

f) Insurance liabilities are not split into different parts when assessing eligibility for the Top Bucket (no unbundling).

124. To be eligible for the Middle Bucket insurance liabilities should meet the following criteria:

a) [not applicable]

b) The portfolio of assets to cover Middle Bucket insurance liabilities should be identified and, together with the corresponding liabilities, it should be managed separately, without being used to cover losses arising from other business of the Volunteer Group.

c) The expected cash flows of the identified portfolio of assets and qualifying future premiums (see point d) below) replicate the expected cash flows of the portfolio of insurance liabilities within defined maturity bands in the same currency or using cash flows of hedged foreign assets, up to the LOT of the risk-free yield curve for the relevant currency. Any mismatch between maturity bands, which should be addressed through the carry forward of cash generated from excess of asset cash flows at previous maturities, does not give rise to material risks. For 2018 Field Testing purposes, carry forward of cash should be limited to 10% of the total undiscounted liability cash flows up to the LOT.

d) The contracts underlying the insurance liabilities do not include future premiums or include only future premiums which are contractually fixed.

e) The portfolio of insurance liabilities include no surrender option for the policyholder or only a surrender option where the surrender value does not exceed the value of the assets covering the insurance liabilities at the time the surrender option is exercised. Surrender options where the surrender value exceeds the value of assets may be included where the lapse risk they expose the portfolio to is not material (Materiality test: the ICS Lapse risk charge does not represent more than 5% of the current estimate of the liabilities of the portfolio).

f) Insurance liabilities are not split into different parts when assessing eligibility for the Middle Bucket (no unbundling).

125. The following paragraphs detail the methodologies to be applied in the calculation of the adjustments for each of the buckets.

6.4.1.1 Top Bucket

126. The adjustment for the Top Bucket should be calculated by each IAIG, based on the average spread above the base yield curve of the eligible own assets held by the Volunteer Group to back the portfolio of liabilities which has been identified as meeting the Top Bucket criteria.

127. The Volunteer may identify different portfolios, which will lead to the calculation of portfolio-specific adjustments.

128. The spread is adjusted for Credit risk and any other risk, using an approximation based on the Weighted Average of Multiple Portfolios (WAMP) methodology as described in paragraph 140.

129. For the Top Bucket 100% of the adjusted reference spread on top of the risk-free rates is used to discount insurance liabilities.

$$interest\ rate_{adjusted,t} = risk\ free_t + Adjusted\ Spread$$

130. Only eligible assets, as specified in Table 8 for the Middle Bucket, contribute to the calculation of the adjustment.

131. A cap at the level of the ICS RC 4 spread applies for assets with a lower credit quality. The ICS RC 4 cap should be defined based on the spreads earned by the Volunteer Group for ICS RC 4 rated assets, in the same currency. Where no such assets exist, the spread defined by the IAIS for the calculation of the Middle Bucket should be used.

132. Volunteer Groups should select and use the relevant adjusted yield curves according to the currency of the insurance liability cash outflows.

133. Where the Volunteer Group backs insurance liabilities with assets denominated in foreign currencies, the calculation of the spread adjustment for the currency includes spreads which may be earned by the Volunteer Group in foreign denominated assets, provided that exposures to foreign currency denominated assets are hedged. An adjustment to the spread recognised in the calculation of the Top Bucket adjustment should be made to reflect the cost of hedging the exposures.

134. The spread adjustment determined according to this methodology is applied as a parallel shift up to the run-off of the liabilities, which may be beyond the defined LOT.

6.4.1.2 Middle Bucket

135. For the Middle Bucket, the IAIS provides multiple indices differentiating between credit qualities and currencies, which should be used to construct an adjustment that reflects the assets held by the Volunteer Group.

136. The calculation of the weighted average of the multiple indices should be performed based on the identified portfolio of assets backing Middle Bucket insurance liabilities.

137. Where the Volunteer Group backs insurance liabilities with assets denominated in foreign currencies, the weighted average calculation of the spread adjustment for the currency includes spreads which may be earned by the Volunteer Group in foreign denominated assets, provided that exposures to foreign currency denominated assets are hedged. An adjustment to the spread recognised in the calculation of the Middle Bucket adjustment should be made to reflect the cost of hedging the exposures.

138. For the purpose of assessing the matching criterion in 2018 Field Testing, duration bands have been defined with a three year range, whenever possible (as this depends on the LOT of the currency, further detail is provided in the following table). A calculation example follows on assessing the matching criterion for Top Bucket eligibility, as well as Middle Bucket eligibility using the duration bands.

Table 6. Duration bands

LOT	Duration bands										
10	[0;3[	[3;6[	[6;8[	[8;10]							
15	[0;3[	[3;6[	[6;9[	[9;12[	[12;15]						
20	[0;3[	[3;6[	[6;9[	[9;12[	[12;15[	[15;18[	[18;20]				
30	[0;3[	[3;6[	[6;9[	[9;12[	[12;15[	[15;18[	[18;21[	...	[27;30]		
50	[0;3[	[3;6[	[6;9[	[9;12[	[12;15[	[15;18[	[18;21[	...	[27;30[	...	[48;50]

Table 7. Example of assessing the matching criterion and duration bands

Example with a LOT of 20 years	Total	Assessing the matching criterion for Top Bucket eligibility																		
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19
Liability cash-flows	4,585	0	10	15	30	20	80	100	60	120	200	350	480	200	0	700	350	400	350	800	320
Asset cash-flows	5,700	800	20	30	75	540	100	95	50	130	250	400	500	220	50	500	330	410	400	500	300
Asset-Liability cash flows	1,115	800	10	15	45	520	20	(5)	(10)	10	50	50	20	20	50	(200)	(20)	10	50	(300)	(20)
Use Carry forward?		NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	YES	YES
Used	555							5	10							200	20			300	20
Test criterion	12.1%	Failed. Total used / Total liability cash flows is above the 10% limit																			
		Assessing the matching criterion for the Middle Bucket eligibility (Using Middle bucket duration bands)																		
		[0;3[			[3;6[			[6;9[			[9;12[			[12;15[			[15;18[			[18;20]	
Liability cash-flows	4,585	25			130			280			1,030			900			1,100			1,120	
Asset cash-flows	5,700	850			715			275			1,150			770			1,140			800	
Asset-Liability cash flows	1,115	825			585			(5)			120			(130)			40			(320)	
Use Carry forward?		NO			NO			YES			NO			YES			NO			YES	
Used	455							5						130						320	
Test criterion	9.9%	Passed. Total used / Total liability cash flows is under the 10% limit																			

139. For the Middle Bucket, 90% of the adjusted reference spread is used to discount insurance liabilities.

$$interest\ rate_{adjusted,t} = risk\ free_t + 90\%\ x\ Adjusted\ Spread$$

140. The calculation of the spread adjustment is performed according to the following steps; this calculation is referred to as Weighted Average of Multiple Portfolios (WAMP):

a) Identify the assets backing the Middle Bucket liabilities according to the currency of the liabilities and the criteria identified above.

   i. Assets backing unit-linked/separate account liabilities should be excluded where such liabilities are deemed replicable by a portfolio of assets and calculated in line with Section 6.7 (this is therefore not on the basis of the general current estimate methodology).

   ii. Assets backing insurance liabilities that are denominated in a different currency than the corresponding liabilities shall be included in the determination of the weights of the different representative portfolios (ICS RC 1, ICS RC 2, …). When calculating the WAMP spread, the representative portfolios in the foreign currency shall be included in the weighting, provided that exposures to foreign currency denominated assets are hedged. An adjustment to the spread recognised in the calculation of the Middle Bucket adjustment should be made to reflect the cost of hedging the exposures.

   iii. Assets rated below investment grade (i.e. ICS RC 5 and below) should be assigned to the weight of the ICS RC 4 portfolio, which in practice means that the spread generated by such assets is capped at the level of ICS RC 4 assets.

b) Then, for each currency, remove any cash to determine the total portfolio of assets backing liabilities in that currency.

c) Identify the eligible assets in the portfolio, according to Table 8 below.

d) Determine the weights for each asset category as the total market value of the assets in that category divided by the market value of the total portfolio of assets (which includes the ineligible assets).

e) Calculate the weighted average adjustment for the currency applying these weights to the given adjustments per asset category.

141. The resulting spread is adjusted for Credit risk and any other risk, using the risk corrections provided in the spreadsheet *2018 Field Testing Yield Curves*.

142. The average Adjusted Spread for a given currency should be computed as follows:

$$
\begin{aligned}
&Adjusted\ Spread = \\
&\omega_{gov} \cdot \left(Spread_{gov} - RC_{gov}\right) \\
&+\omega_{ICS\ RC\ 1} \cdot \left(Spread_{ICS\ RC\ 1} - RC_{ICS\ RC\ 1}\right) \\
&+\omega_{ICS\ RC\ 2} \cdot \left(Spread_{ICS\ RC\ 2} - RC_{ICS\ RC\ 2}\right) \\
&+\omega_{ICS\ RC\ 3} \cdot \left(Spread_{ICS\ RC\ 3} - RC_{ICS\ RC\ 3}\right) \\
&+\omega_{ICS\ RC\ 4} \cdot \left(Spread_{ICS\ RC\ 4} - RC_{ICS\ RC\ 4}\right) \\
&+\omega_{non-eligible} \cdot 0
\end{aligned}
$$

Where:

- ω denotes the weight of the corresponding debt instrument
- $Spread$ denotes the spread of the corresponding debt instrument; $Spread_{gov}$ = 0 when the corresponding government bond rate is used for the risk-free yield curve
- RC denotes the risk correction for Credit risk and any other risk
- $\omega_{non-eligible}$ denotes the weight of non-elegible assets in the total portfolio of assets for that currency

143. The spread adjustment determined according to this methodology is to be applied as a parallel shift across the liquid part of the base yield curve (Segment 1 as defined above). For Segments 2 and 3 of the adjusted yield curve, the same extrapolation methodology as used for determining the base yield curve (see above) should be applied. A placeholder 10 basis point spread adjustment is added to the LTFR.

144. Investments to be included in the representative portfolio are referenced in the table below:

Table 8. Investments to be included in the representative portfolio

Asset Class	Eligible
Cash and other liquid assets not for investment purposes	(Excluded from portfolio)
Investment income receivable / accrued	N
Fixed Interest Government Bonds	Y
Fixed interest Corporate Bonds	Y
Fixed Interest Municipal Bonds	Y
Variable Interest Government Bonds	Y
Variable interest Corporate Bonds	Y
Variable Interest Municipal Bonds	Y
Convertible notes	N
Residential Mortgage Loans	Y
Non-residential Mortgage Loans	Y
Other (non-mortgage) Loans	Y
Loans to policyholders	Y
Residential Mortgage Backed Securities	Y
Commercial Mortgage Backed Securities	Y
Insurance Linked Securities	N
Other structured securities	Y
Equities	N
Hedge Funds	N
Private equity	N
Real estate (for investment purposes)	N
Infrastructure	Y (if debt) N (if equity)
Other investment assets	N

145. Government bonds includes only debt instruments issued or guaranteed by central governments (excluding exposures to municipals and public sector entities).

146. Where assets include call options, they would not be deemed eligible to back liabilities included in the Middle Bucket, unless it can be demonstrated that the exercise of the option does not imply a loss to the insurer and that the matching of the liability cash flows can be maintained (for example, by using the proceeds of the sale to buy a similar asset on the market which enables the matching of cash flows to be maintained).

147. Corporate bonds should be allocated according to their ICS rating category. This includes all debt instruments issued by corporates as well as municipals and public sector entities. Specifically:

a) Unrated debt instruments should be allocated to the ICS RC 4 bucket

b) Sub-investment grade debt instruments should be allocated to the ICS RC 4 bucket

c) Assets backing unit-linked/separate account insurance liabilities should be included in the representative portfolio only if those insurance liabilities are valued as the sum of a current estimate and a MOCE (Section 6.7 on Obligations Replicable by a Portfolio of Assets does not apply)

148. The Template specifies which currencies should use the average "world" spreads as well as those which are peered to other currencies.

149. In the case of currency unions (e.g. the Euro Area) the sovereign exposure (and the corresponding weight in the WAMP calculation) should be further detailed into the different sovereign countries that contribute to the total exposure as set out in the Template.

6.4.1.3 General Bucket

150. The adjustment for the General Bucket is provided by the IAIS, based on a representative portfolio that reflects the assets typically held by all Volunteer Groups in a particular currency. This portfolio includes all types of investments (except cash) assumed to back insurance liabilities (bonds, loans, securitisations, equities, properties).

151. The spread is adjusted for Credit risk and any other risk.

152. For corporate bonds, risks other than liquidity risk are captured through the credit spread corresponding to the risk of default. The risk of default is derived from the annualised cumulative default experience for a hypothetical 15-year bond, computed on the basis of transition matrices. A fraction of the credit spread accounting for current market conditions is then added.

153. Where risk-free rates are determined based on swap rates, risks other than liquidity risk are assumed to represent 30% of the 10-year average of spread. For currencies where risk-free rates are based on government bond rates, no risk correction is applied.

154. For the General Bucket 80% of the adjusted reference spread on top of the risk-free rates is used to discount insurance liabilities.

$$interest\ rate_{adjusted,t} = risk\ free_t + 80\%\ x\ Adjusted\ Spread$$

155. Volunteer Groups should select and use the relevant adjusted yield curves according to the currency of the insurance liability cash outflows.

156. The spread adjustment determined according to this methodology is to be applied as a parallel shift across the liquid part of the base yield curve (Segment 1 as defined above). For Segments 2 and 3 of the adjusted yield curve, the same extrapolation methodology as used for determining the base yield curve should be applied. A placeholder adjustment of 10 bps is added to the LTFR.

6.4.1.3.1 Basis risk mitigation mechanisms for the General Bucket

157. To account for specific situations that generate basis risk between individual IAIG portfolios and the representative portfolio used under the General Bucket, two basis risk mitigation mechanisms are proposed: one mechanism for cases where the same currency is shared among different jurisdictions and one mechanism for cases where Volunteer Groups are materially invested in assets denominated in a currency which is different from the liabilities they are backing.

158. The aim of these mechanisms is to limit the basis risk generated in such cases by introducing a modification to the calculation of the base yield curve adjustment.

159. In both cases, the mechanism introduces a modification to the calculation of the currency spread adjustments, by allowing Volunteer Groups to replace the spreads used by the IAIS in the determination of the currency spread adjustment, but not the weights of the different asset categories considered.

160. In practice, this means that after the triggering of the mechanism, the calculation of the representative portfolio spread is modified from

$$Spread\ Adjustment_{currency} = \sum_{i=1}^{t} Spread_{market,i} * Weight_{market,i}$$

with i=Sovereign, ICS RC 1, 2, 3 4-7, non-eligible (with 0 spread)

to become

$$Spread\ Adjustment_{currency\ modified} = \sum_{i=1}^{t} Spread_{jurisdictions,i} * Weight_{market,i}$$

with i=Sovereign, ICS RC 1, 2, 3 4-7, non-eligible (with 0 spread)

6.4.1.3.2 Shared currency basis risk mitigation mechanism

161. Where the same currency is shared among different jurisdictions, the spread calculated for the currency may not reflect the reality of the spreads observed in the financial markets for one or more of the underlying jurisdictions.

162. This relief mechanism operates as follows:

If S_rc_adjusted – S_rc_crncy >= 50bps

S_rc = S_rc_crncy + MAX [(S_rc_adjusted – (S_rc_crncy + 50bps));0)]

With
S_rc = spread after risk correction used to discount liabilities

S_rc_crncy = currency spread after risk correction

S_rc_adjusted = modified currency spread after risk correction using a weighted average of the spreads of the specific jurisdictions (within the shared currency) to which the Volunteer Group is actually exposed to (but keeping the asset category weights unchanged compared to the currency portfolio)

6.4.1.3.3 Foreign assets basis risk mitigation mechanism

163. Where the Volunteer Group backs insurance liabilities with assets denominated in foreign currencies, the spread calculated for the currency may not reflect the reality of the spreads which may be earned by the Volunteer Group.

164. To promote sound risk management, only exposures to foreign currency assets where currency risk is deemed to be hedged as per the section on Risk Mitigation (Section 13.2.2) are considered for the purposes of this relief mechanism.

165. This relief mechanism operates as follows:

If $$\frac{\text{Hedged eligible foreign currency denominated assets}}{\text{Total investments (excl.cash)converted into the currency of the liability}} \geq 5\%$$

Then

S_rc = S_rc_crncy +50%* (S_rc_adjusted – S_rc_crncy)

With

S_rc = spread after risk correction used to discount liabilities

S_rc_crncy = currency spread after risk correction

S_rc_adjusted = modified spread including the extra spreads which can be earned from the hedged assets denominated in foreign currency which exceed the 5% threshold. Where the

5% threshold is exceeded by a combination of exposures in multiple asset categories, the threshold should be proportionally allocated to the different asset categories.

166. Additional information is requested to assess the materiality and impact of the foreign assets basis risk mitigation mechanism.

167. Volunteer Groups which are exposed to such currency mismatch are encouraged to provide that additional information as requested in the Template, and respond to questions about the topic which are included in the Questionnaire.

6.4.2 Revised Blended method

168. Under this additional method, the Volunteer Group is requested to split its liabilities into two buckets, the General Bucket and the Top Bucket, to which different methodologies are applied. This differentiation is due to the fact that some insurance liabilities, in particular very long-term and predictable liabilities, can be managed in a differentiated manner consistent with its long term nature, which enables the Volunteer Group to better match the asset and liability cash flows and to hold assets with longer durations until maturity.

169. The two buckets are identified as follows:

a) Top Bucket: only liabilities which meet the specified criteria can be allocated to the Top Bucket.

b) General Bucket: all insurance liabilities which are not eligible for the Top Bucket should be allocated to the General Bucket.

170. To be eligible for the Top Bucket insurance liabilities should meet the same criteria as defined for the Top Bucket under the Three-Bucket Approach.

171. The following paragraphs specify the methodologies to be applied in the calculation of the adjustments for each of the buckets.

6.4.2.1 Top Bucket

172. The Top bucket follows the same specifications as outlined for the Three-Bucket Approach.

6.4.2.2 General Bucket

173. The General Bucket follows the same specifications as outlined for the Three-Bucket Approach. The only difference concerns the application ratio, which is 65% for the Revised Blended method.

6.4.3 OAG 2.0 method

174. Under the revised Own Assets with Guardrails (OAG 2.0) method, Volunteer Groups discount their insurance liabilities using the relevant risk-free IAIS yield curves, adjusted at a liability portfolio level by a spread (the adjusted lifetime spread) reflective of the approved asset liability management (ALM) processes of the Volunteer Group.

175. The adjusted lifetime spreads represents the combined expected return across all asset classes (i.e. the return net of expected defaults), varying by duration, and is calculated in three stages. For each liability portfolio:

I. Determine the adjusted own asset spread, adjusted for rating-specific risk correction factors determined by the IAIS.
II. Calculate the ratio of asset duration to liability duration.
III. Calculate the spread net of reinvestment at each duration.

6.4.3.1 Scope of application

176. Consistent with the principle of proportionality applied to the ICS as described in Section 4.2, the Volunteer Group is not required to apply the OAG 2.0 method to non-life insurance business.

177. Similarly, where the Volunteer Group can clearly demonstrate that the impact of applying the OAG 2.0 method to certain business lines would not be materially different from that obtained by applying the Three-Bucket Approach, then the Volunteer Group is not required to apply the OAG 2.0 method to these business lines.

178. For the purposes of the 2018 Field Testing, where a Volunteer Group does not apply the OAG 2.0 method to a particular line of business, then the discount rate derived using the Three-Bucket Approach should be used instead. Volunteer Groups should use the same bucket that would have been used if applying the Three-Bucket Approach.

6.4.3.2 Stage I: Calculate risk adjusted spread on currently held (own) assets

6.4.3.2.1 (A) Procedure to calculate spread on currently held (own) assets, by asset class within each liability portfolio

179. Volunteer Groups should apply the following procedure:

a) **Step 1:** Allocate assets[9] to liabilities in liability portfolios based on the approved ALM strategy for the Volunteer Group. An approved ALM strategy for this purpose must meet the

[9] Including assets backing insurance liabilities that are denominated in a different currency than that of corresponding liabilities.

requirement that it is subject to regulatory oversight such as local Supervisor approval and/or local actuarial/accounting Standards of Practice.

Then, apply steps 2 through 6 for each liability portfolio:

b) **Step 2**: Net off any cash to determine the total portfolio of own assets backing liabilities in that group.

c) **Step 3**: Identify the eligible own assets in the portfolio, according to Table 9 below and group them by rating class. (For eligible equity and alternative long duration assets (according to Table 10, see step 6 in paragraph 182). Assets which are not externally rated (e.g. mortgages and certain infrastructure assets) should be assigned an internal rating subject to appropriate internal governance and regulatory oversight.

d) **Step 4:** Calculate average spread over risk-free for assets in each rating class using CUSIP (or equivalent) asset spread data from recognised data sources as appropriate. Alternatively, where more expedient, or where such information is not available (e.g. for specific asset classes), calculate the average spread over the risk-free rate for assets in these asset classes using the method described in the Appendix OAG Appendix A.

e) **Step 5**: Calculate the average spread over risk-free rate in respect of eligible assets with a credit rating below ICS RC 4 as the corporate ICS RC 4 spread as determined in step 4 above.

180. Where ICS RC 4 spread information is not available, ICS RC 4 spreads specified by the IAIS should be used instead.

181. In the case of an average spread over the risk-free rate for assets backing insurance liabilities that are denominated in a different currency than that of corresponding liabilities, the following notable technical requirements should be fulfilled:

- For the purposes of determining the spread for these assets, the spread should be measured relative to the risk-free yield curve of the assets' currency
- The risk adjusted ICS RC 4 spread cap that would be applicable should be based on the assets' currency (i.e. the average risk adjusted ICS RC 4 spread calculated based on the Volunteer Group's own ICS RC 4 rated assets denominated in the assets' currency or, or if the Volunteer Group does not hold ICS RC 4 rates assets in the assets' currency, the ICS RC 4 spread cap should be based on the IAIS' risk adjusted ICS RC 4 spread for the assets' currency)

182. **Step 6** (after steps 1 to 5 in paragraph 179): Include eligible equity and alternative long duration assets (according to Table 10) in the average spread over risk-free calculation as a ICS RC 4 bond, using the ICS RC 4 spread determined in Step 5 above, subject to a 200bps long term average equity spread cap.

183. Finally, an additional quantitative guardrail restricting the use of equity and alternative long duration assets to the valuation of long term liabilities is applied as follows.

(1) Calculate X = sum of undiscounted liability cash flows > 12 years / total undiscounted liability cash flows
(2) Calculate Y = current market of value equity assets and other alternative long duration assets / total current market value of all eligible assets

184. The average spread over risk-free rate in respect of eligible equity and alternative long duration assets is determined as above multiplied by a factor, where the factor = minimum (1,X/Y).

Table 9. Assets eligible for derivation of OAG 2.0 – fixed income*

Asset Class	Eligible
Cash and other liquid assets not for investment purposes	(Excluded from portfolio)
Investment income receivable / accrued	N
Fixed Interest Government Bonds	Y
Fixed interest Corporate Bonds	Y
Fixed Interest Municipal Bonds	Y
Variable Interest Government Bonds	Y
Variable interest Corporate Bonds	Y
Variable Interest Municipal Bonds	Y
Convertible notes	Y
Residential Mortgage Loans	Y
Non-residential Mortgage Loans	Y
Other (non-mortgage) Loans	Y
Infrastructure loans	Y
Other fixed interest assets	Y
Loans to policyholders	Y
Residential Mortgage Backed Securities	Y
Commercial Mortgage Backed Securities	Y
Insurance Linked Securities	N

*also applies to inflation linked analogues

Table 10. Assets eligible for derivation of OAG 2.0 – equity and alternative long duration assets (ALDA)

Asset Class	Eligible
Equities	Y
Hedge Funds	Y
Private equity	Y
Real estate (for investment purposes)	Y
Infrastructure (equity like)	Y
Other alternative long duration (equity like) assets	Y

6.4.3.2.2 (B) Procedure to calculate weighted average adjusted spread on currently held (own) assets

185. The resulting spread for each group of assets (Stage I(A) above) is adjusted for expected defaults over the lifetime of each asset. To do this, a single risk-corrected adjusted spread is calculated for each group of assets hypothecated to a particular liability portfolio using the weightings of assets by rating in the portfolio and the risk corrections as shown in Table 11.

186. The weighted average adjusted spread for a given group of assets should be computed as follows (note: for non-eligible assets, it is assumed that no spread is earned in excess of the risk-free rate):

$$Adjusted\ Spread_{own\ assets} =$$

$$\sum_{Eligible\ assets\ i} \omega'_i \cdot maximum(0, Spread_i - RC_i) + \omega'_{non-eligible} \cdot 0$$

Where:
- ω'_i denotes the exposure-duration weight[10] of eligible asset rating class *i* in the total portfolio of assets for that group of assets
- $Spread_i$ denotes the spread of eligible asset rating class *i* in the total portfolio of assets for that group of assets (as determined in Steps 4 and 5)
- RC_i denotes the single IAIS-specified risk correction for eligible asset rating class *i*, representing losses from expected defaults as shown in Table 11
- $\omega_{non-eligible}$ denotes the total weight of non-eligible assets in the total portfolio of assets for that group of assets

[10] Weighted average calculation where weight for asset i is given as follows: $\omega'_i = \frac{MV_i x dur_i}{\sum all\ assets_j [MV_j x dur_j]}$

Table 11. Risk correction

	Sovereign	ICS RC 1 (AAA)	ICS RC 2 (AA)	ICS RC 3 (A)	ICS RC 4+ (BBB and lower)	Other eligible assets
Risk Correction bps	-0.22*	1.21	13.69	17.78	37.28	37.28

*exposure weighted average of IAIS sovereign risk corrections by currency

6.4.3.3 Stage II: Calculate the ratio of asset duration to liability duration

187. **Step 1: Calculate asset duration**: This is the weighted-average duration of eligible assets below held i.e.

$$Duration_{own\ assets} = \sum_{Eligible\ assets\ i} \omega_i \cdot duration_i + \omega_{non-eligible} \cdot 0$$

188. The duration used should correspond to Macaulay duration, which represents the weighted average maturity of cash flows.

189. Asset duration can be obtained from recognised data sources as appropriate. Where this is not available for certain assets, duration will have to be calculated directly using those assets' cash flows using the following formula corresponding to Macaulay duration:

$$Duration_{assets} = \frac{\sum_{t=1}^{T} t \cdot PV(cf_t)}{\sum_{t=1}^{T} PV(cf_t)}$$

Where $PV(cf_t)$ is the present value of the asset cash flow at time t.

190. Equity assets should be included in this calculation assuming that they have a duration equal to the duration of the liabilities as calculated in Step 2 below.

191. **Step 2: Calculate liability duration:** Liability duration should be calculated using the following formula (which corresponds to the Macaulay duration of the liabilities when using risk-free plus adjusted spread as the discount rate):

$$Duration_{liabilities} = \frac{\sum_{t=1}^{T} t \cdot cf_t \cdot (1 + rf_t + Adjusted\ Spread_{own\ assets})^{-t}}{\sum_{t=1}^{T} cf_t \cdot (1 + rf_t + Adjusted\ Spread_{own\ assets})^{-t}}$$

192. **Step 3: Derive ratio of asset duration to liability duration**: This is simply the ratio of the two measures derived directly above i.e.:

$$Duration\ ratio = \frac{Duration_{own\ assets}}{Duration_{liabilities}}, \text{ subject to a maximum value of 1}$$

6.4.3.4 Stage III: Calculate spread above risk-free at each duration

193. **Step 1: Calculate reinvestment assumption at each duration**: Calculate the reinvestment assumption at each duration as follows:

Table 12. Spread on reinvested assets

Duration (time since valuation date)	Adjusted spread on reinvested assets[11]
1 year to $Duration_{own\ assets}$ (from Stage II)	Weighted average adjusted spread on currently held (own) assets from Stage I
$Duration_{own\ assets}$ to 60 years	*Interpolate using Smith Wilson method*[11]
Over 60 years	Ultimate reinvestment spread = spread over LTFR[12]

194. **Step 2: Calculate liability spread at each duration**: Calculate the liability discount rate at each duration as follows:

$$Spread_t = Duration\ ratio \cdot Adjusted\ Spread_{own\ assets} + (1 - Duration\ ratio) \cdot Reinvestment\ assumption_t$$

6.4.4 Risk-free method

195. Under this additional method, the Volunteer Group should discount its insurance liabilities using the risk-free base yield curves provided by the IAIS, without any spread adjustment.

6.5 Stressed Spreads Scenarios

196. The invested assets, insurance liabilities, reinsurance and related deferred tax balances under the MAV and GAAP Plus approaches (including the additional discounting methods) should be calculated twice: first, using spreads as at the balance date and second, with prescribed stressed spreads. For the Three-Bucket Approach and additional methods, the IAIS-provided stressed yield curves should be used. For the Middle Bucket of the Three-Bucket Approach, the IAIS provides the stressed spreads which should be used for the calculation.

197. The impact of the stress scenario on the value of investment assets is expected to be the same irrespective of the method used to discount insurance liabilities (Three-Bucket Approach, RFR, Revised

[11] See Appendix OAG Appendix B.
[12] For 2018 Field Testing, a placeholder 10 basis point spread adjustment is added to the LTFR.

Blended and OAG 2.0). This expectation has been reflected in the design of the 2018 Field Testing Template.

198. The following tables set out the stresses that have been applied to determine the stressed yield curves for the General Bucket of the Three-Bucket Approach and the General Bucket of the Revised Blended method. These should be used for the Middle and Top Buckets of the Three-Bucket Approach, the Top Bucket of the Revised Blended method and OAG 2.0. Sovereign spreads in Table 13 are only applied where the base yield curve has been developed using swaps as a reference instrument.

Table 13. Sovereign spreads – end of 2017 and stressed sovereign spreads

Sovereign spreads	**Dec.17**			**Mar.17**			**Stressed sovereign spread**		
	gross	minus	net	gross	minus	net	gross	minus	net
World	-5.00	-0.22	-4.78	-4.00	-0.89	3.11	-17.00	-7.42	-9.58
CHF	-35.00	-8.84	-26.17	-25.00	-8.91	-16.09	-25.00	-8.75	-16.26
DKK	-64.00	-14.35	-49.65	-57.00	-13.81	-43.19	-46.00	-8.79	-37.21
EUR	9.00	13.39	-4.39	25.00	12.57	12.43	199.00	3.24	195.76
EUR:AT	-30.00	-0.98	-29.02	-31.00	-0.90	-30.10	40.00	-1.52	41.52
EUR:BE	-24.00	6.09	-30.09	-7.00	6.00	-13.00	148.00	1.52	146.48
EUR:CY	88.00	135.49	-47.49	262.00	147.51	114.49	1325.00	100.52	1224.48
EUR:DE	-47.00	-12.11	-34.90	-55.00	-11.68	-43.33	-78.00	-7.82	-70.18
EUR:ES	47.00	35.38	11.63	62.00	33.69	28.32	250.00	7.91	242.09
EUR:FI	-34.00	-6.48	-27.52	-35.00	-6.32	-28.68	-25.00	-5.19	-19.81
EUR:FR	-24.00	-0.86	-23.14	8.00	-1.04	9.04	42.00	-4.06	46.06
EUR:GR	330.00	175.99	154.01	544.00	166.19	377.81	2409.00	66.13	2342.87
EUR:IE	-16.00	48.39	-64.39	8.00	48.07	-40.07	553.00	26.99	526.01
EUR:IT	82.00	36.95	45.06	111.00	34.74	76.26	384.00	11.22	372.78
EUR:NL	-40.00	-6.65	-33.35	-41.00	-6.35	-34.65	-41.00	-5.09	-35.91
EUR:PT	70.00	81.46	-11.46	207.00	78.32	128.68	1013.00	27.61	985.39
EUR:SI	-3.00	39.79	-42.79	35.00	42.24	-7.24	372.00	25.31	346.69
EUR:SK	-13.00	17.17	-30.17	6.00	17.33	-11.33	257.00	12.46	244.54
GBP	2.00	-2.89	4.89	-4.00	-4.01	0.01	-13.00	-11.65	-1.36
NOK	-42.00	-20.06	-21.94	-45.00	-20.71	-24.29	-56.00	-15.34	-40.67
NZD	-36.00	-8.41	-27.59	-21.00	-10.29	-10.72	-29.00	-24.65	-4.36
SEK	-48.00	-13.48	-34.53	-38.00	-13.60	-24.40	-77.00	-11.54	-65.46

Table 14. Corporate bond spreads – end of 2017 and stressed corporate bond spreads

Corporate spreads				Dec-17				Mar-17				Stressed
	ICS RC 1 (AAA)	ICS RC 2 (AA)	ICS RC 3 (A)	ICS RC 4+ (BBB and lower)	ICS RC 1 (AAA)	ICS RC 2 (AA)	ICS RC 3 (A)	ICS RC 4+ (BBB and lower)	ICS RC 1 (AAA)	ICS RC 2 (AA)	ICS RC 3 (A)	ICS RC 4+ (BBB and lower)
Gross World	55	41	68	115	72	56	87	143	138	103	170	288
Gross GBP	65	71	129	154	62	83	141	184	163	178	323	385
Gross EUR	3	9	30	63	15	21	49	96	8	23	75	158
Gross USD	60	54	78	132	77	69	98	156	150	135	195	330
Gross JPY	24	42	63	80	23	43	55	80	61	106	158	200
Gross CNY	0	0	195	217	0	0	195	217	0	0	488	543
Risk correction	*1.21*	*13.69*	*17.78*	*37.28*	*1.21*	*13.69*	*17.78*	*37.28*	*2.45*	*8.04*	*23.70*	*76.29*
World	54	27	50	78	71	42	69	106	135	94	146	211
GBP	64	57	111	117	61	69	123	147	160	169	299	309
EUR	2	-5	12	26	14	7	31	59	5	14	51	81
USD	59	40	60	95	76	55	80	119	148	127	171	254
JPY	23	29	45	43	22	29	38	43	58	98	134	123
CNY	0	0	177	180	0	0	177	180	0	0	464	467

199. The stresses are artificially constructed with the aim to define an adverse scenario in order to observe the balance sheet impact. The stressed scenario is not specifically linked to any reference date or specific historical scenario. The stressed spreads shown in the table above should be applied to the portion of the balance sheet labeled "related to Insurance Activities" for any interest sensitive assets, insurance liabilities, reinsurance, and deferred taxes. For certain participating contracts, the simplification formula as defined below may be used:

a) On the asset side: the value of debt instruments should be re-evaluated to reflect the relative change in prescribed spreads under the stressed scenario. Gross corporate stressed spreads are 250% of gross corporate spreads.

b) On the liability side: the value of future discretionary benefits should be re-evaluated to account for the decrease in value of the debt instruments. For this purpose the following simplification may be used:

$$FDB_{stressed} = max(0; FDB_{2017} - \alpha \cdot (MVA_{2017} - MVA_{stressed}))$$

$$With\ \alpha = min(1; \max(0; \frac{Net\ Insurance\ liabilities_{2017}}{Investment_{2017} + Assets\ in\ separate\ accounts_{2017}}))$$

MVA denotes the market value of assets.

200. The impact related to assets, insurance liabilities, capital resources, deferred taxes and AOCI adjustment should be reported in Section D of the worksheet *FT18.BCR & ICS.Balance Sheet.* The details of the impact on insurance liabilities should be reported in Section C of the same worksheet.

6.6 Curves Not Provided by the IAIS

201. The IAIS is not able to provide details to determine adjusted yield curves for all currencies and countries where Volunteer Groups operate. In those cases, the Volunteer Group is asked to derive the

curve following the approach set out above by complying with the base yield curve methodology provided by the IAIS and the methodologies set out for deriving adjustments.

202. In order to derive these curves, Volunteer Groups may use a technique other than the Smith Wilson approach, such as the Nelson Siegel or Svensson approaches. In many cases the local central bank provides zero coupon bond curves with maturities up to 30 years.

203. If a curve is provided by the IAIS, it must be used irrespective of the size of the business. Otherwise, if the share of the insurance obligations relative to the overall obligations is smaller than 10 percent of the total business, the Volunteer Group can provide a calculation based on its own estimates.

204. To allow comparison, in both cases, the Volunteer Group should provide information about the curves used. Where the Volunteer Group needs to derive a yield curve it should describe the approach used and provide in the Questionnaire a copy of the yield curve used.

6.7 Obligations Replicable by a Portfolio of Assets

205. Where future cash flows associated with insurance obligations can be replicated reliably using financial instruments for which a reliable market value is observable, the value of insurance liabilities associated with those future cash flows can be determined on the basis of the market value of those financial instruments.

206. Insurance obligations are replicated reliably when their cash flows are in every circumstance precisely matched by cash flows of corresponding assets.

207. The cash flows associated with insurance obligations cannot be reliably replicated when:

a) policyholders can exercise contractual options, including lapses and surrenders

b) obligations depend on mortality, disability, sickness and morbidity rates

c) expenses associated with insurance obligations cannot be reliably replicated

208. Financial instruments used to value insurance obligations must be traded in deep, liquid and transparent markets.

OAG Appendix A – Calculating average spread over risk-free for assets classes where recognised public information is not available

Step 4: Calculate average spread over risk-free for assets in each rating class as described below;

(1) Identify the promised cash flows from eligible own assets (according to Table 9) for that rating class (i.e. nominal cash flows ignoring expected defaults).

(2) Identify the market value of the assets in the rating class (MV). Market value should be determined based on recognised public data sources as appropriate e.g. Bloomberg, or alternatively based on the IAIG's audited financial statements.

(3) Value the cash flows of eligible own assets allocated to the group of assets using the appropriate currency-IAIS-specified risk-free yield curve (RFV). These curves must be validated to check that they are consistent with published swap/government asset values using recognised data sources as appropriate.

(4) The average spread over risk-free for eligible own assets for each group of assets is then calculated as a single adjustment representing the difference between:

- The level discount rate that, when used to value the cash flows from eligible own assets, results in a value equal to the MV; and
- The level discount rate that, when used to value the cash flows from eligible own assets, results in a value equal to the RFV.

OAG Appendix B – Applying Smith-Wilson Method

(1) Add the weighted average adjusted spread on currently held (own) assets from Stage I to the risk-free curve spot curve, up to $Duration_{own\ assets}$ calculated in Stage II

(2) Using the yield curve from step (1) above and the Smith-Wilson methodology to determine the interpolated curve (spot curve)

(3) Calculated the reinvestment spread curve based on the S-W method as the difference between the curves in step (2) and step (1) i.e. for t > $Duration_{own\ assets}$

$$Reinvestment\ assumption_t = S\text{-}W\ interpolated\ curve_t - rf_t$$

7 GAAP with Adjustments Valuation Approach (GAAP Plus)

Relevant Worksheets in Template:	*FT18.BCR & ICS.Balance Sheet (GAAP Plus sections)*	*Due 31 August 2018*

209. This section provides specifications for Volunteer Groups to report their consolidated financial data in the ICS Balance Sheet using the GAAP Plus approach to valuation.

7.1 GAAP Plus Updates for 2018 Field Testing

210. GAAP Plus was developed to maximise the use of audited, consolidated financial reporting, systems and processes including generally accepted accounting principles as promulgated by the International Accounting Standards Board (IASB) and other jurisdictional standard setters. As such, recent standard setting activity by the IASB and the U.S. FASB addressing the valuation of financial instruments and insurance contracts will have an impact on the design of GAAP Plus.

211. GAAP Plus for 2018 Field Testing contemplates changes in accounting rules that have been issued by the IASB, namely IFRS 9, *Financial Instruments* and IFRS 17, *Insurance Contracts* and that are expected to be issued by the U.S. FASB in the coming months under their project to address targeted improvements to the accounting for long-duration insurance contracts. Thus, there are significant changes in the specifications for jurisdictions that report under IFRS (or a jurisdictional adaptation) and U.S. GAAP. Changes to specifications relevant for Volunteer Groups that report under Japanese GAAP consist of only minor refinements from 2017 Field Testing.

212. For 2018 Field Testing, GAAP Plus will consist of four main approaches: U.S. GAAP, U.S. SAP, Japan GAAP and IFRS. There is a further breakdown of IFRS into EU and non-EU for purposes of different requirements for 2018 data collection. Future field testing exercises will contemplate the potential need for further breakdown of IFRS GAAP Plus jurisdictional approaches. As of the date of the issuance of these specifications, there are a number of significant decisions regarding adoption/endorsement of new IFRS rules that have yet to be made. There may also be adaptations of new IFRS rules by jurisdictions that would need to be contemplated in the design of GAAP Plus. After consultation with Volunteers Groups, accounting and actuarial practitioners, it was decided that requesting a full balance sheet incorporating these new rules would not result in reliable or useful information. Therefore, 2018 Field Testing of GAAP Plus for IFRS jurisdictions will consist of monitoring discussions and activities by Volunteer Groups, accounting/actuarial practitioners and supervisors with respect to adoption, endorsement, and/or implementation of *IFRS 17 Insurance Contracts* and *IFRS 9 Financial Instruments*. For most jurisdictions reporting under IFRS, 2018 Field Testing is limited to the collection of qualitative information. EU Volunteers will continue to be asked to submit their adjusted Solvency II balance sheet (as specified) under GAAP Plus.

213. It is expected that 2019 Field Testing will be full field testing for jurisdictions reporting under IFRS. In addition, field testing of GAAP Plus for IFRS jurisdictions is expected to continue for the first two years of the ICS monitoring period, followed by three years of monitoring alongside the MAV approach.

214. Although the U.S. FASB has not yet issued their new rules on accounting for long-duration insurance contracts, the FASB Board has published tentative decisions that provide the outline for the changes in accounting that are expected to be published later this year. These changes would only impact certain contract types such as traditional insurance and certain guarantees containing market risk. Based on analysis, as well as discussions with Volunteer Groups, accounting and actuarial practitioners, it was decided that Volunteer Groups will be able to produce a meaningful balance sheet that is reflective of the new rules with certain limitations. These limitations were judged to be not significant enough to distort the 2018 Field Testing results.

215. The 2018 Field Testing specifications for Japanese GAAP Plus are generally consistent with the previous year. Changes for 2018 Field Testing relate primarily to clarifications and refinements. More specific instructions have been included for measuring options/guarantees and group contracts.

216. In 2017 Field Testing, a discounting option (HQA) was tested under the GAAP Plus approach. There will be no discounting options tested in 2018 Field Testing other than what is specified under each GAAP Plus jurisdictional approach. However, additional information will be collected for purposes of refinement of the GAAP Plus approach. A balance sheet will be collected on a GAAP Plus basis using a risk-free rate for discounting insurance liabilities, to be used for analysis purposes only. The risk-free rate is the same as is being used under the MAV approach. This will inform on discounting ranges of practice, as well as assist in identifying non-discounting related differences between GAAP Plus and MAV.

217. The life insurance liability reconciliation from GAAP Plus to MAV is similar in design to the previous year. For 2018 Field Testing, a new column has been added that is applicable for Volunteers Groups reporting under U.S. GAAP Plus only. This new column is GAAP Plus reflecting new accounting rules. This new column should be used to report balances restated to conform to new U.S. GAAP accounting rules as an intermediate step to arriving at current estimate liability balances under GAAP Plus.

218. The non-life reconciliations are also similar to the previous year except that they include new columns for premium receivables and premium deficiency reserve and no longer require a breakdown between short duration" and long duration.

219. 2018 Field Testing continues to include a data request for GAAP Plus Balance Sheet information under a specified stress to market spreads scenario. There will also be a request to apply the stress scenario to the Risk-Free Rate GAAP Plus Balance Sheet. See section on Stressed Balance Sheet Scenarios (Section 7.7) for detailed instructions on reporting stress scenario balance sheet data.

7.2 GAAP Plus Valuation Instructions and Examples

220. GAAP Plus begins with the consolidated balance sheet as reported in a Volunteer Group's general-purpose, audited financial statements, which for most Volunteer Groups is either on the basis of IFRS or their local jurisdictional GAAP. The scope of application used is as described in Section 3. For this section, such general-purpose reporting bases are collectively referred to as "GAAP." The following GAAP Plus sections provide guidelines and specific examples for adjustments under the various jurisdictional GAAPs applicable to Volunteer Groups so that each can arrive at a consolidated GAAP Plus Balance Sheet following the application of these Technical Specifications.

221. Firms that do not report on a consolidated GAAP basis, e.g., U.S. mutual insurers, may provide aggregated statutory data using the corresponding guidance provided in Section 8.1.1.1.

222. Under certain GAAP Plus approaches, there may be instances where beginning insurance liability balances are calculated under more than one set of GAAP rules. This can occur where a Volunteer Group begins with a Statutory GAAP that allows for an aggregation of balances versus a restatement under one set of accounting rules(e.g. Solvency II Aggregation and Deduction, Japanese Stat) or in the case of U.S. Mutuals where an aggregated balance sheet is used because a consolidated GAAP balance sheet is not prepared. In such cases, where the aggregated balance sheet includes different valuation bases for insurance liabilities, Volunteer Groups need not restate to one single GAAP valuation methodology. Rather, a Volunteer Group should use the most appropriate GAAP Plus jurisdictional approach for each component of insurance liabilities in the aggregated balance sheet to arrive at a current estimate liability and report how this has been calculated in a narrative to be included with the Questionnaire responses.

223. There are several risk charge calculations that include alternate instructions to be applied under GAAP Plus where, for example, under Credit risk, assets are reported at amortised cost or under interest rate risk, where liabilities are discounted using a book yield approach. Volunteer Groups should follow the instructions that are applicable based on the measurement approach taken in the GAAP Plus valuation instructions, for example where an asset is measured at either cost or fair value on the GAAP Plus Balance Sheet. This would not necessarily depend on the GAAP Plus jurisdictional approach that is followed.

224. Under U.S. GAAP, U.S. SAP and Japanese GAAP Plus approaches there is an adjustment (AOCI adjustment) that serves to exclude from capital resources any unrealised gains and losses on fixed income securities that meet defined criteria provided in the Section 10.3.2. Where a Volunteer Group's balance sheet is an aggregation that includes liabilities valued under U.S. GAAP, U.S. SAP or Japan GAAP, these instructions should also be followed for that portion of their balance sheet where those jurisdictional GAAP Plus approaches would apply.

225. For 2018 Field Testing, balance sheet data will only be requested for certain GAAP Plus approaches and for certain jurisdictions (see table below). The IAIS Executive Committee has decided that GAAP Plus reporting will be an additional reporting component of the ICS during the monitoring period (2020-2024), at the option of group-wide supervisors. Thus, there are certain jurisdictions that

have chosen to discontinue their participation in GAAP Plus development and field testing. In addition, it was decided that 2018 would be too early in the process of adoption/endorsement of IFRS 17 to expect Volunteer Groups to prepare a balance sheet in accordance with this new standard and that little would be learned from requesting data on the old basis of accounting.

226. Only those Volunteers who will be reporting a GAAP Plus Balance Sheet in 2018 Field Testing will complete the risk charge calculations on a GAAP Plus basis.

Table 15. GAAP Plus participation in 2018 Field Testing

GAAP Plus Jurisdictions	Participating in 2018 Field Testing of GAAP Plus	GAAP Plus Balance Sheet		
		Balance Sheet	Balance Sheet (new rules applied)	No Balance Sheet (Qualitative only)
Japanese GAAP (J-GAAP)	Yes	X		
U.S. GAAP	Yes		X	
U.S. SAP	Yes		X	
Bermuda	Yes		X	
Canadian IFRS (C-GAAP)	Yes			X
European IFRS (EU-GAAP)	Yes	X[13]		
Swiss IFRS (CH-GAAP)	No			
Korean IFRS (K-GAAP)	No			
Chinese Taipei IFRS (T-GAAP)	Yes			X
Singapore SFRS (S-GAAP)	Yes			X
Hong Kong (HK-GAAP)	Yes			X
China (PRC-GAAP)	Yes			X[14]
South Africa (Z-GAAP)	No			

227. Although some supervisors have decided to discontinue field testing of GAAP Plus for their jurisdictions, it does not preclude a Volunteer Group from submitting GAAP Plus field testing data or completing the relevant sections of the Questionnaire if they so choose.

228. For those Volunteer Groups that will be providing a balance sheet under GAAP Plus in 2018 Field Testing, GAAP Plus valuation data should be reported in the worksheet labelled *FT18.BCR&ICS.Balance Sheet*. See Section 8 for detailed specifications on completing the balance sheet columns for balances reported under GAAP and GAAP Plus.

229. In 2018 Field Testing, there is also a request to provide a GAAP Plus balance sheet that is restated to reflect the use of a risk-free rate (RFR) in place of the specified discount rate/curve under GAAP Plus. The risk-free rate, which would be the same rate as specified under MAV, should be applied

[13] EU Volunteers are asked to report their adjusted Solvency II balance sheet for GAAP Plus for 2018 Field Testing and use it to complete the capital requirement calculations for GAAP Plus.
[14] Chinese Volunteers should contact their supervisor concerning any supplemental GAAP Plus specifications not contained in this document.

to the insurance liability current estimate calculation with respect to cash flow estimates and discounting. For those jurisdictional GAAP Plus approaches where certain non-life liabilities are calculated on an undiscounted basis, on the basis of the proportionality principle, these balances would not need to be restated and discounted using the RFR.

230. The *FT18.BCR&ICS.Balance Sheet* worksheet also includes a request for information related specifically to GAAP Plus. There is a table to facilitate the calculation of an AOCI adjustment to capital resources that is being collected for Volunteer Groups following the U.S. GAAP, U.S. SAP and Japan GAAP Plus examples. Detailed instructions for completing the AOCI Adjustment can be found in Section 10.3.2.

231. The worksheet *FT18.BCR&ICS.Balance Sheet* also includes tables to perform reconciliations of insurance liabilities between GAAP Plus and MAV, as well as a reconciliation between GAAP Plus and MAV restated under the risk-free rate. Detailed instructions for completing these tables can be found in Section 9.

232. In addition, there are a series of questions included in the Questionnaire in order to collect detailed descriptions of the methods used to calculate any significant adjustments developed directly by Volunteer Groups as well as explanations for amounts reported in the liabilities reconciliation. Supplemental narratives to further describe methodologies employed, assumptions used, etc., are invited through the Questionnaire. There are questions that are targeted specifically to certain GAAP Plus approaches. Volunteer Groups are invited to provide answers to any relevant questions if they so choose. There is the possibility that some Volunteer Groups, for example in Japan, may move to an IFRS basis of accounting in the future and thus may wish to provide input on the IFRS specific questions even if their 2018 Field Testing data is provided on a different basis of accounting.

7.3 GAAP Plus Guidelines

233. These GAAP Plus Guidelines have been developed to create a consistent framework to be applied in the development of the various jurisdictional GAAP Plus approaches. Like the MAV approach, the adjustments to be made for the GAAP Plus approach address only the most significant or material items on the balance sheet, specifically, insurance-related liabilities and invested assets.

234. To the extent possible, adjustments should be based on amounts from the underlying audited GAAP financial reports, or which emanate from processes and/or systems that are subject to independent, external audit. The intent is to derive the necessary adjustments in a manner that is both practicable and with a level of independent assurance given each Volunteer Group's existing GAAP basis, process of reporting, related internal controls as well as its audit function.

235. Invested assets should be valued on a basis that is consistent with reported balances in the Volunteer Group's audited GAAP financial statements (subject to the need for an adjustment due to paragraph 237 below).

236. Insurance liabilities (and any reinsurance assets/liabilities) should be valued on a basis that is consistent with reported balances in the Volunteer Group's audited GAAP financial statements and adjusted as necessary to approximate the current estimate (as defined under ICP 14 – Valuation)[15]. The approximation of a current estimate should be carried out using existing jurisdictional GAAP to the extent practicable (see ICP 14.8 for additional detailed information on current estimate).

237. Insurance assets and liabilities should be treated consistently such that non-economic volatility is minimised. To achieve a level of comparability across firms this may require an adjustment to capital resources to align the valuation of certain liabilities and assets for some jurisdictional GAAPs. In other cases, this objective is achieved through the adjustment of the yield curves used to discount insurance liabilities.

238. Capital resources and deductions – Aside from the AOCI adjustment that is applicable for some jurisdictional GAAPs to address the consistent treatment of assets and liabilities and non-economic volatility, all adjustments detailed in Section 10.4 apply equally to GAAP Plus as they would for MAV.

239. Tax effects – Deferred taxes should follow the same treatment as under MAV, but amounts would likely differ, due to adjusting GAAP to different balance sheet values under GAAP Plus.

7.4 GAAP Plus General Considerations

240. The following general considerations are applicable to all Volunteer Groups regardless of the jurisdictional GAAP Plus approach followed:

a) Recognition / Derecognition of insurance liabilities: A liability should be recognised and derecognised in accordance with the Volunteer Group's jurisdictional GAAP.

b) Contract Boundaries: The definition of contract boundaries should be in accordance with the Volunteer Group's jurisdictional GAAP.

c) Discounting: GAAP Plus estimates of insurance liabilities (and related reinsurance recoverables) are to be calculated using yield curves or rates as specified under applicable jurisdictional GAAP rules or as outlined in the applicable specific GAAP Plus approach below.

d) The calculation of GAAP Plus adjustments should be based on up-to-date information and credible assumptions.

e) Policy Loans – Policy loans should be reported in the appropriate row under Invested Assets, rather than being netted against insurance liabilities.

f) Separate Accounts – For purposes of GAAP Plus, Volunteer Groups should follow the jurisdictional GAAP definition for a separate account.

[15] A *Current Estimate* reflects the expected present value of all relevant future cash flows that arise in fulfilling insurance obligations, using unbiased, current assumptions.

g) Non insurance liabilities (i.e. issued debt) should be reported in accordance with jurisdictional GAAP. Balances reported at cost should not be adjusted to fair value.

h) Margin over current estimate (MOCE) – Risk margins should be removed from the valuation of insurance liabilities where insurance liabilities are not calculated as a whole. MOCE options that are being considered under MAV would also be evaluated under GAAP Plus.

i) Deferred Taxes (Assets/Liabilities): these items should be based on the Volunteer Group's GAAP valuations. Deferred tax balances should be adjusted consistently with other asset and liability adjustments made for field testing purposes. For example, certain other assets/liabilities are subject to adjustment in deriving values which are to be used in determining the Volunteer Group's qualifying capital resources; in such instances, a corresponding adjustment should be made to deferred tax assets/liabilities.

An additional deferred tax asset should only be recognised up to any net deferred tax liability ('DTL') adjusting for amounts related to assets deducted from capital resources that would impact deferred taxes (e.g. intangibles and goodwill that are not considered permanent tax differences). The net DTL is a product of the GAAP reported net DTL amount and any additional DTL that results from the adjustment from a GAAP to a GAAP Plus balance sheet. See the Section 14 for further specifications.

j) Adjustment offsetting entries: Most adjustments needed to arrive at a GAAP Plus Balance Sheet require offsetting amounts in the equity section of the balance sheet. These pertain to the elimination of margins, related deferred tax adjustments, and possibly other adjustments made by the Volunteer Group. The Field Testing Template automatically includes these offsets in the equity portion of the balance sheet based on the corresponding amounts reported by the Volunteer as adjustments to the underlying assets and liabilities. There should be no need to manually make adjustment to the equity section to report offsetting entries for GAAP Plus adjustments except for certain offsets related to reporting non-controlling interest (NCI). See Section 8 for additional information.

k) Data quality and setting of assumptions: When selecting data for the calculation of insurance liabilities under the GAAP Plus approach, Volunteer Groups should follow similar guidance as provided under the MAV approach including considerations for selecting data for the calculation, working with limited or unreliable data, and supplementing historical data with data from other sources.

l) Management Actions: When calculating the value of an insurance liability under GAAP Plus, Volunteer Groups' future management actions may be taken into account following similar guidance as provided under the MAV approach (Section 6.3.13).

7.5 Jurisdictional GAAP Plus Approaches

241. The following describes the jurisdictional approaches for GAAP Plus based on the GAAP Plus guidelines and considerations outlined above.

7.5.1 U.S. GAAP Plus approach

242. The following approach pertains to Volunteer Groups who report their audited consolidated financial statements on the basis of U.S. GAAP for the purpose of reporting the GAAP Plus Balance Sheet in 2018 Field Testing.

243. 2018 Field Testing contemplates the expected changes to the accounting for long duration insurance contracts as outlined in the FASB's tentative Board decisions regarding the targeted improvements to the accounting for long-duration insurance contracts. There is an expectation that a final standard, which is anticipated to be issued in the second quarter of 2018, would not differ significantly from these published decisions. As such there are several design modifications that serve to align the U.S. GAAP Plus approach with the expected new accounting rules. The most significant items are:

a) Non-participating, traditional life insurance contracts (e.g. with terms that are fixed and guaranteed) and limited payment contracts will be measured according to the new accounting rules with an adjustment to bring the liability to a gross premium basis and an adjustment to include direct overhead expenses in order to approximate a current estimate.

b) At the time of the issuance of these Technical Specifications, the scope of the Market Risk Benefits portion of the new rule was not yet determined with certainly. For purposes of 2018 Field Testing, all options and guarantees should start with the current GAAP and make adjustments as specified in Section 7.5.1.2.3.

7.5.1.1 U.S. GAAP Plus approach – Invested assets

244. Invested assets including fixed income, equity, derivatives, mortgages/loans[16], real estate, and other alternative investments should be reported under GAAP Plus as determined under U.S. GAAP standards for reporting. Therefore no adjustment is required under GAAP Plus.

245. It is expected that under U.S. GAAP the majority of investments will be valued at fair value. Investments valued at amortised cost, such as securities designated as held to maturity, loans designated as held for investment and certain other investments, should be reported on that basis net of any related valuation allowance or loan loss reserve.

246. AOCI adjustment – See the GAAP Plus AOCI adjustment in Section 10.3.2

[16] In this context, mortgages/loans made means mortgages/loans that the Volunteer Group has either originated or purchased as investments.

7.5.1.2 U.S. GAAP Plus approach - Insurance liabilities

247. Volunteer Groups currently filing U.S. GAAP reports should apply the following methods to calculate adjustments for reported insurance liabilities, reinsurance recoverables and reinsurance assumed.

248. Under U.S. GAAP there are several accounting models used to estimate insurance liabilities based on the characteristics of the product and length of the contract. The GAAP Plus approach leverages these accounting models and, in certain cases, outlines required adjustments to existing reported balances in order to approximate, to the extent possible, a current estimate. See Section 6.3 on current estimate instructions.

249. In order to approximate a current estimate, GAAP Plus insurance liability assumptions and calculations should exclude any implicit or explicit margins in the calculations. In addition, any amounts that take into account the own credit standing of the Volunteer Group should be removed.

250. Reinsurance recoverables and any actuarially determined reinsurance payables should be calculated consistent with the GAAP Plus estimates of insurance liabilities. Therefore the same assumptions and inputs that are used for the subject insurance liabilities should be used for the corresponding reinsurance recoverables.

7.5.1.2.1 U.S. GAAP Plus approach - Non-life and other short-term insurance liabilities

251. For insurance liability estimates for unpaid claims and other short-term insurance contracts that are measured under U.S. GAAP ASC 944-30-1 to 4, the valuation of these items should be based on the Volunteer Group's reported U.S. GAAP valuation. Generally speaking, this would be on an undiscounted basis, though there could be exceptions (e.g. tabular discount of certain Workers' Compensation liabilities). Any significant exceptions should be described in the Questionnaire response.

252. Deferred acquisition costs related to non-life insurance should be set to zero (expensed) on the balance sheet under U.S. GAAP Plus. The Template will automatically record the offset in Other Asset Adjustment Offset in the equity section. The premium liabilities should be reduced by the amount of deferred acquisition costs that are expensed. The Template will record the offset in Insurance Liability/Reinsurance Adjustment Offset in the equity adjustments section.

7.5.1.2.2 U.S. GAAP Plus approach - Life insurance, investment contracts and other long-term insurance liabilities

253. For insurance liabilities that are measured under U.S. GAAP as the net present value of cash flows using current or updated assumptions, the valuation of these items should be based on the Volunteer Group's reported U.S. GAAP valuations.

254. For insurance liabilities that are expected to be within to scope of the U.S. FASB rule on targeted improvements to the accounting for long-duration contracts under the section, 'Liability for

Future Policy Benefits' (e.g. non-participating, long-term insurance contracts measured according to ASC 944-30-7, formerly SFAS 60 and limited payment contracts measured according to ASC 944-30-16, formerly SFAS 97):

a) Begin with the liability as it would be reported under the expected new rule, including updated assumptions, elimination of all provisions for adverse deviations and application of a discount rate based on the yields of a representative portfolio of "upper medium quality" fixed income instruments.

b) The net premium ratio should be adjusted to a gross premium.

c) Directly attributable overhead expenses should be added to reflect a current estimate balance. In order to conform to the definition of a current estimate and to be internally consistent with other GAAP Plus jurisdictional examples, overhead expenses should be included under U.S. GAAP Plus for purposes of the ICS. For 2018 Field Testing, as a placeholder in this context only, overhead expenses are those general expenses that would no longer exist in the absence of the business or portfolio of contracts. So for example that could include accounting, human resources, IT and building expenses not already included as specifically identified expenses but would likely exclude most training and product development costs. Overhead expenses calculated under the MAV approach may be used as a practical expedient.

d) An adjustment to AOCI may also be required for the amount relating to updating discount rates to reflect current market conditions under new U.S. GAAP accounting rules. It is understood that simplifying assumptions or a practical expedient may be required to develop an estimate of this amount for field testing.

255. For participating contracts, non-par insurance contracts that are measured under a retrospective deposit method approach (e.g. universal life insurance contracts measured according to ASC 944-30-16, formerly SFAS 97) and investment contracts (e.g. guaranteed investment contracts, retirement products, annuities):

a) Adjust the liability utilizing the Gross Premium Valuation (GPV) approach as defined in loss recognition (premium deficiency) testing under U.S. GAAP ASC Topic 944-60. The GPV is calculated by estimating the present value of future payments for benefits and related settlement and maintenance expenses less the present value of future gross premiums based on actual and anticipated experience. Projections may be based on a single best estimate scenario and may also include the impact of management actions, e.g., the current estimate of future premium rate increases (Section 6.3.13 on Management Actions). For non-par and investment contracts, the discount rate applied should be based on a current portfolio (book) yield and expected reinvestment asset yields and cash flows. Gross rates should be reduced for expected defaults and investment expenses. For par contracts the discount rate would be the current dividend fund crediting rate.

b) While acknowledging that overhead expenses are not included in most instances under U.S. GAAP rules, they would be included in a current estimate. In order to conform to the definition of a current estimate and to be internally consistent with other GAAP Plus jurisdictional examples, overhead expenses should be included under U.S. GAAP Plus for purposes of the ICS. Thus, although loss recognition testing under U.S. GAAP specifies that overhead expenses are excluded, for purposes of reporting under GAAP Plus, overhead expenses should be included. As a practical expedient, the overhead expenses included in the GAAP Plus liabilities can be the same as those included in the reported MAV current estimates. See definition of overhead expenses in paragraph 254 above.

7.5.1.2.3 U.S. GAAP Plus approach - Options and guarantees

256. Insurance contracts may include embedded options and guarantees, such as guarantees of minimum investment returns (including as part of death benefits), maximum charges for mortality, surrender options, or options for the policyholder to reduce or extend coverage. For 2018 Field Testing, liabilities related to these options and guarantees should be valued in accordance with current applicable U.S. GAAP rules.

257. For options and guarantees that do not meet the definition of a derivative under U.S. GAAP, the applicable guidance would be ASC Subtopic 944-40-30-19a to 29 (formerly SOP 03-1). Any historical, locked in assumptions used in this calculation should be updated to reflect current information.

258. For those guarantees/options that are considered to be derivatives under U.S. GAAP, the applicable guidance would be ASC Topic 815 (formerly SFAS 133) and ASC Topic 820 (formerly SFAS 157). Any amounts made to reflect an exit value (market participant's view, e.g. adjustments to reflect the credit standing of the Volunteer Group and adjustments for market participant risk margin or 'load') should be excluded from the estimate.

259. The accounting method for certain market risk benefit guarantees may change under proposed new accounting rules. The scope was not certain as at the time the Technical Specifications were drafted. In addition, systems and processes may need to be developed to apply the new rules. Therefore, as a practical expedient, the current accounting rules apply for GAAP Plus to be supplemented by a question in the Questionnaire to attempt to assess the impact of the upcoming changes to the U.S. GAAP accounting.

7.5.1.3 U.S. GAAP Plus approach – Other adjustments

260. Deferred expenses related to insurance such as deferred acquisition costs, value of business acquired, sales inducement assets, etc. should be expensed/reversed. The offsetting entry is automatically generated by the Template.

261. FAS 115 shadow adjustments: Adjustments to reflect in certain balance sheet items the impact of unrealised gains and losses on available for sale securities as if they had been realised should be reversed and should not be reflected in asset/liability balances and AOCI.

262. Under the new accounting rules for long duration, fixed term and limited payment contacts, it may be necessary to develop an estimate for the starting balance in AOCI related to changes in discounting. This may require application of practical expedients or simplifying assumptions. Please respond to the related question in the Questionnaire to explain how this balance was estimated.

7.5.2 U.S. mutual life insurers (U.S. SAP) GAAP Plus approach

263. The following guidance pertains to U.S. mutual insurers that report audited results only on the basis of statutory accounting principles (SAP) as defined by state insurance regulators in the United States.

264. The general GAAP Plus guidance is applicable to SAP only reporting U.S. mutuals. However, and as described below, there are some balances that must be uniquely addressed by a U.S. mutual Volunteer Group in 2018 Field Testing.

7.5.2.1 U.S. SAP GAAP Plus approach – Asset-related adjustments

265. Long-term and short-term investments reported under SAP that meet the U.S. GAAP definition of available-for-sale or trading should be adjusted to fair value. This would mainly apply to debt securities, equities and derivatives.

266. Replication (synthetic) assets should be bifurcated, reclassified as debt securities and derivatives and valued as per paragraph 265.

267. Real estate owned should be reported on a gross basis with any related debt balances reclassified as a liability using the Reclassification from GAAP column. Amounts should be revalued on the same measurement basis as would be required under U.S. GAAP based on whether the real estate is an investment, held for sale or considered as property for own use.

268. Any life insurance deferred premium assets that exist for SAP when the mean reserve method is used for calculating reserves should be written off. The offset will be automatically calculated and included in the Insurance Liability/Reinsurance Offset Adjustment line under the equity section.

269. Deferred taxes (assets/liabilities) should be based on the Volunteer Group's SAP valuations, adjusted consistently with other asset and liability adjustments made for field testing purposes.

270. Non-admitted assets should be reported in the balance sheet using valuation methods that are consistent with U.S. GAAP.

271. AOCI Adjustment –See the GAAP Plus AOCI Adjustment in Section 10.3.2.

7.5.2.2 U.S. SAP GAAP Plus approach – Liability-related adjustments

272. Insurance liabilities should begin with the Volunteer Group's reported SAP valuations.

a) For contracts that would fall under FAS 60, 97, 120 for U.S. GAAP (disability income, long-term care, life insurance, pay-out annuities with life contingencies), adjust to a current estimate based on baseline cash flow testing. Apply the rate or yield curve consistent with the U.S. GAAP Plus approach.

b) For fixed and variable deferred annuities not included in AG 43 and non-life contingent pay-outs, Volunteer Groups should use baseline cash flow testing per [a] above.

c) For options and guarantee liabilities (variable annuities) that fall under SOP 03-1 and FAS 133/157, adjust to CTE 0 from AG43 models (with appropriate modifications to eliminate conservative PADs/margins) or hedging models if AG 43 is not applicable. Guarantees that fall under FAS 133/157 and are valued as derivatives should also use risk neutral in place of real world scenarios to the extent practical.

d) The asset valuation reserve and interest maintenance reserve should be reclassified using the 'Reclassification from GAAP' column to the equity section of the Balance Sheet as Reserves – Unrestricted as specified in Section 10.3.3.

273. Any reinsurance recoverables that are netted against insurance liabilities for SAP should be reclassified as assets for GAAP Plus using the Reclassification from GAAP column in the balance sheet.

274. Pension liabilities: firms that have elected to defer surplus impacts of the SAP rule change to reflect the full pension benefit obligation should record a liability for the unamortised portion.

7.5.3 Japanese GAAP (J-GAAP) Plus approach

275. The following guidance pertains to Japanese Volunteer Groups who report their audited consolidated financial statements on the basis of Japanese GAAP for the purpose of reporting the GAAP Plus Balance Sheet in 2018 Field Testing.

7.5.3.1 J-GAAP Plus approach – Invested assets

276. Japanese Volunteer Groups should report invested assets consistent with the treatment under J-GAAP. Therefore no adjustment is required under GAAP Plus.

277. For investment securities, fair value should be applied to Available For Sale (AFS) and trading securities, and amortised cost should be applied to Held To Maturity (HTM) and Held for Policy Reserve (HFR) securities. Loans would be valued at amortised cost net of any loan loss reserve and real estate should be valued at cost net of depreciation.

278. AOCI Adjustment –See the GAAP Plus AOCI adjustment in Section 10.3.2.

7.5.3.2 J-GAAP Plus approach – Life insurance liabilities

279. The following adjustments aim to revalue life insurance liabilities to current estimates under the J-GAAP Plus approach utilising the Japanese GAAP statutory cash flow test pursuant to the Insurance Business Act in Japan.

280. Japanese Volunteer Groups should run the statutory cash flow test under a full time horizon assumption and fully reflect the test result in their GAAP Plus life insurance liabilities. Under the full time horizon cash flow analysis, life insurers are required to assess whether future cash flows generated from current assets cover the future cash flows (net of cash-inflows and cash-outflows) from insurance liabilities. The net amount in shortage or excess of insurance liabilities at the end of in-force business should be discounted and the resulting value should be added to (or deducted from) insurance liabilities. The discount rate should be consistent with cash flows to be generated on the asset side.

281. The actual current experience including mortality, lapse, expense ratio and interest rate should be used in the calculation of the future cash flows for insurance liabilities. New business should not be taken into consideration. Book yield (current portfolio assets yield) should be used to generate the future cash flows from the current asset portfolio. The future cash flow projection should be on a pre-tax basis.

282. The discounting assumption for investment returns from reinvestments and new money should be defined based on an assumption that Volunteer Groups invest in Japanese government bonds with an average duration equal to the average duration of Japanese government bonds in which the Volunteer Group invested in the previous financial year.

283. Group insurance contracts are scoped out from the Japanese GAAP statutory cash flow test. Therefore the following specifications should be used to measure these contracts for GAAP Plus:

a) The GAAP Plus valuation approach for group contracts is the same as Japanese GAAP. Group contracts other than group annuities should be measured as the unearned premium. The contract boundary for these group insurance contracts is one year.

b) Insurance liabilities for group annuity contracts should be calculated as a compound interest calculation of premium, therefore no GAAP Plus adjustment is required.

7.5.3.3 J-GAAP Plus approach – Non-life insurance liabilities

284. In order to adjust non-life insurance liabilities for reporting under J-GAAP Plus, Volunteer Groups should apply a full time horizon cash flow analysis discounted using a market yield curve and use the result as the J-GAAP Plus non-life insurance liability. Under the full time horizon cash flow analysis, non-life insurers should assess whether reported insurance liabilities (GAAP basis premium provision) is adequate to cover all expected future cash flow. Recognised shortage or excess of insurance liabilities should be adjusted into insurance liabilities. The actual experience including claim

frequency, lapse, expense ratio and interest rate should be used for the calculation of future cash flows in the insurance liability, but new business should not be taken into consideration.

7.5.3.4 J-GAAP Plus approach –Liabilities for options and guarantees

285. Options and guarantees that are explicitly measured under Japanese GAAP should be adjusted for GAAP Plus using the method described in Section 7.5.3.2. (J-GAAP Plus Approach – Life Insurance Liabilities) for GAAP Plus. For 2018 Field Testing, as a practical expedient, the time value of options and guarantees (TVOG) under MAV may be used to reflect TVOG for the Japanese GAAP Plus Balance Sheet.

7.5.4 IFRS GAAP Plus approach

286. It was decided that 2018 would be too early in the process of adoption/endorsement of *IFRS 17 – Insurance Contracts* to expect Volunteer Groups reporting under IFRS (or a local derivation)to prepare a balance sheet in accordance with this new Standard and that little would be learned from requesting data on the current basis of accounting. As a result, the focus of GAAP Plus for 2018 Field Testing is to monitor the developments of adoption/endorsement of IFRS 17, primarily through the collection of qualitative information. A balance sheet on the basis of IFRS 9 and IFRS 17 will not be requested for 2018 Field Testing. Please refer to the IFRS GAAP Plus specific questions in the Questionnaire.

7.5.5 IFRS GAAP Plus approach: Non-EU Volunteer Groups

287. The following guidance pertains to Non-EU Volunteer Groups who report their audited consolidated financial statements on the basis of IFRS or an adaptation that would adopt or endorse IFRS with certain jurisdictional adjustments or interpretations. For 2018 Field Testing, those jurisdictions include the following:

a) Canada

b) China [17]

c) Chinese Taipei

d) Hong Kong

e) Singapore

288. A GAAP Plus Balance Sheet will not be collected for IFRS reporting Volunteer Groups in the jurisdictions noted above for 2018 Field Testing. In addition, in the absence of a balance sheet, risk

[17] Chinese Volunteers should contact their supervisor concerning any supplemental GAAP Plus specifications not contained in this document.

charges will not be calculated under GAAP Plus. Data collection would be limited to Questionnaire responses.

7.5.6 IFRS GAAP Plus approach: European Union Volunteer Groups

289. The following guidance pertains to European Union (EU) Volunteer Groups who report their audited consolidated financial statements on the basis of EU International Financial Reporting Standards (EU-IFRS) for the purpose of reporting the GAAP Plus Balance Sheet in 2018 Field Testing.

290. The current status of development of IFRS concerning insurance contracts, as well as its implementation across Member States, raise particular challenges regarding the development of a GAAP Plus approach for 2018 Field Testing. The focus of 2018 Field Testing is to monitor the developments of jurisdictional adoption/endorsement of IFRS 17 primarily through collection of qualitative information. However, collection of a balance sheet on the basis of the previous year's specifications would be useful in the analysis of the impact of IFRS 17 in a GAAP Plus context. Thus for 2018 Field Testing, a GAAP Plus balance sheet based on a Solvency II regulatory valuation with some specified adjustments will continue to be collected.

291. Volunteer Groups following the EU GAAP Plus approach that prepare an aggregated group balance sheet should take note of paragraph 223 above. In addition, EU Volunteer Groups should complete the GAAP Plus risk charge calculations on the basis of this balance sheet.

7.5.6.1 EU GAAP Plus approach – Invested assets

292. IAS 39/IFRS 9 (and IAS 40 for investment property) allows for the use of several valuation methodologies, under specific conditions. For the purpose of the GAAP Plus Balance Sheet, to ensure consistency with the valuation of insurance liabilities, invested assets should be reported at fair value. As a proxy, EU Volunteer Groups can apply the same adjustments as per the MAV basis.

7.5.6.2 EU GAAP GAAP Plus approach - Insurance liabilities and reinsurance recoverables

293. EU Volunteer Groups should begin with their general purpose GAAP consolidated balance sheet and perform the necessary adjustments to arrive at their Solvency II regulatory valuation (including the specifications below). This will provide the balances for reporting insurance liabilities and investment contracts for GAAP Plus in 2018 Field Testing.

294. The following adjustments should be made to the Solvency II insurance liability balances in order to derive GAAP Plus figures:

a) Risk margins should be removed from the valuation of insurance liabilities where insurance liabilities are not calculated as a whole.

b) The valuation of insurance liabilities should be adjusted to exclude the phasing in measures provided by the regulatory framework.

7.5.7 Bermuda GAAP Plus approach

295. Section 17A of the Bermuda Insurance Act requires commercial insurers to prepare consolidated GAAP financial statements in accordance with one of the following standards:

a) International Financial Reporting Standards (IFRS);

b) GAAPs that apply in Bermuda, Canada, the United Kingdom or the United States of America; or

c) Such other GAAPs as the Bermuda Monetary Authority may recognise.

296. GAAPs that apply in Bermuda in point b) above are aimed at domestic (non-exempt) companies and means Canadian GAAP (which would be IFRS for purposes of GAAP Plus for 2018 Field Testing).

297. Bermudian Volunteer Groups should use specifications under the GAAP Plus jurisdictional approaches for whichever underlying GAAP rules they are using to prepare their financial statements.

7.6 Supplemental Data Collection: GAAP Plus Insurance Liabilities Restated under a Risk-Free Rate

298. For 2018 Field Testing, a GAAP Plus balance sheet will be collected that reflects the application of a risk-free rate/curve (RFR) in place of the discount rate/curve specified under each jurisdictional GAAP Plus approach. This rate/curve would be the same that is applied under the MAV approach. The RFR is being collected in a similar fashion to the HQA discounted balance sheet that was collected in 2017 Field Testing, however it is not being considered as a discounting option. The purpose of this supplemental data collection is to allow for the analysis of jurisdictional GAAP Plus discounting approaches, to evaluate range of practice and to identify non-discounting differences between GAAP Plus and MAV.

299. The RFR should be applied to the insurance liability current estimate calculation with respect to cash flow estimates and discounting. For those jurisdictional GAAP Plus approaches where certain non-life liabilities are calculated on an undiscounted basis, on the basis of the proportionality principle, these balances do not need to be restated and discounted using the RFR. The AOCI adjustment is not applicable under the RFR scenario.

300. A reconciliation will accompany the RFR balance sheet where GAAP Plus and MAV insurance liabilities applying the RFR will be reconciled. This data collection will also be similar to the HQA reconciliation from 2017 Field Testing. See Section 9 Reconciliations for further instructions.

7.7 Supplemental Data Collection: Stressed Balance Sheet scenarios

301. The GAAP Plus Balance Sheet and the GAAP Plus Balance Sheet using the RFR should each be run twice: first, using spreads as at the balance date and second, with prescribed stressed spreads (refer to Section 6.5 for the stressed spreads).

302. The MAV prescribed stresses should be applied to determine market value changes in assets. For GAAP Plus approaches that include an AOCI adjustment for invested assets backing long duration insurance contracts, the impact of the application of stressed spreads on the AOCI adjustment should be calculated and reported on a separate line in the Template (see Section D in the worksheet *FT18.BCR & ICS Balance sheet*). As the AOCI adjustment is essentially restating assets to an amortised cost basis, the change in the AOCI adjustment serves to offset the impact of the stressed spreads on the assets that are within the scope of the AOCI adjustment. The AOCI adjustment does not apply under the GAAP Plus balance sheet using the RFR.

303. Application to GAAP Plus insurance liabilities will depend on the GAAP discounting approach used. For those liabilities measured using a discount rate that represents a book yield blended with a reinvestment assumption, only the reinvestment assumption component of the rate would be impacted by the prescribed stress spread. For liabilities discounted with a market based rate or curve, the stress should be applied directly. Volunteer Groups are expected to apply the stress spreads to rerun the cash flows and to discount those cash flows.

304. The Questionnaire contains questions requiring a description of how the stressed spread scenario has been applied to GAAP Plus insurance liabilities.

305. The stresses are artificially constructed with the aim to define an adverse scenario in order to observe the balance sheet impact under the GAAP Plus Balance Sheet. The stressed scenario is not specifically linked to any reference date or specific historical scenario. The stressed spreads should be applied to the portion of the balance sheet labeled “related to Insurance Activities” for any interest sensitive assets, insurance liabilities, reinsurance, deferred taxes and the AOCI adjustment (if applicable). For certain participating contracts, the simplification formula as defined under the MAV approach may be used (see paragraph 199). The impact related to assets (net of the AOCI adjustment), insurance liabilities, capital resources, deferred taxes and AOCI adjustment should be reported in Section D of the worksheet *FT18.BCR & ICS.Balance Sheet.* The details of the impact on insurance liabilities should be reported in Section C of the same worksheet.

8 BCR and ICS Balance Sheet

Relevant Worksheets in Template:	*FT18.BCR & ICS.Balance Sheet*	*Due 31 August 2018*

306. Balance sheet data is reported in worksheet *FT18.BCR & ICS.Balance Sheet*. To avoid duplication of the data collected, this single worksheet is used to collect all the GAAP, GAAP Plus and MAV Balance Sheet data. The specifications below pertain to the section of the worksheet labelled *A) Information on the balance sheets used for BCR and ICS purposes under the current economic conditions.*

8.1 Balance Sheets

307. Specifications to complete the table – *Balance Sheets*

8.1.1 GAAP Valuation Balance Sheet

308. Column GAAP Valuation - *Amounts per audited, consolidated financial statements* (or aggregated statutory financial statements) is the starting point for the Balance Sheet. Totals should be equal to audited financial statements (i.e. Assets, Liabilities, Equity). Other significant balances to the extent possible should also be equal to reported financial statements without any adjustment (e.g. total investments, insurance liabilities, retained earnings, AOCI, etc). Any significant differences should be explained in the Questionnaire.

309. For those Volunteer Groups that do not report aggregated or consolidated statements and must generate aggregated statutory financial statements for 2018 Field Testing, starting balances should be reported as specified in the Section 8.1.1.1 below.

310. Column GAAP Valuation – *Related to Insurance Activities* is the next step. Amounts related to insurance activities should be separated from Column 1 and reported here. For the purpose of 2018 Field Testing, insurance activities are defined as activities of licensed insurers and regulated and unregulated entities that support the insurance activities (for example subsidiaries that provide claims management or asset management acting mainly for the insurance entities). See also Annex 3.

311. Column *Other than Related to Insurance Activities* will then be automatically populated.

8.1.1.1 Instructions for generating GAAP group financial statements

312. For Volunteer Groups that do not report consolidated or group level financial statements it will be necessary to generate financial statements on an aggregated basis to reflect group level

starting balances. This is primarily applicable for U.S. Mutual insurers that do not prepare consolidated GAAP financial statements.

313. The following specifications provide instructions for U.S. Mutual Volunteer Groups. Any other Volunteer Group that may need to generate group level financial statements can use these specifications as an example and apply similar steps as applicable. Volunteer Groups should consult with their supervisor for any specific questions not addressed in the Technical Specifications.

8.1.1.1.1 U.S. SAP - Group level financials

314. U.S. Volunteer Groups that do not report on a consolidated group basis will need to prepare a group-level balance sheet that includes domestic insurance companies (whose financial statements are prepared in accordance with U.S. SAP), foreign insurance company subsidiaries, and non-insurance subsidiaries and affiliates (whose financial statements are typically prepared in accordance with U.S. GAAP in the case of subsidiaries and affiliates of a U.S.-based insurer or group).

315. A group level, consolidated balance sheet should be prepared as follows:

a) Aggregate all U.S. audited statutory financial statements for domestic insurance companies.

b) For all non U.S. insurance companies that file audited financial statements on a non-U.S. statutory basis of reporting, aggregate all balances after performing foreign currency translation into the reporting currency of the U.S. Holding Company or Head of Group entity as specified under FASB ASC Topic 830. Foreign currency translation adjustments should be recorded in the balance sheet equity account AOCI.

c) Identify other non-insurance domestic subsidiaries, affiliates and other entities where ownership is greater than 50% or where management controls an entity through the ability to make decisions that can significantly impact returns of the entity. For these entities, eliminate the equity investment in each subsidiary and for each balance sheet line item add in the corresponding value of reported gross assets and liabilities of those subsidiaries to the parent statutory balances[18]. Include any minority interest amounts if applicable. Apply the same approach for foreign entities with the addition of performing foreign currency translation as specified in the paragraph above.

d) Make appropriate intercompany eliminations as specified under FASB ASC Topic 810 Consolidation.

316. This will result in a quasi-consolidated group level Balance Sheet on a mixed valuation basis. These balances should be recorded in worksheet *FT18.BCR & ICS.Balance Sheet*, the column labelled GAAP Valuation – *Amounts per Audited Consolidated Financial Statements*.

[18] This may be a mix of statutory, U.S. GAAP and modified GAAP balances.

8.1.1.2 GAAP Balance Sheet – New line items for 2018

317. There are some new/revised rows for purposes of reporting insurance related items in the 2018 GAAP Balance Sheet. These changes were made to make input easier for Volunteer Groups by aligning the balance sheet descriptions with typical reported GAAP balance sheets. Balances should be reported in the row that most closely aligns with jurisdictional GAAP.

Table 16. New items on the GAAP Balance Sheet for 2018 Field Testing

(Re)insurance Assets	
Ceded Unearned Premium Provision	To report ceded written premium associated with the exposure remaining on the unexpired portion of the policy.
Premium Receivables	To report any premium due after the effective date of the policy, including any agents' balances.
Other (Re)Insurance Assets	To report balances that do not closely align with any other category.
(Re)insurance Liabilities	
Gross Unearned Premium Provision	To report gross written premium associated with the exposure remaining on the unexpired portion of the policy.
Provision for Unexpired Risk (aka Premium Deficiency Reserve)	To report any additional provision when it is determined that the equity in net UPP is negative.
Other (Re)Insurance Liabilities	To report balances that do not closely align with any other category

8.1.1.3 GAAP Balance Sheet equity

318. Volunteer Groups should provide a breakdown of the components of equity as set out in the balance sheet. Definitions for many of the equity line items can be found in the Section 10.3. In particular, please note that share premium and contributed surplus are reported separately.

319. Ordinary shares should be reported on a gross basis with Treasury Shares reported as a deduction at cost on the separate line that has been added to the 2018 Template.

320. The value reported as a subset of minority/non-controlling interests (NCI) in the balance sheet is limited to NCI that represents a third party ownership interest not in the form of a financial instrument. This form of NCI must also meet the full description from the Capital Resources section (Section 10.3.1). It may be necessary to reclassify a portion of the valuation adjustment offset amounts related to GAAP Plus or MAV to NCI. This reclassification amount can be reported in the Adjustment section row "*(-) adjustments already included in other equity items*" with the other side of the entry to the NCI line item.

8.1.1.4 GAAP Balance Sheet tax

321. Deferred tax balances as reported on GAAP financial statements would generally follow jurisdictional GAAP for purposes of assessing utilisation of any deferred tax asset. Under IFRS and U.S. GAAP, that would include the application of a probable (IFRS) or more likely than not (U.S. GAAP) assessment of utilisation. Under both standards the utilisation assessment equates to a greater than 50% chance that the DTA would be realisable. There may be Volunteers Groups that report under more stringent utilisation approaches, such as U.S. Stat.

8.1.2 ICS Balance Sheets

8.1.2.1 GAAP Plus Valuation Balance Sheet (GAAP Plus)

322. Column GAAP Plus - *Reclassification from GAAP* should be used to report any reclassification of amounts that would be a result of differences in presentation between audited GAAP[19] and GAAP Plus (Section 7.5). Volunteer Groups should only record in this column amounts representing the transfer from one balance sheet row to another in order to conform to the format of the GAAP Plus Balance Sheet. For example, some line items may be presented on a net basis on audited financial statements but would be required to be reported on a gross basis for purposes of the ICS (i.e. policy loans, reinsurance recoverables). All reclassification entries should sum to zero. These reclassification amounts should not include any valuation adjustments as outlined in the specifications under each GAAP Plus jurisdictional approach, such as valuation changes to assets or insurance liabilities or eliminations such as the elimination of deferred acquisition expenses. Volunteer Groups should provide narrative explanations for reclassification entries in the Questionnaire.

323. Column GAAP Plus *Valuation – Related to insurance activities* should include balances on the basis of the GAAP Plus approach. The balances should reflect any reclassification amounts as reported in column *Reclassification from GAAP* and adjustments as specified in the applicable jurisdictional GAAP Plus approach (Section 7.5).

324. Offsetting entries for valuation adjustments are automatically calculated fields recorded under the equity section of the balance sheet.

325. For 2018 Field Testing, the U.S. GAAP Plus balances should also reflect (on a best efforts basis) the impact of adopting the new FASB credit loss model (CECL) and targeted improvements to long-duration insurance contracts as outlined in the section U.S. GAAP Plus Approach (Section 7.5.1). Non-EU Volunteer Groups that report under IFRS should not report GAAP Plus balances for 2018 Field Testing. EU Volunteer Groups and Volunteer Groups reporting Japanese GAAP should follow the GAAP Plus specifications which are similar to the previous year.

326. The *FT18.BCR & ICS.Balance Sheet* worksheet also includes additional requests for information related to GAAP Plus including the calculation of an AOCI adjustment to capital resources that is being

[19] In the case of U.S. Mutuals, this would be the generated group level financial statement balances specified in Section 8.1.1.1.1.

collected from Volunteer Groups applying the U.S. GAAP, U.S. SAP and Japan GAAP examples of GAAP Plus. Detailed instructions can be found in Section 10.3.2.

327. In addition, there are a series of questions included in the Questionnaire related to GAAP Plus and questions requesting support for amounts reported in insurance liability reconciliations. Supplemental narratives to further describe methodologies employed, assumptions used, etc., are invited through the Questionnaire.

8.1.2.2 Market Adjusted Valuation Balance Sheet (MAV)

328. MAV - *Reclassification from GAAP* should be used to reflect any entries to reclassify amounts from the audited, consolidated jurisdictional GAAP balances as reported in *GAAP Valuation – Related to Insurance Activities* to the MAV Balance Sheet. Such reclassification differences may result from consolidation rules, offsetting/netting rules, or variance in other accounting definitions (e.g. separate accounts). All reclassification entries should sum to zero. Volunteer Groups should provide narrative explanations for reclassification entries in the Questionnaire.

329. MAV – *Related to Insurance Activities* balances should reflect the changes in valuation of invested assets or liabilities as specified under the MAV approach. The specifications of each of the approaches to be tested in 2018 Field Testing are detailed in the MAV section (Section 6.4).

330. Offsetting entries for valuation adjustments to assets and liabilities are automatically posted as under the equity section of the balance sheet.

8.1.2.3 Additional balance sheets

331. 2018 Field Testing includes columns under both GAAP Plus and MAV to report balances restated using certain additional discounting methods. For both GAAP Plus and MAV, an additional balance sheet will be collected based on a risk-free rate to discount insurance/reinsurance liabilities and reinsurance assets. In addition for MAV, balance sheets will be collected using the OAG 2.0 and Revised Blended methods.

332. Instructions on completing the additional balance sheets can be found in Section 6.4 for MAV and Section 7.6 for GAAP Plus.

8.2 Other Balance Sheet Information

333. This section provides specifications for the tables that appear below the *Balance Sheet* table in worksheet *FT18.BCR & ICS.Balance Sheet*.

334. Difference between consolidated and insurance assets - A table to provide a breakdown by business activity type of the difference between consolidated assets included in table - Balance Sheet column 1 and insurance assets in column 3

335. Information on assets subject to deduction from capital resources – This table collects information used in the calculation of ICS capital resources under the GAAP Plus and MAV valuation approaches. See Section 10.4 for detailed instructions

336. GAAP Plus AOCI adjustment to capital resources – This table is a reconciliation from AOCI on AFS debt securities reported under the GAAP Valuation balance sheet to the AOCI adjustment amount as specified in Section 10.3.2.

337. Allocation of Assets held in separate accounts – Table to provide additional information on separate account assets for GAAP, GAAP Plus and MAV.

338. Detailed *information on the insurance liabilities under current economic conditions* - The value of insurance liabilities and investment contracts under GAAP, GAAP Plus and MAV valuation approaches should be reported in this table as follows:

a) Balances entered in the detailed table populate the insurance liability balance sheet line item.

b) Balances reported in the columns labelled GAAP Valuation – Gross liabilities and GAAP Valuation – Reinsurance recoverables should be reported as per the audited, consolidated financial statements. For Volunteer Groups that must generate group level financial statements (as may be the case for some U.S. mutual insurers), instructions can be found in Section 8.1.1.1.

c) Insurance liability and investment contract adjustments to balances reported in the columns labelled GAAP Plus and MAV approaches should follow the respective specifications.

d) Note that Volunteer Groups should report insurance liabilities gross, i.e. reinsurance recoverables and policy loans should be reported as assets rather than being netted against insurance liabilities. This facilitates analysis and is necessary for the calculation of the capital requirement.

339. The instructions for completing the reconciliation tables can be found in Section 9.

9 Reconciliations from GAAP Plus to MAV

Relevant Worksheets in Template:	*FT18.BCR & ICS.Balance Sheet*	*Due 31 August 2018*

340. Two tables in the *FT18.BCR & ICS.Balance Sheet* worksheet have been provided for Volunteer Groups to reconcile life insurance liability amounts between MAV and GAAP Plus. This data is being collected in order to understand any significant differences between the two ICS valuation methods. The first table is a reconciliation of life liabilities between GAAP Plus and MAV approaches. The second table is a reconciliation of life insurance liabilities that are restated using a risk-free rate (RFR) to further assist in the analysis of non-discounting related differences between GAAP Plus and MAV.

341. Additional tables in the *FT18.BCR & ICS.Balance Sheet* worksheet have been provided to reconcile non-life liability amounts between reported GAAP and GAAP Plus/MAV as well as between GAAP Plus and MAV.

9.1 Life Insurance Liability Reconciliations

342. The first reconciliation table is provided for Volunteer Groups to reconcile life insurance liabilities between GAAP Plus and MAV. This table includes certain specified columns as well as two user-defined columns to identify significant reconciling items (other than those specified). The definitions used by a Volunteer Group for each of the user-defined columns and other relevant information necessary to understand the drivers of differences between MAV and GAAP Plus current estimates should be included in the Questionnaire responses.

343. A second reconciliation table is provided for Volunteer Groups to reconcile between GAAP Plus and MAV insurance liability amounts reported using a Risk-Free Rate (RFR) discount rate/curve. Columns are provided that can be self-defined by each Volunteer Group to highlight significant differences that would not be related to the discount rate/curve. The definitions used by a Volunteer Group for each of these columns and other relevant information necessary to understand the drivers of differences other than discounting between MAV and GAAP Plus current estimates should be included in the Questionnaire responses.

344. Reconciliation information should be provided on a best efforts basis. A zero should be entered for any columns that are not applicable or where data is not available at the level of granularity requested. If the level of granularity is not available, Volunteer Groups should make use of the columns labelled 'Other' which, if used, should be supplemented with descriptive information in the Questionnaire responses.

345. Detailed narrative responses in the Questionnaire should also be provided to explain the process that was followed to calculate a current estimate under MAV and GAAP Plus including the purpose, method, significant judgments, key assumptions and any other information that may assist in understanding the nature of any adjustments.

346. Column descriptions for the Reconciliation of Life Liabilities GAAP Plus to MAV :

a) [GAAP Plus (New accounting rules)] – Reported GAAP balance adjusted to reflect new accounting rules not yet in effect, but prior to adjustment to a current estimate under GAAP Plus. For 2018 Field Testing, this would only apply to U.S. GAAP Plus, and more specifically, long duration insurance contracts with fixed terms and limited payment contracts.

b) [GAAP Plus] – Calculated field, from the table '*Detailed information on the insurance liabilities*' from *FT18.BCR&ICS Balance sheet* worksheet.

c) [Changes due to Contract Boundaries] – Represents the amount of the adjustment related to applying the definition of contract boundaries under MAV versus GAAP Plus.

d) [Changes due to update of Cash Flows] – Represents the impact to cash flow projections from updating any assumptions from GAAP Plus to MAV consistent assumptions, as well as the application of the discount rate/curve under MAV on cash flow projections. Volunteer Groups should separate cash flows from the discounting impact on a best efforts basis, but if not feasible the result should be combined in the cash flow column.

e) [Changes due to discounting of CF] - Represents the amount related to the impact of applying the MAV yield curve in order to obtain a present value of cash flows.

f) [GAAP+ to MAV (user defined)] – In order to understand any other significant differences between the GAAP Plus and MAV current estimate that may not have been explicitly been provided for, additional columns have been included that can be defined by Volunteer Groups to decompose any additional differences that can be isolated. The definitions for these columns and other relevant information necessary to understand the primary drivers of differences between MAV and GAAP Plus current estimates should be included in the Questionnaire responses.

g) [Other] – Any additional amounts required to decompose the difference between GAAP Plus and MAV. Provide a description and breakdown of any material amounts in the Questionnaire responses.

h) [MAV] – Calculated field, sum of columns described above. The amount should equal the amount reported under MAV. A check is provided to ensure that the values match.

347. Column descriptions for the Reconciliation of Life Liabilities GAAP Plus to MAV Balance Sheet using the Risk-Free Rate (RFR):

a) [GAAP Plus (GAAP Rates)] – Calculated field, from the table '*Detailed information on the insurance liabilities'* from *FT18.BCR&ICS Balance sheet* worksheet.

b) [Discounting Impact/Update to RFR] - Represents the amount related to the impact of applying the ICS prescribed RFR curve as defined under the MAV RFR balance sheet to re-estimate projected cash flows dependent on the discount rate/curve as calculated under the GAAP Plus valuation approach and discount those cash flows to generate a current estimate.

c) [GAAP+ to MAV (user defined)] – In order to understand significant, non-discounting related differences between GAAP Plus and MAV current estimates, three columns have been provided that can be defined by Volunteer Groups to decompose differences that can be isolated. The definitions for these columns and other relevant information necessary to understand the primary drivers of differences between MAV and GAAP Plus current estimates should be included in the Questionnaire responses.

d) [Other] – Any additional amounts required to decompose the difference between GAAP Plus and MAV. Provide a description and breakdown of any material amounts in the Questionnaire responses.

e) [MAV (RFR)] – Calculated field, sum of columns described above. The amount should equal the amount reported under MAV RFR from the table '*Detailed information on the insurance liabilities'* from *FT18. BCR&ICS Balance sheet* worksheet. A check is provided to ensure that the values match.

f) [GAAP Plus (RFR)] – Calculated field, Sum of columns [GAAP Plus (GAAP Rates)] and [Discounting Impact/Update to RFR].

9.2 Non-Life Insurance Liability Reconciliations

348. Three reconciliation tables have been provided for Volunteer Groups to provide reconciliation data between reported GAAP and GAAP Plus/MAV and between GAAP Plus (GAAP rates) discounting and the MAV Three-Bucket Approach.

349. For non-life liabilities, the reconciliation provides for a breakdown of these amounts between Premium and Claims liabilities. In previous field testing exercises, premium liabilities were referred to as unearned premium provisions. Claims liability represents the estimate of costs to settle all reported losses and loss adjustment expenses (LAE) plus an estimate of losses and LAE incurred but not reported.

350. Column descriptions for the Reconciliation of Non-Life Premium Liabilities

a) There are three tables for reconciling premium liabilities, though headers and definitions will be similar in each. The first and last column will always be the reconciling item.

b) [Premium Receivables] – Change due to netting of premium receivables against the insurance liability. Any portion of premium receivables that are reclassified as "Other Insurance Assets" (e.g. Agents' Balances) should not be included in this column.

c) [Premium Deficiency Reserve] – Adjustment due to the removal of the GAAP Premium Deficiency Reserve (if any).

d) [DAC Adjustment] Represents the amount to add back to the unearned premium (debit) relating to the reversal of deferred expense asset balances in the balance sheet.

e) [Change to Profitability Assumptions / Cash Flows Impact] Differences due to the profitability/expense assumptions. Example: Assume under a jurisdictional GAAP that a premium liability of 100 was calculated with an implicit combined ratio of 100%. If the acquisition expenses were zero and the MAV premium liability was calculated with a combined ratio of 85%, then the amount of this item in the GAAP-to-MAV reconciliation would be -15 (=[85%-100%]*100).

f) [Discounting Impact] Change due to differing discount rates.

g) [Recognition Criteria] Any changes due to policies that are recognised in the first column but not recognised in the last column and vice versa.

h) [Contract Boundaries] Any changes due to policies or renewals that are within the contract boundary in the first column but are not within contract boundary in the last column and vice versa.

i) [Other] Any additional amounts required to decompose the difference. Provide a description and breakdown of any material amounts in the Questionnaire responses.

351. Column descriptions for the Reconciliation of Non-Life Claims Liabilities:

a) [GAAP Reported (Claims)], [GAAP Plus (Claims)], [MAV Three-Bucket Approach (Claims)] Calculated fields. The amount should equal the amount reported on the balance sheet.

b) [Discounting Impact] Change due to differing discount rates.

c) [Other] - Any additional amounts required to decompose the difference. Provide a description and breakdown of any material amounts in the Questionnaire responses

10 Qualifying Capital Resources

Relevant Worksheets in Template:	*FT18.BCR + HLA* *FT18.ICS Summary* *FT18.Financial Instruments* *FT18.Financial Instruments.TPC* *FT18.Non-Paid-Up Cap Resources* *FT18.Encumbered Assets*	*Due 31 August 2018*

352. Qualifying capital resources will be determined on a consolidated basis for all financial activities and comprise qualifying financial instruments and capital elements other than financial instruments.

353. Qualifying capital resources will be subject to adjustments, exclusions and deductions defined further in the following sections. To avoid any double-counting, any item that is deducted from capital resources should not have a risk charge attributed to it.

354. In 2018 Field Testing, the intention is to gather data to enable the IAIS to make informed decisions on the capital resources framework of ICS Version 2.0, including:

a) the classification of financial instruments and other capital elements into tiers; and

b) the appropriate capital composition limits within the tiering framework.

355. Qualifying capital resources, gross and net of adjustments and limits, are calculated in the following worksheets of the 2018 Field Testing Template:

a) *FT18.BCR+HLA* for BCR capital resources; and

b) *FT18.ICS Summary* for ICS capital resources, which will be calculated on two bases: one for which financial instruments with acceleration clauses that may be triggered in going concern are permitted in Tier 2 Paid-Up capital resources, and one for which such acceleration clauses are not permitted in Tier 2.

356. This approach differs from 2017 Field Testing, which followed a simulation tool approach.

10.1 Financial Instruments Issued by Volunteer Groups

357. This section is relevant to the completion of worksheet *FT18.Financial Instruments*. The worksheet contains eight tables, which are described below. Within the tables, blue cells are for data inputs while yellow cells contain formulae and are populated automatically.

a) The `BCR Summary Table' and `ICS Summary Table' provide summary information on financial instruments that qualify as BCR and ICS capital resources, respectively.

b) The `BCR Classification and Amortisation Table' and `ICS Field Testing Classification and Amortisation Table' provide the BCR and ICS classification results for each financial instrument reported, along with the qualifying amount for each instrument, respectively. The columns in these tables source information from the `BCR Assessment Table' and `2018 Field Testing Assessment Table'. These tables also perform amortisation calculations for financial instruments that are to be amortised over the final five years to their maturity dates (BCR) or effective maturity dates (ICS).

c) Volunteer Groups should report all relevant information on financial instruments issued to external investors in the `Data Input Table'. Volunteer Groups should not include any intra-group financial instruments issued between entities included within the scope of the group, i.e. involving transactions that are eliminated in the consolidated ICS Balance Sheet.

d) In the worksheet *FT18.Financial Instruments.TPC*, Volunteer Groups should provide additional information on any reported financial instruments that have been issued by a consolidated subsidiary to third parties.

e) The `BCR Assessment Table' and `2018 Field Testing Assessment Table' tables contain calculations to perform an automated assessment of the data submitted for each financial instrument. The calculations in these tables use information reported in the `Data Input Table' to assess the features of each financial instrument against the BCR qualifying criteria[20] and the 2018 Field Testing qualifying criteria. The results are then used to populate entries in tables `BCR Classification and Amortisation Table' and `Field Testing Classification and Amortisation Table'. The qualifying criteria (set out in Section 10.1.4 of this document) are only for the purposes of 2018 Field Testing and should not be seen as indicative of how financial instruments will be classified under future iterations of the ICS.

10.1.1 Data submission

358. This section contains instructions for Volunteer Groups on the information to report in `Data Input Table', i.e. what data to report and how to report it within the table. It also describes features of the 2018 Field Testing capital resources framework and the options being explored in 2018 Field Testing to inform policy decisions on outstanding issues. The descriptions and instructions that follow refer to column headings in various tables within the Field Testing Template. Volunteer Groups should note that column headings within the Template are often paraphrased descriptions of data input requirements or criteria to save space; the column headings within the Template should be considered alongside the Technical Specifications for completeness.

[20] Set out in Section 5 and Annex C of the document "Higher Loss Absorbency Requirement for Global Systemically Important Insurers (G-SIIs) ("HLA Document") published on 5 October 2015. The document is available on the IAIS website at http://iaisweb.org/index.cfm?event=getPage&nodeId=25233

359. Volunteer Groups should provide in the `Data Input Table' all relevant information pertaining to paid-up financial instruments issued by the Volunteer Group and included on its consolidated balance sheet as at its reporting date (including senior debt issued by a holding company). A separate worksheet is dedicated to information on non-paid-up capital items. Each financial instrument reported will be assessed against the BCR and ICS Field Testing qualifying criteria in `BCR Assessment Table' and the `2018 Field Testing Assessment Table'. The criteria identify features important to provide an adequate quality of capital for each tier with respect to five key principles: loss absorbing capacity, level of subordination, availability to absorb losses, permanence and absence of encumbrances and mandatory servicing costs.

360. Volunteer Groups should use separate rows to report information on different financial instruments (i.e. one row for each instrument). For the avoidance of doubt, where a Volunteer Group has issued multiple instruments with largely similar features, Volunteer Groups should not use a single row to report that information; in that case, Volunteer Groups should split the data into multiple entries to ensure that accurate information is provided in respect of each specific instrument.

361. The information reported in the `Data Input Table' should reflect the contractual terms and conditions of the financial instrument, unless otherwise indicated. Some data inputs will require Volunteer Groups to provide information on the features of the regulatory and/or legal environment in which an instrument was issued (e.g. in the case of structural and contractual subordination). Where inputs relate to the features of the regulatory and/or legal environment, rather than the terms and conditions of the financial instrument, this is clearly indicated in the Technical Specifications.

362. Many of the columns in the `Data Input Table' utilise drop-down menus in order to collect information in a specific format. Volunteer Groups should not amend the list of menu items under any circumstances. If Volunteer Groups have issued financial instruments with features that cannot be accurately captured within the Template, this should be noted in the Questionnaire. Where a drop-down menu has not been provided, Volunteer Groups are asked to use the format indicated in the column header (e.g. % for distribution rate).

363. Financial instruments may take a number of different forms including common or ordinary shares, preferred shares, hybrid capital instruments, subordinated debt, surplus notes, etc. In `Data Input Table' the column labelled "Type of Financial Instrument" contains a drop-down menu list of different types of financial instruments. For each financial instrument reported, Volunteer Groups should select the category that best describes the instrument.

364. For each financial instrument reported, Volunteer Groups should indicate the type of issuing entity in `Data Input Table' column `Type of issuing entity'. In instances where more than one description may apply to the issuing entity, please select the one that is considered most appropriate. The types of issuing entities listed in the drop-down menu are as follows:

a) Parent non-insurance holding company – this refers to a parent holding company (i.e. an ultimate parent or intermediate parent) that does not undertake insurance activities

b) Parent insurance company – (i.e. ultimate parents or intermediate parents) that do undertake insurance activities

c) Insurance subsidiary – this refers to controlled subsidiaries of a parent that undertake insurance activities

d) Special purpose vehicle

e) Non-insurance financial subsidiary – this refers to controlled subsidiaries of a parent that undertake financial activities other than insurance, including banking subsidiaries

f) Other

365. Volunteer Groups should also indicate the region where the financial instrument was issued.

366. Volunteer Groups should provide information on the subordination of financial instruments in `Data Input Table' columns labelled `Subordination Information'. In particular, for each financial instrument Volunteer Groups should specify the degree of subordination (i.e. "To whom is the instrument subordinated?") and the type of subordination (e.g. contractual or structural). For contractually subordinated financial instruments, Volunteer Groups should specify whether the subordination clause has legal effect outside of the jurisdiction in which the instrument was issued, i.e. whether the subordination of the financial instrument to policyholders and other non-subordinated creditors can be legally enforced when those senior creditors are in another jurisdiction. Additional information requested in respect of structurally subordinated financial instruments is described in Section 10.1.4.5 below.

367. Volunteer Groups are asked to detail whether the financial instrument reported is treated as a liability in any applicable jurisdictional insolvency law tests that determine whether the issuer's liabilities exceed its assets. That is, whether the financial instrument would contribute to the firm's insolvency in any applicable solvency test.

368. Volunteer Groups should provide relevant information on key dates (e.g. issue date, maturity date, first ordinary call date, etc.) in `Data Input Table' columns labelled `Date Information'. These columns have been pre-set to `Date' format in Excel and when completed correctly should display the information in long date format (e.g. in Europe, 22/06/2015 should read as 22 June 2015; the same output should be obtained by reporting 06/22/2015 in North America). The entry "various" does not constitute a valid entry for reporting the issue date of multiple financial instruments with similar features (e.g. several common/ordinary share issuances). In this case, Volunteer Groups should split the data into multiple entries by issue date. For perpetual instruments, no maturity date should be specified (i.e. `Data Input Table' column "Date Information – Maturity" should be left blank). When providing information in `Data Input Table' column "First Ordinary Call" , Volunteer Groups should provide information in respect of ordinary calls that fall after the issue date, rather than extraordinary call rights. For the avoidance of doubt, Volunteer Groups should not enter a first ordinary call date that is the same as the issue date of an instrument (as this interferes with the instrument classification

logic within the Template). Data on extraordinary call rights should be provided in the adjacent columns clearly marked for that purpose.

369. When providing information on the distribution rate of a financial instrument in `Data Input Table' column "Distributions – Distribution Rate (%)" (e.g. the coupon rate of a debt instrument), "various" is not a valid input to simultaneously describe the distribution rate of multiple instruments. Where financial instruments have different distribution rates, Volunteer Groups should report information on those instruments in separate rows of the Template.

370. Information on any principal loss-absorbency mechanisms (i.e. write-down or conversion features) in the terms of an instrument should be provided in the `Data Input Table' columns labelled "Principal Loss Absorbency". If an instrument does not currently possess one of these features, but it is expected to be replaced by an instrument with one of these features upon redemption (for example, due to changes in local jurisdictional requirements), please indicate this in `Data Input Table' columns "Principal Loss Absorbency of Replacement Instruments".

371. `Data Input Table' contains three columns labelled "Prior Supervisory Approval" to collect information on requirements for supervisory approval of the redemption or repurchase of a financial instrument prior to contractual maturity. Redemption refers to the repayment, in whole or in part, of an investor's principal in a financial instrument at the issuing Volunteer Group's option at any time prior to or at contractual maturity. This redemption right (i.e. call option) resides only with the issuer. Repurchase refers to any purchase of a Volunteer Group's own financial instruments (for example, an open market purchase of an Volunteer Group's own financial instrument or through a tender offer by private agreement with investors). Redeemed or repurchased financial instruments are cancelled by the issuer.

372. Volunteer Groups should provide information on any lock-in features specific to a financial instrument, or any other special conditions that might apply to a financial instrument, in particular as it nears maturity in `Data Input Table' columns labelled "Special conditions". A lock-in feature typically involves the suspension of distributions and/or redemption where there is non-compliance with a regulatory capital requirement. Another common feature is amortisation of the amount of an instrument that can be recognised as qualifying capital resources as it approaches its maturity date. Amortisation is normally a feature of the local regulatory jurisdiction rather than being specified within the terms of an instrument. If the special conditions are other than a lock-in clause or amortisation, please specify 'Other' and provide additional details in the Questionnaire.

373. For dated financial instruments that do not have a lock-in feature, the amount recognised as qualifying capital resources will be amortised from 100% to 0% on a straight-line basis in the final five years prior to its 'effective maturity' (defined in Section 10.1.4.4 below), while the amount recognised as BCR qualifying capital resources will be amortised from 100% to 0% on a straight-line basis in the final five years prior to contractual maturity. The ICS amortisation calculation is applied automatically in the `ICS Field Testing Classification and Amortisation Table' and the BCR amortisation is applied automatically in `BCR Classification and Amortisation Table'.

374. For each financial instrument reported, Volunteer Groups should provide the Par (Face) Value of the issued instrument in `Data Input Table' column labelled "Face Amount (Par Value)", and any share premium associated with the instrument in column "Share Premium associated with the issuance". Volunteer Groups should report the gross Par (Face) Value i.e. without making deduction for Treasury Stock or direct investments in own financial instruments. This information is captured as a deduction elsewhere in the Template (treasury stock should be reported in worksheet *FT18.BCR & ICS.Balance Sheet* and direct investments in own financial instruments should be reported in `BCR Summary Table'). Volunteer Groups should not report the Par (Face) Value net of Treasury Stock or direct investments in own financial instruments as this leads to a double deduction from capital resources. However, in situations where the Volunteer Group has redeemed or repurchased a portion of a financial instrument, the amount reported should be the Par Value of the outstanding portion of the instrument. In cases where a Volunteer Group is required by its local regulator to amortise the financial instrument's Par Value, the amount reported should be the Par Value before amortisation. This is because the IAIS will apply its own amortisation calculation in the Template.

375. For each debt instrument (including senior debt, subordinated debt, hybrids, etc.) Volunteer Groups should provide the value of the corresponding liability recognised on the balance sheet in `Data Input Table' columns labelled "Debt instrument – Balance sheet values". For each instrument, Volunteer Groups are requested to provide three different balance sheet values, corresponding to the valuation in the GAAP Balance Sheet and the two different valuation approaches being tested in 2018 Field Testing (MAV and GAAP Plus). The balance sheet values of debt financial instruments reported in worksheet *FT18.Financial Instruments* should be consistent with the information reported for debt instruments and borrowings in worksheet *FT18.BCR & ICS.Balance sheet*.

376. In `Data Input Table', when providing information on whether an expectation of cancellation or repurchase has been created in the terms of an instrument or by the IAIG, Volunteer Groups should consider whether the group has made a communication to investors that could reasonably be considered as an indication that the duration of an instrument will be shorter than its contractual maturity (i.e. where the group has indicated intent to repurchase the instrument or exercise a contractual right to call the instrument). Such communication could take place either within the terms and conditions of an instrument, within other investor facing documentation or through other formal communication with investors. For the avoidance of doubt, call options and incentives to redeem are not relevant to this data item; i.e. the presence of a call option and/or an incentive to redeem within the terms and conditions of a financial instrument does not necessarily mean that a Volunteer Group should report 'Y' for this specific data item. Information on call options and incentives to redeem are collected elsewhere in `Data Input Table'.

377. Volunteer Groups should provide information on the presence of any acceleration clauses within the legal terms and conditions of a financial instrument in `Data Input Table' columns "Acceleration Clauses". Acceleration clauses provide for acceleration of payments (e.g. distributions, redemption amounts) owed in respect of a financial instrument. Volunteer Groups should indicate the circumstances in which any acceleration clauses may be triggered (i.e. in going concern and/or in winding-up).

378. `Data Input Table' columns labelled "SPV Issuance" apply specifically to financial instruments issued by a Special Purpose Vehicle ("SPV"). If an instrument was not issued by an SPV, please select not applicable "N/A" from the drop-down menus.

379. For each financial instrument reported, Volunteer Groups should indicate in the `Data Input Table' column "Third party capital", whether or not an instrument was issued by a consolidated subsidiary of the Volunteer Group and is held by third parties. This includes instruments that are included in a non-controlling interest; Volunteer Groups are also requested to indicate where this is the case in the column labelled "Does the instrument result in a non-controlling interest of the issuer?". The IAIS is considering an approach to limit the recognition of capital resources of consolidated subsidiaries that have issued qualifying financial instruments to third parties, in order to reflect the lack of availability of that capital at the consolidated group level. The limit will be based on local jurisdictional information of the relevant subsidiary insurers. Where a Volunteer Group reports information about a financial instrument that has been issued by a consolidated subsidiary to third parties, it should provide additional information in the worksheet *FT18.Financial Instruments.TPC*) so that the IAIS can compute and apply the limit. If a Volunteer Group fails to provide the required information for a consolidated subsidiary, then all capital resources of that subsidiary will be excluded from the Volunteer Group's qualifying capital resources. See Section 10.4.1 below for more information on the additional data reporting requirements for the limit on third party capital.

10.1.2 Data assessment

380. The yellow cells in `BCR Assessment Table' and `2018 Field Testing Assessment Table' contain formula-based assessments against the BCR qualifying criteria and ICS 2018 Field Testing qualifying criteria for each financial instrument reported. These columns are populated automatically and Volunteer Groups should not over-write these by manually entering information in these columns. Each column header provides a brief description of the criterion being tested. References to the specific criteria set out in the Technical Specifications are provided above the column headers.

381. The outcome of the assessment against each criterion is specified as "Pass", "Fail" or "ERROR" (or "N/A" if not applicable). A minimum amount of information must be provided by Volunteer Groups in the `Data Input Table' in order for the automated classification logic to accurately determine whether the financial instrument has complied with a given criterion. The assessment will return "ERROR" if the information provided is insufficient, or is entered in an incorrect format. Such error messages can be used by Volunteer Groups to identify whether amendments or additional data need to be provided in `Data Input Table'. Volunteer Groups should submit completed Templates that are free of error messages. If a Volunteer Group cannot determine the reason behind an error message then this should be explained in the Questionnaire.

10.1.3 Volunteer Group classification of financial instruments as BCR Core and Additional capital resources

382. The classification of financial instruments as BCR Core and Additional qualifying capital resources, as well as adjustments and exclusions, are described in the HLA Document[20]. Those details are not repeated in these Technical Specifications.

383. The naming convention for BCR Core and Additional criteria listed above `BCR Assessment Table' in worksheet *FT18.Financial Instruments* is as follows:

a) There are nine instrument criteria that apply to BCR Core capital, numbered Ci. to Cix.

b) There are seven instrument criteria that apply to BCR Additional capital, numbered Ai. to Avii.

10.1.4 Classification of financial instruments as Tier 1 and Tier 2 capital resources

384. The relevant criteria for classification of financial instruments as Tier 1 and Tier 2 capital resources for 2018 Field Testing are set out in the following sections. The assessment of each financial instrument reported against these criteria is performed in table `2018 Field Testing Assessment Table'. Criteria reference letters are listed above the column headers in that table.

10.1.4.1 Tier 1 'Unlimited' financial instruments issued by the Volunteer Group

385. For 2018 Field Testing, financial instruments will qualify as Tier 1 capital resources for which there is no limit (referred to as "Tier 1 Unlimited" in worksheet *FT18.Financial Instruments*) if all of the following criteria are met:

a) The instrument is fully paid-up.

b) The instrument is in the form of issued capital such that it is the first instrument to absorb losses as they occur.

c) The instrument represents the most subordinated claim in a winding-up of the IAIG where the holder is entitled to a claim on the residual assets proportional to its share of the issued share capital after all claims have been repaid, and which is not subject to a fixed or capped amount.

d) The instrument is perpetual (i.e. it does not have a maturity date).

e) The principal amount of the instrument is not repaid outside winding-up, other than by means of discretionary repurchase permitted under national law.

f) There is not an expectation created at issuance by the IAIG, through the terms of the instrument or otherwise, that the Volunteer Group will repurchase or cancel the instrument.

g) There are no circumstances under which a distribution is obligatory (non-payment is, therefore, not an event of default).

h) Distributions are paid out of distributable items, including retained earnings (i.e. distributions should reduce equity rather than the profit / loss of the current year).

i) The instrument is neither undermined nor rendered ineffective by encumbrances. In particular, priority of claims should not be compromised by guarantees or security arrangements given by either the IAIG or another related entity over which the IAIG exercises control or significant influence, for the benefit of investors.

j) Neither the IAIG nor a related party over which the IAIG exercises control or significant influence has purchased the instrument, nor has the IAIG directly or indirectly funded the purchase of the instrument.

k) The paid-in amount is recognised as equity capital (i.e. not recognised as a liability) where a determination that liabilities exceed assets constitutes a test of insolvency.

386. Compared to the 2016 ICS qualifying criteria included in 2017 Field Testing, the IAIS has amended two Tier 1 Unlimited criteria for 2018 Field Testing: the requirement for supervisory approval prior to discretionary repurchase has been removed from criterion e), and a consequential amendment was applied to criterion f) (i.e. reference to prior supervisory approval).

10.1.4.2 Tier 1 'Limited' financial instruments issued by the Volunteer Group

387. For 2018 Field Testing, financial instruments will qualify as Tier 1 capital resources for which there is a limit (referred to as "Tier 1 Limited" in worksheet *FT18.Financial Instruments*) if all of the following criteria are met:

a) The instrument is fully paid-up.

b) The instrument is subordinated to policyholders and other non-subordinated creditors and holders of Tier 2 capital instruments but may rank senior to holders of Tier 1 capital instruments for which there is no limit.

c) The instrument is perpetual (i.e. it does not have a maturity date). For mutual Volunteer Groups, the requirement for an instrument to be perpetual is considered to be met if redemption at maturity (for a dated instrument) can be deferred subject to supervisory approval or a lock-in feature, and where an instrument has an initial maturity of at least ten years.

d) The instrument does not contain a step-up or another incentive to redeem.

e) The instrument is only callable at the option of the issuer after a minimum of five years from the date of issue (i.e., the instrument is not retractable by the holder) and prior supervisory approval is required for any redemption.

f) The instrument may be repurchased by the issuer at any time with prior supervisory approval.

g) There is not an expectation created by the IAIG, through the terms of the instrument or otherwise, that the IAIG will repurchase the instrument or exercise any right to call the instrument, or that the repurchase or redemption will receive supervisory approval.

h) The IAIG has full discretion at all times to forego or cancel distributions (i.e. dividends and coupon payments are non-cumulative). The IAIG's obligation to pay missed distributions is forever extinguished and non-payment is not an event of default.

i) Distributions are paid out of distributable items, including retained earnings (i.e. distributions should reduce equity rather than the profit / loss of the current year).

j) The instrument does not have distributions that are tied or linked to the credit standing or financial condition of the IAIG or another related entity, such that those distributions may accelerate winding-up.

k) The instrument is neither undermined nor rendered ineffective by encumbrances. In particular, priority of claims should not be compromised by guarantees or security arrangements given by either the IAIG or a related entity over which the IAIG exercises control or significant influence, for the benefit of investors.

l) Neither the IAIG nor a related party over which the IAIG exercises control or significant influence has purchased the instrument, nor has the IAIG directly or indirectly funded the purchase of the instrument.

m) If jurisdictional insolvency law includes a test of whether liabilities exceed assets, then the instrument is not treated as a liability for the purpose of that test.

n) The instrument cannot possess features that hinder recapitalisation, such as provisions that require the issuer to compensate investors if a new instrument is issued at a lower price during a specified time frame.

o) If the instrument is not issued out of an operating entity or the holding company of the IAIG (e.g. it is issued out of an SPV), proceeds must be immediately available without limitation to an operating entity or the holding company of the IAIG in a form that meets or exceeds all of the other criteria for inclusion in Tier 1 capital resources for which there is a limit (i.e. the SPV may only hold assets that are intercompany instruments issued by the IAIG or a related entity with terms and conditions that meet or exceed the criteria for Tier 1 capital resources for which there is a limit).

10.1.4.3 Financial instruments issued by mutual Volunteer Groups

388. 2018 Field Testing includes scope to recognise financial instruments issued by mutual Volunteer Groups in Tier 1 Limited capital resources. In particular, the Tier 1 Limited requirement for an instrument to be perpetual (criterion c)) can be met for mutual Volunteer Groups if redemption at maturity (for a dated instrument) can be deferred subject to supervisory approval or a lock-in feature,

and if an instrument has an initial maturity of at least ten years. This is reflected in the additional text included in criterion c) above and marks a change in approach compared with previous field testing exercises.

10.1.4.4 Tier 2 financial instruments issued by the Volunteer Group

389. For 2018 Field Testing, the IAIS will calculate Volunteer Groups' Tier 2 Paid-Up capital resources on two separate bases: one for which acceleration clauses that may be triggered in going concern are permitted and another for which they are not. A default option is not specified and this issue will be further considered for the development of ICS Version 2.0. For 2018 Field Testing, the relevant criteria for financial instruments to qualify as Tier 2 Paid-Up capital resources are as follows:

a) The instrument is fully paid-up.

b) The instrument is subordinated to policyholders and other non-subordinated creditors of the IAIG. The form of subordination can be either contractual or structural (subject to additional conditions set out in Section 10.1.4.5).

c) The instrument has an initial maturity of at least five years with its effective maturity date defined to be the earlier of:

   i. the first occurrence of a call option together with a step-up or other incentive to redeem the instrument; and

   ii. the contractual maturity date fixed in the instrument's terms and conditions.

d) The instrument's availability to absorb losses as it nears its effective maturity is captured by either:

   i. decreasing the qualifying amount of the instrument from 100% to 0% on a straight-line basis in the final five years prior to maturity; or

   ii. the existence of a lock-in clause, which is a requirement for the Volunteer Group to suspend repayment or redemption if it is in breach of its applicable regulatory capital requirement or would breach it if the instrument is repaid or redeemed.

e) The instrument is only callable at the option of the issuer after a minimum of five years from the date of issue (i.e. the instrument is not retractable by the holder) and prior supervisory approval is required for any redemption prior to contractual maturity. [21] For structurally subordinated financial instruments, the requirement for supervisory approval of redemptions can be fulfilled through approval of upstreaming of dividends from an insurance subsidiary to the holding company.

f) The instrument may be repurchased by the issuer at any time with prior supervisory approval. For structurally subordinated financial instruments, the requirement for supervisory approval of repurchases can be fulfilled through approval of upstreaming of dividends from an insurance subsidiary to the holding company.

g) There is not an expectation created by the IAIG, through the terms of the instrument or otherwise, that the IAIG will repurchase the instrument or exercise its right to call the instrument, or that the repurchase or redemption will receive supervisory approval.

h) The instrument does not have distributions that are tied or linked to the credit standing or financial condition of the IAIG or another related entity, such that those distributions may accelerate winding-up.

i) The instrument does not give holders rights to accelerate the repayment of future scheduled principal or coupon payments, except in winding-up. (This criterion will not apply in the capital resources calculation that permits acceleration clauses that may be triggered in going concern.)

j) The instrument is neither undermined nor rendered ineffective by encumbrances. In particular, priority of claims should not be compromised by guarantees or security arrangements given by either the IAIG or a related entity over which the IAIG exercises control or significant influence, for the benefit of investors.

k) Neither the IAIG nor a related party over which the IAIG exercises control or significant influence has purchased the instrument, nor has the IAIG directly or indirectly funded the purchase of the instrument.

l) If the instrument is not issued out of an operating entity or the holding company of the IAIG (e.g. it is issued out of an SPV), proceeds must be immediately available without limitation to an operating entity or the holding company of the IAIG in a form that meets or exceeds all of

[21] In the absence of a requirement for prior supervisory approval, this criterion is considered to be met if the following conditions are met:

- the terms of the financial instrument include a lock-in feature that prevents redemption when a firm does not comply with its regulatory capital requirement (or where redemption would lead to non-compliance);
- either:
  - the supervisor receives prior notification upon redemption, OR
  - call dates are fixed and known and the supervisor monitors potential redemption; and
- the supervisor has the power to prevent redemption of the instrument.

the other criteria for inclusion in paid-up Tier 2 capital resources (i.e. the SPV may only hold assets that are intercompany instruments issued by the IAIG or a related entity with terms and conditions that meet or exceed the criteria for Tier 2 Paid-Up capital resources).

390. The IAIS has introduced the following changes to Tier 2 criteria for 2018 Field Testing: criterion b) on subordination explicitly acknowledges that both contractual and structural subordination will be recognised; a footnote has been added to criterion e) to elaborate on how the criterion can be satisfied in cases where supervisory approval is not a feature of a jurisdiction's regulatory regime. Additional text has been included in criteria e) and f) to address how those criteria apply to structurally subordinated instruments. Criterion i) will only apply in the capital resources basis that does not permit acceleration clauses that may be triggered in going concern.

10.1.4.5 Structural subordination

391. Structural subordination of debt refers to a situation where a holding company issues a financial instrument directly to third party investors and then down-streams the proceeds into insurance subsidiaries. The recognition of structural subordination of financial instruments for the purposes of meeting Tier 2 Paid-Up criterion b) in 2018 Field Testing is subject to the following conditions:

a) The debt instrument has been issued by a "clean" holding company, defined as a holding company that does not have policyholder liabilities on its stand-alone balance sheet.

b) The Volunteer Group and the supervisor have determined that the proceeds of the instruments, which have been down-streamed into insurance subsidiaries, are being tracked and reported appropriately.

c) Amounts from the instrument issuance have been down-streamed into an insurance subsidiary of the holding company and the insurance subsidiary is located in a jurisdiction whose regulatory regime proactively enforces structural subordination through appropriate regulatory/supervisory controls over distributions from insurance subsidiaries.[22]

392. The information relevant to assessing these additional conditions should be provided by Volunteer Groups in `Data Input Table' columns labelled "Down-streaming Activities" and "Additional Information on Structural Subordination". Additional information should also be provided in the Questionnaire where relevant. For debt instruments issued by holding companies, Volunteer Groups should indicate if the relevant holding company is "clean" and whether or not it has any policyholder

[22] Supervisory controls over distributions from insurance subsidiaries refer to the supervisory review and/or prior supervisory approval of all distributions, including the ability for the supervisor to limit, defer and/or disallow the payment of any distributions should it find that the insurer is presently, or may potentially become, financially distressed. As part of its review and/or prior approval of distributions, the relevant supervisor considers surplus adequacy, financial flexibility, the quality of earnings, and other factors deemed to be pertinent as they relate to the financial strength of the insurer and policyholder protection.

liabilities. For instruments not issued out of a holding company, Volunteer Groups should report this as "N/A" (not applicable).

393. Volunteer Groups should also provide the following information (where relevant):

a) The amount of the proceeds from the instrument issuance that have been down-streamed into each insurance subsidiary of the parent non-insurance holding company, and whether or not the jurisdiction of the subsidiary is the same as that of the holding company. If the jurisdiction is not the same, additional information should be included in the Questionnaire.

b) Whether down-streamed amounts can be tracked and reported appropriately over time. Additional information about the means of down-streaming proceeds and the tracking of amounts down-streamed should be provided in response to questions in the Questionnaire

c) Whether dividends from insurance subsidiaries of the holding company are subject to review and/or prior supervisory approval. If yes, Volunteer Groups should report in the Questionnaire whether review and/or supervisory approval applies to:

- all dividends; or
- the circumstances under which supervisory approval of dividends applies.

10.2 Non-Paid-Up Capital (NPC) Resources

394. Non-paid-up capital items may take a number of different forms, including unpaid preference shares, unpaid subordinated debt, letters of credit, guarantees and mutual member calls. For the purposes of 2018 Field Testing, the recognition of NPC resources in ICS Tier 2 is limited to mutual Volunteer Groups; however, for the purpose of BCR calculations, both mutual and non-mutual Volunteer Groups should report information on NPC resources. Volunteer Groups are asked to provide information on any NPC within the worksheet *FT18.Non-Paid-Up Cap Resources*. The worksheet contains three tables:

a) `BCR Summary Table' and `ICS Field Testing Summary Table' provide summary information on financial items, contracts and arrangements that qualify as BCR and ICS capital resources, respectively. All of the cells in these tables contain formulae and are populated automatically.

b) `NPC Data Input Table': Volunteer Groups should report all relevant information on non-paid up items that could potentially qualify as capital resources. All of the cells in this table are data entry cells, except for those in the column labelled "Does item qualify as Non-Paid-Up Tier 2?", which performs an automated assessment of each non-paid up item against the qualifying criteria set out below.

395. Volunteer Groups should provide information regarding any non-paid-up items in the blue cells of `NPC Data Input Table'. Volunteer Groups should indicate the expected classification that the item would be afforded under the ICS framework, if the item was paid-up, as well as the expected ICS

qualifying amount, in `NPC Data Input Table' columns labelled "Expected classification of paid-up item under ICS". Volunteer Groups should also indicate the expected classification that the item would be afforded under the BCR, if the item was paid-up, as well as the expected BCR qualifying amount, in `NPC Data Input Table' columns labelled "Expected classification of paid-up item under BCR".

396. For 2018 Field Testing, financial items, contracts and arrangements established by Mutual Volunteer Groups will qualify as Tier 2 ICS Non-Paid-Up ICS capital resources (subject to a limit – see Section 10.5) if all of the following criteria are met:

a) The item has been approved by the supervisor as satisfying all relevant criteria as to its characteristics and amount.

b) The item is callable on demand by the Mutual Volunteer Group and is not subject to any contingencies or conditions that prevent or act as a disincentive to the call being made or satisfied.

c) When called, the item becomes a financial instrument that meets in full the criteria for inclusion in Tier 1 capital resources (or Tier 2 Paid-Up) or as an element within Tier 1 capital resources.

d) The item is legally enforceable in each relevant jurisdiction.

e) The counterparty to the contract to provide capital resources is able and willing to pay the agreed amounts when called upon by the Mutual Volunteer Group.

f) The item is neither undermined nor rendered ineffective by encumbrances.

g) The Mutual Volunteer Group is under a duty to notify the supervisor of any changes of fact or circumstance that could affect the supervisor's approval of the item.

10.3 Capital Elements other than Financial Instruments

397. Information on capital elements other than financial instruments that are included in capital resources for BCR and/or ICS should be reported by Volunteer Groups in the equity section of the balance sheet in worksheet *FT18.BCR & ICS.Balance Sheet*. As these items may vary by local jurisdiction (in both type and designation), the information is collected for both MAV and GAAP Plus approaches. Where the treatment for a particular element is not clear in the Technical Specifications or there is uncertainty with respect to the treatment, interpretation or classification of an element (e.g. significant expert judgment is required), please provide additional details, relevant assumptions and rationale in the Questionnaire.

10.3.1 Capital elements other than financial instruments

398. For 2018 Field Testing, Tier 1 capital elements other than financial instruments include the following items.

a) Retained earnings: the accumulated balance of income less losses resulting from operations, including earnings retained as surplus held in the participating policyholders' equity account for joint stock companies, and in the non-participating account for mutual companies. Note that this capital element is the sum of two separate lines in the equity section of the balance sheet: `Retained earnings at the end of the period' and `Participating policyholders' equity or account'.

b) Share premium resulting from the issuance of instruments included in Tier 1 and other forms of contributed surplus earned from sources other than profits (e.g. members' contributions and initial funds for mutual companies and other contributions by shareholders in excess of amounts allocated to share capital for joint stock companies).

c) Accumulated Other Comprehensive Income (AOCI), including an AOCI adjustment for GAAP Plus as defined in the following section on GAAP Plus AOCI Adjustment (Section 10.3.2).

d) Unrestricted reserves as defined in Section 10.3.3 on Regulatory Reserves below.

e) The fair market value of equity-settled employee stock options provided that a corresponding expense is recorded in the profit and loss account of the Volunteer Group under applicable accounting standards.[23] [24] This should be reported in the balance sheet as contributed surplus.

f) Other allocated to equity, which includes:

   i. Minority/Non-controlling interests (NCI), other than financial instruments issued by a consolidated subsidiary to third party investors, that are generated by an equity investment in an entity that is, for example, structured as a limited partnership (LP) or a limited liability company (LLC), and that are available to absorb losses from any source in the same way as other Tier 1 capital instruments or elements.

   ii. Adjustments applied to the Volunteer Group's consolidated balance sheet (as per audited financial statements) to produce the ICS balance sheet. This item is automatically calculated based on other balance sheet inputs.

399. Note that item f) in the above list (Other allocated to equity) does not include amounts reported in the line labelled "Other" in the equity section of the balance sheet. The line for Other items does not contribute directly to capital resources within the 2018 Field Testing Template. Where a Volunteer Group considers that an equity item is not appropriate to include in another named line

[23] Equity-settled employee stock options refer to contracts under which employees of the IAIG are granted rights to purchase shares of the IAIG at pre-determined strike prices. Employee stock options that can be settled in cash should not be included as capital resources.

[24] The granting (and vesting) of equity-settled employee stock options is capital neutral. Once an equity-settled employee stock option is exercised, capital resources would increase by the amount paid in by the employee to purchase the underlying shares at the applicable strike price.

in the balance sheet, please report this in the "Other" line and provide additional information in the Questionnaire so that a determination can be made if that amount should be included within qualifying capital resources.

400. For 2018 Field Testing, Tier 2 capital elements other than financial instruments include the following:

a) Share premium resulting from the issuance of instruments included in Tier 2 Paid-Up capital resources.

b) Restricted reserves as defined in Section 10.3.3 on Regulatory Reserves below.

c) The value of encumbered assets in excess of the on-balance sheet liabilities secured by the encumbered assets and incremental ICS capital requirement in respect of those assets and liabilities excluded from Tier 1 (see Section 10.4.3 for details on the treatment of encumbered assets).

d) "Tier 2 basket", comprised of the following three items which relate to deductions from Tier 1 (Section 10.4.2), subject to a limit of 10% of the ICS capital requirement:

   i. 50% of the value of each net pension fund that is an asset on the Volunteer Group's Balance Sheet, net of any eligible Deferred Tax Liability (DTL).

   ii. Current realisable value of net DTA that relies on the future profitability of the Volunteer Group and that has been deducted from Tier 1 capital resources.

   iii. 50% of the value of computer software intangibles (net of amortisation) deducted from Tier 1 capital resources, net of any eligible DTL.

10.3.2 GAAP Plus AOCI adjustment

401. The AOCI adjustment is applicable under GAAP Plus for jurisdictions where insurance liabilities are measured based on an asset book yield and fixed income investments backing those liabilities are reported at fair value. The GAAP Plus examples that match these criteria are the U.S. GAAP, U.S. SAP and Japan GAAP examples of GAAP Plus. In order to address the asymmetry in accounting and the resulting volatility in capital resources, an AOCI adjustment has been defined under GAAP Plus such that the net unrealised gain/loss associated with fixed income assets that meet certain criteria is deducted from Tier 1 capital resources. The criteria are as follows:

a) The net unrealised gain/loss to be excluded must relate to fixed income assets that are both classified as available for sale (AFS) and that back long term liabilities; and

b) The unrealised gain/loss is not likely to be realised.

402. The related asset balances are restated to amortised cost for purposes of calculating the Credit risk charge (Section 13.5) but would not be restated on the reported GAAP Plus Balance Sheet.

403. For Volunteer Groups following GAAP Plus examples where insurance liabilities are discounted using a market based curve/rate or for jurisdictions that do not record unrealised gains or losses related to fixed income investments in AOCI, the AOCI adjustment is not applicable. For 2018 Field Testing this would also include U.S. GAAP liabilities that would be measured under the new accounting rules using a discount rate reflecting an upper medium grade fixed income yield.

404. For 2018 Field Testing, the AOCI adjustment amount should be calculated as follows using the table provided in worksheet *FT18.BCR&ICS.Balance Sheet*:

405. Starting with net AOCI on AFS Debt Securities as reported in the GAAP Plus Balance Sheet, exclude any unrealised gains/losses relating to the following:

a) Fixed income investments that are backing life liabilities measured using a market based discount rate/curve.

b) Fixed income investments that are backing short-term life or non-life insurance liabilities. Short term is defined as having a contract duration of one year or less.

c) Fixed income investments designated in fair value accounting hedges.

d) Fixed income investments backing long-term liabilities measured on a market value basis (e.g. variable annuity guarantees). Long term is defined as contracts with maturity greater than one year.

e) Fixed income investments where, based on management judgment, it is more likely than not that unrealised gains/losses would be realised through sale, conversion, prepayment, etc. For example, this could include certain callable bonds where the call price is lower than the market price or Residential Mortgage Backed Securities (RMBS), Asset backed Securities (ABS) student, ABS consumer ABS auto that are likely to be prepaid. “More likely than not” in this context is defined as a greater than 50% chance of occurrence based on facts and circumstances known to management as of the balance date.

f) Fixed income investments that have experienced significant credit impairment.

406. The AOCI adjustment should be calculated net of tax, consistent with how unrealised gains and losses are recorded in AOCI.

407. Volunteer Groups following the U.S. SAP Example of GAAP Plus should perform the following steps to calculate an AOCI adjustment and enter the results in the AOCI adjustment section of the worksheet *FT18.BCR & ICS.Balance Sheet*:

a) Identify all fixed income assets that are backing long term insurance liabilities (excluding designated fair value hedged items).

b) Quantify the total unrealised gains/losses by subtracting the value of those assets in GAAP Valuation – Insurance Activities from GAAP Plus Valuation – Insurance Activities.

c) Remove all amounts where it is more likely than not that unrealised gains/losses would be realised through sale, conversion, prepayment, etc.

408. The amount reported as the AOCI adjustment should equal the difference between fixed income investments reported on the balance sheet versus exposure amounts reported under the Credit risk section of the worksheets *FT18.ICS Risk Charges*.

10.3.3 Regulatory reserves

409. This section describes the reporting and treatment of regulatory reserves within qualifying capital resources for 2018 Field Testing. Values should be entered in the worksheet *FT18.BCR & ICS.Balance Sheet*, rows labelled "Unrestricted" and "Restricted".

410. Unrestricted reserves are reserves or profits accumulated by the Volunteer Group that are unappropriated and available to absorb losses from any source in the same way as other Tier 1 capital instruments or elements. Further, reserves that have been appropriated or specifically allocated under legislative or supervisory authority for a particular risk or subset of risks and that may become unrestricted may be classified as unrestricted reserves, subject to the following conditions:

a) Supervisory authority re-characterises or designates the reserve as unrestricted and available to absorb losses from any source in the same way as qualifying Tier 1 capital instruments or elements. This supervisory re-characterisation or designation is not contingent upon a specific event or set of circumstances. The release of the reserve generates retained earnings and is subject to supervisory notification or approval.

b) Where supervisory notification or approval is required:

   i. The circumstances of such supervisory notification or approval occur under going concern conditions.

   ii. Supervisory approval would not be unreasonably withheld as evidenced by prior approvals or explicit supervisory acknowledgement that approval would not be unreasonably withheld.

411. Restricted reserves are reserves or profits accumulated by the Volunteer Group that are appropriated and set aside for a specific subset or class of risks and that would only be released and available to absorb losses relating to a specific subset or class of risks upon a specific event or set of circumstances. In winding-up, restricted reserves would be available to absorb losses related to all policyholder claims.

412. For 2018 Field Testing, unrestricted reserves are classified as Tier 1 capital resources and restricted reserves are classified as Tier 2 capital resources.

413. The following table sets out how Volunteer Groups should report those reserves within the 2018 Field Testing Template.

Table 17. Treatment of specific types of reserves

Reserve	Treatment
Provision for Bonuses and Rebates (Germany)	Unrestricted (Tier 1)
FX Volatility Reserve (Chinese Taipei)	Restricted (Tier 2)
Legal Capital Reserve and Special Capital Reserve for Revaluation Increments of Property (Chinese Taipei)	Unrestricted (Tier 1)
Special Claim Reserve (Chinese Taipei)	Restricted (Tier 2)
Claim Fluctuation Reserve (Chinese Taipei)	Unrestricted (Tier 1)
Emergency Risk Reserve (Korea)	Restricted (Tier 2)
Legal Reserve (Korea)	Unrestricted (Tier 1)
Reserve for Business Rationalisation (Korea)	Unrestricted (Tier 1)
Voluntary Reserve (Korea)	Unrestricted (Tier 1)
Contingency Reserves (Japan)	Unrestricted (Tier 1)
Price Fluctuation Reserve (Japan)	Unrestricted (Tier 1)
Catastrophe Reserve (Japan)	Unrestricted (Tier 1)
Merger reserves (UK, South Africa)	Unrestricted (Tier 1)
Share Premium Reserve (UK)	Unrestricted (Tier 1)
Safety Reserve (UK)	Unrestricted (Tier 1)
Asset Valuation Reserve (U.S. Stat)	Unrestricted (Tier 1)
Interest Maintenance Reserve (U.S. Stat)	Unrestricted (Tier 1)
General Risk Reserves (China)	Unrestricted (Tier 1)
Regulatory Surplus Reserves (China)	Unrestricted (Tier 1)
Excess loan loss reserve (Volunteer Groups with a banking subsidiary)	Restricted (Tier 2)

414. Where a Volunteer Group has a regulatory reserve that is not included in the table, it is recommended that the Volunteer Group consult with its supervisor to determine the appropriate classification. Furthermore, the Volunteer Group should provide a detailed description of the reserve in the Questionnaire.

10.4 Capital Adjustments and Deductions

415. For 2018 Field Testing, there are a number of adjustments and deductions from capital resources. Volunteer Groups are asked to report if the adjustments are made directly in the balance sheet valuation of the local jurisdiction and also complete the section 'Information on assets subject to deduction from capital resources under MAV' in worksheet *FT18.BCR & ICS.Balance Sheet*. In the worksheet *FT18.Financial Instruments,* Volunteer Groups should indicate in `BCR Summary Table' and 'ICS Summary Table' any direct investments in own capital instruments distinguished between Tier 1/Core capital resources and Tier 2/Additional capital resources (treasury stock should be included in Tier 1/Core capital resources). The deductions apply on both a BCR and ICS basis, so no distinction is made between the two.

10.4.1 Recognition of capital resources arising from a consolidated subsidiary of the Volunteer Group and attributable to third party investors

416. The IAIS is considering an approach to limit the inclusion of financial instruments issued by a consolidated subsidiary of the Volunteer Group and held by third party investors, as well as other capital elements arising from the subsidiary and attributable to third party investors (i.e. capital elements other than financial instruments included in a non-controlling interest), in qualifying capital resources. This is in order to reflect the lack of availability of those items at the consolidated group level. In order to test options for this approach, Volunteer Groups are requested to provide some local jurisdictional information of the relevant subsidiary insurers.

417. To calculate the limit, Volunteer Groups are requested to provide additional information in the worksheet *FT18.Financial Instruments.TPC*. Volunteer Groups should provide the following data (the local jurisdictional values – not on an ICS basis) for each consolidated subsidiary that has issued financial instrument(s) to third parties:

a) The Volunteer Group subsidiary's total liabilities

b) The Volunteer Group subsidiary's equity and subordinated debt

c) The Volunteer Group subsidiary's equity and subordinated debt attributable to third party investors

418. Where an amount is reported on worksheet *FT18.BCR & ICS Balance Sheet* for non-controlling interest (other than financial instruments) attributable to the Volunteer Group's subsidiary, a break-down of the reported amount (by subsidiary) should also be provided in the worksheet *FT18.Financial Instruments.TPC*. The total figure reported in the worksheet *FT18.Financial Instruments.TPC* in respect

of all consolidated subsidiaries that have issued financial instruments to third parties and, as applicable, generate non-controlling interests, should reconcile to the total figure reported in the equity section of the balance sheet in worksheet *FT18.BCR & ICS.Balance Sheet.*

10.4.2 Deductions from Tier 1 capital resources

419. To the extent that any items have not already been excluded through the valuation approach, the following items will be deducted from Tier 1 capital resources for 2018 Field Testing. Information on these items should be provided in worksheet *FT18.BCR & ICS.Balance Sheet*, unless otherwise specified.

a) Goodwill.

b) Intangible assets, including computer software intangibles.

c) Each asset recognised on the Volunteer Group's Balance Sheet that relates to a defined benefit pension fund.

d) DTAs that rely on the future profitability of the Volunteer Group. DTAs may be netted with associated DTLs only if the DTAs and DTLs relate to taxes levied by the same taxation authority and offsetting is permitted by the relevant taxation authority.

e) Reciprocal cross holdings, arranged either directly or indirectly between financial institutions and that artificially inflate the Tier 1 capital position of the Volunteer Group.

f) Direct investments in own Tier 1 capital instruments (indirect investments via the group should have already been eliminated).

g) Reinsurance assets arising from arrangements deemed to constitute non-qualifying reinsurance or arrangements that are either not legally binding or not executed within a six-month grace period from the effective date of reinsurance coverage. Non-qualifying insurance refers to agreements:

   i. with entities providing reinsurance that are neither regulated nor subject to risk-based solvency supervision, including appropriate capital requirements; or

   ii. that do not provide a sufficient transfer of risk.

h) Encumbered assets in excess of the on-balance sheet liabilities secured by the encumbered assets and incremental ICS capital requirement in respect of those assets and liabilities (see Section 10.4.3 for details on the treatment of encumbered assets). This figure is automatically calculated in worksheet *FT18.Encumbered Assets*, based on the information provided by the Volunteer Group in that worksheet.

i) The value of equity and debt owned by the Volunteer Group in entities that are excluded from the scope of the group.

420. Items a) to c) listed above should be net of any associated DTL that would be extinguished if the item becomes impaired or derecognised under the valuation approach. DTLs are permitted to be netted against DTAs (item d) above) provided that it excludes amounts that have already been netted against items a) to c).

10.4.3 Treatment of encumbered assets

421. This section describes the treatment of encumbered assets and associated data requirements to be reported in worksheet *FT18.Encumbered Assets*. For 2018 Field Testing, an encumbered asset is an asset that a Volunteer Group pledges as collateral to a counterparty to either meet regulatory requirements or in order to participate in certain activities, such as: centrally cleared derivatives, OTC derivatives, mortgage borrowing, on-balance sheet repurchase agreements / securities lending and reverse repurchase agreements /securities lending, letters of credit /guarantees, collateral for reinsurance, assets held in trust, etc.

422. The amount and granularity of the encumbered assets data capture is being reduced for 2018 Field Testing (compared to that in 2017). Volunteer Groups should provide information in worksheet *FT18.Encumbered Assets* to indicate the total amount of encumbered assets, the value of on-balance sheet liabilities secured by the encumbered assets and additional information pertaining to incremental BCR and ICS capital requirements for encumbered assets and secured liabilities.

423. The deduction from BCR Core capital resources and ICS Tier 1 capital resources is calculated on worksheet *FT18.Encumbered Assets* and is the total value of encumbered assets in excess of the sum of the value of the Volunteer Group's on-balance sheet liabilities secured by the encumbered assets; plus:

a) For the BCR, the value of the Volunteer Group's incremental BCR capital requirement for encumbered assets and secured liabilities. For the avoidance of doubt, the incremental BCR capital requirement is equal to the difference between the BCR capital requirement of the Volunteer Group, and the BCR capital requirement of the Volunteer Group excluding the encumbered assets and secured liabilities.

b) For the ICS, the value of the Volunteer Group's incremental ICS capital requirement for encumbered assets and secured liabilities.

424. Volunteers will have the option of calculating the incremental ICS capital requirement and reporting the result in the Template. In addition, in response to feedback from Volunteer Groups on the complexity and onerous nature of the full calculation, the Field Testing Template includes an automated simplified calculation of the incremental ICS capital requirement. To effect the simplified calculation, additional proxy data will be collected in the Field Testing Template in table `Additional

Proxy Data' within worksheet *FT18.Encumbered Assets*. The simplified calculation takes into account the following information:

a) Non-life risk: the total non-life net current estimate for the Volunteer Group will automatically populate from information provided on *FT18.BCR & ICS.Balance Sheet*. Volunteer Groups should report the value of the non-life net current estimate for liabilities secured by encumbered assets.

b) Life risk: the total life net current estimate for the Volunteer Group will automatically populate from information provided on *FT18.BCR & ICS.Balance Sheet*. Volunteer Groups should report the value of the life net current estimate for liabilities secured by encumbered assets.

c) Catastrophe risk: the total net current estimate for the Volunteer Group will automatically populate with a local area calculation. Volunteer Groups should report the value of the net current estimate for liabilities secured by encumbered assets.

d) Credit risk: figures for the total assets and encumbered assets are sourced from information already provided in the Template.

e) Market risk: figures for the total net asset value (NAV) and NAV corresponding to encumbered assets and secured liabilities are sourced from information already provided in the Template.

425. No BCR Core or ICS Tier 1 deduction is required for encumbered assets relating to off-balance sheet securities financing transactions (i.e., securities lending and borrowing, repos and reverse repos) that do not give rise to a liability on the balance sheet.

426. The amount deducted from ICS Tier 1 capital resources will be included in ICS Tier 2 capital resources, subject to the limit that applies to Tier 2.

10.4.4 Deductions from Tier 2 capital resources

427. To the extent that any items have not already been excluded through the valuation approach, the following items will be deducted from Tier 2 capital resources:

a) Reciprocal cross holdings, arranged either directly or indirectly between financial institutions and that artificially inflate the Tier 2 capital position of the Volunteer Group.

b) Direct investments in own Tier 2 capital instruments (indirect investments via the group should have already been eliminated).

10.5 Capital Composition Limits

428. Capital composition limits are used within a capital resources framework to appropriately reflect the quality of capital resources and the ability of those resources to absorb losses. Capital composition limits for the ICS will be explicitly tested in 2018 Field Testing.

429. The calculation of the BCR ratio is subject to the following capital composition limits:

a) Qualifying Additional capital cannot exceed 50% of the BCR capital requirement.

b) Non-paid-up capital items are limited to an amount not greater than 10% of the BCR capital requirement.

430. These limits are applied in worksheet *FT18.BCR+HLA* within the 2018 Field Testing Template.

431. The IAIS is considering a number of capital composition limits to apply to ICS capital resources. The following description of the ICS capital composition limits is for the purposes of 2018 Field Testing only. The value of the limits for ICS Version 2.0 have not been finalised.

432. For non-mutual Volunteer Groups, the following limits will be applied in the worksheet *FT18.ICS Summary* within the Field Testing Template:

a) Tier 1 Limited capital resources will be limited to 10% of the ICS capital requirement;

b) Tier 2 capital resources will be limited to 50% of the ICS capital requirement; and

c) no allowance for Tier 2 Non-Paid Up capital.

433. For mutual Volunteer Groups, the following limits will be applied in the worksheet *FT18.ICS Summary* within the Field Testing Template:

a) Tier 1 Limited capital resources will be limited to 30% of the ICS capital requirement;

b) Tier 1 Limited + Tier 2 capital resources will be limited to 60% of the ICS capital requirement; and

c) Tier 2 Non-Paid Up capital will be limited to 10% of the ICS capital requirement.

434. Any capital resources from financial instruments that qualify as Tier 1 Limited that are in excess of the limit on Tier 1 Limited will be included within Tier 2 capital resources (subject to the limit on Tier 2 capital resources).

11 BCR and HLA related data

Relevant Worksheets in Template:	*FT18.BCR+HLA* *FT18.BCR & ICS.Balance Sheet*	*Due 31 August 2018*

11.1 Overview

435. The "IAIS Basic Capital Requirement for Global Systemically Important Insurers (G-SIIs)" ("BCR Document")[25] was published on 23 October 2014. The "IAIS Higher Loss Absorbency for G-SIIs" ("HLA Document")[26] was published on 5 October 2015. The HLA Document includes some changes to the BCR relative to the BCR Document published in 2014. All Volunteer Groups (including both G-SIIs and other Volunteer Groups) are requested to provide information[27] on:

a) BCR Capital Resources (see Section 10.1.3 of this document as well as the BCR Document)

b) BCR and HLA required capital amounts (in Section 11.2 of this document) in order to facilitate monitoring

c) If necessary, refinement of the BCR in line with paragraph 30 of the BCR Document

d) If necessary, refinement the HLA in line with paragraph 115 of the HLA Document

436. For G-SIIs, submission of data by 31 August 2018, in accordance with the requirements of these Technical Specifications, will meet the requirements for confidential reporting as stated in the "Guidance on Confidential BCR and HLA Reporting" document published on 18 December 2015,[28]. For other Volunteer Groups, submission of this data will be relevant to the BCR and HLA and also the Field Testing of the ICS. In particular, the MAV Three-Bucket Approach for discounting will be used for the purposes of the BCR, HLA and ICS. In addition, the BCR and HLA will serve as benchmarks in the development of the ICS along with existing jurisdictional baseline data.

[25] For the BCR Document see the public IAIS website (http://www.iaisweb.org/page/supervisory-material/financial-stability-and-macroprudential-policy-and-surveillance).

[26] For the HLA Document see the public IAIS website (http://www.iaisweb.org/page/supervisory-material/financial-stability-and-macroprudential-policy-and-surveillance).

[27] For avoidance of doubt, please refer to paragraph 2 of the HLA Document which states: "Together with the Basic Capital Requirement (BCR), the HLA will provide a globally comparable group capital standard that is intended to apply to all G-SIIs."

[28] For the Guidance on Confidential BCR and HLA Reporting see the public IAIS website (http://www.iaisweb.org/page/supervisory-material/financial-stability-and-macroprudential-policy-and-surveillance).

11.2 BCR and HLA Required Capital

11.2.1 BCR overview[29]

437. BCR required capital is calculated on a consolidated group-wide basis for all activities (as per Section 3 Scope of Application). All holding companies, insurance legal entities, banking legal entities and any other companies in the group will be included in the consolidation. Individual non-financial entities within the group may be excluded from the scope of the BCR if the risks of/from those entities are negligible.

438. The BCR required capital consists of three basic components:

a) Insurance, including Non-Traditional activities

b) Banking, which refers to regulated banking activities

c) Other non-insurance financial activities not currently subject to regulatory capital requirements

439. In summary, the full BCR required capital is provided in formula form in the HLA Document, Annex E. This describes the uplift made from the 2014 requirement. This essentially, with the exception of NI regulatory capital held with respect to regulated banks, reflected applying a 1.33 scale factor to the 2014 regulatory capital requirements. Both the 2014 and updated factors are specified in the HLA document, Annex D.

440. The BCR required capital formula is:

$$BCR = [TL_{BCR} + TNL_{BCR} + NT_{BCR} + A_{BCR}] + NI\text{-}RB_{BCR} + [NI\text{-}UB_{BCR} + NI\text{-}AUM_{BCR} + NI\text{-}O_{BCR}]$$

where

- $TL_{BCR} = \sum_{i=1}^{4} a_i \, TL_i$ with TL standing for 'Traditional Life'
- $TNL_{BCR} = \sum_{i=1}^{4} b_i \, TNL_i$ with TNL standing for 'Traditional Non-Life'
- $NT_{BCR} = \sum_{i=1}^{4} c_i \, NT_i$ with NT standing for 'Non-Traditional'
- $A_{BCR} = \sum_{i=1}^{3} d_i \, A_i$ with A standing for 'Assets'
- $NI\text{-}RB_{BCR}$ is the BCR required capital for Non-Insurance (NI) Regulated banking
- $NI\text{-}UB_{BCR}$ is the BCR required capital for Non-Insurance (NI) Unregulated banking
- $NI\text{-}AUM_{BCR}$ is the BCR required capital for Non-Insurance (NI) Assets Under Management
- $NI\text{-}O_{BCR}$ is the BCR required capital for Non-Insurance (NI) Other business.

[29] Please also refer to the BCR Document, in particular Sections 3.3 (noting the factors specified in this section have been updated) and 3.4 as well as Annex E, and the HLA Document, in particular Section 3 and Annexes D and E.

441. For the insurance related activities specific parameters a_i, b_i, c_i and d_i and their related exposures are given in Table 18.

442. The Non-Insurance activities are discussed in more detail in Section 11.5 below.

443. The calculations for the BCR and HLA required capital are automated in the Template.

11.2.2 HLA overview

444. Additional details regarding the following are available from to the HLA Document, in particular Sections 4.1 and 4.4.

445. The HLA required capital formula is:

$$HLA = HLA\_Bucket_{TL} \, x \, TL_{BCR} + HLA\_Bucket_{TNL} \, x \, TNL_{BCR} + HLA\_Bucket_{NT} \, x \, NT_{BCR} + HLA\_Bucket_{A} \, x \, A_{BCR} + HLA\_Bucket_{NI-RB} \, x \, NI\_RB_{BCR} + HLA\_Bucket_{NI-UB} \, x \, NI\_UB_{BCR} + HLA\_Bucket_{NI-AUM} \, x \, NI\_AUM_{BCR} + HLA\_Bucket_{NI-O} \, x \, NI\_O_{BCR}$$

where

- The HLA-Bucket parameters are factors as given in Table 19 below.
- The exposure to which these factors are applied are the BCR required capital amounts computed using the full 2015 outcome.

11.3 BCR and HLA Segments, Exposure Measures and Factors for Insurance-related Activities

446. The exposures and factors for the 2015 BCR required capital calculation are given in Table 18.

Table 18. BCR required capital factors and exposures

BCR segment	BCR proxy measure for risk exposure	Factor	BCR Factor: 2015 value
Traditional Life (TL)			
Protection life	Net Amount At Risk	a_1	0.080%
Participating products	Net Current Estimate	a_2	0.80%
Annuities	Net Current Estimate	a_3	1.6%
Other life	Net Current Estimate	a_4	0.80%
Traditional Non-Life (TNL)			
Property	Premium Measure	b_1	8.4%
Motor	Net Current Estimate	b_2	8.4%
Casualty	Net Current Estimate	b_3	15.0%

Other Non-Life	Net Current Estimate	b_4	10.0%
Non-Traditional (NT)			
Variable annuities	Notional Value	c_1	1.6%
Mortgage insurance	Risk in Force	c_2	5.3%
GICS & Synthetic GICS	Notional Value	c_3	1.46%
Other non-traditional	Net Current Estimate	c_4	1.73%
Assets (A)			
Credit - investment grade	Fair Value	d_1	0.93%
Credit - non investment grade	Fair Value	d_2	2.4%
Equity, real estate & non-credit investment assets	Fair Value	d_3	11.2%

447. All references to 'Net Current Estimate' in Table 18 are net of reinsurance ceded.

448. The exposures and factors, for both the HLA required capital calculation are given in Table 19.

Table 19. HLA required capital factors and exposures

BCR required capital exposure	**HLA Factors**		
	Low Bucket	**Mid Bucket**	**High Bucket**
TL_{BCR}: Traditional Life insurance	6%	9%	13.5%
TNL_{BCR}: Traditional Non-Life insurance			
A_{BCR}: Assets			
NT_{BCR}: Non-Traditional insurance	12%	18%	27%
NI-AUM_{BCR}: Non-Insurance – Assets Under Management			
NI-O_{BCR}: Non-Insurance – Other			
NI-RB_{BCR}: Non-Insurance – Regulated Banking	8.5%	12.5%	18.75%
NI-UB_{BCR}: Non-Insurance – Unregulated banking	12.5%	18.75%	25%

449. The HLA exposures for insurance related risks are the BCR required capital amounts. Consequently, no additional data is required to be collected.

450. The HLA required capital amount is computed in the Template for all three buckets.

11.4 BCR Data Collection for Insurance-related Activities

11.4.1 Assets

451. For the calculation of the BCR required capital for assets exposed to Credit risk, Volunteer Groups are required to provide the amounts of relevant assets that are of investment grade quality in the *FT18.BCR+HLA* worksheet.

11.4.2 Insurance liabilities

452. For the calculation of the BCR required capital for insurance liabilities, Volunteer Groups are requested to report, in the *FT18.BCR+HLA* worksheet, the following exposure measures not included on the Balance Sheet for the relevant insurance liabilities:

a) Written premium

b) Sums insured for life segments only

453. In addition for specific sub-segments of insurance liabilities, Volunteer Groups are required to provide additional measures as follows:

a) Additional exposure measures for some traditional life insurance liabilities.

b) Net Amount At Risk (NAAR) for protection life. NAAR equals the sum insured minus the current estimate, net of reinsurance recoverables, where the sum insured is the sum of all maximum amounts that the insurance group would have to pay out on policies in force within the Protection segment. The NAAR equals the maximum possible pay-outs in excess of the current estimate.

c) Additional exposure measures for some non-traditional insurance liabilities.

454. The notional value of the guarantee embedded in a variable annuity should be calculated as the maximum present value of all guaranteed benefits payable by the insurer under the assumption that it is not able to fund any of the payments from the account (i.e. the account value is zero).

455. Notional value of a guaranteed investment contract (GIC) represents the present value of principal and interest payments that are contractually guaranteed by the Volunteer Group.

456. Net risk in force for the mortgage insurance exposures measures the amount of the outstanding principal of the mortgage loans insured.

11.5 Non-Insurance

457. The NI-RB_{BCR} component of the BCR required capital relies on banking sector requirement (the Leverage ratio and Basel III Risk Weighted Assets (RWA)[30] requirements), and is computed as follows:

$$NI\text{-}RB_{BCR} = \text{Max [3\% Leverage ratio, 8\% RWA]}$$

458. The NI-UB_{BCR} component of the BCR required capital is computed as follows:

$$NI\text{-}UB_{BCR} = \text{4\% Leverage ratio}$$

459. The NI-AUM_{BCR} component of the BCR required capital is computed as follows:

$NI\text{-}AUM_{BCR}$ = 16% of gross income from such activities (averaged over the most recent three years)

460. The NI-O_{BCR} component of the BCR required capital is computed as follows:

$NI\text{-}O_{BCR}$ = existing global capital requirements x 1.33

461. Financial activities that are subjected to neither banking nor insurance regulation, such as some securities operations[31], are to be incorporated in the BCR by aggregating existing global capital requirements for such non-bank, non-insurance (NBNI) financial activities. In particular, third party asset management is a material activity for a number of Volunteer Groups.

462. The above information will be captured as part of the *FT18.Baseline* worksheet.

[30] This formulation treats regulated banks in aggregate and not separately. In theory this permits offsetting between banks in the calculation. In practice this is considered unlikely to be a concern. If this is shown not to be the case then a review in the future will be considered.

[31] Some securities operations fall in the scope of either banking or insurance regulation. These are not intended to be included in this paragraph. The IAIS assumes that such operations are already covered by the consideration of the respective sectoral requirements of the insurance-related BCR. Additional consideration may be given in subsequent BCR analysis and calibration to the optimal way to incorporate off-balance sheet securities activities.

12 Consistent and Comparable Margin Over Current Estimate

Relevant Worksheets in Template:	*ICS.MOCE* *ICS.MOCE.Patterns*	*Due 31 August 2018*

463. Consistent with ICP 14, the IAIS is committed to investigate the development of a consistent and comparable margin over current estimate (CC-MOCE) to be included in the valuation of insurance liabilities.

464. For the purposes of 2018 Field Testing, the IAIS is considering the following approaches:

a) The Cost of Capital MOCE (C-MOCE) on both a fixed and variable cost of capital basis; and

b) The Prudence MOCE (P-MOCE).

465. The C-MOCE with a fixed cost of capital of 5% (Fixed C-MOCE) with no deduction from the capital requirement is the default MOCE methodology for 2018 Field Testing, on which the ICS ratio is calculated.

466. Two other options are being field tested in 2018:

a) The C-MOCE with a variable cost of capital (Variable C-MOCE) with no deduction from the capital requirement

b) P-MOCE with full deduction from the capital requirement

467. All three options that are included in 2018 Field Testing are viable options that will be considered for ICS Version 2.0.

12.1 Cost of Capital MOCE (C-MOCE)

468. Under this approach the MOCE could be expressed as:

$$MOCE = Cost\ of\ Capital \cdot \sum_{t\geq 0} \frac{Expected\ capital\ required\ (t)}{(1+discount\ rate)^t}$$

469. The MOCE should be calculated separately for life and non-life risks.

470. For 2018 Field Testing, two different approaches to the cost of capital in excess of the relevant risk-free rate will be tested:

a) A fixed cost of capital rate set equal to 5%[32]; and

b) A variable cost of capital rate linked to another economic variable in order to reflect differences in the cost of capital in different economic environments at a given point in time and over time.

471. The expected capital required is defined as the aggregation of the ICS risk charges for a portfolio of assets and liabilities that minimise the ICS risk charges (i.e. excluding all hedgeable risks). As a simplified implementation of the assumptions above, the risks to be covered by the expected capital required for the purpose of calculating the C-MOCE are:

a) Insurance risks (covering life and non-life risks with the adjustment of Premium risk to reflect that (in a post liability transfer situation) policies expiring within one year will not be renewed)[33]

b) Credit risk related to reinsurance recoverables[34]

c) Operational risk

472. For 2018 Field Testing, the C-MOCE should be calculated as follow:

a) Step 1**:** allocation of the various components of the ICS risk charges (e.g. Non-life risks, Catastrophe risk, components of Life risk, Credit risk related to reinsurance recoverables and Operational risk) between life and non-life business,

b) Step 2: projection of the capital required based on:

   i. the Volunteer Group's own run-off patterns for life insurance liabilities; and

   ii. the characteristics of the ICS segments provided by the IAIS for the non-life insurance liabilities.

c) Step 3: discounting of the projected ICS risk charges by applying the risk-free rate for the relevant currency(ies).

d) Step 4: application of the cost of capital rate.

[32] The 5% cost of capital rate is set for 2018 Field Testing and will be revisited for future exercises. The cost of capital rate is determined based on the observed historical risk premia in excess of the risk-free rate. In the future the IAIS will consider possible changes to that methodology including, but not limited to, linking the cost of capital to some economic variable(s).

[33] A more accurate calculation should consider all cash flows within the contract boundaries, so the adjustment using as a proxy 50% of the premium risk charge pre-diversification is a simplification for the purpose of Field Testing.

[34] For the purpose of Field Testing, Credit risk associated with the reinsurance recoverables is deemed the only non-hedgeable component of Credit risk.

12.1.1 Step 1: Determination of the capital requirement for future period:

473. The ICS risk charges will be used as a starting point for the determination of the future capital requirement. The allocation of the projected ICS risk charges (in particular between life and non-life risks) is performed in the Template.

474. Acknowledging the difference of durations and development between life and non-life insurance liabilities, the ICS capital requirement will be allocated between life and non-life insurance liabilities in order to project each component according to the relevant projection pattern (see the C-MOCE calculation section in the Template, as well as the *FT18.ICS.MOCE.Patterns* worksheet). The allocation is automated in the Template, with the exception of the allocation of the Credit risk related to reinsurance recoverables, which requires a manual entry. The allocation is performed as follows:

a) The relevant individual risk charges are retrieved from the relevant ICS components (pre-diversification)

b) A diversified amount is calculated (using the ICS aggregation rules and correlations) and allocated back based on the diversified amount

c) The Catastrophe risk charge is allocated between life and non-life and to the three non-life patterns according to their characteristics

d) The Life risk charges (Mortality, Longevity, Morbidity/Disability, Lapse and Expenses) are kept separate to allow for different projection patterns

e) The Non-Life risk charge is allocated between short, medium and long tail based on the characteristics of the ICS segments provided by the IAIS

f) The Operational risk charge is allocated between life and non-life as per its original calculation

g) The Credit risk charge (associated with reinsurance recoverable) is allocated between life and non-life based on a percentage provided by Volunteer Groups – Data entry required

12.1.2 Step 2: Projection of the capital requirement

475. The capital that will be required, over the future periods, to cover the run off of the insurance liabilities is calculated based on the capital requirement and projection patterns used to determine how the required capital will run down over time. The run-off pattern should reflect the run-off of the risks associated with the insurance liabilities. The chosen proxy for the determination of the run-off patterns for life risks is based on only outgoing cash flows (i.e. claims paid and associated expenses) associated with the related insurance liabilities. If separate patterns are provided for the different risks (e.g. mortality, longevity, lapse), the run-off patterns should be calculated using outgoing cash flows excluding the amount not exposed to risk (for example, maturity benefit cash flows for Mortality risk).

476. The IAIS will collect data to assess how to differentiate the projection pattern for life insurance risks. Two dimensions have been selected for 2018 Field Testing:

a) Currency: Volunteer Groups are allowed to utilise a maximum of seven currencies. If a Volunteer Group operates in more than seven currency zones, liabilities will have to be grouped based on their similarities regarding first the run-off patterns of the associated insurance risks and second regarding the level of the risk-free rate (applied for the discounting of the return to be provided on the future capital requirement).

b) Life risks: all five life risks are separated (mortality, longevity, morbidity/disability, lapse and expenses). This split by risk might be too granular and not relevant for some businesses. Some risks might be grouped more naturally if associated from the same insurance products. Based on the data collection the IAIS will assess which split and granularity is more appropriate. If a Volunteer Group determines that separate patterns are not relevant or appropriate for different life insurance risks, it could use the same (ultimately a unique) pattern across risks.

477. Life risks data entry: in order to provide the data described above the data entry is split in two steps:

a) Allocation table: for each life insurance risk the percentage of the projected capital for that risk should be allocated among the selected currencies (maximum of seven). The sum for each risk across currencies should be 100%. This allows a maximum of 35 different patterns (7 currencies x 5 risks). However Volunteer Groups might choose to select less than 7 currencies and could use the same pattern for several risks if that appropriately represents their business.

b) Individual patterns: patterns are to be calculated as the percentage of risks remaining at the end of each year, determined based on cash out flows as described above. When providing projection patterns, Volunteer Groups should be mindful that the C-MOCE formula embedded in the Template already accounts for the first term of the sum (i.e. t=0). The first factor to be populated in the Template is the projection at the end of the first year (expected to be lower than 100%)

478. For Non-Life risks, a similar approach as for previous field testing exercises is adopted for 2018 Field Testing. The capital requirement is allocated to the ICS segments based on Non-Life individual risk charges. For each ICS segment, the capital required is projected based on three run-off patterns (short, medium and long tail) provided by the IAIS[35].

12.1.3 Step 3: Discounting

479. The projected capital requirements are discounted using the risk-free rate for the relevant currency. The risk-free rate and discount factors are provided in the 'Projection patterns' table. No input from Volunteer Groups is required.

[35] As a trade-off between simplicity and risk sensitivity, three run-off patterns are tested.

12.1.4 Step 4: Application of the Cost of Capital

480. Two approaches for the cost of capital are embedded in the Template and applied to the discounted future capital requirements in order to calculate the C-MOCE:

a) A fixed 5% cost of capital rate; and

b) An adjusted cost of capital rate linked to the level of the risk-free interest rate with an absolute cap at 10% and an absolute floor at 3%. The link being tested for 2018 Field Testing is: cost of capital rate = 3% + 10 year risk-free rate[36].

12.2 Prudence MOCE (P-MOCE)

481. The P-MOCE is calculated based on the current estimate of insurance liabilities and a proxy for estimating uncertainty. The P-MOCE reflects the risks/uncertainty of the reserve and, for non-life, premium estimates of each Volunteer Group.

482. For non-life, the approach is based on avoiding the recognition of future profits. Non-life current estimates have two components: claim liabilities and premium liabilities (PL, formerly known as the unearned premium provision). The latter covers cash flows associated with claims that have not yet occurred while the former covers claims that have already occurred. Given the differing nature of these risks, the P-MOCE for each will be calculated separately. For claim liabilities, where profits take the form of investment income on reserves, this takes the form of a discounting approach. The effect of discounting increases with the length of the cash flows, which is a proxy for estimation uncertainty. For unearned premiums, profits can result from investment and underwriting gains and can be calculated more directly using balance sheet inputs.

483. For non-life claim liabilities, P-MOCE is the difference between discounted and undiscounted claims liabilities as calculated net of reinsurance. These discounted liabilities are already entered on the worksheet *FT18.BCR&ICS.Balance Sheet*. The undiscounted claim liabilities should be calculated on the same basis but, instead of using the ICS yield curve, a discount rate of 0% should be used. The amounts entered here should tie with the total of the undiscounted net claim liabilities reported in the data on non-life type risk in the worksheets *FT18.*ICS.Risk Charges. The MOCE related to the non-life claim liabilities is floored at zero at the group level.

484. For premium liabilities, the P-MOCE will be the difference between liabilities (net of reinsurance) as implied by a combined ratio of 100% and the liability calculated using current estimate assumptions. The combined ratio that is used should include all expenses (acquisition, underwriting and other). The intent is to prevent the recognition of future profit. With P-MOCE, profits should

[36] The choice of a risk-free interest rate as the economic variable to link the cost of capital to is motivated by comments received from the ICS consultation and considering the related economic literature.

(ideally) be recognised at the same expected rate as premiums are earned. On the day a policy is written, there should be no profit.

485. Significant reporting issues were identified in previous field testing exercises for the current estimate of premium liabilities. Lack of a consistent current estimate for premium liabilities presents difficulties in calculating a consistent MOCE. As such, more detail is being requested in the GAAP Plus and MAV sections of the Technical Specifications. Note that the P-MOCE may be zero if the current estimate was calculated using a combined ratio of 100% (this is explicitly the case in one MAV simplification and implicitly the case in GAAP Plus for some jurisdictions). The calculation of the P-MOCE related to the non-life premium liabilities is floored at zero at the group level (the floor will be embedded in the Template).

486. For life insurance liabilities, a P-MOCE will be calculated in the Template. An estimated standard deviation for insurance liabilities will be computed for each Volunteer Group using the relevant aggregated ICS risk charges as a proxy for the stressed current estimate and assuming a normal distribution for the current estimate. A specified percentage of that standard deviation is taken as the-measure of P-MOCE. For 2018 Field Testing that percentage is set at 66.7%[37]

[37] The presumption of a Normal Distribution and the initial percentage postulated of 66.7% are set aside for the purposes of field testing and will be revisited for future exercises.

13 The ICS Risk Charges

487. This section contains instructions for completing the worksheets for the risk charges identified for the ICS.

488. The main purpose of testing each of the risk charges in 2018 is to inform the design and calibration for ICS Version 2.0, to be finalised by the end of 2019. To this end, the design and calibrations included in 2018 Field Testing are subject to change as more fundamental calibration work is undertaken over the course of the ICS development.

489. Each risk charge within the standard method will be calculated on both the MAV and GAAP Plus approaches in order to facilitate a comparison of the various components under the two valuation bases. Each risk charge will be calculated using the MAV Three-Bucket Approach for discounting and currently-existing jurisdictional GAAP rules and any adjustments as previously defined for GAAP Plus.

13.1 Approach

490. The approach taken is to consider each risk category and determine an approach to measuring that risk which is suitable on an individual basis. Some risks are best measured on the basis of a stress approach. This is particularly the case where a risk could manifest in changes in the values of both assets and liabilities, or where the risk cannot be adequately captured by a single factor or item of the balance sheet (e.g. Mortality risk, Longevity risk, Interest Rate risk). Other risks are measured using a factor-based approach. Cases where this is appropriate include where a risk exposure is appropriately captured by a balance sheet item. However, in the case of Catastrophe risk, a stochastic modelling approach also forms part of the ICS standard method risk charges as this is likely to provide the greatest level of risk sensitivity and to adequately reflect the risk profile of the Volunteer Group.

491. The risks will be combined to recognise risk diversification. This is automatically done in the Template; Volunteer Groups do not have to enter any data for the aggregation.

13.2 Calculation Methods within the Standard Method

13.2.1 Look-through

492. For reasons of risk sensitivity and sound risk management, the look-through approach should apply to indirect investments and insurance arrangements whenever and to the extent possible on the basis of the underlying current exposures at a point in time.

493. When a full look-through is not possible, a partial look-through could be applied, along the lines as provided by the Basel III framework.[38] For example, for an investment fund it could be assumed that the fund first invests, to the maximum extent allowed under its mandate, in the asset classes with the highest risk charge, and then continues making investments in descending order until the maximum total investment level is reached.

494. Finally, when no look-through is possible, the full investment should be considered as unlisted equity.

495. In the context of Market risks, look-through could be applied, for instance, to collective investment funds, hedge funds, mandatory convertible bonds, etc. in order to identify all the indirect exposures embedded in such instruments. A look-through approach should be applied to the extent possible, in order to identify which assets are sensitive to the stress-based approaches to measuring risks.

496. In the context of insurance risks, the look-through approach could be applied to the underlying risk of investments such as single tranche mortality bonds, catastrophe bonds, etc. This is in order to appropriately capture the effect on such instruments of the stress scenarios designed for mortality, longevity, catastrophe events and any other relevant scenario.

13.2.2 Risk mitigation

497. Risk mitigation techniques may be recognised in the ICS risk charges as long as they meet the following principles:

a) The risk mitigation technique must be effective and legally enforceable in all relevant jurisdictions and there must be an effective transfer of risk to a third party.

b) The contractual arrangement ensures that the risk transfer is clearly defined.

c) The calculation of the ICS risk charges allows for the effects of risk mitigation techniques through a reduction in requirements commensurate with the extent of risk mitigation. It makes reasonable allowance for any basis risk effects due to changes in risk mitigation assumptions and relationships during a stress scenario and there is appropriate treatment

[38] http://www.bis.org/publ/bcbs266.htm.

of any corresponding risks embedded in the use of risk mitigation techniques (e.g. Credit risk). These two effects should be separated.

d) The calculation should be made on the basis of assets and liabilities existing at the reference date of the ICS calculation.

e) There should be no double counting of mitigation effects.

f) The Volunteer Group has, in the event of a default, insolvency or bankruptcy of a counterparty or other credit event set out in the transaction documentation for the arrangement, a direct claim on that counterparty.

g) Providers of risk mitigation should have adequate credit quality (demonstrable through either adequate rating, capitalisation or collateralisation levels) to guarantee with appropriate certainty that the Volunteer Group will receive the protection in the cases specified by the contracting parties. Credit quality should be assessed consistently with the definition of credit categories provided in the section on Credit risk.

498. Where risk mitigation techniques are in force for a period shorter than 12 months and meet the qualitative criteria above, the risk mitigation effect to be taken into account in the ICS risk charges is in proportion to the length of time defined as:

a) where the risk exposure's term is less than 12 months, the proportion of the full term of the risk exposure that the risk mitigation technique is in place up to a maximum of 100%; or

b) the proportion of 12 months that the risk mitigation technique is in place up to a maximum of 100%.

499. However where the Volunteer Group plans to replace a risk mitigation arrangement relating to a Market risk exposure at the time of its expiry with a similar arrangement, this renewal may be taken into account if the Volunteer Group expects to renew and all of the foreseeable costs of renewal within the time horizon are taken into account. The renewal of the arrangements may be taken into account only if:

a) The renewal is consistent with previous business practice and documented strategy.

b) The replacement of the risk mitigation instrument shall not take place more often than every three months except for Currency risk or Equity risk where the replacement of the risk mitigation instrument shall not take place more often than every month.

c) The risk that the risk mitigation arrangement cannot be replaced due to an absence of liquidity in the market is not material under different market conditions and there is no material basis or operational risks compared to the risk mitigation effect. If the instruments mitigating Currency or Equity risk are replaced more frequently than every three months then the Volunteer Group should be also able to justify to their supervisor that:

a. the market for these instruments is sufficiently liquid at this tenor; and

b. these instruments do not pose a materially greater risk than those replaced less frequently than every three months.

d) The replacement of the risk mitigation arrangement is not conditional on any future event, which is outside of the control of the Volunteer Group. Where the replacement of the risk mitigation arrangement is conditional on any future event that is within the control of the Volunteer Group, then the conditions should be clearly set out in the documented strategy referred to in point (a).

e) The renewal is realistic with regards to availability of the arrangement and its cost, including the risk that these costs may increase during the following 12 months, is deducted from the value attributed to the instrument.

f) Any additional risk stemming from the risk mitigation arrangement (e.g. Credit risk) is taken into account in the ICS risk charges.

g) The hedge effectiveness and any related risks are monitored on an ongoing basis.

500. The recognition of the renewal of the risk mitigation arrangement will be limited such that the value attributed to the renewal element, net of all potential costs that may be incurred from the implementation of the strategy, will not be more than 80% of the difference between applying a proportional recognition and a full recognition of the arrangement, excluding all costs.

Example:
Risk exposure = 1 year
Duration of inforce instrument = 3 months
Hedge proportion = 25%
Value recognised after costs and risk of renewal = 90
Value recognised before costs and risk of renewal = 100
Ratio of value = Value recognised net of costs /value recognised gross of costs = 90%
*In this example, where the criteria for recognition of renewal are **not** met, the proportion for which the risk mitigation effect is to be taken in to account will be equal to the hedge proportion i.e. 25%*
Where the criteria for recognition of renewal are met, the proportion for which the risk mitigation effect is to be taken in to account will be:
*= Minimum [hedge proportion + ((1- hedge proportion) * 80% /Ratio of value),1]*
*=Min [25% + ((1-.25%) * 80%/ 90%), 1] = 92%*

501. Separately, renewal of risk mitigation arrangements with respect to non-life Premium risk may be taken into account if the Volunteer Group expects to renew and the costs of renewal within the time horizon are taken into account. The renewal of the arrangements should be taken into account only if:

a) The renewal is consistent with previous business practice and documented strategy.

b) The renewal is realistic with regards to availability of the arrangement and its cost[39].

c) Any additional risk stemming from the risk mitigation arrangement (e.g. Credit risk) is taken into account in the relevant ICS risk charges.

502. When modelling natural catastrophe risk, the renewal of the arrangements should be taken into account only if the renewal is consistent with previous business practice and documented strategy. The renewal should be realistic with regards to availability of the arrangement and its cost. Any additional risk stemming from the risk mitigation arrangement (e.g. Credit risk) is also taken into account in the natural catastrophe risk modelling.

503. The following principle also applies specifically to the recognition of financial risk mitigation techniques in the ICS: there should be an explicit reference to specific exposures or a pool of exposures.

504. Due to the limited effectiveness of risk mitigation of Operational risk, risk mitigation should not be recognised in the calculation of the ICS Operational risk charge.

13.2.3 Geographical segmentation

505. For a number of risk charges, a geographical segmentation is used in Field Testing:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

506. The following table sets out the definitions of each region.

[39] Costs may include, but are not limited to, ceded premiums to the reinsurer and commissions.

Table 20. Geographical segmentation definitions

Region	Countries included
EEA and Switzerland	Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland, Liechtenstein, Norway, Switzerland
USA and Canada	USA[40] and Canada
China	Mainland China, Macao SAR
Japan	Japan
Other developed[41]	Australia, New Zealand, Israel, San Marino, Korea, Singapore, Chinese Taipei, Hong Kong SAR
Other emerging markets	For a list of emerging markets, please see Table E of the Statistical Appendix of the IMF World Economic Outlook April 2016[42]. For completeness, if a country is not listed in the regions above, it should be classified as 'Other emerging market'.

507. Note that that these are not the same regions used in the Equity risk section. The definition of emerging and developed markets used for Equity risk is based on the FTSE Developed Index and the FTSE Emerging Markets Index.

508. For providing information related to insurance business, the Template should be completed on the basis of location of the risk. Where this information is not available, the location where the business was written may be used as a proxy and information on this should be provided in the Questionnaire.

13.2.4 Management actions

509. For the purposes of the standard method in 2018 Field Testing, the definition of "management actions" is confined to changes in liabilities for future bonuses and other discretionary benefits.

510. Therefore, the "After management actions" risk charges should only take into account these actions and the "Before management actions" positions must take into account no management actions whatsoever.

[40] Including NAIC members outside of the 50 United States and the District of Columbia: American Samoa, Guam, Northern Mariana Island, Puerto Rico and U.S. Virgin Islands.
[41] 'Other developed' taken from IMF list of advanced economies minus countries mentioned in other regions as of April 2016.
[42] See http://www.imf.org/external/pubs/ft/weo/2016/01/pdf/text.pdf (accessed on 12 May 2016).

511. Volunteer Groups are requested to provide risk charges both "Before management actions" and "After management actions". This information will be used to support the assessment of the appropriateness of the cap on management actions when there is a stress on multiple risks.

512. Management actions should be realistic and cannot be contrary to the Volunteer Group's obligations to policyholders or to legal provisions applicable to the Volunteer Group.

Example: Management actions considered after an equity stress

Consider a Volunteer Group with a portfolio of savings contracts. Those savings contracts do not include any legally enforceable profit participation, however the Volunteer Group has an internal policy aiming at redistributing approximately 80% of each year financial profits (when positive) to policyholders. Such a policy leads to an amount of 80 of discretionary benefits in the current estimate figure, corresponding to the maximum loss absorbency that the Volunteer Group would be able to pass through to policyholders in case of adverse financial scenarios.

However, for reasons of competitiveness and avoiding mass lapses, the Volunteer Group is, in practice, not likely to pass through the maximum possible amount of loss to policyholders. For instance, while a drop of 40% in the value of its equity investments would have a negative impact of 100 on the value of assets, and normally result in an amount of discretionary benefits reduced to 0 by applying the distribution policy unchanged, the Volunteer Group could assume that it would decide to distribute future discretionary benefits for an amount of 30. Therefore, the impact of the shock after management actions would be 100 – (80 – 30) = 50.

This example can be summarised as follows:

Balance Sheet before shock:

Assets	**1000**	**Capital resources**	**150**
of which equity	*250*	**MOCE**	**50**
of which other	*750*	**Current estimate**	**800**
		of which discretionary	*80*

Balance Sheet after shock, before management actions:

Assets	**900**	**Capital resources**	**50**
of which equity	*150*	**MOCE**	**50**
of which other	*750*	**Current estimate**	**800**
		of which discretionary	*80*

Balance Sheet after shock, after management actions:

Assets	**900**	**Capital resources**	**100**
of which equity	*150*	**MOCE**	**50**
of which other	*750*	**Current estimate**	**750**
		of which discretionary	*30*

13.2.5 Margin over current estimate (MOCE)

513. All stress-based calculations should include only current estimates in determining the Net Asset Value (NAV). Factors applied to insurance liabilities should only be applied to current estimates. MOCE should not be included.

13.3 Insurance Risks

13.3.1 Grouping of policies for life risks

514. A stress-based approach will be used for the 2018 Field Testing to calculate the risk charge for a number of insurance risks. To ensure consistency between the pre-stress and post-stress cash flows, where the stress-based approach is used, the projections of the stressed cash flows should be conducted at the same level of granularity as the pre-stress cash flows. In most cases, it is expected that the pre-stress projections should be done for each policy individually. However, where the pre-stress cash flows have been projected by applying some grouping of policies, to ensure consistency, the same grouping of policies should be applied to the stressed cash flows.

515. For some policies, an upward stress may produce an increase in risk charge, while for others a downward stress may result in an increase in risk charge. Even if cash flow projections are mostly performed at a policy level, to determine whether to apply an upward or a downward stress, it is necessary to decide on the appropriate grouping of policies, in particular for mass lapse risk. The level of prudence of the resulting risk charge would thus depend on the granularity of the policy groupings adopted by the Volunteer Group.

516. From a practicality standpoint, grouping by portfolios of products (or policies) exposed to homogeneous insurance risks within the class can be applied. In deciding on the appropriateness of grouping of policies, the Volunteer Group should ensure that portfolios of products (or policies) exposed to homogeneous insurance risks are grouped together. For this purpose, a homogeneous risk group encompasses a collection of policies with similar risk characteristics.

517. Homogeneous risk groups should be expected to be reasonably stable over time. Where necessary, Volunteer Groups should for the derivation of risks take into account items such as:

a) Underwriting policy

b) Claims settlement pattern

c) Risk profile of policyholders

d) Product features, in particular guarantees

e) Future management actions

13.3.2 Mortality risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

518. For Mortality risk, a stress-based approach is applied in 2018 Field Testing. Under this approach, the value of the assets and the liabilities after the stress should reflect the impact of risk mitigating mechanisms.

519. The following components could be included within a stress-based approach to Mortality risk:

a) Stress to the level of mortality

b) Stress to the trend in which mortality is expected to develop

c) Stress to the volatility of mortality rates

520. Catastrophe Mortality risk is addressed as part of Catastrophe risk.

521. For the purposes of 2018 Field Testing, Volunteer Groups should estimate the Mortality risk charge by stressing the level of mortality rates only.

522. The Mortality risk calculation only applies to those policies that are subject to Mortality risk.

523. Volunteer Groups may take into account management actions in the calculation of the Mortality risk charge. The effect of such management actions should be recorded separately in the worksheets *FT18.ICS Risk Charges* to enable a comparison of the change in net asset value (NAV) before and after management actions. In the Questionnaire, Volunteer Groups are also asked to provide a description of management actions taken and the basis for such actions.

524. The Technical Specifications for Mortality risk apply both to the MAV and GAAP Plus valuation approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Mortality risk calculation is fundamentally the same for both approaches.

13.3.2.1 Geographical segmentation

525. Volunteer Groups should provide data by the following geographical groupings:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

13.3.2.2 Input data required

526. Input data required are:

a) The base NAV, i.e. value of assets less insurance liabilities before applying the prescribed shock, net of reinsurance

b) The NAV after applying the prescribed shock, net of reinsurance, and before management actions

c) Effects of the management actions on NAV after applying prescribed shocks

13.3.2.3 Output data

527. The following output will be automatically calculated by the Template:

a) $Mortality\ Risk\ Charge$= Mortality risk charge before management actions

b) $Mortality\ Risk\ Charge^{\ mgmt}$ = Mortality risk charge after management actions

13.3.2.4 Calculation

528. The Mortality risk charge is calculated as:

$$Mortality\ Risk\ Charge = \Delta NAV \mid shock$$

Where:

$\Delta NAV \mid shock$ = Change in NAV, i.e. value of assets less insurance liabilities (not including changes in the margin over current estimate) after applying the prescribed shock.

$shock$ = Increase of x% in mortality rates at all ages for all policies where an increase in mortality rates would lead to a decrease in the NAV, i.e. $(1 + \mathrm{x}\%) \times$ $base\ mortality\ assumptions$, with x as follows:

Table 21. Mortality level shocks

	X%
EEA and Switzerland	12.5 %

USA and Canada	12.5 %
China	12.5 %
Japan	12.5 %
Other developed markets	12.5 %
Other emerging market	12.5 %

529. The $Mortality\ Risk\ Charge$ should be first calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

530. Volunteer Groups should then determine the change in NAV, taking into account realistic management actions, e.g. the Volunteer Group is able to change its assumptions on future bonus rates in response to the scenario; this is $Mortality\ Risk\ Charge^{\ mgmt}$.

531. The calibration proposed for the 2018 Field Testing is subject to refinements based on further analysis and evidence. For example, the IAIS will carry out further analysis to assess whether the shocks represented in the table above could vary by geographical grouping.

532. For the purposes of 2018 Field Testing, no geographical diversification is assumed when calculating the Mortality risk charge.

533. Even though the stresses are applied to different geographical regions, double counting of the risk mitigating impact of reinsurance arrangements covering more than one geographical area should be avoided.

13.3.3 Longevity risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

534. In 2018 Field Testing, a stress-based approach is applied to Longevity risk.

535. The following components could be included within a stress approach:

a) Stress to the level of longevity

b) Stress to the trend that longevity is expected to follow

c) Stress to the volatility of longevity rates

536. For the purposes of 2018 Field Testing, Longevity risk will retain a simplified approach. Under this approach, Volunteer Groups should estimate the Longevity risk charge by stressing only the level of longevity. The prescribed single stress is intended to combine the level, trend and volatility components.

537. The Longevity risk calculation applies only to those policies that are subject to Longevity risk.

538. Volunteer Groups may take into account management actions in the calculation of the Longevity risk charge. The effect of such management actions should be recorded separately in the worksheets *FT18.ICS Risk Charges* to enable a comparison of the change in NAV before and after management actions. In the Questionnaire, Volunteer Groups are also asked to provide a description of management actions taken and the basis for such actions.

539. The Technical Specifications for Longevity risk apply to both the MAV and GAAP Plus valuation approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Longevity risk calculation is fundamentally the same for both approaches.

13.3.3.1 Geographical segmentation

540. Volunteer Groups should provide data by the following geographical groupings:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

13.3.3.2 Input data required

541. Input data required:

a) The base NAV, i.e. the value of assets less insurance liabilities before applying the prescribed shock, net of reinsurance

b) The NAV after applying the prescribed shock, net of reinsurance, and before management actions

c) Effects of the management actions on NAV after applying the prescribed shocks

13.3.3.3 Output data

542. The following output will be automatically calculated by the Template:

a) $Longevity\ Risk\ Charge$= Longevity risk charge before management actions

b) $Longevity\ Risk\ Charge^{\ mgmt}$ = Longevity risk charge after management actions

13.3.3.4 Calculation

543. The Longevity risk charge is calculated as follows:

$$Longevity\ Risk\ Charge = \Delta NAV \mid shock$$

where

$\Delta NAV \mid shock$ = Change in net asset value, i.e. value of assets less insurance liabilities (not including changes in the margin over current estimates) after applying the prescribed shock

$shock$ = Decrease of x% in mortality rates at all ages for all policies where a decrease in mortality rates would lead to a decrease in the NAV i.e. $(1 - x\%) \times base\ mortality\ assumptions$, with x as follows:

Table 22. Mortality shocks for Longevity risk

	x%
EEA and Switzerland	17.5%
USA and Canada	17.5%
China	17.5%
Japan	17.5%
Other developed markets	17.5%
Other emerging market	17.5%

544. The $Longevity\ Risk\ Charge$ should be first calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

545. Volunteer Groups should then determine the change in NAV, taking into account realistic management actions, e.g. the Volunteer Group is able to change its assumptions in future bonus rates in response to the scenario; this is the $\text{Longevity Risk Charge}^{\text{mgmt}}$.

546. Even though the stresses are applied to different geographical regions, double counting of the risk mitigating impact of reinsurance arrangements covering more than one geographical area should be avoided.

547. The calibration proposed for the 2018 Field Testing is subject to refinements based on further analysis and evidence. For example, the IAIS will carry out further analysis to assess whether the shocks represented in the table above could vary by geographical grouping.

548. For the purposes of 2018 Field Testing, no geographical diversification is assumed when calculating the Longevity risk charge. Further data collections or analysis may be conducted to determine whether geographical diversification should be allowed.

13.3.4 Morbidity and Disability risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

549. The Technical Specifications for Morbidity/Disability risk apply both to the MAV and GAAP Plus valuation approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Morbidity/Disability risk calculation is fundamentally the same for both approaches.

550. The charge determined for this risk reflects the impact of unexpected changes in the level, trend and volatility of disability, sickness and morbidity rates (the expected impacts are assumed to be incorporated in valuation methodologies) as well as unexpected changes in the level of claim payments. This risk category includes risk events that are caused by accident as well as by sickness. In summary, Morbidity/Disability risk covers all risks linked to unexpected changes in the health status of policyholders.

551. Similar Morbidity/Disability benefits may be classified as life or non-life business (see below for definition of the scope of Morbidity/Disability risk).

552. The risk charge relating to the Morbidity/Disability risk is obtained by the application of a stress scenario, designed as a combination of stresses as specified below.

13.3.4.1 Geographical segmentation

553. Volunteer Groups should provide data by the following geographical groupings:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging market

13.3.4.2 Definition of the scope of the application of Morbidity/Disability risk

13.3.4.2.1 Segmentation

554. Morbidity/Disability risk is applied only to benefits evaluated on similar to life technical bases (see examples below). Irrespective of the legal or contractual classification of insurance obligations, generally the technical calculation basis of insurance obligations should form the decision criterion for the assignment to life or non-life activities. If and only if the technical basis is not consistent with the nature of the risk relating to the obligation, the nature of the underlying risk of the contract should form the decision criterion.

Example
Segmentation of a "classic" health insurance product (no levelling of premiums) with a morbidity benefit
• If the health insurance guarantee insurance liabilities are calculated on the basis of claims triangles or unearned premiums, this guarantee should be classified into a non-life segment. If the morbidity guarantee insurance liabilities calculations are based on a disability/morbidity table, then this guarantee should be classified into a life segment.
• In the case where the calculation methodology of insurance obligations changes after the occurrence of an event in order to reflect the evolution of the underlying risk, the segmentation should reflect this evolution.

Example
Segmentation of a disability product:
• The disability guarantee should be classified into a non-life segment during the period in which the policyholder does not have a declared disability, if the insurance liabilities calculation methodology is based on claims triangles or unearned premiums.
• If the insurance liabilities calculation methodology changes when a policyholder declares a disability and takes into account biometrical variables from that moment, this disability guarantee should be classified into a life segment after the occurrence of the claim.

Example
Segmentation of morbidity and disability products where the insurance liability calculation is based on loss ratios:
• The morbidity or disability guarantee should be classified into a non-life segment if the determination of the loss ratio was based on non-life techniques such as claims triangles.
• The morbidity or disability guarantee should be classified into a life segment if the determination of the loss ratio was based on life techniques such as morbidity/disability tables.

13.3.4.2.2 Sub risks to be covered

555. The following is a (non-exhaustive) list of major types of Morbidity/Disability risks that have been identified, and can be pursued on similar to life technical bases:

a) Sickness

b) Accident at work/occupational disease while employed and post-employment (particularly with respect to occupational disease)

c) Critical illness, specifically tied to benefit availability dependent on surviving a specified period of time following confirmation of diagnosis

d) Disability, including temporary and permanent, temporary and full, physical and non-physical (mental)

e) Loss of income, including past and future income and includes (but not limited to) salary replacement

f) Long-term care - all forms of insurance that address full or partial loss of ability to perform all defined and established functions of daily living

g) Health insurance – medical and directly related expenses

h) Health insurance – other than medical and directly related expenses such as preventative health and wellness benefits

556. For the purpose of the calculation of the risk charge for morbidity/disability, similar to life insurance obligations should be split in the following four mutually exclusive benefit segments:

a) Category 1: Medical expenses

   i. Products providing any kind of compensation (either fixed or based on real costs) for medical expenses, in-patient or not. The compensation depends directly on the treatment or expenses incurred by the policyholder, and is not directly dependent on the time spent in a given health status.

   ii. Typical examples are medical expense / supplemental medical contracts that provide benefits for practitioner fees, medication fees, vision and dental expenses, etc.

   iii. When a policy provides a combination of benefits between Medical Expenses and Short-term recurring payments (Categories 1 and 3), it can either be split into both categories, or considered under Category 1 altogether.

b) Category 2: Lump sum in case of a health event

   i. Products providing a single payment at the occurrence of a specified, and usually severe, health event, such as the diagnosis of cancer or other types of dread disease, or the occurrence of an accident resulting in a certain level of disability.

   ii. Typical examples are accident, critical illness, and permanent disability policies that provide a lump sum payment on occurrence of a claim. This category generally also includes Accidental Death and Dismemberment policies.

c) Category 3: Short-term recurring payments

i. Products providing a recurring amount of compensation for a period depending on the time spent in a given temporary health status, such as unable to work, hospitalisation, etc.

ii. Typical examples are hospital indemnity, personal accident / loss of income policy, short-term disability income protection (generally in the context of group insurance).

d) Category 4: Long-term recurring payments

i. Products providing a fixed annuity in case of long-term / permanently deteriorated health status.

ii. Typical examples are personal or group policies for permanent disability, long-term care, etc.

557. The "typical examples" provided above are indicative and are not meant to be exhaustive. The terminology may also vary across jurisdictions.

558. The distinction between "short-term recurring" and "long-term recurring" should generally be made according to the temporary vs. permanent characteristics of the recurring benefit. A benefit that is contractually limited to a given period (typically no more than five years) should be classified as "short-term recurring". A benefit that is to be paid lifelong, or until a time (for instance, retirement age) that makes it variable across policyholders, without any upfront short-term limitations, should be considered as "long-term recurring".

559. Each benefit category is divided into two segments by original contract term:

a) Short-term: Includes contracts with an original term of up to five years

b) Long-term: Includes contracts with an original term of longer than five years

Example
•Short-term recurring payments with long contract term (Category 3):
Medical benefit products with a 10-year renewal or whole life term which provides hospitalisation benefits is typically categorised as short-term recurring payments with long contract term.
•Long-term recurring payments with short contract term (Category 4)
Group Disability contracts that are typically one year in duration but for which the associated benefits could continue to be paid to individuals until age 65 or 70.

560. A policy/product may actually include coverage belonging to several of the above benefit categories. For instance, a policy may provide:

a) Regular payments in cases of short-term (temporary) disability

b) Regular payments in cases of long-term disability

c) A lump sum in cases of critical illness

561. Each of the different components of such a policy is subject to the relevant shock. However, if it is not feasible for the individual stresses to be applied to each component of the policy, the stress applied to a given policy should be based on the dominant component of that policy.

13.3.4.3 Input data required

562. Input data required are:

a) The base NAV, i.e. value of assets less insurance liabilities before applying the prescribed shock, net of reinsurance

b) The NAV after applying the prescribed shock, net of reinsurance, and before management actions

c) Effects of the management actions on NAV after applying prescribed shocks

d) Risk exposure amounts for each benefit category and original contract duration segment

13.3.4.4 Output data

563. The following output will be automatically calculated by the Template:

a) $Morbidity/Disability\ Risk\ Charge^{mgmt}$ = Morbidity/Disability Risk charge after management actions

b) $Morbidity/Disability\ Risk\ Charge$ = Morbidity/Disability Risk charge before management actions

c) $$Morbidity/Disability\ Risk\ Charge^{mgmt} = \sum_{i,j} Category_{ij}\ Risk\ Charge^{mgmt}$$
$$i = 1, 2, 3, 4$$
$$j = Short, Long$$

d) $$Morbidity/Diability\ Risk\ Charge = \sum_{i,j} Category_{ij}\ Risk\ Charge$$
$$i = 1, 2, 3, 4$$
$$j = Short, Long$$

e) $$Category_{4,j}\ Risk\ Charge = MAX(Inception\ Rate\ Risk\ Charge_{j,}\ Recovery\ Rate\ Risk\ Charge_{j})$$
$$j = Short, Long$$

564. If applying management actions per category is not feasible, Volunteer Groups can apply management actions on an overall basis.

13.3.4.5 Calculation

565. The risk charge per benefit category and contract term is calculated as:

$$Category_{i,j} Risk\ Charge = \Delta NAV \mid shock$$

where:

$\Delta NAV \mid shock$ = change in net asset value after applying the prescribed shocks, net of reinsurance and before management actions.

a) For benefit categories i = 1, 2 and 3:

Shock = Instantaneous increase of x_j% in 'inception rate,'

j = Short-term, Long-term with x_j as shown in the table below.

The shock is meant to capture the total morbidity/disability risk for categories 1-3. There are two applications of this 'inception rate' shock:

1. For benefits in categories 1-3 where claim costs are explicitly modelled using inception rates and/or recovery rates, the shock is only applied to inception rates. If only recovery rates are modelled, the shock is applied as a decrease in recovery rates.

2. For other benefits in categories 1-3, which do not explicitly have inception rates and/or recovery rates, the shock to "inception rate" should be interpreted as a shock to the medical claim payments amount.

b) The Category 4 risk charge is calculated for both contract term segments as the maximum of (Inception Rate risk charge, Recovery Rate risk charge), where:

i. The Inception Rate risk charge is calculated as:

$$Inception\ Rate\ Risk\ Charge = \Delta NAV \mid shock$$

where: $\Delta NAV \mid shock$ = change in net asset value after applying the prescribed shocks, net of reinsurance and before management actions.

$shock$= increase in the inception rate used to calculate the current estimate as shown in the table below

ii. The Recovery Rate risk charge is calculated as:

$$Recovery\ Rate\ Risk\ Charge = \Delta NAV \mid shock$$

where:

$\Delta NAV \mid shock$ = change in net asset value after applying the prescribed shocks, net of reinsurance and before management actions.

$shock$ = decrease in the recovery rate of 20% (same shock for both contract durations – short and long)

Table 23. Morbidity/Disability risk shocks

Category (i)	Short-term	Long-term
1	20%	8%
2	25%	20%
3	20%	12%
4	inception rate shock = 25%, recovery rate shock=20%	inception rate shock = 20%, recovery rate shock = 20%

566. The individual risk charges should first be calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

567. Volunteer Groups should then determine the change in NAV, taking into account realistic management actions, e.g. the Volunteer Group is able to change its assumptions in future bonus rates in response to the scenario.

13.3.5 Lapse risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

568. Lapse risk is the risk of adverse change in the value of qualifying capital resources due to unexpected changes in the level and trend of exercise rates of policyholder options. The risk charge takes into account all legal or contractual options that can change the value of future cash flows. This includes options to partially or fully terminate, surrender, renew, extend, reduce or increase insurance coverage as well as the reduction or suspension of premium payments and changes in take up rates of options such as annuitisation options. This risk is applicable only to life business and similar to life health business.

569. The Technical Specifications for Lapse risk apply both to the MAV and GAAP Plus valuation approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Lapse risk calculation is fundamentally the same for both approaches.

Geographical Segmentation

570. Volunteer Groups should provide data by the following geographical groupings:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

Input data required

571. For the Level and Trend component, the input data required are:

a) The base NAV, i.e. the value of assets less insurance liabilities before applying the prescribed upward or downward shocks (“base NAV”), net of reinsurance

b) The NAV after applying the prescribed upward or downward shocks ("Post Shock NAV"), net of reinsurance before management actions

c) Effects of the management actions on Post Shock NAV, net of reinsurance

572. For the Mass Lapse component, the input data required are:

a) The base NAV before applying the prescribed mass lapse shock ("base NAV"), net of reinsurance

b) The NAV after applying the prescribed mass lapse shock ("Post Shock NAV"), net of reinsurance before management actions

c) Effects of the management actions on Post Shock NAV, net of reinsurance

573. Estimates may be provided on a best efforts basis if Volunteer Groups are unable to provide exact figures due to system constraints. If estimates are provided, please provide details on material assumptions or simplifications used in the Questionnaire.

574. In the Questionnaire, Volunteer Groups should provide a brief description of the management actions taken for both Level and Trend component, and Mass Lapse component as well as the basis for such actions.

Output data

575. The following output will be automatically calculated in the Template:

a) $Lapse\ Risk\ Charge$ = Lapse risk charge before management actions

b) $Lapse\ Risk\ Charge^{mgmt}$ = MAX($Lapse\ Risk\ Charge_{level}^{mgmt}$, $Lapse\ Risk\ Charge_{mass}^{mgmt}$)

c) $Lapse\ Risk\ Charge_{level}^{mgmt}$ = Lapse risk charge for Level and Trend component after management action

d) $Lapse\ Risk\ Charge_{mass}^{mgmt}$ = Lapse risk charge for Mass Lapse component after management action

Calculation

Level and Trend Component

576. The Lapse risk charge for the Level and Trend component is calculated as:

$$Lapse\ Risk\ Charge_{level}^{mgmt} = MAX\ (Lapse\ Risk\ Charge_{up}^{mgmt}, Lapse\ Risk\ Charge_{down}^{mgmt}\ )$$

Where:

$$Lapse\ Risk\ Charge_{up}^{mgmt} = Lapse\ Risk\ Charge_{up}\ after\ management\ actions$$

$$Lapse\ Risk\ Charge_{down}^{mgmt} = Lapse\ Risk\ Charge_{down}\ after\ managment\ actions$$

$$Lapse\ Risk\ Charge_{up} = \Delta NAV\ |shock_{up}$$

$$Lapse\ Risk\ Charge_{down} = \Delta NAV\ |shock_{down}$$

$\Delta NAV\ |\ shock =$ *Change in net asset value after applying the prescribed shocks, net of reinsurance and before management actions.*

$shock_{up} =$ *Increase of 40% in the assumed option take-up rates in all future years for all homogeneous groups adversely affected by such risk. Options that allow for a reduction in insurance coverage (e.g. options to partially or fully terminate cover) will be affected by the increase in take-up rates. Where an option allows for an increase in insurance cover (e.g. extension of cover), the 40% increase should be applied to the rate that would apply if the option is not taken up (i.e. not exercised). The resulting shocked lapse rate should not exceed 100%, i.e.* $MIN[100\%, (1 + 40\%) \times base\ option\ take\ up\ rate\ assumptions]$

$shock_{down} =$ *Decrease of 40% in the assumed option take-up rates in all future years for all homogeneous groups adversely affected by such risk. Options that allow for a reduction in insurance coverage (e.g. options to partially or fully terminate cover) will be affected by the decrease in take-up rates. Where an option allows for increase in insurance cover (e.g. extension of cover), the 40% reduction should be applied to the rate that would apply if the option is not taken up (i.e. not exercised). Resulting shocked lapse rate should be floored at 0%, i.e.* $MAX[0\%, (1 - 40\%) \times base\ option\ take\ up\ rate\ assumptions]$

577. For each geographical segment, $Lapse\ Risk\ Charge_{level}^{mgmt}$ should first be determined for each homogeneous risk group[43] before aggregating across all homogeneous risk groups in the same geographical segment.

[43] Please refer to Section 13.3.1 on Grouping of Policies for details on how grouping should be done.

578. $Lapse\ Risk\ Charge_{up}$ and $Lapse\ Risk\ Charge_{down}$ should first be calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

579. Volunteer Groups should then determine the change in NAV (net of reinsurance and not including changes in the margin over current estimates), taking into account realistic management actions e.g. the Volunteer Group is able to change its assumptions in future bonus rates in response to the scenario. These will give $Lapse\ Risk\ Charge_{up}^{mgmt}$ and $Lapse\ Risk\ Charge_{down}^{mgmt}$.

Example for Level and Trend component

The following example illustrates how results should be aggregated in a given Region A
Assuming that there are only 2 homogeneous groups for Region A

		Base NAV				
		Assets (a)	PV Benefits (b)	PV Expenses (c)	PV Premiums (d)	Current Estimate (e)=(b)+(c)-(d)
Homogenous Group 1	Base	100	200	20	150	70
Homogenous Group 2	Base	80	100	10	50	60
Total		180	300	30	200	130

Base NAV for Region A=(100-70)+(80-60)=50

		Post Shock NAV (net of Reinsurance and before Management Actions)				
		Assets (a)	PV Benefits (b)	PV Expenses (c)	PV Premiums (d)	Current Estimate (e)=(b)+(c)-(d)
Homogenous Group 1	Upward Shock	100	150	10	100	60
	Downward Shock	100	220	30	160	90
Homogenous Group 2	Upward Shock	60	80	10	40	50
	Downward Shock	80	110	20	70	60

Assuming no effect of management actions

		Post Shock NAV (net of Reinsurance and after Management Actions)				
		Assets	PV Benefits	PV Expenses	PV Premiums	Current Estimate
Homogenous Group 1	Upward Shock	100	150	10	100	60
	Downward Shock	100	220	30	160	90
Homogenous Group 2	Upward Shock	60	80	10	40	50
	Downward Shock	80	110	20	70	60

Post shock NAV for Group 1 = Min(100-60,100-90)=10 (downward shock resulted in larger drop in NAV)
Post shock NAV for Group 2 = Min(60-50, 80-60)=10 (upward shock resulted in a larger drop in NAV)

Reported in Template for Region A

Lapse risk (Level and Trend component)

		Base NAV Net of Reinsurance	Post Shock NAV (Net of Reinsurance)(1)	Effect of management actions	Change in NAV after management actions	Change in NAV before management actions
Region A		50	20	0	30	30

Mass Lapse Component

580. The lapse risk charge for the Mass Lapse component is calculated as:

$$Lapse\ Risk\ Charge_{mass}^{mgmt} = Lapse\ Risk\ Charge_{mass}\ after\ management\ actions$$

$$Lapse\ Risk\ Charge_{mass} = \Delta NAV \mid shock$$

Where;

$\Delta NAV \mid shock$ = Change in net asset value after applying the prescribed shocks, net of reinsurance and before management actions.

$shock$ = immediate surrender of 30% of homogeneous risk groups of retail policies and an immediate surrender of 50% of homogeneous risk groups of non-retail policies.

581. For each geographical segment, the Mass Lapse component should first be determined for each homogeneous risk group before aggregating across all homogeneous risk groups in the same geographical segment. The Mass Lapse component for each homogeneous risk group is subject to a floor of zero, i.e. should not be negative.

582. $Lapse\ Risk\ Charge_{mass}$ should first be calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

583. Volunteer Groups should then determine the change in net asset value (net of reinsurance), taking into account realistic management actions, e.g. the Volunteer Group is able to change its assumptions in future bonus rates in response to the scenario; this will give $Lapse\ Risk\ Charge_{mass}^{mgmt}$.

584. Both the Level and Trend component as well as the Mass Lapse component are applicable to products with dynamic lapse function[44] such as variable annuities and universal life products. The Level and Trend component shock is to be applied to the base rate of the dynamic lapse function.

[44] A dynamic lapse function typically varies the lapse rate used in the calculation of insurance liabilities depending on the difference between the return the insurer is providing on its policies and the returns provided by competitors.

13.3.6 Expense risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

585. The Expense risk charge covers both unit expense risk and expense inflation risk. Unit Expense risk is the risk of adverse change in the value of qualifying capital resources due to unexpected changes in the level of expenses incorporated within the insurance liabilities. Such expenses would include administrative expenses and overheads, management expenses and acquisition expenses excluding commissions expected to be incurred in future.

586. Expense inflation risk is the risk of expenses inflating at a higher rate than assumed in the calculation of insurance liabilities due to adverse changes in factors relating specifically to the insurance sector. This risk is applicable only to life business and similar to life health business.

587. The Technical Specifications for Expense risk apply both to the MAV and GAAP Plus valuation approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Expense risk calculation is fundamentally the same for both approaches.

Geographical Segmentation

588. Volunteer Groups should provide data by the following geographical groupings:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

Input data required

589. Volunteer Groups should provide the following input data:

a) The base NAV, i.e. the value of assets less insurance liabilities before applying the prescribed shock (“base NAV”), net of reinsurance

b) The base NAV after applying the prescribed shock ("Post Shock NAV"), net of reinsurance before management actions

c) Effects of the management actions on Post Shock NAV, net of reinsurance

d) Change in NAV net of reinsurance and after management actions for both the unit expense component and expense inflation component

590. Estimates may be provided on a best-efforts basis if the Volunteer Group is unable to provide exact figures due to system constraints. If estimates are provided, please provide material assumptions or simplifications used in the Questionnaire.

591. In the Questionnaire, Volunteer Groups should provide a brief description of the management actions taken for each region for both the unit expense component and expense inflation component as well as the basis for such actions.

Output data

592. The following output will be automatically calculated in the Template:

a) $Expense\ Risk\ Charge$= expense risk charge before management actions

b) $Expense\ Risk\ Charge^{\ mgmt}$ = expense risk charge after management actions

Calculation

593. The expense risk charge is calculated as:

$$Expense\ Risk\ Charge = \Delta NAV \mid shock$$

Where:

$\Delta NAV \mid shock$ = Change in the net asset value after applying the prescribed shock

$shock$ = Increase of x% in unit expense assumptions, i.e. $(1 + x\%) \times base\ unit\ expense\ assumptions$; and an additive increase of y% per annum in expense inflation, with x and y as follows:

Table 24. Expense risk shocks

	x% ***(unit expense)***	***y%*** ***(expense inflation)***
EEA and Switzerland	6%	1%
USA and Canada	6%	1%
Japan	6%	1%
Other developed markets	8%	Year 1 – 10: 2%; Year 11 onwards: 1%
China and Other Emerging Markets	8%	Year 1 – 10: 3%; Year 11 – 20: 2%; Year 21 onwards: 1%

594. The shocks to the unit expense and expense inflation assumptions should be applied simultaneously.

595. The Expense risk charge should be first calculated under the condition that the scenario does not change the value of future discretionary benefits in the insurance liabilities.

596. Volunteer Groups should then determine the change in NAV, taking into account realistic management actions, e.g. the Volunteer Group is able to change its assumptions in future bonus rates in response to the scenario; this will give $Expense\ Risk\ Charge^{\ mgmt}$.

13.3.7 Premium risk and Claims Reserve risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

597. The Technical Specifications for Premium risk and Claims Reserve risk apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Premium risk and Claims Reserve risk calculation is fundamentally the same for both approaches.

598. Premium risk and Claims Reserve risk are captured by a factor-based approach, with a factor applied to segments within defined regions. The claims reserve factors also include the effects of 'latent liability' risk.

13.3.7.1 Geographical segmentation

599. All data items in the worksheets will be aggregated into the following geographical segments:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

600. See Section 13.2.3 for further details on the definitions of these geographical segments.

13.3.7.2 Segments/lines of business

601. The tables should be completed on the basis of location of risk. This is important to ensure that the appropriate factor is applied. Where this information is not available, the location of the legal entity underwriting the business may be used as a proxy and information on this should be provided in the Questionnaire.

602. Each of the first four regions (EEA and Switzerland, USA and Canada, China and Japan) is segmented into lines of business based on statutory reporting in those regions.

603. Additional countries (Australia and New Zealand, Hong Kong SAR, Korea, Singapore, Chinese Taipei) are segmented into lines of business based on statutory reporting. For countries not listed, the segmentation in the following paragraph should be used. For 2018 Field Testing, a short tail medical expenses segment has been added for Australia. A placeholder risk factor is being used, pending future calibration work.

604. Exposures to risks in countries not listed should be reported as part of 'other developed' or 'other emerging markets', using the following segmentation.

a) Motor

b) Property damage

c) Accident, protection and health (APH)

d) Short tail medical expenses

e) Other short tail

f) Marine, aviation, transport (MAT)

g) Workers' compensation

h) Public liability

i) Product liability

j) Professional indemnity

k) Other liability and other long tail

l) Non-proportional motor, property damage, APH and MAT

m) Catastrophe reinsurance

n) Non-proportional liability

o) Non-proportional professional indemnity

p) Mortgage insurance

q) Commercial credit insurance

r) Other non-traditional

605. Please note that for the purpose of 2018 Field Testing, several segments have been merged together:

- the 2018 Field Testing segment *Other liability and other long tail* is comprised of the following 2017 Field Testing segments: *Other liability*, *Other medium tail, Other long tail*;

- the 2018 Field Testing segment *Non-proportional motor, property damage, APH and MAT* is comprised of the 2017 Field Testing segments *Non-proportional motor, property damage and APH*, and *Non-proportional MAT*; and

- the 2018 Field Testing segment *Non-proportional liability* is comprised of the following 2017 Field Testing segments: *Non-proportional public liability*, *Non-proportional product liability* and *Non-proportional other liability*.

606. Furthermore, a short tail medical expenses segment has been added for 'other developed' and 'other emerging markets'. A placeholder risk factor is being used, pending future calibration work.

607. The IAIS has provided definitions of ICS segments at the end of this section. Each segment has been assigned:

a) an ICS category: a high level grouping of the type of business (property-like, liability-like, motor-like, other, mortgage and credit); and

b) a risk factor for the purpose of calculating the risk charge. Each bucket has been assigned a corresponding risk factor that is based on the associated risk of that segment, and the factors aim to increase the exposure measures to a 99.5% VaR. The Premium risk factors for 2018 Field Testing are the same as those used in 2017 Field Testing. Inclusion of latent liability led to the update of some Claims Reserve risk factors (see below). Latent liability was previously included with the Catastrophe risk component of the ICS.

13.3.7.3 Latent liability risk

608. The purpose of this charge is to capture risk on liability exposures that is not adequately captured by historical claims experience. Latent liability exposure can develop over many years and can also affect written business that has already been fully earned. Levels of the factors have been calibrated so that the 2018 design produces an overall risk charge that is similar to that from 2017 Field Testing, where latent liability was part of Catastrophe risk. For comparison purposes, the Claims reserve risk will calculated both with and without Latent Liability risk. However, the ICS capital requirement will be calculated using Claims reserve risk "with Latent Liability". As defined in 2017 Field Testing, a latent liability factor is determined by mapping to these categories:

- *line of business*: product liability; general commercial liability, employer's liability/workers' compensation;

- *region*: "EEA and Switzerland", "USA and Canada", "China", "Japan", "Other developed markets", "Other emerging markets"; and

- *type of business*: direct and proportional, non-proportional.

609. As such, the following segments' factors have been updated to include latent liability risk:

a) *EEA and Switzerland*: General liability - third party liability, non-proportional casualty reinsurance, workers' compensation

b) *Canada*: Liability

c) *U.S.*: Workers' compensation, commercial multi-peril, other liability–occurrence, products liability, reinsurance – non-proportional assumed liability

d) *China*: Liability

e) *Japan*: General liability, workers' compensation

f) *Australia & New Zealand:* Public and product liability, employer's liability, public and product liability (non-proportional reinsurance), employer's liability (non-proportional reinsurance)

g) *Hong Kong:* General liability

h) *Korea:* Workers accident

i) *Singapore:* Work injury compensation, public liability, others-liability

j) *Chinese Taipei:* Liability – public, employer, product, etc.

k) *Other developed and emerging markets*: Workers' compensation, public liability, product liability, other liability and other long tail, non-proportional liability

13.3.7.4 Input data required

610. Volunteer Groups should report the following amounts for each relevant region and segment within that region:

611. Premium Risk

a) Net Earned Premium – most recent financial year ("FY") – Report the net earned premium as defined under statutory reporting in that country/region for the latest financial year (e.g. from 1 January 2017 to 31 December 2017 for end of December reporting date). The amount should be net of ceded reinsurance.

b) Net Premium to be earned ("FY +1") – Report the expected premium to be earned in the next financial year (e.g. from 1 January 2018 to 31 December 2018 for end of December reporting date). This figure should be consistent with the business already written and must include expected new business. It should be net of ceded reinsurance subject to Section 13.2.2 on the recognition of risk mitigation.

c) Net Written Premium – most recent financial year ("FY") – Report the net written premium as defined under statutory reporting in that country/region for the latest financial year (e.g. from 1 January 2017 to 31 December 2017 for end of December reporting date). The amount should be net of ceded reinsurance.

d) The Premium risk charge for the line of business is then calculated as the relevant risk factor multiplied by the greater of net earned premium and net premium to be earned. However when net earned premium is not reported by the Volunteer Group, net written premium will be used as a proxy.

612. Claims Reserve Risk

a) Net Current Estimates for Claims (discounted) – most recent financial year ("FY") – Report the discounted net current estimate for claims as at the end of the most recent financial year (e.g. from 1 January 2017 to 31 December 2017 for end of December reporting date). For more information on the determination of current estimates, refer to Section 6.3.

b) Net Current Estimates for Claims (undiscounted) – ("FY(undisc)") – Report the net current estimate for claims as at the end of the most recent financial year (e.g. from 1 January 2017 to 31 December 2017 for end of December reporting date) on an undiscounted basis. For more information on the determination of current estimates, refer to Section 6.3.

c) The Claims Reserve risk charge for a segment is calculated as the relevant risk factor multiplied by the net current estimate (discounted).

13.3.7.5 Aggregation

613. Aggregation is automated within the Template. Volunteer Groups do not have to enter any data with respect to the aggregation.

614. For the purposes of Field Testing, risk charges for each ICS segment in each region are not simply added together, thus recognising that there is diversification across lines of business and regions.

615. The first step of aggregation is to combine each ICS segment's Premium risk and Claims Reserve risk charges, applying a 25% correlation between the Premium and Claims Reserve risk charges (with the exception of mortgage and credit as outlined in the paragraph below). The second step of aggregation is within region, where a correlation matrix is applied to the sum of each of the four IAIS categories (applying a 50% correlation between ICS categories). The third step of aggregation is across regions, where a correlation matrix is applied to each region's total risk charge (applying a 25% correlation between regions).

616. Mortgage business and credit business are added across all regions and then aggregated with Real Estate risk and Credit risk, respectively.

13.3.7.6 Data collection

617. In addition, during 2018 Field Testing there will be an assessment of the assumptions and/or models that have been used in the development of Premium risk factors, such as assumptions about the level of future loss ratios or profitability of future business. In particular, there will be consideration of a "profitability adjustment" to Premium risk, i.e. an adjustment to risk charges whose purpose would be to deal with non-life valuation assumptions in the calibration. To help consider this issue, the following data are requested:

- At the group level: Written Premium, Earned Premium, Incurred Loss+LAE, Acquisition Expense, Underwriting & Other Expenses both gross and net of reinsurance. This should be done for the past five financial years (FY – 4 to FY) and projected for the coming financial year (FY+1).
    - Figures for past financial years should be based on actual results. Projected figures should align with the projections used for the Non-Life Premium risk exposures. Figures are for analysis purposes and so can be done using local accounting rules. However, effort should made to use a similar categorisation of premium/loss/expense as in the breakdown of the 'Premium Liability' on the ICS Balance Sheet.
    - Past projected loss ratios correspond to the forecast of the loss ratios in the past years. For instance, the past projected loss ratio of year FY-4 is the forecast of the loss ratio in year FY-5 for the year FY-4. Submission of loss ratios for the past five financial years (FY – 4 to FY) is voluntary.
- At the segment level: Unearned Premium Reserve and the Current Estimate of the Premium Liability for each segment.
    - For an individual policy, the Unearned Premium Reserve is the difference between written and earned premium.

13.3.7.7 Definition of ICS segments and risk charges

618. The following table provides the definitions of ICS segments as well as the risk charges for Premium and Claims Reserve risks.

619. The factors below reflect the results of the calibration exercise conducted since 2016 Field Testing. While this effort resulted in updated factors for a number of segments, the calibration process is on-going and there may be further changes in the future. In particular, calibration work will be performed next year to refine the placeholder risk factors for the short tail medical expenses segment of the following jurisdictions: Australia, other developed markets, and other emerging markets.

Table 25. Definitions for non-life lines of business segmentation

ICS Segment	Definition	Premium risk factor	Claims Reserve risk factor including latent liability	Claims Reserve risk factor excluding latent liability
EEA and Switzerland/Medical expense insurance	Insurance obligation that covers the provision or financial compensation for medical treatment or care including preventive or curative medical treatment or care due to illness, accident, disability or infirmity.	15%	10%	10%
EEA and Switzerland/Income protection	Insurance obligation that covers the financial compensation arising from illness, accident, disability or infirmity (excluding medical expense insurance).	25%	35%	35%
EEA and Switzerland/Workers' Compensation	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. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	25%	27%	25%
EEA and Switzerland/Motor vehicle liability - Motor third party liability	Insurance obligations which cover all liabilities arising out of the use of motor vehicles operating on land (including carrier's liability).	20%	15%	15%
EEA and Switzerland/Motor, other classes	Insurance obligations which cover all damage to or loss of land vehicles (including railway rolling stock).	20%	15%	15%
EEA and Switzerland/Marine, aviation and transport	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).	35%	25%	25%
EEA and Switzerland/Fire and other damage	Insurance obligations which cover all damage to or loss of property (other than those included in motor (other) and marine/aviation/transport) due to fire, explosion, natural forces including storm, hail or frost, nuclear energy, land subsidence and any event such as theft.	17.5%	17.5%	17.5%

EEA and Switzerland/General liability - third party liability	Insurance obligations which cover all liabilities other than those in motor vehicle liability and marine, aviation and transport. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	27%	25%
EEA and Switzerland/Credit and suretyship	Insurance obligations which cover insolvency, export credit, instalment credit, mortgages, agricultural credit and direct and indirect suretyship.	35%	50%	50%
EEA and Switzerland/Legal expenses	Insurance obligations which cover legal expenses and cost of litigation.	15%	40%	40%
EEA and Switzerland/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.	15%	50%	50%
EEA and Switzerland/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 above.	30%	35%	35%
EEA and Switzerland/Non-proportional health reinsurance	Reinsurance on a non-proportional basis of health insurance classes.	50%	45%	45%
EEA and Switzerland/Non-Proportional Casualty reinsurance	Reinsurance on a non-proportional basis of casualty classes (motor vehicle liability and general liability). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	55%	45%	40%
EEA and Switzerland/Non-proportional marine, aviation and transport reinsurance	Reinsurance on a non-proportional basis of marine, aviation and transport.	55%	40%	40%
EEA and Switzerland/Non-Proportional property reinsurance	Reinsurance on a non-proportional basis of property classes (other motor, fire, credit/suretyship, legal expenses and assistance)	45%	40%	40%

Canada/Property - personal	Insurance against the loss of, or damage to, property, and includes insurance against loss caused by forgery. It includes such classifications as habitational property and multi-peril policies, including residential contents of buildings such as apartments, rooming houses, motels, manufacturing and mercantile buildings and the liability exposure of personal package policies issued with indivisible premiums. This line would include fire policies, householder contents and homeowner personal risks, residential burglary and theft and special residential glass coverage. Casualty coverage such as personal liability for bodily injury would not be included in this category.	35%	25%	25%
Canada/Home Warranty	Refers to a contract of insurance issued by a warranty provider covering defects in the construction of a new home and consequential losses or costs incurred by the owner.	30%	25%	25%
Canada/Product Warranty	Insurance not incidental to any other class of insurance against loss of, or damage to, personal property, other than a motor vehicle, under which an insurer undertakes to pay the costs of repairing or replacing the personal property.	30%	25%	25%
Canada/Property - commercial	Insurance against the loss of, or damage to, property, and includes insurance against loss caused by forgery and all commercial property and multi-peril policies, but excludes all separate classes of insurance as defined by regulators	30%	30%	30%
Canada/Aircraft	Insurance against: 1. liability arising from bodily injury to, or the death of, a person, or the loss of, or damage to, property, in each case caused by an aircraft or the use of an aircraft; or 2. the loss of, the loss of use of, or damage to, an aircraft.	45%	35%	35%
Canada/Automobile - liability/personal accident	Insurance: 1. against liability arising from bodily injury to, or the death of, a person, or the loss of, or damage to, property, in each case caused by an automobile or the use or operation of an automobile; or 2. that falls within clause (i) or (ii) of the definition of accident and sickness insurance, if the accident is caused by an automobile or the use or operation of an automobile, whether or not liability exists in respect of the accident, and the policy includes insurance against liability	35%	20%	20%

	arising from bodily injury to, or the death of, a person caused by an automobile or the use or operation of an automobile.			
Canada/Automobile - other	Insurance against the loss of, the loss of use of, or damage to, an automobile.	35%	20%	20%
Canada/Boiler and Machinery	Insurance against: 1. liability arising from bodily injury to, or the death of, a person, or the loss of, or damage to, property, or against the loss of, or damage to, property, in each case caused by the explosion or rupture of, or accident to, pressure vessels of any kind or pipes, engines and machinery connected to or operated by those pressure vessels; or 2. liability arising from bodily injury to, or the death of, a person, or the loss of, or damage to, property, or against the loss of, or damage to, property, in each case caused by a breakdown of machinery.	30%	25%	25%
Canada/Equipment Warranty	The sub-class of boiler and machinery insurance that covers loss of or damage to a motor vehicle or to equipment arising from its mechanical failure, but does not include automobile insurance or insurance incidental to automobile insurance.	30%	25%	25%
Canada/Credit Insurance	Insurance against loss to a person who has granted credit if the loss is the result of the insolvency or default of the person to whom the credit was granted.	45%	30%	30%
Canada/Credit Protection	Insurance under which an insurer undertakes to pay off credit balances or debts of an individual, in whole or in part, in the event of an impairment or potential impairment in the individual's income or ability to earn an income.	45%	30%	30%
Canada/Fidelity	Insurance against loss caused by the theft, the abuse of trust or the unfaithful performance of duties by a person in a position of trust; and insurance under which an insurer undertakes to guarantee the proper fulfilment of the duties of an office.	45%	30%	30%
Canada/Hail	Insurance against the loss of, or damage to, crops in the field caused by hail.	35%	30%	30%
Canada/Legal Expenses	Insurance against the costs incurred by a person or persons for legal services specified in the policy, including any retainer and fees incurred for the services, and other costs incurred in respect of the provision of the services.	45%	40%	40%

Canada/Liability	Insurance, other than insurance that falls within another class of insurance: 1. against liability arising from bodily injury to a person or the disability or death of a person, including an employee; 2. against liability arising from the loss of, or damage to, property; or 3. if the policy includes the insurance described in sub-clause (i), against expenses arising from bodily injury to a person other than the insured or a member of the insured's family, whether or not liability exists. Includes general liability, cyber liability, directors & liability, excess liability, professional liability, umbrella liability and pollution liability. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	50%	38%	35%
Canada/Mortgage	Insurance against loss caused by default on the part of a borrower under a loan secured by a mortgage or charge on, or other security interest in, real property.	45%	30%	30%
Canada/Surety	Insurance under which an insurer undertakes to guarantee the due performance of a contract or undertaking or the payment of a penalty or indemnity for any default.	45%	30%	30%
Canada/Title	Insurance against loss or damage caused by: 1. the existence of a mortgage, charge, lien, encumbrance, servitude or any other restriction on real property; 2. the existence of a mortgage, charge, lien, pledge, encumbrance or any other restriction on personal property; 3. a defect in any document that evidences the creation of any restriction referred to in sub-clause (i) or (ii); 4. a defect in the title to property; or 5. any other matter affecting the title to property or the right to the use and enjoyment of property.	35%	30%	30%
Canada/Marine	Insurance against liability arising from: 1. bodily injury to, or the death of, a person; or 2. the loss of, or damage to, property; or 3. the loss of, or damage to, property, occurred during a voyage or marine adventure at sea or on an inland waterway, or during a delay or a transit other than by water that is incidental to a voyage or marine adventure at sea or on an inland waterway.	45%	35%	35%

Canada/ Accident and Sickness		45%	30%	30%
Canada/Other Approved Products	Insurance against risks that do not fall within another class of insurance.	45%	35%	35%
U.S./ Auto physical damage	Any motor vehicle insurance coverage (including collision, vandalism, fire and theft) that insures against material damage to an insured's vehicle.	12.5%	10%	10%
U.S./ Homeowners/ Farm owners	Homeowners: coverage for personal property and/or structure with broad personal liability coverage, for dwelling, appurtenant structures, unscheduled personal property and additional living expenses. Farm owners: similar, for farming and ranching risks; property + liability coverages for personal and business losses, on farm dwellings and contents (e.g. mobile equipment and livestock), barns, stables, other farm structures and farm inland marine.	30%	15%	15%
U.S./ Special property	Various, including: fire; allied lines; inland marine; earthquake; burglary and theft. Fire insurance includes the loss to real or personal property from damage caused by the peril of fire or lightning, including business interruption, loss of rents, etc. Allied lines are coverages generally written with property insurance, e.g., glass; tornado; windstorm and hail; sprinkler and water damage; explosion, riot, and civil commotion; growing crops; flood; rain; and damage from aircraft and vehicle, etc. Inland marine is coverage for property that may be in transit, held by a bailee, at a fixed location, a movable good that is often at different locations (e.g., off road construction equipment), or scheduled property (e.g., Homeowners Personal Floater) including items such as live animals and property with antique or collector's value. This line also includes instrumentalities of transportation and communication, such as bridges, tunnels piers, wharves, docks, pipelines, power and phone lines, and radio and television towers.	25%	17.5%	17.5%
U.S./ Private passenger auto liability/ medical	Coverage for financial loss resulting from legal liability for motor vehicle related injuries (bodily injury and medical payments) or damage to the property of others caused by accidents arising out of the ownership, maintenance or use of a motor vehicle. Does not include coverage for vehicles used in a commercial business.	15%	15%	15%

U.S./ Commercial auto/ truck liability/ medical	Similar to private passenger auto liability/medical, except for commercial vehicles.	15%	15%	15%
U.S./ Workers' compensation	Insurance that covers an employer's liability for injuries, disability or death to persons in their employment, without regard to fault, as prescribed by state or Federal workers' compensation laws and other statutes. Includes employer's liability coverage against the common law liability for injuries to employees (as distinguished from the liability imposed by Workers' Compensation Laws). Excludes excess workers' compensation. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	15%	16%	15%
U.S./ Commercial multi-peril	Two or more insurance coverages for a commercial enterprise, including various property and liability risks, that are included in the same policy. Includes multi-peril policies other than farmowners, homeowners and automobile policies. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	30%	26%	25%
U.S./ Medical professional liability -- Occurrence	For a licensed health care provider or health care facility against legal liability resulting from the death or injury of any person due to the insured's misconduct, negligence, or incompetence in rendering professional services. The insurance covers events occurring during the policy coverage period.	40%	45%	45%
U.S./ Medical professional liability – Claims-Made	For a licensed health care provider or health care facility against legal liability resulting from the death or injury of any person due to the insured's misconduct, negligence, or incompetence in rendering professional services. The insurance covers claims presented during the period of coverage.	30%	35%	35%
U.S./Other Liability– Occurrence	Insurance against legal liability resulting from negligence, carelessness, or a failure to act causing property damage or personal injury to others. Typically, coverage includes liability for the following: construction and alteration; contingent; contractual; elevators and escalators; errors and omissions; environmental pollution; excess stop loss, excess over insured or self-insured amounts and umbrella; liquor; personal	17.5%	28%	25%

	injury; premises and operations; completed operations; nonmedical professional, etc. Also includes indemnification coverage provided to self-insured employers on an excess of loss basis (excess workers' compensation). The insurance covers events occurring during the policy coverage period. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.			
U.S./Other Liability – Claims-Made	Same types of coverages as other liability – occurrence above except that the insurance covers claims presented during the period of coverage. The insurable event does not need to occur during the policy period.	15%	20%	20%
U.S./Products liability	Products liability - occurrence: covers events occurring during coverage period. Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product. Products liability - occurrence: covers events occurring during coverage period. Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product. Products liability - occurrence: covers events occurring during coverage period. Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	45%	47%	40%
U.S./Reinsurance – non-proportional assumed property	Non-proportional assumed liability reinsurance in fire allied lines, ocean marine, inland marine, earthquake, group accident and health, credit accident and health, other accident and health, auto physical damage, boiler and machinery,	35%	25%	25%

	glass, burglary and theft and international (of the foregoing).			
U.S./Reinsurance – non-proportional assumed liability	Non-proportional assumed liability reinsurance in farm owners multiple-peril, homeowners' multiple-peril, commercial multiple-peril, medical professional liability, workers' compensation, other liability, products liability, auto liability, aircraft (all perils) and international (of the foregoing). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	45%	39%	30%
U.S./Special liability	Various insurance coverages including ocean marine, aircraft (all perils), and boiler and machinery. Ocean marine is coverage for ocean and inland water transportation exposures; such as goods or cargoes; ships or hulls; earnings; and liability. Aircraft is coverage for aircraft (hull) and their contents; aircraft owner's and aircraft manufacturer's liability to passengers, airports and other third parties. Boiler and machinery is coverage for the failure of boilers, machinery and electrical equipment. Coverage includes the property of the insured, which has been directly damaged by an accident, costs of temporary repairs and expediting expenses and liability for damage to the property of others.	30%	25%	25%
U.S./Mortgage insurance	Mortgage guaranty is indemnification of a lender from loss if a borrower fails to meet required mortgage payments.	45%	30%	30%
U.S./Fidelity/surety	Fidelity is a bond covering an employer's loss resulting from an employee's dishonest act (e.g., loss of cash, securities, or valuables). Surety is a three-party agreement where the insurer agrees to pay a second party or make complete an obligation in response to the default, acts, or omissions of a third party.	35%	40%	40%
U.S./Financial Guaranty	Financial guaranty is a surety bond, insurance policy, or when issued by an insurer, an indemnity contract and any guaranty similar to the foregoing types, under which loss is payable upon proof of occurrence of financial loss to an insured claimant, oblige or indemnitee as a result of failure to perform a financial obligation.	45%	25%	25%

U.S./Other	Coverages not included elsewhere which includes credit coverages, warranty, and, where considered part of property/casualty, accident/health coverages. The Schedule P "International" LOB should be allocated to the region(s) where risk is located, but if this is not possible could be included in this segment.	25%	35%	35%
U.S./Other non-traditional Non-Life insurance	Coverages not included elsewhere that are non-traditional. Note this class is included for consistency in naming with 2015 Field Testing; uncertainty in the definition of NTNI may make it difficult to map business to this segment.	25%	45%	45%
U.S./Reinsurance – non-proportional assumed financial lines	Non-proportional assumed reinsurance in the following lines: mortgage guaranty, financial guaranty, fidelity, surety, credit, and international (in the foregoing).	45%	20%	20%
Japan/Fire	This insurance covers property damage for either commercial or household caused by fire, windstorm, hail, water damage and earthquake	20%	35%	35%
Japan/Hull	This insurance covers damage of vessel.	40%	35%	35%
Japan/Cargo	This insurance covers damage on good and property in transit by vessel.	35%	40%	40%
Japan/Transit	This insurance is called as Inland marine, which covers property being transported by other than vessel or aircraft.	40%	35%	35%
Japan/Personal Accident	This insurance covers loss by accidental bodily injury. Under this insurance, policyholder is reimbursed based on actual losses occurred or receives a fixed benefit due to a certain accident event.	10%	15%	15%
Japan/Automobile	This insurance covers personal injury or automobile damage sustained by the insured and liability to third parties for losses caused by the insured. Please note fleet automobile insurance should be included here.	10%	10%	10%
Japan/Aviation	This insurance covers aircraft, goods or property in transit by aircraft and launch to the space, and liability arising from the loss of or damage to the goods or property in transit or bodily injury or property loss or damage to third parties	50%	45%	45%
Japan/Guarantee Ins.	This insurance covers financial loss caused by the insolvency or payment default of customers to whom credit has been granted	35%	40%	40%
Japan/Machinery	This insurance protects the insured against loss incurred as a result of machinery breakdown.	35%	40%	40%

Japan/General Liability	This insurance covers any legal obligations to pay compensation and costs for bodily injury, property loss or damage to third parties. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	17.5%	27%	25%
Japan/Contractor's All Risks	This insurance is purchased by contractors to cover damage to property under construction.	35%	40%	40%
Japan/Movables All Risks	This insurance covers loss or damage to property other than motor, aircraft and vessel.	17.5%	25%	25%
Japan/Workers' Compensation	This insurance covers no-fault basis compensation payments to employees who sustained bodily injury or occupational disease during or which arises out of the course of their employment, and provides employers with protections against claims which their employees make for bodily injury or occupational disease caused by tort. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	22%	20%
Japan/Misc. Pecuniary Loss	This insurance provides the insured with tailor-made covers for consequential losses that are not covered by any other classes of business.	35%	45%	45%
Japan/Nursing Care Ins.	This Insurance provides benefit to meet specified conditions requiring the insured to be nursed. Under this insurance, policyholder is reimbursed based on actual cost incurred or receives a fixed benefit for nursing care.	35%	45%	45%
Japan/Others	Any other non-life insurance not listed above should be included.	35%	40%	40%
China/Motor	A vehicle insurance that the object of insurance is vehicle itself and related liability to pay compensation.	10%	20%	20%
China/Property, including commercial, personal and engineering	Insurance that the object of insurance is property and related interests.	30%	45%	45%
China/Marine and Special	Insurance that the object of insurance is watercraft and related liability to pay compensation.	25%	45%	45%
China/Liability	Insurance that the object of insurance is assumed liability of the insurant to pay compensation to the third party.	10%	36%	35%

	For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.			
China/Agriculture	Insurance that the object of insurance is the property loss of agriculture caused by disasters.	25%	35%	35%
China/Credit	Insurance that the object of insurance is the economical loss of loaner because of the debtor's incapacity or refusing to pay for the debt.	45%	35%	35%
China/Short-term Accident	A short term accident insurance, the object of insurance is the death or disability of insurant because of accident. The period of insurance is usually no more than one year.	10%	10%	10%
China/Short-term Health	Health insurance that the period of insurance is no more than one year and without guaranteed renewable terms.	10%	10%	10%
China/Short-term Life	A short term life insurance, the object of insurance is the lift of insured. The period of insurance is usually no more than one year.	10%	20%	20%
China/Others	Other insurances.	35%	20%	20%
Australia&NZ/ Householders	This class covers the common Householders policies, including the following classes/risks: contents, personal property, arson and burglary. Public liability normally attaching to these products is to be separated. This class also covers proportional reinsurance of householders business.	30%	20%	20%
Australia&NZ/ Commercial Motor	Motor vehicle insurance (including third party property damage) other than insurance covering vehicles defined below under Domestic Motor. It includes long and medium haul trucks, cranes and special vehicles, and policies covering fleets. This class also covers proportional reinsurance of commercial motor.	25%	20%	20%
Australia&NZ/ Domestic Motor	Motor vehicle insurance (including third party property damage) covering private use motor vehicles including utilities and lorries, motor cycles, private caravans, box and boat trailers, and other vehicles not normally covered by business or commercial policies. This class also covers proportional reinsurance of domestic motor.	25%	20%	20%
Australia&NZ/ Other type A	Other classes of business with similar characteristics to householders and motor This class also covers proportional reinsurance of other type A.	30%	20%	20%

Australia&NZ/ Travel	Insurance against losses associated with travel including loss of baggage and personal effects, losses on flight cancellations and overseas medical costs. This class also covers proportional reinsurance of travel insurance.	35%	25%	25%
Australia&NZ/ Fire and ISR	Includes all policies normally classified as fire (includes sprinkler leakage, subsidence, windstorm, hailstone, crop, arson and loss of profits) and Industrial Special Risk This class also covers proportional reinsurance of fire and industrial special risk.	30%	25%	25%
Australia&NZ/Marine and Aviation	Includes Marine Hull and Marine Liability (including pleasure craft), and Marine Cargo (including sea and inland transit insurance). Also includes Aviation (including aircraft hull and aircraft liability). This class also covers proportional reinsurance of marine and aviation.	35%	25%	25%
Australia&NZ/ Consumer Credit	Insurance to protect a consumer's ability to meet the loan repayments on personal loans and credit card finance in the event of death or loss of income due to injury, illness or unemployment. This class also covers proportional reinsurance of consumer credit.	35%	25%	25%
Australia&NZ/ Other Accident	Includes miscellaneous accident, all risks (baggage, sporting equipment, guns), engineering when not part of Fire & ISR, plate glass when not package, livestock, pluvius and sickness and accident. This class also covers proportional reinsurance of other accident.	35%	25%	25%
Australia&NZ/ Other type B	Other classes of business with similar characteristics to Fire & ISR, marine, aviation, consumer credit and other accident. This class also covers proportional reinsurance of other type B.	35%	25%	25%
Australia&NZ/ Mortgage	Insurance against losses to a lender in the event of borrower default on a loan secured by a mortgage over residential or other property. This class also covers proportional reinsurance of mortgage.	45%	30%	30%
Australia&NZ/ CTP	Compulsory Third Party business. This class also covers proportional reinsurance of CTP.	45%	35%	35%

Australia&NZ/ Public and Product Liability	Public Liability covers legal liability to the public in respect of bodily injury or property damage arising out of the operation of the insured's business. Product Liability includes policies that provide for compensation for loss and/or injury caused by, or as a result of, the use of goods and environmental clean-up caused by pollution spills where not covered by Fire and ISR policies. Includes builders warranty and public liability attaching to householders policies. This class also covers proportional reinsurance of public and product liability. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	45%	31%	30%
Australia&NZ/ Professional Indemnity	PI covers professionals against liability incurred as a result of errors and omissions made in performing professional services that has resulted in economic losses suffered by third parties. Includes Directors' and Officers' Liability insurance plus legal expense insurance. Cover for legal expenses is generally included in this type of policy. This class also covers proportional reinsurance of professional indemnity.	45%	35%	35%
Australia&NZ/ Employers' Liability	Includes workers' compensation, seaman's compensation and domestic workers' compensation. This class also covers proportional reinsurance of employer's liability. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	45%	36%	35%
Australia&NZ/ Short tail medical expenses	Insurance obligation that covers the provision or financial compensation for medical treatment or care including preventive or curative medical treatment or care due to illness, accident, disability or infirmity usually made during the term of the policy or shortly (typically, up to 1 year) after the coverage period of the insurance has expired.	35%	25%	25%
Australia&NZ/ Other type C	Other classes of business with similar characteristics to mortgage, CTP, and other liability. This class also covers proportional reinsurance of other type C.	45%	35%	35%

Australia&NZ/ Householders - non-prop reins	Non-Proportional reinsurance of householders business (refer definition).	45%	30%	30%
Australia&NZ/ Commercial Motor - non-prop reins	Non-Proportional reinsurance of commercial motor (refer definition).	45%	30%	30%
Australia&NZ/ Domestic Motor - non-prop reins	Non-Proportional reinsurance of domestic motor business (refer definition).	45%	30%	30%
Australia&NZ/ Other non-prop reins type A	Non-Proportional reinsurance of other type A business (refer definition).	45%	30%	30%
Australia&NZ/ Travel - non-prop reins	Non-Proportional reinsurance of travel business (refer definition).	45%	35%	35%
Australia&NZ/ Fire and ISR - non-prop reins	Non-Proportional reinsurance of Fire & ISR business (refer definition).	55%	40%	40%
Australia&NZ/ Marine and Aviation - non-prop reins	Non-Proportional reinsurance of marine and aviation business (refer definition).	55%	40%	40%
Australia&NZ/ Consumer Credit - non-prop reins	Non-Proportional reinsurance of consumer credit business (refer definition).	55%	40%	40%
Australia&NZ/ Other Accident - non-prop reins	Non-Proportional reinsurance of other accident business (refer definition).	55%	40%	40%
Australia&NZ/ Other non-prop reins type B	Non-Proportional reinsurance of other type B business (refer definition).	55%	35%	35%
Australia&NZ/ Mortgage - non-prop reins	Non-Proportional reinsurance of mortgage business (refer definition).	50%	35%	35%
Australia&NZ/ CTP - non-prop reins	Non-Proportional reinsurance of CTP business (refer definition).	55%	40%	40%
Australia&NZ/ Public and Product Liability - non-prop reins	Non-Proportional reinsurance of public and product liability business (refer definition). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	55%	43%	40%
Australia&NZ/ Professional Indemnity - non-prop reins	Non-Proportional reinsurance of professional indemnity business (refer definition).	55%	40%	40%
Australia&NZ/ Employer's Liability - non-prop reins	Non-Proportional reinsurance of employer's liability business (refer definition). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	55%	43%	40%

Australia&NZ/ Other non-prop reins type C	Non-Proportional reinsurance of other type C business (refer definition).	55%	40%	40%
Hong Kong/ Accident and health	Providing fixed pecuniary benefits or benefits in the nature of indemnity (or a combination of both) against risks of the persons insured 1. Sustaining injury or dying as a result of accident; or 2.Becoming incapacitated in consequence of disease; or 3. Sickness.	30%	25%	25%
Hong Kong/Motor vehicle, damage and liability	This includes 1. Insurance against the risk of the person sustaining injury or dying as a result of travelling as passenger on motor vehicle; 2. Insurance upon loss of or damage to vehicles used on land, including motor vehicles but excluding railway rolling stock; or 3. Insurance against damage arising out of or in connection with the use of motor vehicles on land, including third-party risks and carrier's liability.	25%	20%	20%
Hong Kong/Aircraft, damage and liability	This includes 1. Insurance against the risk of the person sustaining injury or dying as a result of travelling as passenger on aircraft; 2. Insurance upon aircraft or upon the machinery, tackle, furniture or equipment of aircraft; or 3. Insurance against damage arising out of or in connection with the use of aircraft, including third-party risks and carrier's liability.	45%	40%	40%
Hong Kong/Ships, damage and liability	This includes 1. Insurance against the risk of the person sustaining injury or dying as a result of travelling as passenger on marine transport; 2. Insurance upon vessels used on the sea or on inland water, or upon the machinery, tackle, furniture or equipment of such vessels; or 3. Insurance against damage arising out of or in connection with the use of vessels on the sea or on inland water, including third-party risks and carrier's liability.	45%	40%	40%
Hong Kong/Goods in transit	Insurance upon loss of or damage to merchandise, baggage and all other goods in transit, irrespective of the form of transport (i.e. include goods in transit via motor, aircraft, ships and other transport).	45%	40%	40%
Hong Kong/Fire and Property damage	This includes insurance against loss of or damage to property (other than property to which motor, aircraft, ships or goods in transit relates) due to 1. Fire, explosion, storm, natural forces other than storm, nuclear energy or land subsidence; or 2.	35%	30%	30%

	hail or frost or to any event (such as theft) other than those mentioned in 1.			
Hong Kong/General liability	Insurance against risks of the persons insured incurring liabilities to third parties, the risks in question not being risks to which motor, aircraft or ships relates. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	45%	36%	35%
Hong Kong/Pecuniary loss	This includes: 1. Insurance against risks of loss to the persons insured arising from the insolvency or failure of debtors of theirs; 2. Suretyship; 3. Insurance against risks attributable to interruptions of the carrying on of business carried on by them or to reduction of the scope of business so carried on; or 4. Insurance against risks of loss to the persons insured attributable to their incurring legal expenses (including costs of litigation).	45%	35%	35%
Hong Kong/Non-proportional treaty reinsurance	In the event that it is impracticable to allocate the treaty reinsurance business to the respective eight accounting classes of general business above, such business may be shown under 2 broad classes, namely, Non-proportional Treaty Reinsurance and Proportional Treaty Reinsurance	45%	35%	35%
Hong Kong/Proportional treaty reinsurance	In the event that it is impracticable to allocate the treaty reinsurance business to the respective eight accounting classes of general business above, such business may be shown under 2 broad classes, namely, Non-proportional Treaty Reinsurance and Proportional Treaty Reinsurance	35%	35%	35%
Korea/ Fire, technology, overseas	This includes fire insurance, technology insurance, original overseas insurance, reinsurance assumed from overseas. - fire insurance: insurance for residential fire, factory fire, general fire (insurance for fire in any ordinary building and movable property therein, excluding residential houses and factories) and other fire. - technology insurance: insurance for construction, assembling, machinery, electronic devices and others. The definitions for each are set out below. 1) construction: protection against damage and liability for damage to a building under construction.	25%	30%	30%

	2) assembly: protection against damage and liability for damage to a structure in assembling progress. 3) machinery: insurance for damage to machinery. 4) electronic devices: insurance for damage to electronic devices and costs and expenses for restoration of data. - original overseas insurance: insurance for property damage, bodily injury, or liability for damages in connection with any goods located in a foreign country. - reinsurance assumed from overseas: assuming other insurer's risk as a reinsurer from overseas.			
Korea/Package	This includes package insurance for household and for business. - for household: insurance for two or more types of damage among insurance for an individual person's property damage, bodily injury, and liability for damages. - for business: insurance for two or more types of damage among an enterprise's property damage, liability for damages, and insurance for bodily injury of its members.	35%	50%	50%
Korea/Maritime	This includes Marine, Transportation and aviation. More specifically this includes cargo, ship, general maritime, marine liability, transportation, aviation, space, and other maritime. 1) cargo: insurance for risks in marine transportation of cargoes. 2) ship: insurance for damage to a ship. 3) general maritime: insurance for risks in marine activities, such as risks in marine construction. 4) marine liability: protection against liability for damage on the seas, such as insurance of liability for marine contamination (excluding ship and general marine). 5) transportation: insurance for risks in cargoes in inland transportation. 6) aviation: insurance for damage to aircraft, such as operation and navigation of aircraft (property) and protection against liability for damages related to accidents of aircraft (liability for damages). 7) space: insurance for risks in successful launching and performance of missions of artificial satellites (property) and protection against liability for damages related to accidents	45%	45%	45%

	of artificial satellites (liability for damages). 8) other maritime: marine insurance products other than those classified above.			
Korea/Personal injury	This includes injury, travel and others (excluding those for foreigners). 1) injury: insurance for an insured person's bodily injury caused by a sudden and unexpected accident. 2) travel: insurance for injuries inflicted while travelling within the Republic of Korea (domestic travel), insurance for injuries inflicted while travelling abroad (overseas travel) and insurance for injuries inflicted on persons staying abroad for a long time, such as students studying abroad and personnel stationed abroad (long stay abroad). 3) others: injury insurance products not listed above.	35%	50%	50%
Korea/Workers accident, liability	This includes insurance for workers' compensation for accidents and insurance for liability. - Workers' compensation for accidents includes: 1) domestic: indemnity for accidents and employer's liability. 2) overseas: indemnity for accidents and employer's liability. 3) seafarers: indemnity for accidents and employer's liability. 4) occupational trainee: indemnity for accidents and employer's liability. - Insurance for liability includes: 1) general liability: personal liability, business liability, ship owner's liability, excursion and ferry ship business, road transportation business, gas accident, sports facilities, local government and others. 2) product liability: product liability, product recall and product guarantee. 3) professional liability: malpractice and errors and omissions (E&O). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	12.5%	**31%**	30%
Korea/Foreigners	This includes insurance for injury, travel and others provided for foreigners.	15%	10%	10%

Korea/Advance payment refund guarantee	Insurance purchased by a builder for damage that a buyer may sustain due to non-performance of repayment of advance payment in connection of building of a ship or construction of marine facilities.	50%	50%	50%
Korea/Other Non-Life	General insurance products other than those specified above.	45%	50%	50%
Korea/Private vehicle(personal injury)	Insurance that indemnifies the policyholder from the liability for damages incurred to a victim by killing or injuring another person as a consequence of an accident incurred while the insured owns or manages a vehicle, among covers provided under an automobile insurance policy for a private motor vehicle, which shall include the liability insurance under Article 5 (1) of the Guarantee of Automobile Accident Compensation Act.	15%	30%	30%
Korea/Private vehicle(property, vehicles damage)	Insurance that indemnifies the policyholder from the liability for damages incurred to another vehicle or the policyholder's own vehicle as a consequence of an accident incurred while the policyholder owns or manages a vehicle, among covers provided under an automobile insurance policy for a private motor vehicle.	25%	35%	35%
Korea/Vehicle for commercial or business purpose(personal injury)	Insurance that indemnifies the policyholder from the liability for damages incurred to a victim by killing or injuring another person as a consequence of an accident incurred while the policyholder owns or manages a motor vehicle, among covers provided under an automobile insurance policy for a motor vehicle for commercial or business purpose, which shall include the liability insurance under Article 5 (1) of the Guarantee of Automobile Accident Compensation Act.	25%	20%	20%
Korea/Vehicle for commercial or business purpose(property, vehicles)	Insurance that indemnifies the policyholder from the liability for damages incurred to another vehicle or the policyholder's own vehicle as a consequence of an accident incurred while the policyholder owns or manages a vehicle, among covers provided under an automobile insurance policy for a motor vehicle for commercial or business purpose.	25%	20%	20%
Korea/Other motor	Automobile insurance other than insurance products specified above.	15%	20%	20%
Singapore/Personal Accident	Refers to the insurance business of writing personal accident policy.	30%	25%	25%

Singapore/Health	Refers to the insurance business of writing health policy.	25%	20%	20%
Singapore/Fire	This insurance covers property damage for either commercial or household caused by fire, windstorm, hail, water damage and earthquake	30%	25%	25%
Singapore/Marine and Aviation - Cargo	Includes insurance against risk of loss or damage of any cargo in transit, and any liability arising from such cargo in transit arising from the use of a vessel or ship or aircraft.	35%	30%	30%
Singapore/Motor	Includes insurance against risk of loss, damage or liability arising out of or in connection with the use of motor vehicles.	30%	25%	25%
Singapore/Work Injury Compensation	This insurance covers compensation payments to employees who sustained bodily injury or occupational disease during or which arises out of the course of their employment. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	31%	30%
Singapore/Bonds	Includes maid insurance and insurance under which an insurer undertakes to guarantee (other than guarantees to which "Credit/ Credit related" relates to) the due performance of a contract or undertaking, or the payment of a penalty or indemnity for any default.	35%	30%	30%
Singapore/Engineering Construction	Includes insurance against construction, erection, or engineering risks such as the loss or damage involved in a construction project, and installation and erection of ready built-engineering projects. It also includes boiler and pressure vessel insurance, construction all risk insurance, engineering all risk insurance, erection all risk insurance, machinery all risk insurance and insurance on any other specialised equipment or machinery that are excluded from the standard property insurance.	35%	30%	30%
Singapore/Credit	Insurance protecting against the risk of non-payment of goods and services by buyers and importers.	35%	30%	30%
Singapore/Mortgage	Insurance protecting against losses on mortgage loans arising from default by borrowers.	35%	30%	30%

Singapore/Others- non liability class	Other non-liability classes not covered elsewhere.	35%	30%	30%
Singapore/Marine and Aviation - Hull	Includes insurance against risk of physical loss or damage of vessel or ship used on sea or inland water or aircraft, any liability arising from such vessel or ship or aircraft, and damage of vessel or ship or aircraft while under construction. It also includes marine terminal operator insurance and airport operator insurance and insurance against aerospace risks.	45%	35%	35%
Singapore/ Professional indemnity	Includes insurance for professionals against risk of their liability to their principals, clients, principal's clients, or any third parties arising out of neglect, omission or error in the discharge of their professional duties. It also includes directors and officers liability insurance, and errors and omission insurance.	35%	35%	35%
Singapore /Public liability	Includes insurance against risk of the insured's liability to third party in respect of bodily injury, property damage or any monetary losses arising out of negligence (other than liability to which business classes "Cargo", "Marine Hull", "Aviation Hull" and "Motor" relate to). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	31%	30%
Singapore /Others- liability class	Other liability classes not covered elsewhere. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	31%	30%
Chinese Taipei / Fire - residence	Fire insurance for personal residence.	25%	40%	40%
Chinese Taipei / Fire - commercial	Fire insurance for commercial building.	55%	45%	45%
Chinese Taipei / Marine - inland cargo	Marine insurance for inland cargo.	30%	25%	25%
Chinese Taipei / Marine - overseas cargo	Marine insurance for overseas cargo.	30%	25%	25%
Chinese Taipei / Marine - hull	Marine insurance for hull.	55%	45%	45%
Chinese Taipei / Marine - fish boat	Marine insurance for fish boat/vessel.	45%	45%	45%

Chinese Taipei / Marine - aircraft	Aviation insurance for aircraft.	55%	45%	45%
Chinese Taipei / Motor - personal vehicle	Motor insurance for personal vehicle.	25%	25%	25%
Chinese Taipei / Motor - commercial vehicle	Motor insurance for commercial vehicle.	25%	25%	25%
Chinese Taipei / Motor - personal liability	Motor insurance for personal liabilities.	25%	25%	25%
Chinese Taipei / Motor - commercial liability	Motor insurance for commercial liabilities.	25%	25%	25%
Chinese Taipei / Liability - public, employer, product, etc.	Public liability insurance, employer liability insurance, product liability insurance, etc. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	35%	36%	35%
Chinese Taipei / Liability - professional	Professional liability insurance.	35%	35%	35%
Chinese Taipei/ Engineering	Engineering insurance.	55%	45%	45%
Chinese Taipei / Nuclear power station	Insurance for nuclear power station.	55%	45%	45%
Chinese Taipei / Guarantee - surety, fidelity	Surety insurance, fidelity insurance, mortgage insurance, etc.	55%	45%	45%
Chinese Taipei / Credit	Trade credit insurance, credit card insurance, small-amount loan credit insurance, etc.	55%	45%	45%
Chinese Taipei /Other property damage	Property damage insurances not included in other LOBs, e.g. cash insurance, theft insurance, glass insurance, etc.	35%	40%	40%
Chinese Taipei / Accident	Accident insurance for personal injuries or death.	15%	10%	10%
Chinese Taipei / Property Damage - commercial earthquake	Earthquake insurance (other than compulsory earthquake insurance).	45%	35%	35%
Chinese Taipei / Comprehensive - personal property and liability	Comprehensive insurance for personal property and liabilities.	45%	45%	45%

Chinese Taipei / Comprehensive - commercial property and liability	Comprehensive insurance for commercial property and liabilities.	45%	45%	45%
Chinese Taipei / Property damage - typhoon and flood	Typhoon and flood insurance.	55%	45%	45%
Chinese Taipei / Property damage - compulsory earthquake	Compulsory earthquake insurance (compulsory for personal residence).	55%	45%	45%
Chinese Taipei / Health	Health insurance.	15%	10%	10%
OTHER/Motor	This includes: Motor property damage: Damage to own and third-party motor vehicles (and related property damage) through accident, theft, fire and weather events, excluding liability for personal injury; and Motor bodily insurances: Insurances relating to the injury or death of third parties due to or related to motor vehicles and accidents involving them. This may also extend to include the driver involved.	Devel. 30% Emerg. 35%	Devel. 20% Emerg. 25%	Devel. 20% Emerg. 25%
OTHER/ Property damage	This includes, but is not limited to: 1. Property: Insurance of house or other property (including house contents) against loss through fire, windstorm etc., insurance of contents against losses due to theft, fire, windstorm, earthquake, impact, damages, water damage, and other natural and man-made perils. Contents insurances may extend to loss or damage to property outside the home or its usual location. 2. Fire and industrial: Loss or damage and loss of earnings due to damage to commercial buildings and other physical infrastructure due to fire, windstorm and other perils. 3. Consequential losses: Products covering consequential losses (such as 'loss of profits' or 'business interruption') should also be included in this segment; 4 Construction: This includes 'construction all risks and erection all risks' (CAR/EAR) or similar written in connection with construction projects. This includes the construction and erection of infrastructure projects and buildings.	Devel. 30% Emerg. 35%	Devel. 25% Emerg. 30%	Devel. 25% Emerg. 30%

OTHER/ Accident, protection and health (APH)	This includes, but is not limited to: 1 Accident and sickness: Accident cover provides benefits if an accident result in bodily injury or death. Benefits are lump sum or periodic (typically for at most 2 years). Sickness cover is often an extension of accident insurance; 2 Other consumer accident: Property damage other than householders or motor vehicle. For example, travel insurance. 3. Other commercial accident: Commercial property insurance other than Fire and Industrial risk and MAT, and other than commercial long-term liability; 4 Consumer credit: Guarantee of repayments on consumer credit contracts due to involuntary loss of employment; 5. Consumer liability: Private individual's liability for personal injury through personal actions or property	35%	30%	30%
OTHER/ Short tail medical expenses	Insurance obligation that covers the provision or financial compensation for medical treatment or care including preventive or curative medical treatment or care due to illness, accident, disability or infirmity usually made during the term of the policy or shortly (typically, up to 1 year) after the coverage period of the insurance has expired.	35%	25%	25%
OTHER/ Other short tail	Any non-Life products which do not fit into the segments above, do not fit the definition of non-life non-traditional business and where claims are usually made during the term of the policy or shortly (typically, up to 1 year) up to after the coverage period of the insurance has expired.	35%	30%	30%
OTHER/ Marine, Air, Transport (MAT)	This includes: 1. All damage or loss of river, canal, lake and sea vessels, aircraft, goods in transit, liabilities from use of aircraft, ships and boats.; 2 Loss or damage to property, consequential third party liability for damages to the property of others, and consequential third party liability for personal injury to operators, passengers and other should be included.	35%	35%	35%
OTHER/ Workers' compensation	This insurance covers compensation payments to employees who sustained bodily injury or occupational disease during or which arises out of the course of their employment. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	Devel. 35% Emerg. 45%	36%	35%
OTHER/ Public liability	Public liability insurance for bodily injury or damage to property.	Devel. 35% Emerg. 45%	Devel. 31% Emerg. 36%	Devel. 30% Emerg. 35%

	For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.			
OTHER/ Product liability	Product liability insurance for bodily injury or damage to property for claims attributed to the use of products. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	Devel. 35% Emerg. 45%	Devel. 43% Emerg. 47%	Devel. 40% Emerg. 45%
OTHER/ Professional indemnity	Professional indemnity for a professional person or organisation for claims for losses legal and other) attributed to professional negligence (and related) in the services provided. For example, medical malpractice and directors and officers insurance products.	Devel. 35% Emerg. 45%	35%	35%
OTHER/ Other liability and other long tail	Any non-life products which do not fit into the defined segments above, do not fit the definition of non-life non-traditional business and where claims may be made many years (typically 1 or more years) after the coverage period of the insurance has expired. All other liability classes not covered elsewhere. For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	Devel. 35% Emerg. 45%	36%	35%
OTHER/ Non-proportional motor, property damage, APH and MAT	Non-Proportional reinsurance of motor, property damage and accident/protection/health business, marine, aviation and transport (refer definition).	50%	Devel. 40% Emerg. 45%	Devel. 40% Emerg. 45%
OTHER/ Catastrophe reinsurance	Catastrophe Reinsurance is an inwards reinsurance line of business providing excess of loss protection or proportional protection in respect of aggregate losses arising from a single event or a combination of events. Typically, such business is covering damages to property and is sold with an 'hours' clause and provides protection against natural catastrophe perils such as windstorms, earthquakes and man-made catastrophe such as acts of terrorism.	50%	Devel. 40% Emerg. 45%	Devel. 40% Emerg. 45%
OTHER/ Non proportional liability	Non-Proportional reinsurance of public liability, product liability and other liability (refer definition). For 2018 Field Testing, impacts of latent liability risks have been included and the claims reserve factor updated accordingly.	50%	Devel. 44% Emerg. 48%	Devel. 40% Emerg. 45%
OTHER/ Non-proportional professional indemnity	Non-Proportional reinsurance of professional indemnity (refer definition).	50%	Devel. 40% Emerg. 45%	Devel. 40% Emerg. 45%

OTHER/ Mortgage insurance	Indemnity to credit providers for losses due to the failure of a borrower to repay a loan secured by a mortgage over property.	Devel. 45% Emerg. 50%	Devel. 35% Emerg. 40%	Devel. 35% Emerg. 40%
OTHER/ Commercial credit insurance	Indemnity for financial losses due to the failure of a commercial entity to repay outstanding credit contracts or failure to perform contracted services or deliver contracted products other than short-term trade credit and suretyship insurance.	Devel. 45% Emerg. 50%	Devel. 35% Emerg. 40%	Devel. 35% Emerg. 40%
OTHER/ Other non-traditional	Any other non-life non-traditional insurance products other than the above and not included in non-life traditional insurance segments above. This includes, but is not limited to: Financing or monetising Insurance-linked securities (ILS, for example catastrophe bonds). For example, embedded Value/Present Value of Future Profit securitisations, ILS with financial risk as material trigger condition.	Devel. 50% Emerg. 55%	40%	40%

13.3.8 Catastrophe risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

620. The Technical Specifications for Catastrophe risk apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Catastrophe risk calculation is fundamentally the same for both approaches.

621. Catastrophe risk covers risks associated with claims events that are yet to happen, particularly low frequency and high severity events. This includes individual major claims as well as the aggregation of multiple claims arising from a single event. Catastrophe risk affects life and non-life business. It considers all losses arising as a consequence of events occurring at any point in time in the next 12 months and may take into account expected business volumes including expected new business to be written during the next 12 months.

622. For 2018 Field Testing, latent liability risk is included in the calculation of Claims Reserve risk (Section 13.3.7).

623. Allowance may be made for any risk mitigation arrangements, e.g. outwards reinsurance protection purchased, that may reduce overall Catastrophe risk. Renewal of risk mitigation arrangements with respect to non-life insurance risks may be taken into account if the Volunteer Group expects to renew, and the costs of renewal within the time horizon are taken into account (see Section 13.2.2 on Risk Mitigation). The Catastrophe risk charge is calculated assuming that the payments from mitigation arrangements will always be fully recovered where applicable. The contingent Credit risk associated with such recoveries should be assessed as part of Credit risk based on the recoverable amount determined within the catastrophe component (see Section 13.5 on Credit risk). The calculation of the recoverable amount by rating category is described at the end of this section. Treatment of the renewal of risk mitigation arrangements with respect to natural catastrophe risk is specified in Section 13.2.2.

624. Catastrophe risk is segmented at the risk/peril level. Peril covers both naturally occurring perils (natural catastrophe) and man-made perils/scenarios (other catastrophe) and their consequences.

13.3.8.1 Scope of calculation

625. When calculating the Catastrophe risk charge, the Volunteer Group should consider all lines of business exposed to Catastrophe risk. For example, a natural catastrophe such as an earthquake could impact not only the residential property, commercial property, auto and marine (incl. energy offshore) lines of business, but also specie/fine art, personal accident, aviation, liability, workers'

compensation and some life or health insurance lines of business. To avoid double counting with the other ICS risk charges, the following principles should be applied:

a) Life and similar to life health business should be included only for the pandemic and the terrorism scenario (see below).

b) The impact on financial markets and the whole economy (Market and Credit risks) should not be included in the calculation of Catastrophe risk.

626. The impact of catastrophe claims events should include not only the main peril (e.g. windstorm, earthquake), but also the secondary perils associated with the primary peril. Secondary perils can, in principle, affect all lines of business within the scope of the calculation. For example, the main peril tropical cyclone may cause secondary perils such as storm surge and events such as dam breaking as well as demand surge or loss amplification. Similarly, fire or tsunami following an earthquake, sprinkler leakage and demand surge or loss amplification should be associated with the earthquake scenario as appropriate.

627. Before performing a detailed calculation, Volunteer Groups should assess the materiality of the impact of catastrophe events based on their contractual exposure to the perils and scenarios listed. For 2018 Field Testing, if the Volunteer Group establishes that its possible exposure to a specific scenario is immaterial, then a detailed calculation is not required.

628. Volunteer Groups should report losses gross as well as net of protection from qualifying risk mitigation arrangements. The amounts reported gross of protections should be calculated net of reinstatement premium received (i.e. net of inward reinstatement premium). The amounts reported net of protections should take into account any reinstatement premiums received and paid (i.e. net of inward and outward reinstatement premium).

13.3.8.2 Input data required

629. Volunteer Groups should report the following perils:

a) Natural catastrophe:

   i. Tropical cyclone, hurricane, typhoon

   ii. Extra-tropical windstorm / winter-storm

   iii. Earthquake

   iv. Other material natural perils such as:

      (1) Flood

      (2) Tornado, hail, convective storms

(3) Other risks

b) Other catastrophe scenarios:

i. Terrorist attack

ii. Pandemic

iii. Credit and surety

13.3.8.3 Natural catastrophe

630. For 2018 Field Testing, Volunteer Groups should report the total annual aggregate loss amounts for the perils, risk measures and confidence levels specified in the Template:

a) losses gross of protections (e.g. gross of external reinsurance protections)

b) losses net of protections (e.g. net of external reinsurance protections)

c) the resulting risk charge will be calculated as the difference between the 99.5th percentile and the mean of the losses net of protections

d) the annual aggregate losses should be calculated as the aggregation of losses across all regions and perils

631. The loss amounts should be calculated considering:

a) the impact of the natural catastrophe on all lines of business affected

b) an allowance for non-modelled exposures including expected new business over the target time horizon of one year that could be affected by the listed perils

c) an allowance for non-modelled perils and regions should be reported as part of the other natural catastrophe losses. This could include perils and regions that are not modelled individually or specifically but for which potential losses are assessed using other approaches.

632. Volunteer Groups are allowed to use stochastic catastrophe models (vendor or proprietary) to calculate the loss amounts resulting from natural catastrophe events.

633. The calculation should include the secondary perils/effects associated with the primary peril modelled such as, but not limited to, fire following earthquake, storm surge and including demand surge and loss amplification, if relevant.

13.3.8.4 Other catastrophe scenarios

634. For catastrophe exposures other than natural perils, Volunteer Groups are requested to report the loss amounts for the event scenarios described below. The impact of the scenarios should

be calculated for all lines of business affected by the respective scenario, unless otherwise specified in the scope of the calculation.

635. For each scenario below, the loss amounts gross and net of external protections should be reported. For scenarios that are not material, Volunteer Groups may adopt a simplified and prudent approach to provide a reasonable approximation.

13.3.8.4.1 Terrorist attack

636. The scenario is defined as the sum of the following two components:

a) total loss of property (including building, content, motor vehicles) from insurance contracts and the impact on other insurance contracts resulting directly from the loss of property (e.g. business interruption); and

b) the losses from life insurance contracts, health coverage and workers' compensation.

637. For the life and non-life components, the scenario is a five-tonne bomb blast and should be calculated for the largest geographical risk concentration partly or fully located within a radius of 500 metres. In determining this concentration, all buildings (including properties for own use) should be considered. Note the largest concentration for each life and non-life component may not be the same.

638. For property damage and related covers (e.g. business interruption), a 100% damage ratio within a circular zone of a 200 metres radius, 25% damage ratio for the next circular zone up to a 400 metres radius and a 10% damage ratio beyond 400 metres up to 500 metres should be assumed. Property damage should take into account insured properties. For fatalities, a 15% fatality rate within a circular zone of a 200 metres radius and a 1.5% fatality rate beyond 200 metres up to 500 metres should be assumed. For disabilities, a 20% disability rate within a circular zone of a 200 metres radius, and a 10% disability rate beyond 200 metres up to 500 metres should be assumed. Fatalities and disabilities should only take into account liabilities from insurance contracts (e.g. life and health insurance policies). In particular liabilities to own staff not originating from insurance contracts (e.g. through benefits or other forms of exposure) should not be included. For life insurance liabilities for which the geographical location is not available, Volunteer Groups should make a best effort estimation of the concentration of exposures considering, in particular, group policies.

13.3.8.4.2 Pandemic

639. The scenario is defined as the increase in the number of deaths following a global pandemic.

640. The scenario should be calculated as the total loss amount to all individual and group insurance products covering Mortality risk in any part of the world resulting from the increase of 1.0 in the number of deaths per thousand insureds. Losses both gross and net of qualifying outward reinsurance should be reported in the Template.

13.3.8.4.3 Credit and surety

641. The risk charge for this scenario is the sum of the losses calculated for the three components detailed below:

a) Mortgage insurance

b) Trade credit

c) Surety

Mortgage insurance

642. The credit stress scenario for mortgage insurance is defined as a decline in home prices that leads to an increase in default frequencies. Each Volunteer Group should apply the nationwide home price declines in the table below to each region where the Volunteer Group is active. The decline in home prices is assumed to persist for the entire one-year time period. The total loss amount should include the impact of both an increase in frequency of delinquency and defaults and an increased loss severity that result from the decline in home prices.

643. In implementing the stress scenario and to account for differences in risk profiles across various exposures and activities, Volunteer Groups should segment their portfolios and business activities into categories based on common or related risk characteristics. Companies should use appropriate models to translate the relevant risk factor (home price decline) into the financial impact (increased losses, decrease in the cures rate). Where applicable, those models that the Volunteer Group already uses to calculate stress losses, premium deficiency reserves or other loss measures should be used.

Table 26. Credit stresses for mortgage insurance

	One-year change in house price
EEA and Switzerland	-25%
USA and Canada	-25%
China	-25%
Japan	-25%
Other Developed	-25%
Other Emerging	-25%

644. The scenario should be calculated as an aggregate loss amount resulting from an increase in frequency and severity due to the specified decline in home prices.

Trade Credit

645. The credit stress scenario for Trade Credit is defined as the total loss amount due to the inability of customers of the insured to pay for goods delivered and/or services provided. The trade credit coverage indemnifies the insured policyholder for bad debt losses incurred due to a customer's inability to pay. An insured's customer inability to pay is indicated by an increase in both the probability of default and the loss given default of that customer.

646. To help approximate these total loss amounts, the Volunteer Group should first calculate its aggregate net earned premium for Trade Credit by external credit rating category: investment grade vs. non-investment grade. Then the following factors should be applied to net premiums earned in the past year by rating category. Considering that the scenario does not require the identification of specific defaulting customers, the factors should be applied to the net premium earned as a way to reflect the impact of reinsurance. As the impact of reinsurance will be reflected by using the net premium, no further adjustment for reinsurance protection (e.g. non-proportional reinsurance) is required to the loss amount.

Table 27. Credit stresses for trade credit

Rating category	Factor
Investment Grade	80%
Non-Investment Grade	200%

647. The investment grade and non-investment grade categories should be determined using current rating of the insured customer's (if available). If an insured customer is not rated the Volunteer Group should use its internal rating system and/or for non-rated entities assume it is non-investment grade.

648. If the Volunteer Group is not able to apply the above factors due to internal data limitations, the company should apply a stress loss ratio equal to the worst experience from 2008-2010 to the net earned premium for Trade Credit.

649. The total loss amount should be adjusted for any existing loss mitigation, including reimbursements from insured, retention etc.

Surety

650. The credit stress scenario for surety is defined as the total net potential loss amount based on the penal sum of the surety bond. A surety bond indemnifies the insured from the principal inability to perform its contractual obligation. The penal sum represents the maximum amount that the Volunteer Group is required to pay the insured. The Volunteer Group should calculate the largest net potential losses for its ten largest exposures to surety counterparties (principals) using the methodology described below. The total net potential loss amount will be calculated assuming that the two largest net losses have occurred, so it is equal to the sum of the two largest net losses.

651. The net potential loss amount for a principal is calculated using the gross exposure of the principal (after any contractual amortisation that has occurred). The loss severity model 95% probable

maximum loss (PML) factor is applied to the gross exposure. For U.S. exposures, the loss severity model 90% PML for each principal can be calculated using the most current construction loss severity model developed by the Surety & Fidelity Association of America. For non-U.S. exposures, the Volunteer Group should use a loss severity model 95% PML worst gross loss to exposure ratio for the past 10 years in that country or for that exposure type, whichever is the most granular. Then the loss amount should be adjusted for any co-surety arrangements, acceptable cash collateral (currently in the custody of the Volunteer Group) and any reinsurance arrangements. Please use the example below as a guide.

Example of Credit Stress for Surety

	Loss calculation	Surety Exposure
1	Gross Exposure for Principal	10,000,000
2	Loss Severity Model 95% PML Factor	0.4
3	Loss Severity Model 95% PML Amount = (1) * (2)	4,000,000
4	Adjustment for co-surety (co-surety % * (3))	400,000
5	Net PML Amount after Co-surety = (3) - (4)	3,600,000
6	Acceptable cash collateral	100,000
7	Net PML amount = (5) - (6)	3,500,000
8	Adjustment for reinsurance	50,000
9	Net potential Loss amount	3,450,000

652. The co-surety amount and the adjustment for reinsurance should be calculated using existing terms of the surety exposure. In addition the Volunteer Group should only adjust for cash collateral already in custody with the firm or in a trust in which the firm is a beneficiary. As noted above, the Volunteer Group should aggregate the two largest net potential loss amount from its ten largest surety exposures and report it as the total loss amount for surety.

13.3.8.5 Aggregation of Catastrophe risks

653. For the purpose of calculating the Catastrophe risk charge, the other catastrophe scenarios are assumed to be mutually independent and independent of the natural catastrophe perils. Consequently, the total ICS catastrophe capital charge will be calculated as follow:

$$ICS_{Cat} = \sqrt{ICS_{NatCat}^2 + ICS_{Terror}^2 + ICS_{Pand}^2 + ICS_{Credit}^2}$$

13.3.8.6 Calculation of the recoverable amount to be used for the calculation of the contingent Credit risk

654. For the purpose of the Catastrophe risk charge calculation, the following simplification will be applied: The recoverable amount is calculated as the difference between the risk charge for Catastrophe risk calculated as if the risk mitigation arrangements did not exist, and the risk charge for Catastrophe risk calculated taking into account qualifying risk mitigation arrangements.

655. In order to apply the Credit risk standard method, the recoverable amount is allocated by rating categories. This is done using the following steps (see an example of the calculation provided below):

a) For the aggregate of the Natural Catastrophe risk and for each other catastrophe scenario, calculate the recoveries by rating class and the gross and net losses.

b) Aggregate all gross and net losses using the aggregation approach described above. The difference between aggregated gross and net losses is the total recoverable.

c) The recoverable by rating class is equal to the total recoverable multiplied by the ratio of the sum over all scenarios of the recoveries in that rating class to the sum over all scenarios of the recoveries for all rating classes.

656. The approach is illustrated by the following example, where for simplicity, it is assumed that the terrorist attack scenario is the only other catastrophe scenario and where the Catastrophe risk charge is the square root of the sum of the square of the Natural Catastrophe risk charge and the Terrorist Attack risk charge.

Example

		Natural catastrophe	*Terrorist attack*	*Catastrophe risk charge*
Gross Loss: A	ICS Rating Category	150	50	158
Reinsurance recoverable				
Recovery 1: B1	1	20	10	
Recovery 2: B2	1	20	10	
Recovery 3: B3	2	10	5	
Net loss: C = A - B1 - B2 - B3		100	25	103
Recoverable amount: D= A - C				55

All recoverable in ICS RC 1: B1 + B2	40	20	60
All recoverable in ICS RC 2: B3	10	5	15
% recoverable category 1 : E1 = (B1 + B2) / (B1 + B2 + B3)			80%
% recoverable category 1 : E2 = B3 / (B1 + B2 + B3)			20%
Total recoverable amount = D			55
Recoverable category 1: D * E1			44
Recoverable category 2: D * E2			11

657. The recoverable amounts by ICS RC should be reported in the column "Reduction in ICS risk charges" of the relevant Credit risk section of the worksheets *FT18.ICS Risk Charges* and should be subject to the risk charge for maturities of 1-2 years.

13.4 Market Risks

658. When considering Market risks, it is not only the direct impact on the value of balance sheet items that must be considered, but also the consequential impact of market changes on policyholder behaviour. For instance, with respect to policy lapses:

a) Unexpected increases in future interest rates for non-participating products may lead to the products being perceived as less attractive compared with newer insurance or investment products.

b) Reduction in bonus rates as a response to equity losses or decreases in interest rates may result in policyholders perceiving their coverage to be less valuable or attractive.

13.4.1 Interest Rate risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

13.4.1.1 MAV approach

659. For 2018 Field Testing, Interest Rate risk is defined to be the aggregate of gains or losses under a set of scenarios, arising from independent sources, stressing the shape of the yield curve. The scenarios are calibrated so that, when aggregated, the result is the value at risk for the asset and liability portfolio at a 99.5% confidence level.

660. Five scenarios are specified, based on the Dynamic Nelson-Siegel yield curve model. The first scenario represents the expected mean reversion over the next year as forecast by the model. The remaining four scenarios consist of two symmetric pairs of independent stresses: a level upward (downward) stress, and a twist stress from up to down (down to up).

661. The total Interest Rate risk charge[45] per currency is:

$$\text{Gain or loss under mean reversion scenario} + \sqrt{\text{Max loss (level up, level down)}^2 + \text{Max loss (twist up to down, twist down to up)}^2}$$

662. The impact of the level and twist scenarios is aggregated assuming they are independent. In order to capture convexity, optionality, and other nonlinear aspects of assets and liabilities, both the gain/loss under the pairs of symmetric level and twist stresses are evaluated. For the shocks under the square root, any gain is set to zero (i.e. a gain is considered a zero loss). However, if there is a gain under the mean reversion scenario then this amount is subtracted from the requirement.

663. The modelling approach used is based on a model of the yield curve as a whole, whereas the approaches used for 2015 and 2016 Field Testing were based on modelling individual tenors and combining these independent results in a second step. To facilitate analysis of field testing results, and improve the design and calibration of Interest Rate risk as ICS Version 2.0 is developed, limited changes were made in 2018 compared to 2017 Field Testing:

a) The stress approach stays aligned with the three-segment approach used for valuation (see Section 6.3.15.2), with the result that the risk model only impacts the first segment fully.

b) The datasets used for calibration of the stresses to the first segment are similar (weekly interest rate observations starting at 1 January 2010).

[45] Floored at zero

c) The grading of the stress between the end of the first segment and the start of the third segment is unchanged, and relies on the automatic grading that is part of the Smith-Wilson method used to interpolate and extrapolate yield curve point estimates.

d) The magnitude of the level stress on the third segment has been maintained at 10%.

664. Volunteer Groups operating in multiple jurisdictions are exposed to interest rate risk in more than one currency. For 2018 Field Testing, the Interest Rate risk charge for each currency (excluding the mean reversion components) are aggregated using linear correlation. The interest rate position in a currency is defined to have a net long duration if there is a loss under the level up scenario, and a net short duration if there is a gain under the level up scenario. The Interest Rate risk charges (excluding mean reversion components) are aggregated using a 75% correlation between each pair of currencies that have net long or net short duration in both currencies, and a negative 75% correlation in each pair of currencies for which one of the durations is net long and the other is net short. The mean reversion components are summed across all currencies, and then added to the aggregation of the Interest Rate risk charges (excluding the mean reversion components).

13.4.1.2 Assets and liabilities subject to the stress

665. The stress calculations should capture changes in the values of all assets and liabilities that are sensitive to changes in interest rates. Non-interest sensitive assets such as cash, investment income due and accrued and common shares are excluded from the calculation and should not show any change under the interest rate stresses. However, subordinated debt and preferred shares are treated as interest-sensitive assets within the calculation.

666. For insurance liabilities valued with a dynamic lapse function that uses the interest rate as an input variable, the base lapse assumption should stay unchanged, while allowing lapses to increase or decrease in reaction to interest rate movements.

13.4.1.3 GAAP Plus approach

13.4.1.3.1 Background

667. The IAIS is field testing an approach for valuing liabilities under the interest rate stress that is more compatible with the way in which these liabilities are valued under GAAP Plus. Depending on the jurisdiction and product type, different approaches to liability discounting are used in under GAAP Plus. For example, in the U.S., the valuation of long-term insurance current estimates utilises a discount rate that is a blend of the portfolio return rate and a reinvestment rate based on current market assumptions. Assets backing those liabilities are essentially reported at amortised cost via an adjustment to capital resources referred to as the AOCI adjustment. In other jurisdictions, insurance liabilities are valued using market yield curves, with certain adjustment and all assets are measured at fair value.

668. A shock to a market based curve will not translate to a change in value for assets valued at cost, nor would it impact the book yield used to discount liabilities. For this reason, Volunteer Groups

should apply different methodologies to calculate their GAAP Plus interest rate risk charge, depending on how insurance liabilities and assets are measured under the various GAAP Plus examples.

13.4.1.3.2 Liabilities

669. For those insurance liabilities under GAAP Plus examples where the value is calculated using yield curves based on current market information, the Interest Rate risk charge is calculated using the MAV approach. So for example, the MAV Interest Rate risk approach would be applicable for all products under the EU GAAP Plus. It would also be applicable for variable annuity guarantees under U.S. GAAP Plus where market based curves are applied in the valuation of such guarantees.

670. Where insurance liabilities are discounted using a portfolio earned rate/curve under some GAAP Plus valuation examples, long-term insurance liabilities are shocked using a discount rate that is a blended rate of the portfolio earned rate on existing investments and the stressed IAIS yield curves for reinvestments at each tenor and currency.

13.4.1.3.3 Assets

671. For assets measured at market value, the stress is the same as that used in the standard method for MAV.

672. For assets measured at amortised cost (e.g., for loans, bonds classified as held to maturity or held for reserves as in Japan), these asset balances would not be impacted by the market value-based stress scenario.

673. Where assets are measured at amortised cost for field testing purposes (e.g. fixed income investments that back long-term insurance liabilities and that have relatively low liquidity risk under some GAAP Plus valuation basis examples), the asset stress impact is assessed through the "AOCI adjustment" instead of through direct estimation of the change in asset value.

674. For assets that are included in the AOCI adjustment, as specified in Section 10.3.2, assets are measured at market value. However the change in value due to the stress would be offset by the change in value of the AOCI adjustment. Therefore the net impact of the stress for these assets would be zero, or the same as for those assets measured at cost.

13.4.1.3.4 Calculation and reporting

675. Where a Volunteer Group applies more than one Interest Rate risk method, the risk charge for each of those components is required to be calculated if material. In such cases, the results of the different methodologies should be separately reported in the Template, and the total GAAP Plus Interest Rate risk charge will be the sum of the charges calculated for those liabilities, using the two different methodologies.

13.4.1.4 Information provided by the IAIS

676. Stressed yield curves are provided for the currencies for which the IAIS has provided base valuation yield curves. Volunteer Groups should use the stressed yield curves provided for the relevant currencies.

13.4.1.5 Information required from Volunteer Groups

677. Under the stress approach being used for 2018 Field Testing, the changes in the values of assets and liabilities are calculated by segment for each stress scenario:

a) for asset segments please refer to Table 28
b) for non-life, no segmentation is required – please report one figure for total non-life
c) for life, use the segments from the worksheet *FT18.BCR & ICS Balance Sheet*

678. The changes in value of all financial instruments used for hedging Interest Rate risk that are in place as at the balance date should be taken into account according to Section 13.2.2 on Risk Mitigation.

679. The effect of management actions is determined in a two-step process. First, the selection of the shocked scenarios among the level pair (up or down) and the twist pair (steepening or flattening) is done without reflecting management actions (i.e. liabilities for future discretionary benefits should not be recalculated under the stress scenarios, and the gain or loss for each scenario should not assume any change in the liability for future discretionary benefits). In a second step, the scenarios selected in the first step are evaluated allowing for the effect of management actions.

Table 28. Interest Rate risk asset segmentation

Interest Rate risk asset category	**Balance Sheet asset segment**
Bonds	Fixed Interest Government Bonds
	Fixed Interest Corporate Bonds
	Fixed Interest Municipal Bonds
	Variable Interest Government Bonds
	Variable Interest Corporate Bonds
	Variable Interest Municipal Bonds
	Convertible notes
Loans	Residential Mortgage Loans
	Non-residential Mortgage Loans
	Other (non-mortgage) Loans
Structured securities	Residential Mortgage Backed Securities
	Commercial Mortgage Backed Securities
	Insurance Linked Securities
	Other structured securities
Other investments assets	Other investment assets
Assets held in separate accounts	Assets held in separate accounts
Reinsurance recoverables/assets	Reinsurance recoverables

	Other reinsurance assets
Non-investment assets	Other non-investment assets
Fair values of financial instruments used for hedging	On balance sheet value of market-related off-balance sheet exposures
	On balance sheet value of non-market-related off-balance sheet exposures

13.4.1.6 Details on the calibration approach used

680. When available, the datasets for all currencies used to calibrate the interest rate risk requirement contained weekly interest rate observations for 12 maturities – years 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, and 30 - starting on 1 January 2010. No filtering adjustment has been applied to the raw dataset to derive the calibration. Over the coming years, the starting point for the data series used for calibration continue to be 1 January 2010. This will result in the time series lengthening annually be one year.

681. The weekly observations were transformed into zero-coupon spot rates, using the same methodology as for the valuation curve – i.e. including a credit risk adjustment of 10 basis points when the observed instruments are not government bonds.

682. Under the Dynamic Nelson-Siegel model, the yield curve at time t is described in closed form as a linear combination of a level curve (L), a slope curve (S), and a curvature curve (C):

$$y_t(\tau) = L_t + S_t\left(\frac{1-e^{-\lambda\tau}}{\lambda\tau}\right) + C_t\left(\frac{1-e^{-\lambda\tau}}{\lambda\tau} - e^{-\lambda\tau}\right)$$

683. The dynamic of the change in the yield curve - restricted to model definitions where mean-reversion matrix is diagonal[46] - is described by the following transition equation:

$$\begin{pmatrix} dL_t \\ dS_t \\ dC_t \end{pmatrix} = \begin{pmatrix} \kappa_{11}^P & & \\ & \kappa_{22}^P & \\ & & \kappa_{33}^P \end{pmatrix} \left(\begin{pmatrix} \theta_1^P \\ \theta_2^P \\ \theta_3^P \end{pmatrix} - \begin{pmatrix} L_t \\ S_t \\ C_t \end{pmatrix} \right) dt + \begin{pmatrix} \sigma_{11} & 0 & 0 \\ \sigma_{21} & \sigma_{22} & 0 \\ \sigma_{31} & \sigma_{32} & \sigma_{33} \end{pmatrix} \cdot \begin{pmatrix} dW_t^{L,P} \\ dW_t^{S,P} \\ dW_t^{C,P} \end{pmatrix}$$

684. From this model specification, the DNS shocks were then computed using the following algorithm.

[46] A fully flexible model with cross terms in the mean reversion factors (i.e. with non-diagonal elements in the K matrix) was also tested, without much difference.

DNS Shock Generating Algorithm

1) Fit *L*, *S* and *C* to the discrete year-end data points using least squares. That is, choose L, S and C so that the sum of the squares of the difference between L*Level Curve + S*Slope Curve + C*Curvature Curve at the terms for which there are data points, and the data points themselves, is minimised. This initial vector (L, S, C) is referred to as X_0.

2) The mean reversion shock, expressed as an (L, S, C) vector is:

$$(I - e^{-K})(\theta - X_0)$$

where I is the 3 x 3 identity matrix. This linear combination of the DNS curves gets added to the year-end rates.

3) One set of shocks that could be placed under the square root, expressed as (L, S, C) vectors, are the columns of the square root of the conditional covariance matrix:

$$M = \sqrt{\left(\Sigma\,\Sigma^{T}\right) \odot \left(\frac{1 - e^{-(K_i + K_j)}}{K_i + K_j}\right)_{ij}}$$

multiplied by the normal percentile $N^{-1}(0.995)$, where:

$$K = \begin{pmatrix} K_1 & & \\ & K_2 & \\ & & K_3 \end{pmatrix}$$

4) In order to reduce the workload on the insurers and keep this method comparable to the principal components approach used previously, a principal components-type analysis on the three shocks available is performed and the least significant shock is discarded[47]. Let:

$$N = \begin{pmatrix} LOT & & \\ & a & \\ & & b \end{pmatrix} M$$

where:

LOT = Last Observed Term (e.g. 30 for USD) $a = \sum_{\tau=1}^{LOT} \frac{1 - e^{-\lambda\tau}}{\lambda\tau}$, $b = \sum_{\tau=1}^{LOT} \left(\frac{1 - e^{-\lambda\tau}}{\lambda\tau} - e^{-\lambda\tau}\right)$

Diagonalise the matrix $N^T N$, and let e_1 and e_2 be the two orthonormal eigenvectors of $N^T N$ (with $\|e_1\| = \|e_2\| = 1$) that have the largest eigenvalues (i.e. the eigenvector with the lowest eigenvalue is discarded). The remaining shocks are defined by Me_1 and Me_2.

5) A rotation is applied on these shocks[48] in order to produce equivalent shocks, where the second shock can be characterised as a twist shock. The characteristic of a twist is that the shocks at some terms are up, and at others the shocks are down. To make things definite, a shock curve if defined to

[47] The remaining two shocks account for around 99% of the requirements.

[48] This is equivalent to applying a rotation on the eigenvectors, thus preserving the independence property.

be a twist if the sum of the shocks at each term is zero. The corresponding rotated first shock is assumed to be mostly a level shock.

Let Θ be the rotation angle, i.e. the rotated vectors are defined by $Twist = (\cos(\theta)Me_2 - sin(\theta)Me_1)$ and $Level = (\cos(\theta)Me_1 + sin(\theta)Me_2)$.

Let $S_1(\tau)$ and $S_2(\tau)$ be the shocks at term τ corresponding to the vectors Me_1 and Me_2. The twist definition used imply that Θ satisfy:

$\sum_{\tau=1}^{LOT}(\cos(\theta)S_2(\tau) - \sin(\theta)\, S_1(\tau)) = 0$

Or equivalently $\tan(\theta) = \frac{\sum_{\tau=1}^{LOT} S_2(\tau)}{\sum_{\tau=1}^{LOT} S_1(\tau)}$

6) The final shocks are defined by $Twist\ shock = N^{-1}(0.995) * (\cos(\theta)Me_2 - sin(\theta)Me_1)$ and $Level\ shock = N^{-1}(0.995) * (\cos(\theta)Me_1 + sin(\theta)Me_2)$.

7) The actual shocked curves are equal to the year-end curve plus or minus the linear combination of DNS curves, with coefficients taken from the components of the vectors $Level\ shock$ and $Twist\ shock$. For example, if the $twist = (\cos(\theta)Me_2 - sin(\theta)Me_1)$ is equal to:

$$\begin{pmatrix} -0.001 \\ 0.002 \\ 0.01 \end{pmatrix}$$

then the corresponding shocked curves are:

$$\text{Year-end curve} \pm N^{-1}(0.995) * (-0.001\ \text{Level Curve} + 0.002\ \text{Slope Curve} + 0.01\ \text{Curvature Curve})$$

13.4.2 Non-Default Spread risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

13.4.2.1 2018 Field Testing approach

685. Non-Default Spread Risk (NDSR) aims to capture unexpected changes in the level or volatility of spreads over the risk-free yield curve, excluding the default component (which is captured in Credit risk)

686. The stress is bi-directional, using a combination of an absolute and a relative stress. This ensures that the charge is relevant in different asset-liability matching situations and that it remains appropriate for the different currencies, taking into account the materially different spread levels which are observed.

NDSR = MAX (Up stress; Down stress; 0)

687. The stress is determined as the minimum of an absolute and a relative calculation. The calibration for 2018 Field Testing is included in the following table:

Table 29. Stresses for Non-Default Spread risk

ICS RC	Up (in bps)	Down[49] (in bps)
1	+100	-100
2	+100	-100
3	+140	-140
4-7	+200	-200
Subject to the relative limit, which is applied to the spread over the base yield curve, defined by:		
Relative limit	250%	50%

688. The stresses are calculated using spreads after risk correction. For insurance liabilities, the calculated stress is applied as a parallel shift to the spread adjustment, as specified for valuation purposes.

[49] The calculation of the absolute down stress is limited to 0 (no negative spread adjustment).

Example of calculation of the stress

GBP	Current Spread	Up Shock	ABS up	REL up (250%)	Resulting Spread (Up Shock)	Down Shock	ABS down	REL down (50%)	Resulting Spread (Down Shock)
	A	B	C = A+B	D=2.5xA	=Min(C,D)	E	F=A+E	G=0.5xA	=max(F,G)
ICS RC 1	63.8	+100	163.8	159.5	159.5	-100	-36.2	31.9	31.9
ICS RC 2	57.3	+100	157.31	143.3	143.3	-100	-42.7	28.7	28.7
ICS RC 3	111.2	+140	251.2	278.1	251.2	-140	-28.8	55.6	55.6
ICS RC 4 & lower	116.7	+200	316.7	291.8	291.8	-200	-83.3	58.4	58.4

General Bucket adjustments (using the GBP Representative Portfolio):

Pre-stress General Bucket adjustment: 19.5 bps

Post-stress General Bucket adjustments: 46.0 bps (up) and 10.1 bps (down)

13.4.2.2 Assets and liabilities subject to the stress

689. The stress calculations should capture changes in the values of all assets and liabilities that are sensitive to changes in spreads. For simplicity, the same assets which contribute to the calculation of the valuation spread adjustments (Table 8) should be subject to the stress, with the exception identified in the next paragraph.

690. Sovereign assets are excluded from the scope of the NDSR stress. This is consistent with the approach adopted in the Credit risk module.

691. Insurance liabilities are also included in the scope of NDSR stress. The application of the stress results in a re-calculation of the spread adjustments, as determined for valuation purposes (this means that the same specification of the discounting methodology is used, only the spreads considered are wider/narrower), using the information provided by the IAIS.

13.4.2.3 GAAP Plus approach

13.4.2.3.1 Background

692. Depending on the jurisdiction and asset or liability type, the NDSR shock impacts liabilities differently, depending on the approach to liability discounting and asset valuation used in GAAP Plus.

13.4.2.3.2 Liabilities

693. For insurance liabilities measured using yield curves based on current market information, the impact of the NDSR shock is calculated by applying the MAV approach.

694. For insurance liabilities that are discounted using a portfolio earned rate/curve blended with a reinvestment rate assumption, the NDSR shock is applied to the reinvestment rate only using the NDSR stressed IAIS yield curves at each tenor for each currency.

695. For insurance liabilities that are discounted using a portfolio earned rate/curve blended with a reinvestment rate based on the government bond rate (e.g. Japanese Life liabilities), there is no NDSR shock applied.

696. For insurance liabilities that are reported undiscounted (e.g. U.S. non-life liabilities), there is no NDSR shock applied.

13.4.2.3.3 Assets

697. For assets measured at fair value, using yield curves based on current market information, the impact of the NDSR shock is calculated by applying the MAV approach.

698. For assets measured at cost, there is no NDSR shock applied.

699. Where an AOCI adjustment is applied to certain assets backing long duration liabilities such as under GAAP Plus for U.S. GAAP, U.S. SAP, and Japanese GAAP, the NDSR shock as specified under MAV is also applied to restate the AOCI adjustment, which serves to neutralise the NDSR asset shock for those assets included in the AOCI adjustment.

13.4.2.4 Information provided by the IAIS

700. Yield curves including stressed spread adjustments are provided for the General Bucket of the Three-Bucket Approach, for the currencies for which the IAIS has provided base yield curves. The IAIS-provided stressed spreads used in this calculation, should be also used by Volunteer Groups to determine the stressed yield curves under the Middle (WAMP) and Top (Own Assets) Buckets of the Three-Bucket Approach.

13.4.2.5 Information required from Volunteer Groups

701. Under the stress approach being used for 2018 Field Testing, the changes in the values of assets and liabilities are reported separately for each bucket of the Three-Bucket Approach.

702. The effect of management actions is determined in a two-step process. First, the impact of the scenario is calculated without allowing for the effect of management actions. In the second step, the scenarios are evaluated allowing for the effect of management actions. The NDSR charge is calculated after management actions.

13.4.3 Equity risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

703. The Technical Specifications for Equity risk apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Equity risk calculation is fundamentally the same for both approaches.

13.4.3.1 Definition of Equity risk

704. Equity risk is defined as the risk of adverse changes in the value of capital resources due to unexpected changes in the level or volatility of market prices of equities.

705. In 2018 Field Testing, Equity risk should capture all direct and indirect impact of the equity stress scenario on the financial situation of the Volunteer Group. Equity risk exposures refer to all financial resources with values sensitive to changes in the level or volatility of market prices for equities.

706. The indirect impacts are linked to products held by the Volunteer Group that may be sensitive to a change in value or behaviour of the equity prices. Such indirect exposures may include, but are not limited to:

a) Mutual funds invested in equity (see Sections 4.3 and 13.2.1 on Look-through)

b) Derivatives sensitive to equity prices and/or volatilities

c) Unit-linked products (especially those providing guarantees)

d) Participating products that are linked to equity values

e) More complex insurance products, such as variable annuities

13.4.3.2 Segmentation

707. For the calculation of the risk charge for Equity risk, the following segmentation of assets is used in the Template:

a) Listed equity in developed markets

b) Listed equity in emerging markets

c) Hybrid debt / preference shares

d) Other equity

708. Listed equity in developed markets includes equities listed on the securities exchanges of countries included in the FTSE Developed Index: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, UK, and USA.

709. For the purposes of 2018 Field Testing, any country not included in the FTSE Developed Index is considered an 'emerging market'.

710. Preference shares are defined as a company's shares that generally entitle the holder to receive dividends (often fixed) before common share dividends are paid, and that are to be paid out before common shares in the event of bankruptcy, but that do not have any voting rights. All subordinated debt is included in the segment "Hybrid debt/preference shares" and consequently does not bear any Credit risk charge.

711. The segment Other equity comprises unlisted equities, hedge funds, limited partnerships, commodities, infrastructure and other alternative investments.

712. The value for each of these asset segments should be provided before any shocks, and under the stress scenario. Separate columns are provided for direct or indirect ownership equity and derivatives.

713. The impact on insurance liabilities should be reported in the Template, separately for life and non-life business, following the general IAIS segmentation (please refer to Annex 1). The impact on reinsurance recoverables/assets should be disclosed separately.

714. The impact on non-insurance liabilities should also be reported in the Template.

13.4.3.3 Calculation of the Equity risk charge

715. The risk charge for Equity risk is calculated as the change in net asset value (NAV) following the occurrence of the stress scenario described below, taking into account all the Volunteer Group's individual direct and indirect exposures to Equity risk as defined above.

716. The impact of the stress scenario should be calculated before and after management actions.

717. The impact of the stress scenario after management actions is the Equity risk charge.

13.4.3.3.1 Stress scenario (prices down, volatility up)

718. The stress scenario is a shock consisting of four level scenarios (one for each asset segment) and one volatility scenario as defined below:

a) Instantaneous relative decrease by 35% of the market prices of all listed shares in developed markets

b) Instantaneous relative decrease by 48% of the market prices of all listed shares in emerging markets

c) Instantaneous relative decrease of the market prices of hybrid debt/preference shares by x%, which varies based on the ICS RC of the asset :

Table 30. Stresses for hybrid debt/preference shares

ICS RC	x%
1-2	4%
3	6%
4	11%
5	21%
6-7	35%

d) Instantaneous relative decrease by 49% of the market prices of all assets classified as other equity (see paragraph 711)

e) Instantaneous absolute increase by x% of the implied volatilities of all the asset classes listed above, with x having the following values:

Table 31. Absolute stresses for implied volatilities

Maturity (months)	Shock x = (A*B)
0-1	39%
3	27%
6	23%
12	20%
24	18%
36	17%
48	16%
60	16%
84	15%
120	14%
144	14%
180 and above	13%

f) For maturities not specified above, the increase is interpolated linearly.

13.4.3.3.2 Aggregation

719. The aggregation of Equity risk consists of the following two steps:

a) Step 1: The total level risk is calculated by aggregating the impacts of the stress for each level scenario using the following correlation matrix (i.e. the diversification effect among each level scenario is taken into account):

Table 32. Equity correlation matrix

Equity segment	Developed	Emerging	Hybrid/preferred	Other
Developed	100%	75%	100%	75%
Emerging	75%	100%	75%	75%
Hybrid/preferred	100%	75%	100%	75%
Other	75%	75%	75%	100%

b) Step 2: The total Equity risk charge is calculated by summing the total level risk in a) above and the impact of the stress under the volatility scenario.

13.4.4 Real Estate risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

720. Real Estate risk is defined as the risk of adverse changes in the value of capital resources due to unexpected changes in the level or volatility of market prices of real estate or from the amount and timing of cash flows from investments in real estate.

721. In the GAAP Plus approach, the Real Estate risk charge for owner occupied property is calculated as the difference, if positive, of the balance sheet value on the reporting date less 75% of the property's fair value on the reporting date. If the fair value of such a property is not available, the risk charge is 25% of the property's book value. The risk charge is determined on a property-by-property basis.

722. A simplified approach continues to be used for Real Estate risk for 2018 Field Testing, with the Real Estate shock being represented only by a change in the level of real estate prices without distinguishing between commercial, residential and real estate for own use .

723. In order to capture realistic management actions in a post stress situation, when material, the Real Estate risk charge is based on stressing the market value of real estate exposures.

724. Real estate exposures subject to this risk include both direct and indirect exposures to real estate (see Sections 4.3 and 13.2.1 on Look-through).

725. Direct exposure includes real estate held for own use. When such assets are not carried on the ICS Balance Sheet at their realisable value, the exposure should be adjusted to the realisable value.

726. Mortgages are not included in Real Estate risk (see Section 13.5 on Credit risk).

727. Investments in companies engaged in real estate management, facility management or real estate administration, or investments in companies engaged in real estate project development or similar activities are excluded from Real Estate risk for 2018 Field Testing.

13.4.4.1 Results (Real Estate risk summary)

728. After Management Actions – The Real Estate risk charge is defined as the change in net asset value (NAV) after applying the prescribed stress and after management actions (see Section 13.2.4 on Management Actions) and is calculated automatically within the Template based on input data.

729. Before Management Actions – The change in NAV before management actions is calculated automatically within the Template based on input data.

13.4.4.2 Input data

730. Input data required for this risk charge are:

a) Value Pre-Shock – The pre-shock value of assets and liabilities sensitive to real estate price changes, including direct and indirect exposures, for

i. Commercial investment, including:

(1) Direct ownership

(2) Indirect

ii. Residential investment, including:

(1) Direct ownership

(2) Indirect

iii. Real Estate for own use

iv. Other assets

v. Liabilities – this includes liabilities (both insurance and other) whose value is impacted by a change in real estate values

b) Post-Shock NAV before management actions – The NAV after applying the prescribed shock, before management actions, but including any direct effect on current estimates values (e.g. unit-linked current estimates);

c) Effect of management actions – Effects of the management actions on NAV after applying the prescribed shock. This should be entered as a positive number.

13.4.4.2.1 Calculation

731. The Real Estate risk charge is calculated as:

$$Real\ estate\ Risk\ Charge = \Delta NAV \mid shock$$

where

$\Delta NAV \mid shock$ = Change in net asset value after applying the prescribed shock

$shock$ = simultaneous decrease of 25% in the value of all property exposures.

13.4.5 Currency risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

732. The Technical Specifications for Currency risk apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Currency risk calculation is fundamentally the same for both approaches.

733. The look-through approach should be applied on a best efforts basis for 2018 Field Testing. The approach set out in the Currency risk section requires granular data that may not be readily available from indirect investments. Volunteer Groups may need to make assumptions about currency exposures from indirect investment vehicles. Volunteer Groups should report these assumptions in the Questionnaire.

734. Currency risk exposures consist of 35 predefined currencies. A World Bucket[50] is provided for exposures in any currency not included in the predefined list. In choosing the currencies to report, the general principles of best efforts and proportionality should be taken into account.

735. In the table of exposures, report the net open position in each currency. Net long positions should be reported as positive entries, and net short positions should be reported as negative entries. All positions should be reported in units of the Volunteer Group's base currency, converted using spot exchange rates in effect at the reporting date. The net open position for each currency is calculated by deducting up to 10% of net insurance liabilities in each currency from the sum of the following:

a) the net spot position, defined as all asset items less all liability items, including accrued interest and accrued expenses

b) the net forward position, defined as all net amounts under forward foreign exchange transactions, including currency futures and the interest and principal on currency swaps

c) the delta equivalent amounts of currency options

d) guarantees and similar instruments that are certain to be exercised and are likely to be irrevocable

e) at the discretion of the Volunteer Group, net future income and expenses not yet accrued but already fully hedged

f) any other item representing a profit or loss in the foreign currency.

[50] The one exception to the World bucket is the BND. The stresses for the BND are the same as the SGD. BND against the SGD will receive the lowest stress factor, which is 5%.

The deduction of up to 10% of net insurance liabilities should only be applied to long positions and may not change any long position to a short position.

736. The net open currency position should exclude assets that are fully deducted from capital resources (e.g. goodwill), and liability items that qualify for inclusion in consolidated capital resources (e.g. subordinated debt).

737. The net insurance liability reported for each currency should consist of gross insurance liabilities net of any reinsurance assets, plus all deferred tax assets and liabilities associated with the insurance liabilities and reinsurance assets. This amount as well as the net open position both before and after the offset (i.e. up to 10% of net insurance liabilities) should be reported within the Currency risk section of the worksheets *FT18.ICS Risk Charges.*

738. Forward currency positions should be valued at spot market exchange rates as at the balance date. Volunteer Groups should not use forward exchange rates, as these rates reflect current interest rate differentials.

739. A Volunteer Group's net capital investment in a foreign subsidiary includes all positions arising from instruments issued by the subsidiary to the Volunteer Group that meet the criteria for qualifying capital resources. If the Currency risk relating to a capital investment in a foreign subsidiary is hedged, the currency position for the investment should be reported net of the associated hedges (please refer to Section 13.2.2).

740. Report the new value of each net open currency position under the following stress scenarios:

a) Scenario 1: All of the currencies in which the Volunteer Group has a net long position decrease in value, while all of the currencies in which the Volunteer Group has a net short position remain unchanged. The amount of the decrease of each foreign currency relative to the reporting currency is found in the currency stress matrix in Table 33 below. Volunteer Groups should look up the reference currency (in the far left column) and the other currency (in the top row) within the matrix to determine the amount of the decrease.

b) Scenario 2: All of the currencies in which the Volunteer Group has a net short position increase in value, while all of the currencies in which the Volunteer Group has a net long position remain unchanged. The amount of the increase of each foreign currency relative to the reporting currency is found in the currency stress matrix in Table 33. Volunteer Groups should look up the reference currency (in the far left column) and the other currency (in the top row) within the matrix to determine the amount of the increase.

741. For each scenario, the losses by currency are aggregated using a correlation formula for which the assumed correlation of losses between each pair of foreign currencies is 50%. The Currency risk charge is equal to the higher of the aggregated losses incurred under the two scenarios.

Table 33. Currency risk stress matrix

	Against											
Ref Curr	AUD	BRL	CAD	CHF	CLP	CNY	COP	CZK	DKK	EUR	GBP	HKD
AUD	0%	50%	30%	45%	40%	40%	45%	40%	35%	35%	35%	40%
BRL	55%	0%	55%	65%	50%	60%	55%	60%	60%	60%	60%	60%
CAD	30%	50%	0%	40%	35%	25%	35%	35%	30%	30%	30%	25%
CHF	45%	65%	35%	0%	45%	35%	50%	30%	20%	20%	30%	35%
CLP	40%	50%	35%	45%	0%	35%	40%	45%	40%	40%	35%	35%
CNY	40%	55%	25%	35%	30%	0%	35%	40%	30%	30%	25%	5%
COP	45%	55%	35%	50%	40%	35%	0%	50%	45%	45%	40%	35%
CZK	40%	60%	35%	30%	45%	40%	50%	0%	15%	15%	30%	40%
DKK	35%	60%	30%	20%	40%	30%	45%	15%	0%	5%	25%	30%
EUR	35%	60%	30%	20%	40%	30%	45%	15%	5%	0%	25%	30%
GBP	35%	55%	30%	30%	35%	25%	40%	30%	25%	25%	0%	25%
HKD	40%	55%	25%	35%	30%	5%	35%	40%	30%	30%	25%	0%
HUF	40%	60%	40%	40%	50%	45%	50%	25%	25%	25%	35%	45%
IDR	50%	60%	45%	55%	45%	40%	45%	55%	50%	50%	45%	40%
ILS	50%	65%	35%	45%	40%	25%	45%	50%	40%	40%	40%	25%
INR	35%	50%	25%	35%	30%	20%	35%	40%	30%	30%	30%	20%
JPY	50%	70%	40%	40%	45%	30%	50%	45%	40%	40%	40%	30%
KRW	35%	50%	25%	40%	35%	25%	35%	40%	35%	35%	30%	25%
MXN	35%	50%	30%	45%	30%	30%	35%	45%	40%	40%	35%	30%
MYR	35%	50%	25%	35%	30%	15%	30%	35%	30%	30%	25%	15%
NOK	35%	55%	30%	30%	40%	35%	45%	25%	20%	20%	30%	35%
NZD	25%	55%	30%	45%	40%	40%	45%	40%	35%	35%	35%	40%
PEN	40%	55%	25%	40%	30%	15%	35%	40%	30%	30%	30%	10%
PHP	30%	35%	20%	40%	25%	15%	30%	35%	30%	30%	25%	15%
PLN	40%	55%	35%	40%	45%	45%	50%	25%	30%	30%	35%	45%
RON	40%	50%	35%	35%	40%	35%	45%	30%	25%	25%	30%	35%
RUB	50%	65%	40%	50%	45%	35%	45%	45%	40%	40%	40%	35%
SAR	40%	55%	25%	35%	30%	5%	35%	40%	30%	30%	25%	5%
SEK	35%	60%	30%	30%	40%	35%	45%	25%	20%	20%	30%	35%
SGD	30%	50%	20%	30%	30%	15%	30%	30%	25%	25%	25%	15%
THB	40%	55%	30%	35%	35%	20%	35%	40%	30%	30%	30%	20%
TRY	70%	75%	70%	75%	70%	70%	75%	75%	70%	70%	70%	70%
TWD	35%	55%	25%	35%	30%	10%	35%	35%	30%	30%	25%	10%
USD	40%	55%	25%	35%	30%	5%	35%	40%	30%	30%	25%	5%
ZAR	45%	65%	45%	55%	50%	55%	55%	50%	50%	50%	50%	55%

	Against											
Ref Curr	HUF	IDR	ILS	INR	JPY	KRW	MXN	MYR	NOK	NZD	PEN	PHP
AUD	40%	50%	50%	35%	55%	35%	35%	35%	35%	25%	40%	30%
BRL	65%	65%	65%	55%	75%	55%	50%	55%	60%	55%	55%	40%
CAD	40%	45%	35%	25%	40%	25%	30%	25%	30%	30%	25%	20%
CHF	35%	50%	45%	35%	40%	40%	45%	35%	30%	40%	35%	40%
CLP	45%	50%	40%	30%	50%	35%	30%	30%	40%	40%	30%	25%
CNY	45%	40%	25%	20%	30%	25%	30%	15%	35%	40%	15%	15%
COP	50%	50%	45%	35%	50%	35%	35%	30%	45%	45%	35%	30%
CZK	25%	55%	50%	40%	45%	40%	40%	35%	25%	40%	40%	35%
DKK	25%	50%	40%	30%	40%	35%	40%	30%	20%	35%	30%	30%
EUR	25%	50%	40%	30%	40%	35%	40%	30%	20%	35%	30%	30%
GBP	35%	45%	40%	30%	40%	30%	35%	25%	30%	35%	30%	25%
HKD	45%	40%	25%	20%	30%	25%	30%	15%	35%	40%	10%	15%
HUF	0%	60%	55%	45%	55%	45%	45%	40%	30%	40%	45%	45%
IDR	60%	0%	50%	40%	50%	40%	45%	40%	50%	50%	40%	20%
ILS	55%	50%	0%	30%	40%	40%	40%	30%	45%	50%	30%	30%
INR	45%	40%	30%	0%	35%	25%	25%	15%	35%	35%	20%	20%
JPY	55%	50%	40%	35%	0%	40%	50%	35%	45%	50%	35%	30%
KRW	45%	40%	40%	25%	40%	0%	30%	25%	35%	35%	30%	20%
MXN	45%	45%	40%	25%	50%	30%	0%	25%	40%	40%	30%	25%
MYR	40%	40%	30%	15%	35%	25%	25%	0%	30%	35%	20%	20%
NOK	30%	50%	45%	35%	45%	35%	40%	30%	0%	35%	35%	30%
NZD	40%	50%	50%	35%	55%	35%	40%	35%	35%	0%	40%	35%
PEN	45%	40%	30%	20%	35%	25%	30%	20%	35%	40%	0%	15%
PHP	45%	20%	30%	20%	30%	20%	25%	20%	30%	35%	15%	0%
PLN	25%	55%	55%	40%	55%	40%	40%	40%	30%	40%	40%	40%
RON	35%	50%	45%	35%	45%	35%	40%	30%	30%	40%	35%	35%
RUB	50%	50%	45%	35%	50%	40%	40%	35%	45%	50%	35%	50%
SAR	45%	40%	25%	20%	30%	30%	30%	15%	35%	40%	10%	15%
SEK	30%	50%	45%	35%	45%	35%	40%	35%	20%	35%	35%	30%
SGD	40%	35%	30%	15%	30%	20%	25%	15%	30%	35%	15%	15%
THB	45%	40%	30%	20%	35%	30%	35%	20%	35%	40%	20%	15%
TRY	70%	75%	75%	70%	75%	70%	70%	70%	70%	75%	70%	30%
TWD	40%	40%	25%	15%	30%	20%	30%	15%	30%	35%	15%	15%
USD	45%	40%	25%	20%	30%	30%	30%	15%	35%	40%	10%	15%
ZAR	50%	65%	60%	50%	65%	45%	50%	45%	45%	50%	50%	40%

	Against										
Ref Curr	PLN	RON	RUB	SAR	SEK	SGD	THB	TRY	TWD	USD	ZAR
AUD	40%	40%	50%	40%	35%	30%	40%	55%	35%	40%	45%
BRL	60%	50%	65%	60%	60%	55%	60%	70%	55%	60%	65%
CAD	35%	35%	40%	25%	30%	20%	30%	55%	25%	25%	45%
CHF	40%	35%	45%	35%	30%	30%	35%	65%	30%	35%	55%
CLP	45%	40%	40%	35%	40%	30%	35%	55%	30%	35%	50%
CNY	45%	35%	35%	5%	35%	15%	20%	55%	10%	5%	50%
COP	50%	45%	45%	35%	45%	35%	35%	60%	35%	35%	55%
CZK	25%	30%	45%	40%	25%	30%	40%	60%	35%	40%	50%
DKK	30%	25%	40%	30%	20%	25%	30%	55%	30%	30%	50%
EUR	30%	25%	40%	30%	20%	25%	30%	55%	30%	30%	50%
GBP	35%	30%	40%	25%	30%	25%	30%	55%	25%	25%	50%
HKD	45%	35%	35%	5%	35%	15%	20%	55%	10%	5%	50%
HUF	25%	35%	50%	45%	30%	40%	45%	60%	40%	45%	50%
IDR	55%	50%	50%	40%	50%	35%	40%	70%	40%	40%	65%
ILS	55%	45%	45%	25%	45%	30%	30%	65%	25%	25%	60%
INR	40%	35%	35%	20%	35%	15%	20%	55%	15%	20%	50%
JPY	55%	45%	50%	30%	45%	30%	35%	70%	30%	30%	65%
KRW	40%	35%	40%	30%	35%	20%	30%	55%	20%	30%	45%
MXN	40%	40%	40%	30%	40%	25%	35%	55%	30%	30%	45%
MYR	40%	30%	30%	15%	35%	15%	20%	55%	15%	15%	45%
NOK	30%	30%	40%	35%	20%	30%	35%	60%	30%	35%	45%
NZD	40%	40%	50%	40%	35%	35%	40%	60%	40%	40%	50%
PEN	40%	35%	35%	10%	35%	15%	20%	55%	15%	10%	50%
PHP	35%	30%	50%	15%	30%	15%	15%	25%	15%	15%	40%
PLN	0%	35%	45%	45%	30%	35%	45%	55%	40%	45%	50%
RON	35%	0%	40%	35%	30%	30%	35%	60%	30%	35%	50%
RUB	50%	40%	0%	35%	45%	35%	40%	65%	35%	35%	55%
SAR	45%	35%	35%	0%	35%	15%	20%	55%	10%	5%	55%
SEK	30%	30%	45%	35%	0%	30%	35%	60%	35%	35%	50%
SGD	35%	30%	35%	15%	30%	0%	20%	55%	10%	15%	45%
THB	45%	35%	40%	20%	35%	20%	0%	55%	20%	20%	50%
TRY	70%	70%	75%	70%	70%	65%	70%	0%	70%	70%	75%
TWD	40%	30%	35%	10%	35%	10%	20%	55%	0%	10%	50%
USD	45%	35%	35%	5%	35%	15%	20%	55%	10%	0%	55%
ZAR	50%	50%	55%	55%	50%	45%	50%	60%	50%	55%	0%

13.4.6 Asset Concentration risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

742. The Technical Specifications for Asset Concentration risk apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for the GAAP Plus approach, the Asset Concentration risk calculation is fundamentally the same for both approaches.

743. The Asset Concentration risk threshold is calculated using total assets (for insurance business, excluding assets in separate accounts or where the investment risks fully flow-through [51] to policyholders) based upon the applicable valuation basis (MAV or GAAP Plus approach).

744. The table for calculating the Asset Concentration risk charge only applies to amounts of net exposures in excess of the Asset Concentration risk threshold.

745. Counterparty related – Net exposures should be determined on the basis of non-affiliated single counterparties or connected group of counterparties (including for reinsurers). For 2018 Field Testing, the BCBS definition[52] of a connected group of counterparties should be used. Specifically, two or more natural or legal persons should be deemed a group of connected counterparties if at least one of the following criteria is satisfied:

a) Control relationship: one of the counterparties, directly or indirectly, has control over the other(s).

b) Economic interdependence: if one of the counterparties were to experience financial problems, in particular funding or repayment difficulties, the other(s), as a result, would also be likely to encounter funding or repayment difficulties.

746. Property – Net exposures should be determined for property exposures. Property exposures should be based upon single property, or group of properties in very close proximity to each other (for example, two properties within 250 metres of each other), including exposures from both direct and indirect (such as funds of properties and mortgage) holdings.

747. 2018 Field Testing does not require the Asset Concentration risk charge to be applied to national government exposures. Sub-national government obligations (e.g. provincial/state or municipal bonds) should included within the worksheet.

[51] Not considering any guarantee to policyholders that may exist on the value of the overall investment fund(s) such as on variable annuity products

[52] As specified in the BCBS publication *Supervisory framework for measuring and controlling large exposures* (April 2014), which also outlines criteria for assessing whether 'control' or 'economic interdependence' exists.

748. The determination of the gross counterparty and property exposures should include both on- and off-balance sheet positions, and should consider the following:

a) Exposures to reinsurance counterparties should be included, but should not be assessed on a 'stress basis'; in other words, it should not take into account the contingent Credit risk arising from catastrophe scenarios applied.

b) Similar to the specifications within the ICS Credit risk section, the determination of OTC derivatives exposures should be based on a credit-equivalent basis as applicable, and exposures to central counterparties should be excluded from ICS risk charges.

c) Exposures based upon a look-through for investment funds, structured products etc. should be included. For practical considerations, the look-through approach to be utilised for determining risk exposures within other risk modules should also apply here. Where a look-through approach in other modules allows for practical exceptions, the investment fund, structured product etc. should be assessed as a separate counterparty for Asset Concentration risk purposes. When the issuer of a security is a trust (SPV or a similar entity) that has no (material) creditworthiness, and the source of interest and principal payments is the assets in the trust, and there is no guarantor for the payments, look-through to the trust's assets is appropriate, and the assets are then also subject to the asset concentration limit. When there is a guarantor that is responsible for maintaining assets in the trust sufficient for interest and principal payments, or directly guarantees those payments, the guarantor (such as a GSE – government sponsored entity) is subject to Asset Concentration risk, and the assets in the trust provide additional credit support should the guarantor (such as a GSE) not be able to honour its obligations.

d) Non-affiliated (external) guarantees made, commitments given, bank deposits, receivables and any other item subject to the possibility of financial loss due to counterparty default should be included.

e) Gross exposures should be calculated based upon the applicable valuation basis (MAV or GAAP Plus), except where otherwise specified (such as the use of 'credit-equivalent' amounts).

749. For the determination of net counterparty and property exposures, the following should be considered:

a) Exposures from assets held in separate accounts or in respect of life insurance contracts where the investment risks fully flow-through to policyholders (not considering any guarantee to policyholders that may exist on the value of the overall investment fund(s) such as on variable annuity products) should be excluded.

b) Asset exposures should only be netted against liability exposures to the extent that they are subject to a legally enforceable right of offset.

c) For collateral and unconditional and irrevocable guarantees, the 'substitution approach' specified within the ICS Credit risk section may be used, if favourable, for the portion of the exposure that is covered by the collateral and guarantees. There should be no gross exposure reduction for amounts of over-collateralisation. The exposure to the collateral or guarantor counterparty should replace the exposure of the primary obligation counterparty, reducing the aggregate exposure to the counterparty of the primary obligation and increasing that of the collateral or guarantor counterparties. This approach should also be used for bank deposits if an explicit guarantee (such as a national government guarantee) exists. Where national government exposures are substituted for corporate exposures, such amounts are excluded from the determination of the Asset Concentration risk charge within 2018 Field Testing.

750. Aggregate amount exceeding the threshold – This figure is the total of:

a) Exposures to each non-affiliated single counterparty (to the Volunteer Group) or group of connected counterparties exceeding the threshold

b) Exposures to each single real estate property exceeding the threshold

c) Exposures to each group of very close proximity properties exceeding the threshold

751. Only the aggregate net exposure amounts by counterparty (or connected counterparties) or property in excess of the Asset Concentration risk threshold, and further segmented by the applicable weighted-average credit quality, should be included in this figure. This column should be filled in, if applicable, for each group of ICS Rating Categories and for property.

752. The Asset Concentration risk section of the worksheets *FT18.ICS Risk Charges* also includes columns to capture additional information on:

a) "# of CPs/properties exceeding threshold" – The number of non-affiliated single counterparties or group of connected counterparties, or single or group of very close proximity properties, whose net exposures exceed the thresholds set out in each group of ICS Rating Categories in each risk charge category.

b) "# of reinsurance providers in CPs exceeding threshold" – As a subset of the number of counterparties identified in a) above, the number of these counterparties that are also currently reinsurance providers to any entities within the group.

753. The incremental risk charge factors are for 2018 Field Testing purposes, and should not be viewed as indicative of the level of risk charges, if any, that may be applicable for Asset Concentration risk within ICS Version 2.0.

754. A separate section is included for the supplementary reporting of property for own use as a subset of the property exposures exceeding the applicable thresholds.

755. The following chart outlines the thresholds and risk charges are being tested:

Table 34. Threshold and risk charge for each Asset Concentration risk charge category

Asset concentration risk charge category	Applicable threshold (% of total insurance assets)	Incremental capital charge factor
Counterparty-related (weighted average)		
in ICS rating category 1 and 2	3%	15%
in ICS rating category 3 and 4	3%	25%
in ICS rating category 5, 6 and 7	1.5%	50%
Property	3%	25%

13.5 Credit Risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

756. The Technical Specifications for Credit risk apply both to the MAV and GAAP Plus approaches.

757. Under GAAP Plus, fixed income investments that are included in the AOCI adjustment to capital resources should be reported on an amortised cost basis for purposes of determining the Credit risk charge. The credit risk factor will be applied to the amortised cost balances in order to remain consistent with the valuation method reflected in capital resources. Volunteer Groups that follow either the U.S. GAAP or Japan GAAP Plus examples and have identified fixed income investments that are included in their AOCI Adjustment to Capital Resources in worksheet *FT18.BCR&ICS.Balance Sheet* are requested to record these investments in the credit risk tables on an amortised cost basis. All other investments should continue to be recorded on the same basis as what is reported in the balance sheet, whether that be cost or fair value. A check has been built into the table such that the amount reported as the AOCI adjustment should equal the difference between fixed income investments reported in the Credit risk tables versus the balance sheet.

758. The Credit risk charge is based on external ratings when there is a rating by a rating agency used by the ICS. The IAIS is monitoring developments at the BCBS, and may revise the structure of the Credit risk requirement if a practicable approach that does not rely on rating agencies emerges. For 2018 Field Testing, Volunteer Groups that have access to NAIC Designations[53] should report Credit risk exposures with and without NAIC Designations. Those Volunteer Groups that do not have access to NAIC Designations should report the same Credit risk exposures in both sections (with and without NAIC Designations).

759. Volunteer Groups are also asked to provide information on the migration of ICS ratings when going from not using NAIC Designations to using NAIC Designations within the ICS Credit risk calculation. An intermediate step is included to collect information on the migration of ratings when the NAIC Designations are based only on par value.

760. The look-through approach set out in Sections 4.3 and 13.2.1 should be applied on a best efforts basis for the purposes of 2018 Field Testing. The approach set out in the Credit risk section requires granular data that may not be readily available for indirect investments. Volunteer Groups

[53] The National Association of Insurance Commissioners (NAIC) has developed proprietary technical and analytical products that are used by the states and territories of the U.S. to regulate insurance, including the NAIC Designation, used to assess the quality of assets as part of financial solvency monitoring efforts of U.S. state insurance regulators. The NAIC is not a rating agency.

may need to make assumptions about rating categories and maturities of the underlying investments of indirect investments. Volunteer Groups should report these assumptions in the Questionnaire.

761. The MAV values should be entered in the Credit risk section of the *FT18.ICS Risk Charge* worksheets of a) on-balance sheet assets, broken down by exposure class and rating category, and b) the credit equivalent amounts (see below) of off-balance sheet credit exposures. The Credit risk charge is the sum of each credit exposure, determined by applying specified stress factors based on exposure class, rating category and maturity to the net exposure amounts, then taking into consideration management actions. The following gives instructions on how to classify credit exposures by exposure class, rating category, and maturity, and how to account for the presence of qualifying collateral and guarantees.

762. The GAAP Plus exposure amounts for on-balance sheet and off-balance sheet assets should be entered similarly to MAV, using the tables labelled GAAP Plus. Under the GAAP Plus jurisdictional examples, invested assets may be reported either on a fair value or amortised cost basis. The basis of measurement reported in the GAAP Plus balance sheet should also be used to report exposure amounts in the Credit risk section of the *FT18.ICS Risk Charge* worksheets. As noted above, fixed income investments that have been included in the AOCI adjustment should be reported in the Credit risk section at amortised cost for those Volunteer Groups that report an AOCI adjustment.

13.5.1 Exposure classes

763. The Credit risk charge applies to all senior debt obligations to specified exposure classes of issuers and borrowers. Preferred shares, hybrid obligations and subordinated debt are excluded from the Credit risk charge, and are instead subject to the Equity risk charge for hybrid debt / preference shares described in Section 13.4.2.

764. Credit exposures to national governments, multilateral development banks and supranational organisations are not subject to the Credit risk charge. Regional governments and municipal authorities, as well as other government entities whose debt is not issued by the national government, are classified as public sector entities. Exposures to commercial undertakings owned but not guaranteed by governments or municipal authorities should be classified in the corporates category and not in the public sector entities category.

765. The corporates category includes exposures to banks and securities dealers, but excludes exposures to reinsurers, which are reported separately in the Reinsurance Exposures table. Rated commercial mortgages are included in the corporates exposure class.

766. The class of securitisation exposures reported in the Securitisations table includes all holdings of asset-backed securities and mortgage-backed securities. It also includes any other assets where the cash flow from an underlying pool of exposures is used to service payments by a special purpose vehicle to bondholders. If any of the assets in the pool of exposures underlying a securitisation exposure is itself a securitisation, then the exposure must be reported as a re-securitisation in the Re-securitisations table.

767. Residential mortgages and commercial mortgages should be reported in their respective tables, and miscellaneous assets in the relevant separate table. These exposures are not broken down by rating category. The category "short-term obligations of regulated banks" only includes demand deposits and other obligations that have an original maturity of less than three months, and that are drawn on a bank subject to the solvency requirements of the Basel Framework. All other bank exposures should be included in the corporates exposure class in the Corporates table.

768. A non-paid-up financial instrument that qualifies for inclusion in capital resources is subject to the same credit risk requirement as a direct credit exposure to the contingent capital provider.

13.5.2 Definition of rating categories

769. Volunteer Groups should refer to Section 4.6 for information on ICS Rating Categories. Further, Volunteer Groups may use any ratings by a rating agency currently recognised by their home insurance regulator for local capital determination purposes, subject to clear instructions provided by the home regulator on how to map those credit agency ratings to the ICS Rating categories and explicit acceptance of the use of those ratings by the IAIS as indicated through future communications provided to Volunteer Groups in advance of the Field Testing submission deadline. Similar to 2017 Field Testing, the IAIS will recognise ratings issued by credit agencies licensed with China Banking and Insurance Regulatory Commission (CBIRC). The table below provides a mapping of those ratings, which was determined following all the ICS recognition criteria except that the default statistics are not yet being published regularly; the default data submission is currently to CBIRC only. The average 3-year cumulative default rates (CDRs) used in the mapping are based on the default statistics of the total public trading market from 2008 to 2015. The mapping is on an aggregate basis rather than separately for each agency, because it is very uncommon to differentiate the ratings issued by the above agencies in the China market.

Table 35. Mapping of Chinese domestic credit ratings to ICS Rating Category

ICS Rating Category	Chinese ratings
1	
2	
3	AAA
4	
5	AA/A1, A/A2
6	BBB/A3, BB, B
7	CCC and lower

770. If a Volunteer Group wishes to use ratings produced by any other rating agency, the agency must be regulated or recognised by a suitable government authority in all of the jurisdictions in which the agency issues ratings that the Volunteer Group wishes to use. In addition, the rating agency must

have published, publicly available default and transition statistics extending back at least seven years, and must satisfy all of the following six criteria:

a) Objectivity: The rating agency's methodology for assigning credit assessments must be rigorous, systematic, and subject to some form of validation based on historical experience. Moreover, assessments must be subject to ongoing review and responsive to changes in financial condition. The agency must have an assessment methodology for each market segment, including rigorous back testing that has been established for at least one year and preferably three years.

b) Independence: A rating agency should be independent and should not be subject to political or economic pressures that may influence the rating. The assessment process should be as free as possible from any constraints that could arise in situations where the composition of the board of directors or the shareholder structure of the assessment institution may be seen as creating a conflict of interest.

c) International access/Transparency: The individual assessments, the key elements underlining the assessments and whether the issuer participated in the assessment process should be publically available on a non-selective basis. In addition, the general procedures, methodologies and assumptions for arriving at assessments used by the rating agency should be publicly available.

d) Disclosure: A rating agency should disclose the following information: its code of conduct; the general nature of its compensation arrangements with assessed entities; its assessment methodologies, including the definition of default, the time horizon, and the meaning of each rating; the actual default rates experienced in each assessment category; and the transitions of the assessments, e.g. the likelihood of AA ratings becoming A over time.

e) Resources: A rating agency should have sufficient resources to carry out high quality credit assessments. These resources should allow for substantial ongoing contact with senior and operational levels within the entities assessed in order to add value to the credit assessments. Such assessments should be based on methodologies combining qualitative and quantitative approaches.

f) Credibility: To some extent, credibility is derived from the criteria above. In addition, the reliance on a rating agency's external credit assessments by independent parties (investors, insurers, trading partners) is evidence of the credibility of its assessments. The credibility of a rating agency is also underpinned by the existence of internal procedures to prevent the misuse of confidential information. In order to be eligible for recognition, an agency does not have to assess firms in more than one country.

771. The mapping of the agency's ratings to ICS rating grades will be based on the average of the three-year CDRs associated with the agency's ratings, as follows:

Table 36. Mapping of ratings by other rating agencies

ICS Rating Category	Average 3-year CDR based on over 20 years of published data	Average 3-year CDR based on between 7 and 20 years of published data
1		
2	0 ≤ CDR ≤ 0.15%	
3	0.15% < CDR ≤ 0.35%	0 ≤ CDR ≤ 0.15%
4	0.35% < CDR ≤ 1.20%	0.15% < CDR ≤ 0.35%
5	1.20% < CDR ≤ 10.00%	0.35% < CDR ≤ 1.20%
6	10.00% < CDR ≤ 25.00%	1.20% < CDR ≤ 10.00%
7	CDR > 25%	CDR > 10%

772. If a Volunteer Group is using one or more rating agencies for which it is performing its own mapping to ICS rating categories based on the three-year CDR, for each rating agency it must indicate in the Questionnaire:

a) The name of the rating agency

b) The name of the national authority that regulates or has recognised the rating agency, along with a summary of how the authority regulates, or the criteria that the authority uses for recognizing rating agencies

c) The rating agency's definition of default, including a link to where the definition is posted

d) The rating agency's average three-year CDR, the number of years of default data on which this average is based, the number of credits for each rating on which the average is based, and a link to where all of the information is posted

e) Which agency ratings the Volunteer Group has mapped to which ICS rating categories

13.5.3 Instructions around the use of ratings

773. A Volunteer Group must choose the rating agencies it intends to rely on and then use their ratings consistently for each type of credit exposure. Volunteer Groups may not cherry pick the assessments provided by different rating agencies.

774. Any rating used to determine an ICS rating category must be publicly available, i.e. the rating must be published in an accessible form and included in the rating agency's transition matrix. Ratings that are made available only to the parties to a transaction do not satisfy this requirement.

775. If a Volunteer Group is relying on multiple rating agencies and there is only one rating for a particular security, that assessment should be used to determine the ICS rating category. If there are two ratings from the rating agencies used by a Volunteer Group and they differ, the Volunteer Group should use the ICS rating category corresponding to the lower of the two ratings. If there are three or more ratings for a security from a Volunteer Group's chosen rating agencies, the Volunteer Group should exclude one of the ratings that corresponds to the highest ICS rating category, and then use the rating that corresponds to the highest rating category of those that remain (i.e. the Volunteer Group should use the second-highest rating from those available, allowing for multiple occurrences of the highest rating).

776. Where a Volunteer Group holds a particular security that has one or more issue-specific ratings, the ICS rating category for the claim will be based on these ratings. Where a Volunteer Group's claim is not an investment in a specifically rated security, the following principles apply:

a) In circumstances where the borrower has a specific rating for an issued debt security, but the Volunteer Group's investment is not in this particular security, a rating category of 4 or better on the rated security may only be applied to the Volunteer Group's unrated investment if it ranks pari passu or senior to the rated security in all respects. If not, the credit rating cannot be used and the Volunteer Group's investment must be treated as an unrated obligation.

b) In circumstances where the borrower has an issuer rating, this assessment typically applies to senior unsecured claims on that issuer. Consequently, only senior securities issued by that issuer will benefit from an investment-grade (category 4 or better) issuer assessment; other unassessed securities issued by that issuer will be treated as unrated. If either the issuer or one of its issues has a rating category of 5 or lower, this rating should be used to determine the ICS rating category for an unrated claim on the issuer.

c) Short-term assessments are deemed to be issue specific. They can only be used to derive rating categories for securities issued by a rated facility. They cannot be generalised to other short-term securities, and in no event can a short-term rating be used to support a rating category assignment for an unrated long-term security.

d) Where the rating category for an unrated exposure is based on the rating of an equivalent exposure to the borrower, foreign currency ratings should be used for exposures in foreign currency. Domestic currency ratings, if separate, should only be used to determine the rating category for securities denominated in the domestic currency.

777. The following additional conditions apply to the use of ratings:

a) External assessments for one entity within a corporate group may not be used to determine the rating category for other entities within the same group.

b) No rating may be inferred for an unrated entity based on assets that the entity possesses. The use of internal ratings is not allowed due to a lack of uniformity of methodology and calibration and the lack of a method that would ensure a uniform mapping of ratings.

c) In order to avoid the double counting of credit enhancement factors, Volunteer Groups may not recognise collateral or guarantees if these credit enhancements have already been reflected in the issue-specific rating.

d) A Volunteer Group may not recognise a rating if the rating is at least partly based on unfunded support (e.g. guarantees, credit enhancement or liquidity facilities) provided by the Volunteer Group itself or one of its affiliates.

e) Any assessment used must take into account and reflect the entire amount of Credit risk exposure an insurer has with regard to all payments owed to it. In particular, if a Volunteer Group is owed both principal and interest, the assessment must fully take into account and reflect the Credit risk associated with repayment of both principal and interest.

13.5.4 Exposures in default

778. Any asset for which there is reasonable doubt about the timely collection of the full amount of principal or interest, should be reported in the row for defaulted exposures within the asset's exposure class. This row should also include any asset that is contractually more than 90 days in arrears.

779. The exposure amount for a defaulted asset should be reported net of all balance sheet write-downs and specific provisions that have been recorded for the asset.

13.5.5 Redistribution of exposures for Credit risk mitigation

780. Eligible Credit risk mitigation (i.e. collateral and guarantees) is recognised by substituting the Credit risk factor of the collateral or guarantor for that of the underlying exposure. If an exposure is eligible according to the criteria in the sections below (as well as Section 13.2.2 on Risk Mitigation) for recognition of Credit risk mitigation, the effect of the Credit risk mitigation will be to transfer the exposure from the class of the borrower to that of the collateral or the guarantor. This is done in the Template by including the negative amount of the exposure in column [Redistribution for Collateral and Guarantees] of the row corresponding to the class of the underlying exposure, and including the positive amount of the exposure in column [Redistribution for Collateral and Guarantees] of the row corresponding to the class of the collateral or of the guarantor. The total entry in each row of column [Redistribution for Collateral and Guarantees] is the net sum of the (positive) exposures redistributed

into and (negative) exposures redistributed out of the exposure class. The sum of all entries in column [Redistribution for Collateral and Guarantees] taken over all exposure classes must be zero.

13.5.6 Distribution of exposures by maturity

781. Volunteer Groups must calculate the effective maturity for each credit exposure in a particular rating category and include it in the cell for the corresponding maturity bucket. The effective maturity should be classified by exposure (e.g. for each asset or each counterparty exposure). Volunteer Groups should aggregate all exposures to a group within each rating category before calculating the maturity for the exposures. When an exposure is redistributed into another rating category due to the presence of an eligible guarantee or collateral, effective maturity should be calculated based on the term of the underlying exposure, not the term of the guarantee or the collateral.

782. Effective maturity is calculated as follows:

a) For an instrument subject to a determined cash flow schedule, effective maturity is defined as:

$$\text{Effective Maturity} = \sum_t t * CF_t \,/\, \sum_t CF_t$$

where CF_t denotes the cash flows (principal, interest payments and fees) contractually payable by the borrower in period t.

b) If a Volunteer Group cannot calculate the effective maturity of the contracted payments as noted above, it is allowed to use a more conservative measure, such as the maximum remaining time (in years) that the borrower is permitted to take to fully discharge its contractual obligation (principal, interest, and fees) under the terms of loan agreement. Normally, this will correspond to the nominal maturity of the instrument.

c) For OTC derivatives subject to a master netting agreement, the weighted average maturity of the transactions should be used when applying the explicit maturity adjustment. Further, the notional amount of each transaction should be used for weighting the maturity.

13.5.7 Reinsurance exposures

783. Volunteer Groups can use A.M. Best credit ratings only for purposes of calculating the risk charge on reinsurance exposures. The mapping of A.M. Best insurer financial strength ratings to the ICS ratings categories is as follows:

Table 37. Mapping of A.M. Best ratings to ICS Rating Category

ICS Rating Category	A.M. Best
1	
2	A+

3	A
4	B+
5	B
6	C+
7	C and lower

784. Reinsurance exposures include all positive on-balance sheet reinsurance assets and receivables (negative exposures should not be included as they reduce reported credit exposures), which should be reported in column [Balance Sheet Assets]. Amounts in column [Balance Sheet Assets] should be net of cessions to mandatory insurance pools that are backed by either a governmental entity or jointly by the insurance market. Cessions to these mandatory pools should instead be reported separately. Reinsurance exposures also include all credit that a Volunteer Group takes in its ICS risk charges due to the presence of reinsurance, which should be reported in column [Reduction in ICS risk charges] of the Credit risk section of the worksheets *FT18.ICS Risk Charges*. When a Volunteer Group reduces its ICS risk charges on account of reinsurance, the Credit risk charge is applied on the capital reduction.

785. In the case of catastrophe scenarios and life insurance stresses, the impact of the scenarios and stresses (before management actions) should be calculated on a gross and net of reinsurance basis. The difference between the gross and net of reinsurance basis should then be allocated to Credit risk categories based on the profile of the reinsurers that have provided cover. This calculation needs to occur at the Catastrophe risk charge and Life insurance risk charge level (i.e. after diversification of the components of those risk charges).

786. Modified coinsurance and funds withheld arrangements are subject to a risk charge even if there is no on-balance sheet reinsurance asset or the reinsurance asset is fully offset by payables.

787. For funds withheld and similar arrangements, a Volunteer Group may treat payables and other liabilities due to a reinsurer in the same manner as collateral provided that the arrangement meets the following conditions:

a) The Volunteer Group has executed a written, bilateral netting contract or agreement with the reinsurer from which the asset is due that creates a single legal obligation. The result of such an agreement must be that the Volunteer Group would have only one obligation for payment or one claim to receive funds based on the net sum of the liabilities and amounts due in the event the reinsurer failed to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances.

b) The Volunteer Group must have a written and reasoned legal opinion that, in the event of any legal challenge, the relevant courts or administrative authorities would find the amount owed under the netting agreement to be the net amount under the laws of all relevant jurisdictions.

In reaching this conclusion, the legal opinion must address the validity and enforceability of the entire netting agreement under its terms.

i. The laws of "all relevant jurisdictions" are: a) the law of the jurisdiction where the reinsurer is incorporated and, if the foreign branch of a reinsurer is involved, the laws of the jurisdiction in which the branch is located; b) the law governing the individual insurance transaction; and c) the law governing any contracts or agreements required to effect the netting arrangement.

ii. A legal opinion must be generally recognised as such by the legal community in the Volunteer Group's home country or by a memorandum of law that addresses all relevant issues in a reasoned manner.

c) The Volunteer Group must have procedures in place to update legal opinions as necessary to ensure continuing enforceability of the netting arrangement in light of possible changes in relevant law.

13.5.8 Securities financing transactions

788. Volunteer Groups should include exposures arising from on-balance sheet securities financing transactions in column [Balance Sheet Assets], and exposures arising from off-balance sheet securities financing transactions (full notional amount) in column [Other Off-Balance Sheet]. The rating category for a securities financing transaction is the lower of that of the counterparty to the transaction, or that of the securities lent. Volunteer Groups may recognise collateral received under securities financing transactions according to the same criteria as for collateral received under regular lending transactions.

13.5.9 Credit risk stress factors

789. The following tables contain the ICS Credit risk stress factors for the exposure classes by ICS rating category and maturity[54]:

Table 38. Credit risk stress factors for public sector entities

Rating Category	Maturity: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14+
1 or 2	0.1%	0.4%	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%	1.3%
3	0.4%	1.0%	1.3%	1.5%	1.8%	2.0%	2.2%	2.4%	2.5%	2.7%	2.8%	2.9%	3.0%	3.0%	3.1%
4	1.0%	2.2%	2.6%	3.0%	3.3%	3.6%	3.9%	4.1%	4.2%	4.4%	4.5%	4.6%	4.7%	4.8%	4.9%
5	2.5%	5.1%	6.0%	6.6%	7.0%	7.3%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.9%	7.9%	7.9%
6	6.3%	10.8%	11.8%	12.3%	12.5%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%

[54] These stress factors were developed using the Basel single risk factor IRB model of default risk, combined with the model for credit deterioration risk presented in the 2002 paper "The Distribution of Loan Portfolio Value" by O. A. Vasicek.

7	22.0%	24.7%	25.2%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Unrated	2.5%	5.1%	6.0%	6.6%	7.0%	7.3%	7.5%	7.6%	7.6%	7.7%	7.8%	7.8%	7.9%	7.9%	7.9%
In Default	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%

Table 39. Credit risk stress factors for corporates and reinsurance

Rating Category	Maturity: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14+
1 or 2	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
3	0.6%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%	3.7%
4	1.4%	3.0%	3.6%	4.1%	4.5%	4.9%	5.1%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%	6.0%	6.0%
5	3.6%	7.1%	8.3%	9.0%	9.4%	9.7%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
6	8.9%	14.4%	15.3%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%	15.6%
7	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Unrated	6.3%	10.7%	11.8%	12.3%	12.5%	12.6%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
In Default	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

Table 40. Credit risk stress factors for securitisations

Rating Category	Maturity: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14+
1 or 2	0.2%	0.7%	0.9%	1.2%	1.4%	1.6%	1.7%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%	2.5%
3	0.6%	1.3%	1.6%	1.8%	2.1%	2.3%	2.6%	2.8%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%	3.7%
4	1.4%	3.0%	3.6%	4.1%	4.5%	4.9%	5.1%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%	6.0%	6.0%
5	10.8%	21.3%	24.9%	27.0%	28.2%	29.1%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%
6	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
7	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unrated	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
In Default	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 41. Credit risk stress factors for re-securitisations

Rating Category	Maturity: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14+
1 or 2	0.4%	1.4%	1.8%	2.4%	2.8%	3.2%	3.4%	3.8%	4.0%	4.2%	4.4%	4.6%	4.8%	4.8%	5.0%
3	1.2%	2.6%	3.2%	3.6%	4.2%	4.6%	5.2%	5.6%	6.0%	6.4%	6.6%	6.8%	7.0%	7.2%	7.4%
4	2.8%	6.0%	7.2%	8.2%	9.0%	9.8%	10.2%	10.6%	10.8%	11.2%	11.4%	11.6%	11.8%	12.0%	12.0%
5	21.6%	42.6%	49.8%	54.0%	56.4%	58.2%	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%
6	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
7	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unrated	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
In Default	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

790. The Credit risk stress factor for policy loans (which are to be reported under the 'Miscellaneous Assets' table in the Template) is 0%. The stress factor for deposits and other short-term obligations of regulated banks is 0.4%. All other assets receive a stress factor of 8%, but outstanding premiums can be excluded from the exposure if insurance liabilities are recorded for the contracts relating to the outstanding premiums and the outstanding premiums are unrecorded in line with the release of the insurance liabilities when the contracts expire upon the policyholder's default.

13.5.10 Mortgage Loans

13.5.10.1 Commercial and agricultural mortgages where repayment depends on property income

791. Based on data availability, the risk charge is calculated using one of the three following methods:

a) Tier 1: Risk Charge Determined By Loan To Value (LTV) And Debt Service Coverage Ratio (DSCR)

b) Tier 2: Risk Charge Determined By LTV Only

c) Tier 3: No Credit Quality Differentiator Data Used

792. For Agricultural and Commercial Tier 1, the following stress factors are used:

Table 42. Stress factors for agricultural and commercial tier 1

ICS CM Categories	ICS Stress Factors
CM1	4.8%
CM2	6.0%
CM3	7.8%
CM4	15.8%
CM5	23.5%
CM6	35%
CM7	35%

Where "CM1" means "Agricultural and Commercial Mortgage Factor 1", CM6 and CM7 are delinquent loans and loans in foreclosure, and the mapping of the ICS CM categories according to LTV and DSCR data is based upon the following matrix:

Table 43. Mapping of ICS CM categories

	Tier 1					
	LTV					
	CM	<60%	60% to 69.9%	70% to 79.9%	80% to 89.9%	90% to 99.9%	>= 100%
DSCR	< 0.6	3	3	3	4	4	5
	0.6 to 0.79	3	3	3	4	4	5
	0.8 to 0.99	3	3	3	4	4	5
	1 to 1.19	2	2	3	3	4	4
	1.2 to 1.39	2	2	3	3	3	3
	1.4 to 1.59	1	2	2	2	3	3
	1.6 to 1.79	1	1	1	2	3	3
	1.8 to 1.99	1	1	1	2	2	2
	>= 2	1	1	1	2	2	2

793. For Agricultural and Commercial Tier 2, where only LTV data is available, the following stress factors are used:

Table 44. Stress factors for agricultural and commercial tier 2

ICS CM Categories	ICS Stress Factors	LTV Minimum	LTV Maximum
CM1	4.8%	0%	59%
CM2	6.0%	60%	79%
CM3	7.8%	80%	99%
CM4	15.8%	100%	NA
CM6	35%		
CM7	35%		

794. For Agricultural and Commercial Tier 3, where LTV and DSCR data is not available, a flat 8% stress factor is used.

13.5.10.2 Commercial and agricultural mortgages where repayment does not depend on property income

795. When the loan-to-value ratio of the mortgage is above 60%, the risk factor is that for a regular credit exposure to the borrower. When the loan-to-value ratio of the mortgage is below 60%, the risk factor is the lower of 3.6%, or the risk factor for a regular credit exposure to the borrower.

13.5.10.3 Residential mortgages

796. For performing residential mortgage loans for which repayment depends on income generated by the underlying property, the factors applied are based on the mortgage's loan-to-value ratio, as specified in the following table:

Table 45. Factors for residential mortgages for which repayment depends on income generated by the underlying property

LTV ≤ 60%	4.2%
60% < LTV ≤ 80%	5.4%
LTV > 80%	7.2%

797. For performing residential mortgage loans for which repayment does not depend on income generated by the underlying property, the factors applied are based on the mortgage's loan-to-value ratio, as specified in the following table:

Table 46. Factors for residential mortgages for which repayment does not depend on income generated by the underlying property

LTV ≤ 40%	1.5%
40% < LTV ≤ 60%	1.8%
60% < LTV ≤ 80%	2.1%
80% < LTV ≤ 90%	2.7%
90% < LTV ≤ 100%	3.3%
LTV > 100%	4.5%

798. For non-performing mortgage loans, the factor is 35%.

13.5.10.4 Criteria for recognition of collateral

799. A collateralised transaction is one in which:

a) a Volunteer Group has a credit exposure or potential credit exposure; and

b) that credit exposure or potential credit exposure is hedged in whole or in part by collateral posted by a counterparty or by a third party on behalf of the counterparty.

800. The following standards must be met before relief will be granted in respect of any form of collateral:

a) The effects of collateral may not be double counted. Therefore, Volunteer Groups may not recognise collateral on claims for which an issue-specific rating is used that already reflects that collateral. All criteria around the use of ratings remain applicable to collateral.

b) All documentation used in collateralised transactions must be binding on all parties and legally enforceable in all relevant jurisdictions. Volunteer Groups must have conducted sufficient legal review to verify this and have a well-founded legal basis to reach this conclusion, and undertake such further review as necessary to ensure continuing enforceability.

c) The legal mechanism by which collateral is pledged or transferred must ensure that the Volunteer Group has the right to liquidate or take legal possession of the collateral in a timely manner, in the event of the default, insolvency or bankruptcy (or one or more otherwise-defined credit events set out in the transaction documentation) of the counterparty (and, where applicable, of the custodian holding the collateral). Furthermore, Volunteer Groups must take all steps necessary to fulfil those requirements under the law applicable to the Volunteer Groups' interest in the collateral for obtaining and maintaining an enforceable security interest, e.g. by registering it with a registrar, or for exercising a right to net or set off in relation to title transfer collateral.

d) The credit quality of the counterparty and the value of the collateral must not have a material positive correlation. For example, securities issued by the counterparty – or by any related group entity – provide little protection and are therefore ineligible.

e) Volunteer Groups must have clear and robust procedures for the timely liquidation of collateral to ensure that any legal conditions required for declaring the default of the counterparty and liquidating the collateral are observed, and that collateral can be liquidated promptly.

f) Where collateral is held by a custodian, Volunteer Groups must take reasonable steps to ensure that the custodian segregates the collateral from its own assets.

801. Only the following collateral instruments are eligible to be recognised:

a) Rated debt securities where these securities are:

i. rated ICS Rating Category 5 or better and issued by a sovereign; or

ii. rated ICS Rating Category 4 or better and issued by other entities (including banks, insurance companies, and securities firms)

b) Gold

c) Mutual funds where:

i. a price is publicly quoted daily; and

ii. the mutual fund is limited to investing in the eligible instruments listed above.

d) Letters of credit

802. For collateral to be recognised, it must be pledged for at least the life of the exposure. The market value of collateral that is denominated in a currency different from that of the credit exposure must be reduced by 20%. The portion of an exposure that is collateralised by the market value of eligible financial collateral is redistributed into the rating category applicable to the collateral instrument, while the remainder of the loan is assigned the rating category appropriate to the counterparty.

13.5.11 Criteria for recognition of guarantees and credit derivatives

803. Where guarantees or credit derivatives are direct, explicit, irrevocable and unconditional, and Volunteer Groups fulfil certain minimum operational conditions relating to risk management processes, they will be allowed to take account of such credit protection in determining the ICS rating category. The capital treatment is founded on the substitution approach, whereby the protected portion of a counterparty exposure is assigned the rating category of the guarantor or protection provider, while the uncovered portion retains the rating category of the underlying counterparty. Thus

only guarantees issued by or protection provided by entities with a higher rating category than the underlying counterparty will lead to reduced risk charges. A range of guarantors and protection providers is recognised.

13.5.11.1 Operational requirements

804. The effects of credit protection may not be double counted. Therefore, no recognition is given to credit protection on claims for which an issue-specific rating is used that already reflects that protection. All criteria around the use of ratings remain applicable to guarantees and credit derivatives.

805. A guarantee (counter-guarantee) or credit derivative must represent a direct claim on the protection provider and must be explicitly referenced to a specific exposure or pool of exposures, so that the extent of the cover is clearly defined and incontrovertible. Other than non-payment by a protection purchaser of money due in respect of the credit protection contract it must be irrevocable; there must be no clause in the contract that would allow the protection provider unilaterally to cancel the credit cover or that would increase the effective cost of cover as a result of deteriorating credit quality in the hedged exposure. It must also be unconditional: there should be no clause in the protection contract outside the direct control of the Volunteer Group that could prevent the protection provider from being obliged to pay out in a timely manner in the event that the original counterparty fails to make the payment(s) due.

806. All documentation used for documenting guarantees and credit derivatives must be binding on all parties and legally enforceable in all relevant jurisdictions. Volunteer Groups must have conducted sufficient legal review to verify this and have a well-founded legal basis to reach this conclusion, and undertake such further review as necessary to ensure continuing enforceability.

807. The following conditions must be satisfied in order for a guarantee to be recognised:

a) On the qualifying default/non-payment of the counterparty, the Volunteer Group may in a timely manner pursue the guarantor for any monies outstanding under the documentation governing the transaction. The guarantor may make one lump sum payment of all monies under such documentation to the Volunteer Group, or the guarantor may assume the future payment obligations of the counterparty covered by the guarantee. The Volunteer Group must have the right to receive any such payments from the guarantor without first having to take legal action in order to pursue the counterparty for payment.

b) The guarantee is an explicitly documented obligation assumed by the guarantor.

c) Except as noted in the following sentence, the guarantee covers all types of payments the underlying obligor is expected to make under the documentation governing the transaction, for example notional amount, margin payments etc. Where a guarantee covers payment of principal only, interest and other uncovered payments should be treated as an unsecured amount.

808. In addition to the conditions above, the following conditions must be satisfied in order for a credit derivative contract to be recognised:

a) The credit events specified by the contracting parties must at a minimum cover:

   i. failure to pay the amounts due under terms of the underlying obligation that are in effect at the time of such failure (with a grace period that is closely in line with the grace period in the underlying obligation);

   ii. bankruptcy, insolvency or inability of the obligor to pay its debts, or its failure or admission in writing of its inability generally to pay its debts as they become due, and analogous events; and

   iii. restructuring of the underlying obligation involving forgiveness or postponement of principal, interest or fees that results in a credit loss event (i.e. charge-off, specific provision or other similar debit to the profit and loss account). Refer to the exception below when restructuring is not specified as a credit event.

b) If the credit derivative covers obligations that do not include the underlying obligation, paragraph g) below governs whether the asset mismatch is permissible.

c) The credit derivative shall not terminate prior to expiration of any grace period required for a default on the underlying obligation to occur as a result of a failure to pay.

d) Credit derivatives allowing for cash settlement are recognised for capital purposes insofar as a robust valuation process is in place in order to estimate loss reliably. There must be a clearly specified period for obtaining post-credit event valuations of the underlying obligation. If the reference obligation specified in the credit derivative for purposes of cash settlement is different than the underlying obligation, paragraph g) below governs whether the asset mismatch is permissible.

e) If the protection purchaser's right/ability to transfer the underlying obligation to the protection provider is required for settlement, the terms of the underlying obligation must provide that any required consent to such transfer may not be unreasonably withheld.

f) The identity of the parties responsible for determining whether a credit event has occurred must be clearly defined. This determination must not be the sole responsibility of the protection seller. The protection buyer must have the right/ability to inform the protection provider of the occurrence of a credit event.

g) A mismatch between the underlying obligation and the reference obligation under the credit derivative (i.e. the obligation used for purposes of determining cash settlement value or the deliverable obligation) is permissible if (1) the reference obligation ranks pari passu with or is junior to the underlying obligation, and (2) the underlying obligation and reference obligation

share the same obligor (i.e. the same legal entity) and legally enforceable cross-default or cross-acceleration clauses are in place.

h) A mismatch between the underlying obligation and the obligation used for purposes of determining whether a credit event has occurred is permissible if (1) the latter obligation ranks pari passu with or is junior to the underlying obligation, and (2) the underlying obligation and reference obligation share the same obligor (i.e. the same legal entity) and legally enforceable cross-default or cross-acceleration clauses are in place.

809. When the restructuring of the underlying obligation is not covered by the credit derivative, but the other requirements above are met, partial recognition of the credit derivative will be allowed. If the amount of the credit derivative is less than or equal to the amount of the underlying obligation, 60% of the amount of the hedge can be recognised as covered. If the amount of the credit derivative is larger than that of the underlying obligation, then the amount of eligible hedge is capped at 60% of the amount of the underlying obligation.

810. Only credit default swaps and total return swaps that provide credit protection equivalent to guarantees are eligible for recognition. Where a Volunteer Group buys credit protection through a total return swap and records the net payments received on the swap as net income, but does not record offsetting deterioration in the value of the asset that is protected (either through reductions in fair value or by increasing provisions), the credit protection will not be recognised.

811. Other types of credit derivatives are not eligible for recognition.

13.5.11.2 Eligible guarantors

812. Volunteer Groups may recognise credit protection given by the following entities:

a) sovereigns

b) externally rated public sector entities, banks and securities firms with a higher rating category than that of the counterparty

c) other entities. This includes credit protection provided by parent, subsidiaries and affiliate companies of an obligor when they have a higher rating category than that of the obligor.

813. However, a Volunteer Group may not recognise a guarantee or credit protection on an exposure to a third party when the guarantee or credit protection is provided by a related party (parent, subsidiary or affiliate) of the Volunteer Group. This treatment follows the principle that guarantees within a corporate group are not a substitute for capital.

13.5.11.3 Capital treatment

814. The protected portion of a counterparty exposure is assigned the rating category of the protection provider. The uncovered portion of the exposure is assigned the factor of the underlying counterparty.

815. Where the amount guaranteed, or against which credit protection is held, is less than the amount of the exposure, and the secured and unsecured portions are of equal seniority (i.e. the Volunteer Group and the guarantor share losses on a pro-rata basis), capital relief will be afforded on a proportional basis, so that the protected portion of the exposure will be receive the treatment applicable to eligible guarantees and credit derivatives, and the remainder will be treated as unsecured. Where a Volunteer Group transfers a portion of the risk of an exposure in one or more tranches to a protection seller or sellers and retains some level of risk, and the risk transferred and the risk retained are of different seniority, the Volunteer Group may obtain credit protection for the senior tranches (e.g. second-loss position) or the junior tranches (e.g. first-loss position). In this case, all tranches should be reported as securitisation exposures based on the ratings of the guarantors. If a tranche does not carry a rating, it must be reported as an unrated securitisation exposure even if the underlying exposure is rated.

816. Materiality thresholds on payments below which no payment is made in the event of loss are equivalent to retained first-loss positions, and must be reported as unrated securitisation exposures.

13.5.11.4 Currency mismatches

817. Where the credit protection is denominated in a currency different from that in which the exposure is denominated, the amount of the exposure deemed to be protected will be 80% of the nominal amount of the credit protection, converted at current exchange rates.

13.5.11.5 Maturity mismatches

818. A maturity mismatch occurs when the residual maturity of the credit protection is less than that of the underlying exposure. If there is a maturity mismatch and the credit protection has an original maturity less than one year, the protection may not be recognised. As a result, the maturity of protection for exposures with original maturities less than one year must be matched to be recognised. Additionally, credit protection with a residual maturity of three months or less may not be recognised if there is a maturity mismatch. Credit protection will be partially recognised in other cases where there is a maturity mismatch.

819. The maturity of the underlying exposure and the maturity of the credit protection should both be measured conservatively. The effective maturity of the underlying exposure is gauged as the longest possible remaining time before the counterparty is scheduled to fulfil its obligation, taking into account any applicable grace period. For the credit protection, embedded options that may reduce the term of the protection are taken into account so that the shortest possible effective maturity is used. Where a call is at the discretion of the protection seller, the maturity will always be at the first

call date. If the call is at the discretion of the Volunteer Group buying protection but the terms of the arrangement at origination contain a positive incentive for the Volunteer Group to call the transaction before contractual maturity, the remaining time to the first call date will be deemed to be the effective maturity. For example, where there is a step-up cost in conjunction with a call feature or where the effective cost of cover increases over time even if credit quality remains the same or improves, the effective maturity will be the remaining time to the first call.

820. When there is a maturity mismatch, the following adjustment will be applied:

$$P_a = P \times \frac{t - 0.25}{T - 0.25}$$ where:

- Pa is the value of the credit protection adjusted for maturity mismatch
- P is the nominal amount of the credit protection, adjusted for currency mismatch if applicable
- T is the lower of 5 or the residual maturity of the exposure expressed in years
- t is the lower of T or the residual maturity of the credit protection arrangement expressed in years

13.5.11.6 Sovereign counter-guarantees

821. Some claims may be covered by a guarantee that is indirectly counter-guaranteed by a sovereign. Such claims may be treated as covered by a sovereign guarantee provided that:

a) the sovereign counter-guarantee covers all Credit risk elements of the claim;

b) both the original guarantee and the counter-guarantee meet all the operational requirements for guarantees, except that the counter-guarantee need not be direct and explicit to the original claim; and

c) the cover is robust, and there is no historical evidence suggesting that the coverage of the counter-guarantee is less than effectively equivalent to that of a direct sovereign guarantee.

13.5.11.7 Other items

822. In the case where a Volunteer Group has multiple types of mitigators covering a single exposure (e.g. both collateral and a guarantee partially cover an exposure), it will be required to subdivide the exposure into portions covered by each type of mitigator (e.g. portion covered by collateral, portion covered by guarantee) and the rating category for each portion must be determined separately. When credit protection provided by a single protection provider has differing maturities, these must be subdivided into separate protection as well.

13.5.12 Credit equivalent amount for OTC derivatives

823. Volunteer Groups must calculate the credit equivalent amount of exposures to OTC derivatives counterparties and report them in column [OTC Derivatives]. The credit equivalent

amount is calculated using the current exposure method from Annex 4, section VII of the Basel Framework. Under the Current Exposure Method, Volunteer Groups must calculate the current replacement cost by marking contracts to market, thus capturing the current exposure without any need for estimation, and then adding a factor (the "add-on") to reflect the potential future exposure over the remaining life of the contract. In order to calculate the credit equivalent amount of these instruments under this current exposure method, a Volunteer Group sums:

a) The total replacement cost (obtained by "marking to market") of all its contracts with positive value; and

b) An amount for potential future credit exposure calculated on the basis of the total notional principal amount of its book, split by residual maturity as follows:

Table 47. Calculation of potential future credit exposure

Residual Maturity	Interest Rate	Exchange Rate and Gold	Equity	Precious Metals Except Gold	Other Commodities
One year or less	0.0%	1.0%	6.0%	7.0%	10.0%
Over one year to five years	0.5%	5.0%	8.0%	7.0%	12.0%
Over five years	1.5%	7.5%	10.0%	8.0%	15.0%

Notes:

1. Credit derivatives are not subject to the current exposure method. Credit protection that is received should be treated according to the instructions for guarantees and credit derivatives, while credit protection that is sold should be treated as an off-balance sheet direct credit substitute subject to a 100% credit conversion factor.
2. For contracts with multiple exchanges of principal, the factors are to be multiplied by the number of remaining payments in the contract.
3. For contracts that are structured to settle outstanding exposure following specified payment dates and where the terms are reset so that the market value of the contract is zero on these specified dates, the residual maturity is considered to be the time until the next reset date. In the case of interest rate contracts with remaining maturities of more than one year and that meet the above criteria, the add-on factor is subject to a floor of 0.5%.
4. Contracts not covered by any of the columns of this matrix are to be treated as "other commodities."
5. No potential credit exposure is calculated for single currency floating/floating interest rate swaps; the credit exposure on these contracts is evaluated solely on the basis of their mark-to-market value.

6. The add-ons are based on effective rather than stated notional amounts. In the event that the stated notional amount is leveraged or enhanced by the structure of the transaction, Volunteer Groups must use the actual or effective notional amount when determining potential future exposure. For example, a stated notional amount of $1 million with payments calculated at two times LIBOR would have an effective notional amount of $2 million.
7. Potential credit exposure is to be calculated for all OTC contracts (with the exception of single currency floating/floating interest rate swaps), regardless of whether the replacement cost is positive or negative.

824. Volunteer Groups may net contracts that are subject to novation or any other legally valid form of netting. Novation refers to a written bilateral contract between two counterparties under which any obligation to each other to deliver a given currency on a given date is automatically amalgamated with all other obligations for the same currency and value date, legally substituting one single amount for the previous gross obligations.

825. Volunteer Groups that wish to net transactions under either novation or another form of bilateral netting must satisfy the following conditions:

a) The Volunteer Group has executed a written, bilateral netting contract or agreement with each counterparty that creates a single legal obligation, covering all included bilateral transactions subject to netting. The result of such an arrangement is that the Volunteer Group only has one obligation for payment or one claim to receive funds based on the net sum of the positive and negative mark-to-market values of all the transactions with that counterparty in the event that counterparty fails to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances.

b) The Volunteer Group must have written and reasoned legal opinions that, in the event of any legal challenge, the relevant courts or administrative authorities would find the exposure under the netting agreement to be the net amount under the laws of all relevant jurisdictions. In reaching this conclusion, legal opinions must address the validity and enforceability of the entire netting agreement under its terms.

   i. The laws of "all relevant jurisdictions" are: a) the law of the jurisdictions where the counterparties are incorporated and, if the foreign branch of a counterparty is involved, the laws of the jurisdiction in which the branch is located; b) the law governing the individual transactions; and c) the law governing any contracts or agreements required to effect netting.

   ii. A legal opinion must be generally recognised as such by the legal community in the Volunteer Group's home country or by a memorandum of law that addresses all relevant issues in a reasoned manner.

c) The Volunteer Group has internal procedures to verify that, prior to recognizing a transaction as being subject to netting for capital purposes, the transaction is covered by legal opinions that meet the above criteria.

d) The Volunteer Group must have procedures in place to update legal opinions as necessary to ensure continuing enforceability of the netting arrangements in light of possible changes in relevant law.

e) The Volunteer Group maintains all required documentation in its files.

826. Any contract containing a walkaway clause will not be eligible to qualify for netting for the purpose of calculating the Credit risk charge. A walkaway clause is a provision within the contract that permits a non-defaulting counterparty to make only limited payments, or no payments, to the defaulter.

827. Credit exposure on bilaterally netted forwards, swaps, purchased options and similar derivatives transactions is calculated as the sum of the net mark-to-market replacement cost, if positive, plus an add-on based on the notional principal of the individual underlying contracts. However, for purposes of calculating potential future credit exposures of contracts subject to legally enforceable netting agreements in which notional principal is equivalent to cash flows, notional principal is defined as the net receipts falling due on each value date in each currency.

828. The reason that these contracts are treated as a single contract is that offsetting contracts in the same currency maturing on the same date will have lower potential future exposure as well as lower current exposure. For multilateral netting schemes, current exposure (i.e., replacement cost) is a function of the loss allocation rules of the clearing house.

829. The calculation of the gross add-ons should be based on the legal cash flow obligations in all currencies. This is calculated by netting all receivable and payable amounts in the same currency for each value date. The netted cash flow obligations are converted to the reporting currency using the current forward rates for each value date. Once converted the amounts receivable for the value date are added together and the gross add-on is calculated by multiplying the receivable amount by the appropriate add-on factor.

830. The future credit exposure for netted transactions (ANet) equals the sum of: (i) 40% of the add-on as presently calculated (AGross) ; and (ii) 60% of the add-on multiplied by the ratio of net current replacement cost to positive current replacement cost (NGR) where:

NGR = level of net replacement cost / level of positive replacement cost for transactions subject to legally enforceable netting agreements.

831. The calculation of NGR can be made on a counterparty by counterparty basis or on an aggregate basis for all transactions subject to legally enforceable netting agreements. On a counterparty by counterparty basis a unique NGR is calculated for each counterparty. On an aggregate basis, one NGR is calculated and applied to all counterparties.

13.5.13 Credit equivalent amount for other off-balance sheet exposures

832. Off-balance sheet exposures that are not arising from OTC derivatives should be reported in column [Other Off-Balance Sheet]. Off-balance-sheet items are converted into credit exposure equivalents through the use of credit conversion factors (CCFs) applied to the item's notional amounts:

a) Commitments with an original maturity up to one year and commitments with an original maturity over one year receive a CCF of 20% and 50%, respectively. However, any commitments that are unconditionally cancellable at any time by the Volunteer Group without prior notice, or that effectively provide for automatic cancellation due to deterioration in a borrower's creditworthiness, receive a 0% CCF.

b) Direct credit substitutes, e.g. credit derivatives sold, general guarantees of indebtedness (including standby letters of credit serving as financial guarantees for loans and securities) and acceptances (including endorsements with the character of acceptances) receive a CCF of 100%. If a Volunteer Group has guaranteed a debt security (e.g., through the sale of a credit derivative), the risk charge is the same as if the Volunteer Group were to hold the underlying security directly. Such exposures should be reported in column [Other Off-Balance Sheet] of the Template, in the row corresponding to the guaranteed security.

c) Sale and repurchase agreements and asset sales with recourse, where the Credit risk remains with the Volunteer Group, receive a CCF of 100%.

d) Forward asset purchases, forward deposits and partly-paid shares and securities, which represent commitments with certain drawdown, will receive a CCF of 100%.

e) Transaction-related contingent items (e.g. performance bonds, bid bonds, warranties and standby letters of credit related to particular transactions) receive a CCF of 50%.

f) Note issuance facilities (NIFs) and revolving underwriting facilities (RUFs) receive a CCF of 50%.

g) Short-term self-liquidating trade letters of credit that a Volunteer Group either issues or confirms arising from the movement of goods (e.g. documentary credits collateralised by the underlying shipment) receive a 20% CCF.

h) Where there is an undertaking to provide a commitment on an off-balance sheet item, Volunteer Groups are to apply the lower of the two applicable CCFs.

i) All off-balance sheet securitisation exposures receive a CCF of 100%.

13.5.14 Data collection on use of NAIC Designations

833. For 2018 Field Testing purposes, for situations where Volunteer Groups are able to access NAIC Designations, the IAIS will collect data from those Volunteer Groups.

Table 48. Mapping of NAIC Designations to ICS Rating Categories

ICS Rating Category	NAIC Designations
1	
2	
3	1
4	2
5	3
6	4
7	5

13.6 Operational Risk

Relevant Worksheets in Template:	*FT18.ICS Risk Charges.MAV* *FT18.ICS Risk Charges.GAAP+*	*Due 31 August 2018*

834. In 2018 Field Testing, the charge for Operational risk has been simplified. In addition, links have been added to compare the inputs for Operational risk to other similar inputs used elsewhere in the Template.

835. Operational risk is the risk of adverse change in the value of capital resources due to operational events including inadequate or failed internal processes, people and systems, or from external events. Operational risk includes legal and conduct risk, but excludes strategic and reputational risk.

13.6.1 Line of business segmentation

836. All data items should be split into the following line of business segments.

a) Non-life – insurance products that do not relate to life or similar to life health insurance, often referred to as property and casualty or general insurance. Products include auto/motor, property, workers' compensation/employer's liability, other liability, and credit/surety/pecuniary.

b) Life (risk) – Insurance products that relate to life or similar to life health insurance where the insurer bears investment risk. Products would include individual life, group life, group pension and annuities (with a life aspect).

c) Life (non-risk) – products where the policyholder bears the investment risk. It will include segmented funds and accumulation annuities. For the purposes of 2018 Field Testing, life (non-risk) will be compared to products labelled as "savings without guarantees or living benefits" in the ICS Balance Sheet.

13.6.2 Geographical segmentation

837. All data items should be split into the proposed geographical segments:

a) EEA and Switzerland

b) USA and Canada

c) China

d) Japan

e) Other developed markets

f) Other emerging markets

13.6.3 Data required

838. The design and calibration included in 2018 Field Testing is subject to refinements based on further analysis and evidence. As such, additional information is being collected for supplementary testing. The following information will help with completion of the Operational risk section of the worksheets *FT18.ICS Risk Charge*s.

839. Gross Written Premium (GWP) includes all business (new and renewal) written during the specified financial year before any allowance for reinsurance or other related recoverables. For single premium policies, premiums should be included in full as written during the year. For other insurance policies, written premiums should include premiums due to the Volunteer Group during the specified time period (financial year) on all business inforce. A "check-sum" is provided, which compares the GWP for life (both risk and non-risk) and non-life to the equivalent entry in the *FT18.BCR+HLA* worksheet. These should be equal.

840. Gross current estimates should be reported before any allowance for reinsurance or other related recoverables. A check-sum is provided to compare the gross current estimate for life (both risk and non-risk) and non-life to the equivalent entries on the ICS Balance Sheet. These should be equal.

841. To calculate the growth risk component of Operational risk, enter the GWP for the two most recent financial years for non-life and life (risk).

a) Report the gross written premium for the most recent financial year up until the balance date. The figure should be before the effect of ceded reinsurance and on a consolidated basis.

b) For a Volunteer Group with a balance date of 31 December, the two most recent financial years are 1 January 2016 to 31 December 2016 and 1 January 2017 to 31 December 2017.

842. For non-life:

a) If prior year net written premiums are being entered as the proxy for Premium risk, then reported premiums should be consistent with those used as exposures for the Premium risk charge.

b) The simplifications designed for reporting of premium liabilities do not allow for the netting of premium receivables against the premium liability. This results in a difference in the liability exposure from those doing the full calculation. To adjust for this, firms using one of the simplifications should provide premium receivables so they can be netted against the Operational risk exposure.

13.6.4 Operational risk charge

843. The Operational risk charge is calculated as follows:

$$Op\ risk\ charge = \max\left[non\_life\_op\_risk_{premium}, non\_life\_op\_risk_{liabilities}\right] + non\_life\_op\_risk_{growth} + max\left[life\_(risk)\_op\_risk_{premium}, life\_(risk)\_op\_risk_{liabilities}\right] + life\_(risk)\_op\_risk_{growth} + Life\_(non\_risk)\_op\_risk_{liabilities}$$

844. For 2018 Field Testing purposes, the Operational risk components are computed as factors multiplied by risk exposures. The same factors are applied across geographical segments. The Operational risk factors applied to determine the Operational risk charge have not been finalised and are for the purposes of Field Testing only.

845. The exposures and factors for Operational risk are set in the following table.

Table 49. Operational risk exposures and factors

	Premium	Liabilities	Growth
Risk from Non-Life Operations			
Exposure	GWP most recent financial year	Gross current estimate	GWP most recent financial year exceeding the growth threshold (20%) compared to the previous year
Factor	2.75%	2.75%	2.75%
Risk from Life Operations			
Exposure	**Life (risk):** GWP most recent financial year	**Life (risk):** Gross current estimate **Life (non-risk):** Gross current estimate	**Life (risk):** GWP most recent financial year exceeding the growth threshold (20%) compared to the previous year
Factor	**Life (risk):** 4%	**Life (risk):** 0.4% **Life (non-risk):** 0.45%	**Life (risk):** 4%

13.6.5 Benchmarking

846. For 2018 Field Testing analysis purposes, some "benchmark" calculations are included. These will be calculated automatically and will not be used in determining the ICS capital requirement. They will provide a comparison of the Operational risk charge – in total and also separately for life and non-life operations - to the size of the ICS capital requirement, assets, liabilities and GWP. The following columns will be calculated to make these comparisons:

a) Factor-based Op Risk – This is the same as the Operational risk charge.

b) ICS Capital Requirement Benchmarks – This is the ICS capital requirement, excluding Operational risk, multiplied by a factor. There are two columns – one with a factor of 5% and one with a factor of 10%. The amounts for life and non-life are notional amounts and do not reflect the full diversification between these operations that the ICS itself allows. These are calculated by allocating the underlying risk charges between life and non-life operations and then aggregating using the ICS correlation matrices.

c) Asset/GWP Benchmark – This is a simplified measure of Operational risk based only on the same measures of group size used in the definition of an IAIG – assets and GWP. Assets for life and non-life operations will be based on allocation using the amount of insurance liabilities. A factor of 0.35% is applied to assets and 1.6% is applied to GWP. This is intended to approximate, for an average IAIG, the amount of the 'Factor Based Op Risk' though it may be higher/lower for individual Volunteer Groups.

13.7 Aggregation / Diversification of ICS Risk Charges

847. The Technical Specifications for Aggregation and Diversification apply both to the MAV and GAAP Plus approaches. This section has been written from the perspective of the MAV approach; while somewhat different valuation data might be input for GAAP Plus, the two approaches included in 2018 Field Testing are fundamentally the same for Aggregation and Diversification.

848. The risk charges correspond to a specific measure, confidence level and time horizon, for a 99.5% VaR over a one-year horizon. The aggregation of these individual risk charges will then reflect some degree of diversification between the individual risks, as a consequence of the dependency specified between the risks.

849. The individual risk charges are aggregated using correlation matrices in the Template. The implicit assumptions and limitations of such an approach are recognised, although not discussed here. Pair-wise correlations necessary to fully specify the aggregation are proposed by the IAIS considering the ICS principles and supervisory experience. Following Field Testing the IAIS will consider if this needs to be refined.

850. A multiple step approach is retained for 2018 Field Testing. This approach involves several relatively small matrices being defined and calibrated in order to aggregate several capital charges following the multiple step approach. This will be done automatically in the Template – Volunteer Groups do not have to enter any data with respect to aggregation and diversification in the Template.

851. The Life risks correlation matrix for 2018 Field Testing is:

Table 50. Life risks correlation matrix

	Mortality	Longevity	Morbidity/Disability	Lapse	Expense
Mortality	100.0%	-25.0%	25.0%	0%	25.0%
Longevity	-25.0%	100.0%	0%	25.0%	25.0%
Morbidity/ Disability	25.0%	0%	100.0%	0%	50.0%
Lapse	0%	25.0%	0%	100.0%	50.0%
Expense	25.0%	25.0%	50.0%	50.0%	100.0%

852. The Market risks correlation matrix for 2018 Field Testing is:

Table 51. Market risks correlation matrix

	Interest rate	NDSR Up	NDSR Down	Equity	Real Estate	Currency	Asset concentration
Interest rate	100%	25%	25%	25%	25%	25%	0%
NDSR Up	25%	100%	100%	75%	50%	25%	0%
NDSR Down	25%	100%	100%	0%	0%	25%	0%
Equity	25%	75%	0%	100%	50%	25%	0%
Real estate	25%	50%	0%	50%	100%	25%	0%
Currency	25%	25%	25%	25%	25%	100%	0%
Asset concentration	0%	0%	0%	0%	0%	0%	100%

853. The global correlation matrix for 2018 Field Testing is:

Table 52. Correlation matrix across risks

	Non-Life	Catastrophe	Life	Market	Credit
Non-Life	100.0%	25.0%	0.0%	25.0%	25.0%
Catastrophe	25.0%	100.0%	25.0%	25.0%	25.0%
Life	0.0%	25.0%	100.0%	25.0%	25.0%
Market	25.0%	25.0%	25.0%	100.0%	25.0%
Credit	25.0%	25.0%	25.0%	25.0%	100.0%

14 ICS Tax Treatment

Relevant Worksheets in Template:	*FT18.ICS Summary*	*Due Date: 31 August 2018*

854. The Technical Specifications for Tax apply to both the MAV and GAAP Plus approaches. Specifications provide for calculation and utilisation assessment of the following items related to tax:

a) Deferred tax assets (DTA) and deferred tax liabilities (DTL) on the jurisdictional audited GAAP Balance Sheet

b) Deferred tax assets and deferred tax liabilities arising from differences in valuation between the GAAP Balance Sheet and the ICS Balance Sheets (i.e. MAV and GAAP Plus)

c) Tax effect on the insurance capital requirement

855. In 2018 Field Testing, specifications outline placeholder calculations and instructions that may be revised for ICS Version 2.0. The objective for 2018 Field Testing is mainly to gather additional data to enable the IAIS to make informed decisions on the tax issues.

14.1 Additional Data Collection

856. Data supporting the utilisation assessment of the tax effect on group capital measurement/requirements under your internal economic capital model and local group solvency capital regulations is necessary for further consideration of the ICS Version 2.0 tax design (*FT18.Tax information* worksheet is a template to collect the data). If your local group solvency capital regulation does not require an utilisation assessment of the stress tax effect at group level, you can provide data for the largest entity in your group. Data is collected for the following areas:

a) Group capital measurement/requirements before tax effects and the tax effect on capital measurement/requirements under internal economic capital model and local group solvency capital regulations.

b) Tax planning to provide information on the projection of taxable income after a stress event. Assumptions of this section are:

   i. "Stress loss" happens in FY2017;

   ii. Amount of "stress loss" is the same as the capital measurement/requirement amount;

   iii. All "stress loss" amounts become a taxable loss;

   iv. There was no tax loss carry forward before FY2017, meaning that, in this data collection, the tax loss carry forward should only arise from the stress loss; and,

v. If the Volunteer Group has capacity of a tax loss carry-back in FY2017, this capacity can be utilised to recover the stress loss.

c) Summary of the utilisable tax effect on group capital measurement/requirements to show what percentage of the tax effect on group capital measurement/requirements would be utilised.

14.2 Utilisation Assessment of Deferred Tax Assets on the GAAP Balance Sheet:

857. Deferred tax balances as reported on audited GAAP financial statements would generally follow jurisdictional GAAP for purposes of assessing utilisation of any deferred tax asset. Under IFRS and U.S. GAAP, that would include the application of a probable (IFRS) or more likely than not (U.S. GAAP) assessment of utilisation. Under both standards the utilisation assessment is generally recognised to be a greater than 50% chance that the DTA would be utilisable. There may be Volunteer Groups that report under more stringent utilisation assessment approaches such as U.S. Statutory reporting. Those Volunteer Groups may want to describe approaches to adjust their DTA by applying the probable/more likely than not standard if practical in the Questionnaire response.

858. Deferred tax assets as recognised on the GAAP Balance Sheet are considered to be utilisable for the purpose of the ICS.

14.3 Top-down Approach

859. In principle, taxable income and losses can be offset across legal entities only to the extent that such a treatment is recognised by relevant tax authorities. As a global standard, the ICS needs to define a standardised way to handle deferred taxes notwithstanding the potentially diverse tax reality among different jurisdictions covered. The field testing approach is the Top-down approach which uses the group effective tax rate.

860. The group effective tax rate is calculated using figures on jurisdictional audited GAAP consolidated financial statements.
Group effective tax rate = 1 – (Profit after tax / Profit before tax)
Profit after tax = Profit before tax – current income tax – deferred income tax

861. The top-down approach is used for the utilisation assessment of:

a) The deferred tax assets and liabilities arising from differences in valuation between the jurisdictional audited GAAP Balance Sheet and the ICS Balance Sheet; and,

b) The tax effect on the insurance capital requirement.

14.4 Adjustments Arising from the Differences in Valuation between the Audited GAAP and the ICS Balance Sheets (DTA/DTL recognised by ICS Adjustment)

862. Volunteer Groups should prepare a MAV and/or GAAP Plus Balance Sheet based on the instructions related to the *FT18.BCR & ICS.Balance Sheet* worksheet. Differences in valuation are recognised through reclassifications and adjustments of asset and liability valuations from the jurisdictional audited GAAP Balance Sheet to the MAV and/or GAAP Plus Balance Sheet. The associated deferred tax is defined as "the change in value x group effective tax rate used from the jurisdictional audited GAAP consolidated financial statements".

863. Deferred tax assets recognised by the ICS adjustment are subject to an utilisation assessment. The ICS does not allow for additional net deferred tax assets from the revaluation from the jurisdictional audited GAAP to the ICS MAV or GAAP Plus Balance Sheet. Therefore, utilisation of deferred tax assets on the ICS MAV and/or GAAP Plus Balance Sheets is capped by the following calculation. If the following calculation is negative, the increase of deferred tax assets from the revaluation from GAAP to MAV and/or GAAP Plus should be nil.

Add:

a) Gross jurisdictional audited GAAP deferred tax liabilities

b) Gross DTL recognised by the ICS adjustment

Subtract:

a) Gross jurisdictional audited GAAP deferred tax assets

b) DTL associated with assets subject to the deduction from capital resources (see paragraphs 419 and 420 in Section 10.4)

864. Paragraph 419 requires that Volunteer Groups deduct certain assets from Tier 1 capital resources because of uncertainty regarding the asset valuation. The deducted amount should be calculated net of associated DTLs. Thus, the DTLs associated with those assets have already been reflected in the value of Tier 1 capital elements. To avoid double-counting, all DTLs associated with these assets, that are deducted from Tier 1 capital resources, should be deducted from the DTL balance before assessing the utilisation of the stress tax effect.

14.5 Deferred Tax Impact on MOCE

865. It has not yet been decided whether there will be a deferred tax impact on MOCE in the ICS. As a placeholder for 2018 Field Testing, there will be no tax impact on MOCE.

14.6 Tax Effect on the Capital Requirement

866. Under a stressed condition, if Volunteer Groups have enough taxable income to net against taxable losses from the stress, taxable income would be decreased by the taxable loss amount, as a result, tax expense would be reduced by the stress.

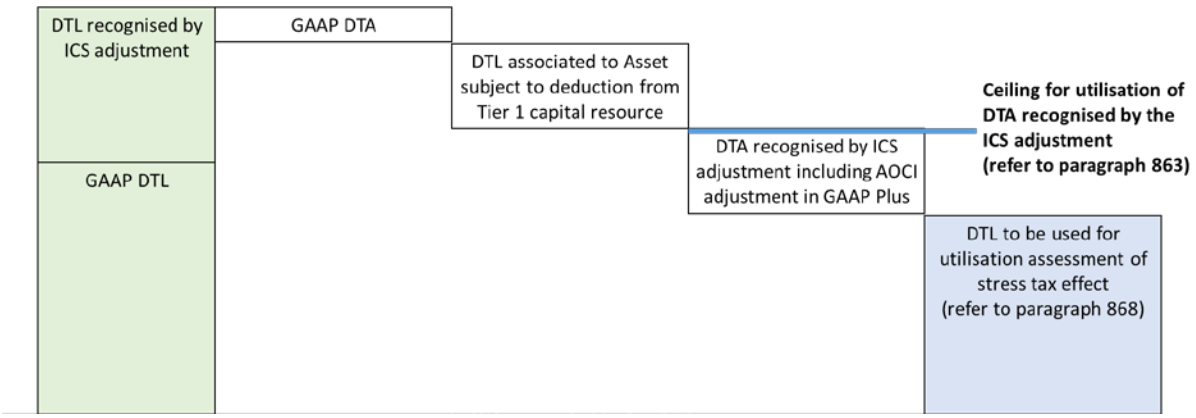
867. The tax effect on the capital requirement is calculated as follows:
Capital Requirement (post diversification and management actions) x Group effective tax rate

868. The tax effect on the capital requirement is deemed utilisable to the extent that there is a net deferred tax liability to offset the stress tax on capital requirements. The net deferred tax liability is calculated as (a) minus (b) defined as follows (the calculation is floored at 0):

a) The ceiling for utilisation of deferred tax assets recognised by ICS adjustment defined in paragraph 863.

b) Gross DTA recognised by the ICS adjustment including the AOCI adjustment for GAAP Plus.

Utilisation assessment of DTA recognised by the ICS adjustment and the Stress tax effect



869. The utilisable stress tax effect should be deducted from the pre-tax ICS capital requirement.

15 Baseline Jurisdictional Legal-Entity Capital Requirements

Relevant Worksheets in Template:	*FT18.Baseline.Jurisdictional*	*Due 31 August 2018*

870. Volunteer Groups are asked to report their existing local capital requirements for each material insurance legal entity (subsidiary) in the group (please use the same definition of material entity as provided in the section on Scope of Group; local capital requirements for all entities under the materiality threshold should be reported on an aggregated basis per country). It is important that this reporting is at the legal entity level rather than a sub-group consolidation within a jurisdiction. This baseline information will be used in further analysis of options in dealing with Currency risk and capital resources, and to assess how to deal with fungibility of capital issues in ComFrame (including the possibility of some quantitative adjustment to the ICS).

15.1 Country

871. The country column has drop down lists in each cell listing all countries according to the World Bank list of countries (http://data.worldbank.org/country) with Chinese Taipei and the Falkland Islands added. Please select one country per subsidiary. It is expected that some Volunteer Groups will have multiple subsidiaries in some jurisdictions.

15.2 Legal Entity identification

872. Please provide the name of the legal entity, as well as the ISO 17442 Legal Entity Identifier (if available). If reporting an aggregated amount per country for multiple immaterial subsidiaries, please indicate 'Multiple Immaterial Entities' as the legal entity name.

15.3 Assets and Liabilities in the Jurisdiction

873. Record the assets and liabilities held in each subsidiary according to the requirements of local regulatory reporting (i.e. no need to adjust MAV or GAAP Plus) with one exception (see below). Please do not report on the basis of local GAAP unless that is the basis of local regulatory reporting. Details of intra-group assets and liabilities (for instance, intra-group reinsurance recoverables, intra-group loans etc.) should also be provided.

874. The IAIS will not specify how particular items are to be treated as assets, liabilities or equity under the capital resources column. These must be reported according to the requirements of local regulatory reporting.

875. If local regulatory reporting of insurance liabilities is on a net basis, please attempt, on a best efforts basis, to record insurance liabilities as a gross amount instead so that the IAIS can assess the extent of intra-group reinsurance arrangements.

876. Information on the proportion of assets and liabilities within an entity that arise due to intra-group transactions are also requested. For this purpose, intra-group transactions take the form of direct and indirect claims with other legal entities within the scope of the group. Examples of intra-group assets are:

a) Reinsurance recoverables from other legal entities within the group

b) Shareholdings in other legal entities within the group

c) Loans provided to other legal entities within the group

d) Receivables for sale of assets to other legal entities within the group

e) Receivables for services provided to other legal entities within the group

877. Examples of intra-group liabilities are:

a) Reinsurance claims payable to other legal entities within the group

b) Borrowings from other legal entities in the group

c) Amounts payable for the purchase of assets from other legal entities within the group

d) Dividends payable to other legal entities that are shareholders of the legal entity

e) Liabilities for services received from other legal entities

f) Liabilities arising out of transactions with a central treasury operation performed by another legal entity within the group

15.4 Local Capital Requirement

878. Record the local capital requirement at a PCR level (see ICP 17) imposed by the respective jurisdictional insurance supervisor. If an agreed change in local capital requirements will be in-force by 2019, Volunteer Groups should report on that basis.

879. For example, the PCR should be reported on the following basis:

a) Subsidiaries based in the European Union should use the Solvency II Solo SCR as the PCR.

b) For U.S. subsidiaries, the RBC Company Action Level of each insurer should be re-calibrated to the point at which regulatory action can be taken in any state based on RBC alone, i.e., the point at which the trend test begins which is one and a half times company action level.

c) For Australian subsidiaries, the PCR is the target capital as set by the insurer/group in accordance with APRA requirements. Effectively, this would be "Target capital under ICAAP". PCR is not a set multiple of MCR.

d) For Bermudian subsidiaries, the Legal Entity PCR in Bermuda for medium and large commercial insurers is called the “Enhanced Capital Requirement” (ECR) and is calibrated to Tail-VaR at 99% confidence level over a one-year time horizon.

e) For Hong Kong subsidiaries, under the current rule-based capital regime, if applied similar to the concept of PCR, the regime's PCR would be 150% of MCR for life insurers and 200% of MCR for non-life insurers.

f) For Japanese subsidiaries, the PCR is the solvency margin ratio of 200%.

g) For Singaporean subsidiaries, the PCR is 120% of total risk requirement (i.e. capital requirement).

h) For Chinese Taipei subsidiaries, the PCR is 200% of RBC ratio.

i) For Chinese subsidiaries, the PCR is 100% of the C-ROSS total capital.

j) For Canadian life subsidiaries, the PCR is 100% of the LICAT Solvency Buffer. For Canadian P&C subsidiaries, the PCR is the MCT capital requirement at target level.

k) For Korean subsidiaries, the PCR is the risk-based solvency margin ratio of 100%.

l) South African subsidiaries should use the SAM SCR as the PCR.

15.5 Local Capital Resources

880. Record the available capital resources recognised by the respective jurisdictional insurance supervisor. The total qualifying capital resources should be the result of the sum of equity items from the Balance Sheet, plus any debt that is recognised as qualifying capital resources (e.g. subordinated debt), less any deductions from capital resources (or inadmissible assets). If an agreed change in local capital resources will be in-force by 2019, Volunteer Groups should report on that basis.

881. In addition, three components of capital resources are requested (these three components are components of local capital resources and are not expected to sum to total local capital resources):

a) The amount of capital resources represented by equity on the regulatory balance sheet of the subsidiary. This is automatically determined in the Template as the difference between assets and liabilities reported on the regulatory balance sheet.

b) Any financial instruments that are issued from the subsidiary that are not issued intra-group and are recognised as available capital resources by the jurisdictional insurance supervisor. These may also be recorded as non-controlling interests for ICS capital resources. However, the ICS capital resources criteria may not be the same as the criteria for available capital resources applied by the jurisdictional insurance supervisor. Where there are available capital resources issued to third parties that are recognised by the jurisdictional insurance supervisor but not under 2018 Field Testing (see Section 10 on Qualifying Capital Resources) please provide details in the Questionnaire, including a cross-reference to where these instruments are shown on the *FT18.Financial Instruments* worksheet.

c) Available capital resources that are not financial instruments. Please record the amount of balance sheet items recognised by the jurisdictional insurance supervisor as available capital resources that are not financial instruments. This will include items like the retained earnings, accumulated other comprehensive income and certain reserves. (This is not intended to be a balancing item, i.e. the three 'of which' components need not sum to total capital resources).

16 Baseline Supplementary Internal Model Data

Relevant Worksheets in Template:	*FT18.Baseline.Internal Model*	*Due 31 August 2018*

882. As an additional reference point in considering the overall calibration of the ICS and its components, the IAIS requests Volunteer Groups to provide internal model results structured in the same way as the ICS. Results should be undiversified at the risk level and reported on a pre-tax basis. This is a voluntary submission.

883. Internal models may not be structured in the same way as the ICS. However, to facilitate the analysis, Volunteer Groups are asked to approximate the results in a way similar to the structure of the ICS and its components (i.e. 99.5% VaR over a one-year time horizon). Furthermore, as Volunteer Groups use various risk measures, time horizons, confidence levels and assumptions within their internal models, it is requested that Volunteer Groups provide the specifications of their internal model (risk measure, time horizon, confidence level) as well as their internal model results using these specifications. In the Questionnaire, Volunteer Groups are asked to explain differences in definition of risks, issues in restructuring internal model results, details about their own internal model specifications (assumptions, distribution and parameters used), methods used for the aggregation of internal results. When answering these questions, please give an indication of the materiality of structural differences such as differences in definition of risks.

884. As the purpose of this part of 2018 Field Testing is to support the analysis of the calibration of the ICS and its components, Volunteer Groups may partially fill in this sheet, if that is all that is possible. The cells are deliberately not aggregated to a total capital requirement to allow for input of individual items.

885. This request applies to internal models that have been approved by group-wide supervisors for the purpose of calculating regulatory capital requirements and internal models for internal risk management purposes that are not subject to regulatory approval. Volunteer Groups should specify whether their internal model has been approved by their group-wide supervisor.

16.1 Calibration

886. In order for data submitted on this worksheet to assist the IAIS in considering the calibration of the ICS, the results presented should be provided by Volunteer Groups using the same target criteria and time horizon as set out for the calculation of the ICS, i.e. 99.5% VaR over a one-year time horizon. Where Volunteer Groups' internal models are not targeting exactly this risk measure but are able to approximate the results, the basis of the results should be reported in the Questionnaire. In addition, further quantile information (90% VaR, 95% VaR, 99% VaR) over a one-year time horizon is requested.

887. In addition to internal models results with the ICS specifications, Volunteer Groups are requested to submit actual internal model results using their own internal model specifications: risk measure, time horizon, confidence intervals and assumptions used (e.g. a Volunteer Group uses for its Equity risk capital charge calculation an internal model approved by a supervisory authority with a 99.9% VaR over a one-day time horizon).

16.2 Economic Balance Sheet items

888. Volunteer Groups should complete the economic balance sheet table only if they are using a full internal model to measure all quantifiable risks. There is no need to complete this part of the worksheet if partial internal models are used. Please provide details in the Questionnaire about the valuation basis including the approach to discounting liabilities.

16.3 Internal Model Required Capital

889. Components of required capital are requested using the same structure as the ICS (including the same definitions for each of the risks). Where it is only possible to report required capital at a high level of aggregation, e.g. market risk as compared to interest rate risk etc., report only that figure. Where the Volunteer Group has the ability to approximate the more granular risk charges in a credible way, please complete the additional granular data request.

890. The IAIS will get more information from the qualitative information provided about the internal model results than the results themselves. Of particular interest is any comparison or contrast with the results of the individual ICS risk charges such that the IAIS can understand where there are material differences in the calibration of the measurement of certain risks.

17 Scope of Group

Relevant Worksheets in Template:	*FT18.ReportingScope*	*Due 31 August 2018*

17.1 General Comments

891. The purpose of this worksheet is to enable the IAIS to identify differences that arise from a different choice of entities or consolidation technique used in preparing the consolidated data submitted as part of Field Testing, rather than differences which arise from the MAV and GAAP Plus approaches.

892. Only material entities need to be included in this analysis (see definition of material entity in Section 17.13).

893. Where a group of similar or related entities is included using the same consolidation technique, a Volunteer Group may complete only one line in the worksheet in respect of all such entities.

894. Where a related entity or a number of related entities are excluded from the consolidated data, but would individually or in aggregate represent more than 5% of the gross assets of the Volunteer Group as defined for Field Testing purposes, then please include those entities in the Template individually or in aggregate.

17.2 Name of Entity

895. Please provide the legal name of the entity. If a sub-group is being reported please indicate a descriptive name in the field for entity name.

17.3 Cross-reference to Group Structure Chart

896. For material entities appearing on the group structure diagram (see Questionnaire), please include a cross-reference to the relevant line in the *FT18.ReportingScope* worksheet.

17.4 Type of Entity

897. Please select the type of entity being described from the drop-down list. Refer to the list of types of entity provided below.

Table 53. Types of entities

Type of entity
Insurance company
Holding company
Service company
Financial regulated company
Financial unregulated company
Non-financial company
Other entity not listed elsewhere

17.5 Percentage Interest in Related Entity

898. Please provide the percentage interest that the group has in the related entity. That interest should be the Volunteer Group's share of the economic value of the related entity if different from the proportion of the controlling or voting rights which the group can exercise.

17.6 Consolidation Criteria

899. Using the drop-down list provided, please describe the criteria applied to determine the consolidation technique used for the entity included in the consolidated Field Testing data. The criteria may be based on the accounting consolidation standards adopted, regulatory rules applied or the requirement in the Technical Specifications to include entities which may be a potential source of risks to the insurance operations. Please identify which apply and the key criteria relevant to each related entity in the Template. For example, key criteria may be particular terms defined according to an accounting standard, such as outlined below.

Table 54. Reasons for including entities in consolidation

Consolidation criteria
Control or Dominant influence (eg if ownership > 50%)
Significant influence (eg if ownership 20% to 50%)
Joint venture
Investment
Not controlled, but presents a risk to policyholders
Controlled and presents a risk to policyholders

900. For excluded entities (paragraph 894 above) please describe the reason for their exclusion as per the table below. These are included in the same drop down box as the example consolidation criteria above. 'Other' criteria can be further specified in the adjacent column.

Table 55. Reasons for excluding entities from consolidation

Consolidation criteria
Not material to consolidate
Not practical to consolidate
Other (please specify)

17.7 Consolidation Technique

901. Please select the consolidation technique used in preparing the data submitted as part of 2018 Field Testing from the drop-down list provided.

Table 56. Consolidation techniques

Consolidation technique
Line-by-line consolidation (with deduction of non-controlling interest as single line item)
Line-by-line proportional consolidation
Net assets as single line item
Valued at nil in the consolidated balance sheet (ie any value is deducted from capital)
Other (please specify)

17.8 Valuation

902. Assets and liabilities included in the consolidated data and reported in the 'Related to Insurance Activities' column of the ICS Balance Sheet should be valued on both a MAV basis and GAAP Plus basis. However, legal entities that are unconsolidated or are included in the 'Other than Related to Insurance Business' column may be valued under a different set of accounting rules. Thus, Volunteer Groups should select the accounting basis that was used to measure either the net assets or gross assets being reported under the corresponding columns in the *FT18.Reporting Scope* worksheet.

903. Please select the valuation used to report net assets or gross assets from the drop-down list provided.

Table 57. Valuation

Valuation
IAIS valuation (MAV or GAAP Plus) - Select this option if the legal entity was consolidated and reported under the 'Related to Insurance Activities' column in the *FT18.BCR & ICS.Balance Sheet* worksheet; and where gross or net assets were valued on both a MAV basis and a GAAP Plus basis.
Local accounting standards – Select this option if the legal entity was either consolidated and reported under the 'Other than Related to Insurance Business' column in the *FT18.BCR & ICS.Balance Sheet* worksheet or was not consolidated; and gross or net assets were valued using local GAAP.
Regulatory valuation rules - Select this option if the legal entity was either consolidated and reported under the 'Other than Related to Insurance Business' column in the ICS Balance Sheet Template or was not consolidated; and gross or net assets were valued using regulatory valuation rules.
Other (please specify) – Please provide a narrative explanation in the adjacent column to the right

904. The majority of assets and liabilities included in the consolidated data submitted will be valued on both a MAV basis and GAAP Plus basis — that being one of the principle objectives of 2018 Field Testing. However, the IAIS wish to identify the extent to which other bases are used in the data submitted. This may be because local accounting rules are applied to the assets and liabilities of the related entity (which may not be the same accounting rules as are used for the preparation of the consolidated accounts). It may be because the entity is a financial entity which is subject to regulation by another sector authority and those regulatory valuation rules have been applied.

17.9 Main Activity

905. Please describe the main activity or purpose of the entity.

17.10 Main Risk

906. Please describe the main risk, or risks, that the entity poses to the group.

17.11 Net Asset Value of Related Entity

907. Please provide the NAV of related entities in which the group has an interest of more than 20% but less than or equal to 50% (i.e. including joint ventures).

17.12 Gross Asset Value of Related Entity

908. Please provide the gross asset value of value of related entities in which the group has an interest of more than 20% but less than or equal to 50% (i.e. including joint ventures).

17.13 Definitions

17.13.1 Material entity

909. A material entity is one which contributes significantly to the total group risks. Materiality in this case relates to the materiality of the risks posed to the financial entities in the group, not the size of the operations of the related entity. In considering what might significantly contribute to group risks, consider whether the related entity's gross assets are more than 5% of the group's gross assets and whether its revenue or profits are more than 5% of the group's revenue (or premium income) or profits.

17.13.2 Insurance company

910. A company required to be authorised to carry on insurance or reinsurance business in a jurisdiction. Branches are considered part of a company (legal entity) and if a branch requires authorisation, then the legal entity requires authorisation.

17.13.3 Holding company

911. A holding company is a company whose main purpose is to acquire and hold a controlling financial interest in another company.

17.13.4 Service company

912. A service company is a company, other than a financial regulated company or insurance company, whose main purpose is to provide services which support the insurance business of authorised insurance companies in the same group and which does not provide material services to companies not in the same group.

17.13.5 Financial regulated company

913. A financial regulated company is a company, other than an insurance company, which is required to be authorised to carry on financial business in a jurisdiction such as the business of banking or securities management.

17.13.6 Financial unregulated company

914. A financial unregulated company is a company other than a financial regulated company that carries on financial business (for example, a company that is not regulated and holds investments).

17.13.7 Non-financial company

915. A company other than an insurance company, holding company, financial company (whether regulated or unregulated) or service company.

18 Supplementary Data Collection (Segmentation of Investments)

Relevant Worksheets in Template:	*FT18.Investment segmentation*	*Due 31 August 2018*

916. For 2018 Field Testing, the IAIS is collecting data on a number of specified investment segments for which there may be sufficient rationale to apply a different treatment/ calibration from what is currently identified for such investments. The IAIS will use the data collected in its consideration of whether to introduce new investment segments for ICS Version 2.0.

917. As outlined below, the IAIS is collecting data on the following specified investment segments: strategic equity, private equity, privately placed debt, fixed-income investments qualifying as capital resources for a financial institution issuer, and infrastructure investments.

918. For most of the specified investment segments, the IAIS is particularly interested in receiving data on the subset of such investments that meet the specified criteria. Given the principle-based nature of some of the specified criteria, the 2018 Field Testing Questionnaire will collect information from Volunteer Groups about applying the criteria. Additionally, the IAIS is interested in Volunteer Groups' views of accessible data sources that may be useful for possibly developing appropriate risk charge calibrations for the proposed investment segments for ICS Version 2.0 – Volunteer Groups are encouraged to provide such information within the 2018 Field Testing Questionnaire.

919. For purposes of this supplementary data collection:

- Volunteer Groups should report their investments according to the MAV approach on a best efforts basis
- The IAIS has attempted to design the specified investment segments as mutually exclusive, should Volunteer Groups identify material segment overlaps, this should be identified (including impacts where possible) within the Field Testing Questionnaire
- A 'look-through' approach on a best efforts basis should be applied to investment funds held, for which the Volunteer Group has investment risks and which could contain investments falling within the definitions of the specified investment segments. If the Volunteer Group is unable to apply a look-through approach to such investment fund, this should be identified (including impacts where possible) within the Field Testing Questionnaire.

18.1 Strategic Equity

920. The IAIS would like to capture data from Volunteer Groups on the both the population of its unconsolidated equity investments in affiliates, joint ventures etc., and the subset of such investments which meet specified criteria for determining if they can be considered as 'strategic.

921. The aim of the criteria is to identify the subset of those specific equity investments which may have less volatile valuations due to their strategic nature and the ability of the Volunteer Group to influence the strategy of the firm for which the equity investment is held.

922. Consequently, a strategic equity investment is defined as those equity investments for which the Volunteer Group can demonstrate all of the following:

- The value of the strategic equity investment is less volatile than the value of other equities as a result of both the nature of the investment and the influence exercised by the Volunteer Group. Under this criterion, the expectation is that Volunteer Groups are monitoring the value development of the investment over time, and comparing it to the value development of non-strategic investments of a similar category. Where dividends are being received these should be continuous in value. Volunteer Groups should also be able to establish that the reduced volatility of the equity investment's value is linked to the influence exercised over the investment, and that this link will persist for at least the following 12 months;

- The nature of the investment is strategic, taking into account all relevant factors, including:

    - Existence of a clear decisive strategy, as well as ability, to continue holding the investment for a long period.

    - Existence of a 'durable link', which may be established by the existence of a stable relationship between two firms over time which results in a close economic bond, the sharing of risks and benefits between them or exposure to risks from one to the other. Such a link may be demonstrated in the form of the relationship between the two firms, which may include ownership, joint products or distribution lines, cross-selling, the creation of joint ventures or other long term operational or financial links.

    - Consistency of such strategy with the main policies guiding or limiting the actions of the Volunteer Group.

18.2 Private Equity

923. The IAIS would like to capture data from Volunteer Groups on the both the population of its unlisted equities and the subset of such investments that meet specified criteria for determining if they can be considered as having a better risk profile.

924. The aim of the criteria is to identify the subset of unlisted equity investments which may be less risky due to their nature and as a result of being subject to active management by an experienced

team of investment professionals following framed processes and requesting extensive information from the investees.

925. Consequently, the subset of unlisted equities to be reported under private equity investments are those for which the Volunteer Group can demonstrate all of the following:

- There is active engagement and management of the equity investment by the investor, such as might be expected under a contractual framework for a venture capital equity investment.
- The diversification is sufficient, such that the expected correlation of returns between the equity investment and other assets is not high.
- The transparency offered to the investor is sufficient, such that the investor is able to obtain information on the investee that is at least similar to what would be available for a listed equity and that situation is expected to continue over the life of the unlisted equity investment.

18.3 Privately Placed Debt

926. The IAIS would like to capture data on the both the population of Volunteer Groups' privately placed debt and the subset of such investments that are unrated (not rated by a credit ratings provider recognised under the ICS criteria) and meet specified criteria for determining if they can be considered as having a better risk profile than other unrated investments.

927. The aim of the criteria is to identify the subset of unrated privately placed debt investments which may be less risky due to the existence of sufficient credit quality features with respect to the investee and the investment. Specifically, the subset of such unrated investments to be reported under privately placed debt investments are those for which the Volunteer Group can demonstrate all of the following:

- The financial state of the debtor is sufficiently strong, according to its financial statements, which may be evidenced by analysis of key financial data and ratios (such as leverage, revenues, etc.);
- The features of the debt instrument are sufficiently protecting the investor in case of default, which may be evidenced by the financial covenants, collateral arrangements as well as ranking of the debt within the credit hierarchy in case of default; and
- The transparency offered to the investor during the lifetime of the instrument is sufficient, meaning the investor has access to information relevant for adequately assessing the security.

928. For this segment, the IAIS would also like to capture Volunteer Group's credit assessment data, where available, on privately placed debt, specifically:

a) External credit assessments provided by firms not explicitly recognised for ICS purposes (for purposes of this data collection, also include applicable NAIC designations); and

b) Internal ratings of the privately placed debt as mapped to the ICS ratings.

18.4 Fixed-income Investments Qualifying as Regulatory Capital for a Financial Institution Issuer

929. The IAIS would like to capture data on investments in fixed-income instruments that have maturity dates and qualify as regulatory capital for a financial institution issuer (for example, investments in bank subordinated debt). In addition to the amount of such investments, data is also being requested from Volunteer Groups on the investment ratings and duration.

18.5 Infrastructure Investments

930. The IAIS would like to collect data from Volunteer Groups on investments in infrastructure debt and equity, including the subset of such investments that meet specified criteria, to determine whether they can be considered as having a better risk profile than similar non-infrastructure investments. The data collection regarding infrastructure investments also includes a separate identification of:

a) Non-rated debt exposures

b) Debt securities and loans in emerging market and developing economies (EMDEs)

c) Exposures depending on public sector involvement (PPP)

d) Construction vs. operational projects

e) Loans vs. bonds

931. For the purposes of this data collection exercise, the following definitions apply:

a) 'Infrastructure assets' means physical assets, structures or facilities, systems and networks that provide or support essential public services.

b) 'Infrastructure corporate' means an entity or corporate group which derives most revenues from owning, financing, developing, or operating infrastructure assets – typically involved in the operational phase of a project, but may sometimes derive a meaningful part of their revenues from non-infrastructure activities. Loans to an infrastructure corporate are normally unsecured.

c) 'Infrastructure projects' are typically set up for the construction phase of a new project. Apart from the borrowers' different legal and financing structures, the main difference from

infrastructure corporates is that lenders to infrastructure projects usually benefit from the project risk being collateralised.

d) 'Infrastructure investments' are those debt or equity investments in infrastructure corporates or projects which support owning, financing, developing, or operating infrastructure assets.

e) EMDEs should be identified on the basis of the World Bank classification of countries[55]: all countries not classified as "high income" should be considered as EMDE.

932. This data collection also includes the reporting of collateral arrangements used to secure investments in infrastructure, as well as the subsequent redistribution between the credit rating categories. The redistribution should be following the instructions for Credit risk (see Section 13.5.5).

933. The following table is provided to assist Volunteer Groups in identifying infrastructure investments:

Table 58. Infrastructure investments

General title	What is infrastructure	What is not infrastructure	What typically makes the infrastructure investment safer
Water utilities	Water supply / distribution, Waste water collection / treatment	Fixing water pipe leakages	Regulation relating to long term concessions or pricing or return-on-assets or profit margin.
Waste management utilities	Facilities dedicated to waste management and recycling.	Using spare parts from scrapped vehicles for other vehicles.	Long term concessions usually with the involvement of a local government or council.
Electricity and gas utilities	Generation / transmission / distribution / storage / district heating	Batteries used in electric cars Insulation of houses.	Regulation relating to long term concessions, or pricing, or return-on-assets or profit margin.
Transportation	Airports / ports / roadways / railway network	Car, aircraft, boat manufacture Spare parts for aircrafts, etc.	Long term concessions or agreements usually with the involvement of a local government or council.

[55] Please refer to the following table, as of June 2017: http://databank.worldbank.org/data/download/site-content/CLASS.xls. The methodology for classification is described on the webpage: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

			Demand for such services.
Telecom	Core telecom infrastructure such as broadband equipment, optical fibres, radio masts, etc. without which telecom services cannot reach the public.	Production and selling of phone instruments with or without a contract with the end consumer. Facilities for private use.	Long term contracts, mostly business-to-business.
Social infrastructure	Infrastructure for public use supported by a government or a similar authority. (e.g. Courts, public libraries, prisons, juvenile facilities, refugee camps, social housing for poor population, government owned hospitals, national museums etc.).	Privately owned universities, hospitals, museums etc. Assets belonging to individual charities or organisations (e.g. YMCA)	The infrastructure facility is consistent with the social policies of the relevant government.

934. The aim of the criteria is to identify the subset of debt and equity infrastructure investments with infrastructure corporates and infrastructure projects which may be less risky due to their nature and the existence of sufficient investment protection features.

18.5.1 Infrastructure corporates

935. The subset of infrastructure investments to be reported under infrastructure corporates are those for which the Volunteer Group can demonstrate all of the following:

- The revenues generated by the infrastructure assets are predictable. This may be evidenced by availability-based revenues or arrangements that are subject to rate-of-return regulations. Alternative factors that can result in predictable revenues are:
    - arrangements that provide a high degree of contractual or regulatory certainty about repayment from future revenues by mitigating demand and/or price risk through concessions
    - offtake contracts, such as take-or-pay contracts, or similar

- resilient demand
- a low risk of substitution and barriers to entry

- The revenues generated by the infrastructure assets are diversified in terms of activities, location, or payers. Alternatively, the revenues are subject to a rate-of return regulation; and
- The debt has either an investment grade rating by a credit rating agency recognised under the ICS criteria, or:
  - The corporate should be of good credit standing or replaceable without a significant loss to investors;
  - Capital structure of the infrastructure corporate allows debt service under conservative assumptions based on an analysis of the relevant financial ratios; and
  - Infrastructure corporate has been active in its lines of business for at least three years, or in the case of an acquired business it has been in operations for at least three years.

18.5.2 Infrastructure projects

936. The subset of infrastructure investments to be reported for infrastructure projects are those for which the Volunteer Group can demonstrate all of the following:

- The cash flows for investors are predictable. This may be evidenced by availability-based revenues or arrangements that are subject to rate-of-return regulations. Alternative factors that can result in predictable revenues are
  - arrangements that provide a high degree of contractual or regulatory certainty about repayment from future revenues by mitigating demand and/or price risk through concessions
  - offtake contracts, such as take-or-pay contracts, or similar
  - resilient demand
  - a low risk of substitution and barriers to entry
- The infrastructure project can meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project; and
- The infrastructure project is governed by a regulatory or contractual framework that provides debt and equity investors with a high degree of protection, including the following:
  - Where the revenues of the infrastructure project are not funded by payments from a large number of users, the contractual framework includes provisions that effectively

protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services and the contracted purchaser should be of good credit standing or replaceable without a significant loss to debt and equity investors;

- The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements; and
- For debt investments, the contractual framework provides a strong security package, which may include security in project assets and contracts, step-in rights, equity pledges, restrictions on the use of net operating cash flows, restrictions on permitted investments and activities as well as on the issuance of new debt.

937. For equity and unrated debt investments in infrastructure projects, the following additional criteria apply:

- The risks faced in the construction phase of the project are significantly mitigated. Relevant features include: good expertise and a track record of the sponsor of successfully overseeing infrastructure projects; established incentives for the sponsor to protect the interests of other investors; limited exposure of investors to the default of the sponsor; established safeguards to ensure completion of the project according to the agreed specification, budget or completion date; the use of tested technology and design;
- The financial risks faced by the infrastructure project are significantly mitigated. Relevant features include: the capital structure of the infrastructure project allows it to service its debt; the refinancing risk for the infrastructure project is low; the infrastructure project uses derivatives only for risk mitigation purposes; the investment instrument is senior to all other claims other than statutory claims and claims from derivatives counterparties; and
- Where operating risks are material, they are properly managed.

19 Supplementary Data Collection (Internal Models)

Relevant Worksheets in Template:	*FT18.Internal Models*	*Due 31 August 2018*

938. In order prepare for the additional reporting, at the option of the group-wide supervisor, that will be an important component of the implementation of ICS Version 2.0, the IAIS requests Volunteer Groups to provide further information related to other methods of calculating the ICS capital requirement. This is a voluntary submission.

939. The IAIS has agreed that the implementation of the ICS Version 2.0 will be conducted in two phases (i.e. the monitoring period and the implementation of the ICS as a group-wide PCR) and that it will have two equally important components:

a) Mandatory confidential reporting by all IAIGs of a reference ICS which is based on market-adjusted valuation (MAV), the standard method for capital requirements and converged criteria for qualifying capital resources; and

b) Additional reporting by IAIGs, at the option of the group-wide supervisor, of ICS based on GAAP Plus valuation and/or and internal model-based capital requirement calculation.

940. The IAIS also agreed that both GAAP Plus and internal models are viable options and will be considered for inclusion in the ICS by the end of the monitoring period. To this end, the IAIS is collecting information with respect to the current use of internal models. This request applies to internal models that have been approved by group-wide supervisors for the purposes of calculating regulatory capital requirements and internal models for internal risk management purposes that are not subject to regulatory approval. Volunteer Groups should specify whether their internal models have been approved by their group-wide supervisor. Volunteer Groups should provide figures for the ICS risk charges calculated both with the standard method and with their internal model.

941. The table on internal models is intended to be a free-form submission in which Volunteer Groups can provide internal model results/risk charges according to its own model specifications (for risk measure, target criteria and time horizon), as well as its own risk structure and definitions, including information about the dependency structure (e.g. correlation parameters). That is, the risk definitions and risk granularity do not need to align with that of the ICS. This differs from the information requested in *FT18.Baseline.Internal Model*, which should follow the ICS risk definitions. Information can be provided either for a full internal model or a partial internal model. The table is divided into parts:

a) Part 1 - Volunteers Groups are required to provide information about their internal model results for every risk charge (e.g. market risk), sub-risk charge (e.g. equity risk), risk factors, lines of business and/or other covered by their internal model.

b) Part 2 – Volunteer Groups should fill in their correlation matrices with their own correlation parameters if they use this aggregation method for their internal model. Volunteer Groups should also provide details about the most significant parameters used in their internal models.

942. Results should be undiversified at the risk level, reported on a pre-tax basis and include the effect of management actions.

19.1 Risk Charges, Sub-risk Charges, Risk Factors and/or Other Results

943. In this section information about capital requirement calculations are requested. Volunteer Groups are invited to provide information about risk charges calculated by an internal model (full or partial).

944. This is an open sheet as each internal model has a different structure. Volunteer Groups should present the structure of their internal model, including risk charges, sub-risk charges, risk factors, lines of business, and/or other covered by the internal model according to their level of aggregation. The structure of the full internal model used by Volunteer Groups in many cases may cover the risks included in the standard method, to the extent that they are applicable to the Volunteer Group. However, the way in which these risks are grouped or defined may differ between Volunteer Groups.

945. In the headings “Name”, Volunteer Groups should assign the names of the risks charges, sub-risk charges, risk factors, lines of business and/or other covered by the internal model. Please delete the heading “Name” and assign your own name for all levels of aggregation.

a) Name 1, Name 2 etc. denotes the first level of aggregation.

b) Name 1.1, Name 1.2 etc. denotes the second level of aggregation for the risk charge, sub-risk charge, risk factor, etc., which are aggregated to Name 1.

c) Name 2.1, Name 2.2 etc. denotes the second level of aggregation for the risk charge, sub-risk charge, risk factor, etc., which are aggregated to Name 2 and so on.

946. Volunteer Groups should add new tables if they use more levels of aggregation, risk charges, sub-risk charges, risk factors, lines of business, and/or other.

947. Volunteer Groups are also asked to provide the amount of capital, risk measure, confidence level and time horizon used for their calculation.

19.2 Dependency Structure

948. In terms of approaches to modelling co-dependencies between risk types, Volunteer Groups may model it at different levels of granularity, depending on their internal model structure. For example, Volunteer Groups might model co-dependencies between entities in a group, or between risk types or between individual contracts.

949. The calculation of the ICS capital requirement by the standard method follows a structured two-step approach. There are six main risk categories (Life, Non-Life, Catastrophe, Market, Credit and Operational risk) which can be divided into several components or sub-risks. To analyse Volunteer's Groups approaches, they are asked to provide information about all the steps (levels) of their internal models' aggregation. Volunteer Groups should present the aggregation matrices used to combine the results of specific risk charges, sub-risk charges, risk factors, lines of business, etc.

950. Volunteer Groups should provide information about risks and matrices at the most detailed level of granularity. However, when a Volunteer Group uses a large correlation matrix to aggregate all sub-risks in one step (and that would be difficult to fit in the current table) it can provide correlation parameters for the main risks. To this end, it is important that the information provided gives an indication of the level of granularity and the aggregation, used in the internal model.

951. Volunteer Groups should provide correlation matrices information using the output correlation matrices from their internal model. Volunteer Groups should also provide details about the most significant parameters used in their internal models. In the columns and rows which have headings "Name", Volunteer Groups should assign names of risks, sub-risks, risk factors, lines of business, and/or other which are covered by their internal model.

a) Name 1, Name 2 etc. denotes the first level of aggregation.

b) Name 1.1, Name 1.2 etc. denotes the second level of aggregation for the risk charge, sub-risk charge, risk factor, etc., which are aggregated to Name 1.

c) Name 2.1, Name 2.2 etc. denotes the second level of aggregation for the risk charge, sub-risk charge, risk factor, etc., which are aggregated to Name 2.

952. Volunteer Groups should add the new tables for correlation matrices if they use more levels of correlations than specified in this sheet.

953. If Volunteer Groups do not use correlation matrices they are asked to provide information about the technique(s) used to aggregate risks in the Questionnaire.

20 Supplementary Data Collection (Dynamic Hedging)

Relevant Worksheets in Template:	*FT18.Dynamic Hedging*	*Due 31 August 2018*

954. Dynamic hedging is currently not recognised in the ICS. However, the IAIS did commit to consider the inclusion of dynamic hedging in the ICS following the release of ICS Version 1.0 for extended field testing. A separate worksheet has been provided to collect information on the potential impact of recognising dynamic hedging programmes. This is a voluntary submission.

955. Volunteer Groups are requested to provide the information related to their dynamic hedging programmes. This is intended to include details of the methodology used to value or calculate risk charges for regulatory purposes or as part of internal economic capital models.

956. The 'Dynamic Hedging' worksheet provides space for quantification of the risk changes calculated for these products, as well as the equivalent risk charges calibrated for the ICS for comparison purposes.

957. The data provided should be as comparable as possible to the ICS capital requirement, so the risk charges should be defined to be consistent with those used in the ICS. Therefore, where practicable:

a) The results should be split into similarly defined sets of risks as the ICS e.g. equity risk, currency risk, interest rate risk, etc.

b) The results should be restated to be comparable to a one-year VaR calculation at the 99.5th percentile.

c) The calculation should be based on similar cash flow projections e.g. having consistent contract boundaries and recognition criteria.

958. Where Volunteers Groups apply different methodologies between product types or groups of policies then separate data should be provided for each group to allow for a comparison, where possible.

959. The Field Testing Questionnaire should be used to provide more detail on the approach used, including:

a) The types of products for which dynamic hedging is being employed;

b) Which risks are being hedged;

c) The mechanisms used to execute the hedging programmes; and

d) How these models are currently being assessed and the capital requirement calibrated within local supervisory regimes.

960. This data is intended to be used to provide insight into the current global practices for managing products that apply dynamic hedging techniques and how these are treated within local regulatory frameworks. It will also be used to inform discussion on how the ICS could be refined in the future.

961. Therefore Volunteers Groups are requested to provide as much detail as possible to help inform the IAIS on approaches currently being employed, how these differ from the current ICS methodology and the rationale for measuring risks in this way.

Annex 1 Insurance Line of Business Segmentation Definitions

Introduction

This Annex provides definitions of each segment of Insurance liabilities for the purposes of filling out the worksheet *FT18.BCR & ICS.Balance Sheet*. This worksheet applies to the BCR, HLA and ICS.

Some general points which are broadly applicable:

- Insurance products should generally be classified by their principal class of their coverage. This is particularly the case when other types of insurance provided may not be material or when it is too difficult to unbundle products. Where relevant, the unbundling of products should be carried out on a best efforts basis.
- Unless specifically stated to the contrary, assumed reinsurance is included in the same segments as directly written business. Note there are several separate non-life segments for non-proportional reinsurance written).
- Unless specifically stated to the contrary, products that are either open to new business or closed to new business (runoff) are included in the same segment.
- The focus of descriptions is on the substance of products rather than their names (as specific terms having varying meanings across jurisdictions). To support comparability of data collected, please use the definitions/descriptions provided (e.g. Annex 3) for terms that may be in common use.

Detail of Insurance line of business segments

Label	Segment	Definition
Life Insurance – Traditional (L_T)		
L_T01	Protection – Life	Policies which: • Provide a defined benefit upon the insured person's death, provided that the death occurs within a certain specified time period. • Are not 'participating' (See L_T06). • Have no or small (immaterial) surrender values. Notes: 1 The dominant insurance risk insured against for these products is mortality risk. When risks insured against include both mortality and morbidity/disability these products should be reported in their separate segments if possible or, if necessary, in the single segment in which the primary risk insured against resides. 2 If there are material surrender values then the business is reported under L_T03. 3 Both individual and group insurance products are included in this segment. 4 Group insurance products with some form of profit sharing arrangement between the group (eg an employer) and the insurer are to be included in this segment.
L_T02	Protection – Accident & health	Policies which: • Provide the policyholder with a benefit upon a health (or health related) or accident event to the insured person, provided that the event occurs within a certain specified time period • Are not 'participating' (See L_T06). • Have no or small (immaterial) surrender values. Notes:

Label	Segment	Definition
		1 The dominant insurance risks insured against for these products are morbidity or disability risks. When risks insured against include both mortality and morbidity/accident these products should be reported in their separate segments if possible or, if necessary, in the single segment in which the primary risk insured against resides. 2 Benefits payable may be capped and/or have deductibles applied. Benefits may be either defined indemnity (with benefits payable specified in advance of insured events occurring) or on a reimbursement basis reflecting costs incurred relating to the insured event. 3 This segment thus includes Critical Illness and Income Protection products 4 Long term care (LTC) products commonly would be included in this segment. LTC cover typically includes indemnity for the long-term medical and related care of an incapacitated policyholder or beneficiary usually until their death. 5 If there are material surrender values then the business is reported under L_T07 since dominant risks insured against are morbidity or disability risks, not mortality risks. 6 Both individual and group insurance products are included in this segment. 7 Group insurance products with some form of profit sharing arrangement between the group (eg an employer) and the insurer are to be included in this segment. 8 Death benefits attached to products in this segment which are not materially in excess of minimum regulatory obligations do not affect the classification of the product into this segment.
L_T03	Protection - Other	Policies which: • Provide a defined benefit upon the insured person's death, provided that the death occurs within a certain specified time period. • Are not 'participating' (See L_T06). • Have material surrender values that are contractually specified and that do not depend on investment performance or other experience. Notes: 1 Products that should be reported in this segment include, but are not limited to 2 Non-participating Whole-of-Life and Endowment products.

Label	Segment	Definition
		3 Other products, such as 'level term' insurances and single premium insurances. 4 Both individual and group insurance products are included in this segment.
L_T04	Savings without guarantees or living benefits	A savings product: • Has the primary purpose of increasing the wealth of the policyholder by the insurer investing in various assets. • Has benefit payments that are not contingent on the life expectancy or health of the beneficiary. • Typically has an account value that fluctuates based on investment performance, and that is commonly disclosed to the policyholder. Notes: 1 Unitised investment products provide returns to policyholder through unit prices directly reflecting Investment performance the underlying assets of the insurer which are separately identified for these products. Non-unitised investment products provide returns to policyholders through discretionary means (with methodologies contractually defined) such as crediting rates which may not directly reflect the movement in the underlying value of the assets held by the insurer to support these products. 2 A product which has underlying assets separately identified for those products can be termed a 'separate account' product. The identification of the underlying assets may be notional or more formal (for example, through statutory funds). In all cases changes to the underlying assets must be managed through a formal process and all premiums and withdrawals for the product flow in and out of the underlying assets. 3 Products include in this segment must reflect both positive and negative investment performance in a consistent manner. If a product has features such as a commitment that crediting rates will not be negative or unit prices will not decline (either in general or only on withdrawal) then these products are to be reported in a Non-Traditional product segment. 4 Both unitised and non-unitised investment products (without investment or other guarantees) are included in this segment 5 A Variable Annuity (VA) is an Investment product, intended for the long term, under which the insurer agrees to make periodic payments (either for a fixed term or life) to the beneficiary. Payments may commence immediately or be deferred. VAs may be purchased with either a single payment or multiple payments. In both the accumulation and pay-out phases of a VA, a number of investment options are typically available to the policyholder. VAs may, but are not necessarily, be administered as unitised investment products. VAs are tax advantaged, with earnings on withdrawals taxed at ordinary rates after withdrawal. VAs have a death benefit, typically at least the amount of purchase payments, in the accumulation period. For the purpose of this data

Label	Segment	Definition
		collection, VAs with no guarantees other than such death benefits are considered to be without guarantees and are to be included here. VAs may also have a variety of other guarantees, often termed living benefits, attached to them. VAs with any guarantees other than the death benefit noted previously are to be included as Non-Traditional Life products. 6 Investment products which are structured as 'participating' products should be included under L_T06. 7 Death benefits attached to products in this segment which are not materially in excess of minimum regulatory obligations do not affect the classification of the product into this segment.
L_T05	Annuities	All types of annuity products are included: • This includes Life annuities (reflecting payments to beneficiaries being made until death, with or without reversions), Term annuities (with or without residual values) and Deferred annuities (that is, annuity payments are deferred into the future, and includes premiums that may be paid in a single amount of over time). • The product reflects the underlying experience at a group level not at experience at an individual level. • The products provide guarantees on the regular payments made (includes both indexed and level (not indexed) payment streams) Notes: 1 This includes annuity products stemming from either life or non-life insurance contracts (including, for example structured settlements from all sources). 2 Benefits in a payment stream from policies due to the occurrence of an insured event (such as an income protection policy) should be included under L_T02, as the payment of such benefits would be paid until recovery or death whichever comes first. 3 Products (typically retirement income products) which reflect the experience of an individual (including investment choice and the possibility of discretionary withdrawals) and do not have guarantees (in particular, guarantees related to mortality) are not considered annuities and are to be reported as Savings products (guided be whether there are any guarantees provided) since they do not directly mitigate mortality risk. 4 Death benefits attached to products in this segment which are not materially in excess of minimum regulatory obligations do not affect the classification of the product into this segment. 5 Annuity products which are structured as 'participating' products but are substantively intended to provide annuity benefits, are to be included in this segment.

Label	Segment	Definition
L_T06	Participating products	A participating policy is such that: • The policyholder shares with the insurer the 'profit' made by the insurer (typically on an annual basis, and terminal bonuses may also be attributed). • The 'profit' sharing process is typically implemented through the attribution of bonuses to policyholders. Such policies are often also known as 'with profits' policies. • The components of the 'profit' shared typically (but not necessarily) include investment 'profits' from gains from the performance of the underlying investment portfolio that supports the policies, mortality gains, expense gains, and lapse gains. Notes: 1 Participating products may be whole-of-life policies (which provide insurance cover on the life insured for his/her entire life, or up to a specified high termination age, such as 100). Such policies typically generate significant liabilities and surrender values. 2 Participating products may be endowment policies (which provide a defined benefit within a certain period or at a certain age (of the life insured) after which the policy matures. At the time of maturity, a lump sum is paid to the beneficiary. 3 Both whole-of-life and endowment polices typically include an investment component, which accumulates a cash value that the policy owner can withdraw or borrow against. 4 Investment products where the benefits structured as participating products, with discretionary benefits, are included in this segment. 5 Other products, such as 'level term' insurances and single premium insurances, may also be structured to be participating products. If so, they are to be included in this segment.
L_T07	Other life traditional	Any life insurance products not included in the segments above and not included in the Life Non-Traditional segments below. Notes:

Label	Segment	Definition
		1 All products in this segment should be non-participating. 2 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported.
Life insurance - Non-Traditional (NT) (L_NT)		
L_NT01	Separate accounts with guarantees	Any separate accounts business where a guarantee is also provided. This includes, but it not limited to: • Products that give the policyholder opportunities to potentially benefit from investment options that essentially create put options for their benefit (see L_NT03). • Annuity or Variable Annuity – Guaranteed Minimum Income Benefit (GMIB) or Guaranteed Minimum Accumulation Benefit (GMAB) • Guaranteed minimum annuitisation rate • Guaranteed Minimum Withdrawal Benefit (GMWB) • Contingent Deferred Annuity • Unit-linked accounts with guaranteed account values or non-negative returns • Unit-linked accounts or variable annuities that provide guarantees for any form of living benefit. Two specific subsets of this segment are requested in L_NT02 and L_NT03 Notes: 1 The value to be included for this segment is the combination of the separate account value and guarantee value.

Label	Segment	Definition
		2 The term 'separate account' product is specified in L_T04 3 Such product may be Variable Annuities, but are not limited to Variable Annuities.
L_NT02	of which guarantee	The full value of all guarantees in relation to the separate accounts reported under L_NT01 are included here. Notes: 1 The values reported for this segment are included in the values reported in L_NT01 as this segment is a subsegment of L_NT01
L_NT03	Separate accounts with portfolio choice and guarantee	Products that give the policyholder opportunities to potentially benefit from investment options that essentially create put options for their benefit. This includes, but is not limited to: • Products with investment options that provide the policyholder the right to choose to invest premiums in different markets (e.g. the equities market), at the commencement of or throughout the contract, in conjunction with a guaranteed minimum performance of the account. • Products that give the policyholder a considerable long-term performance promise and a tangible short-term liquidity promise, which cannot be matched simultaneously by a portfolio of existing cash and market securities. Notes: 1 The values reported for this segment are included in the values reported in L_NT01 as this segment is a subsegment of L_NT01 2 In this segment the primary direct focus of products is on investment performance. 3 The term 'separate account' product is specified in L_T04. 4 Such products may be Variable Annuities, but are not limited to Variable Annuities.
L_NT04	Guaranteed Investment Contracts	Guaranteed Investment Contracts (GICs) Notes:

Label	Segment	Definition
		1 This includes GIC products for which the insurer bears or substantially provides the guarantees directly or indirectly (for example, through an independent third party) 2 Variable Annuity products should not be reported in this segment.
L_NT05	Synthetic GICs	Synthetic GIC products where the insurer bears (or substantially bears) market value/return risk Notes: 1 This includes 'stable value wraps' products. 2 Variable Annuity products should not be reported in this segment.
L_NT06	Other life Non-Traditional	Any other life Non-Traditional insurance products other than the above and not included in life Traditional insurance segments above. Notes: 1 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported.
Non-Life Insurance – Traditional (NL_T)		
NL_T01	Motor	This includes: • Motor property damage: Damage to own and third-party motor vehicles (and related property damage) through accident, theft, fire and weather events, excluding liability for personal injury • Motor bodily insurances: Insurances relating to the injury or death of third parties due to or related to motor vehicles and accidents involving them. This may also extend to include the driver involved. Notes:

Label	Segment	Definition
		• This segment covers both private, commercial and other uses of motor vehicles
NL_T02	Property damage	This includes, but is not limited to: • Property: Insurance of house or other property (including house contents) against loss through fire, windstorm etc, insurance of contents against losses due to theft, fire, windstorm, earthquake, impact, damages, water damage, and other natural and man-made perils. Contents insurances may extend to loss or damage to property outside the home or its usual location. • Fire and industrial: Loss or damage and loss of earnings due to damage to commercial buildings and other physical infrastructure due to fire, windstorm and other perils. • Consequential losses: Products covering consequential losses (such as 'loss of profits' or 'business interruption') should also be included in this segment • Construction: This includes 'construction all risks and erection all risks' (CAR/EAR) or similar written in connection with construction projects. This includes the construction and erection of infrastructure projects and buildings. Notes: 1 In essence, this segment refers to insurances for property which is stationary or fixed in place. 2 This segment refers to both private and commercial property insurances.
NL_T03	Accident, protection and health (APH)	This includes, but is not limited to: • Accident and sickness: Accident cover provides benefits if an accident result in bodily injury or death. Benefits are lump sum or periodic (typically for at most 2 years). Sickness cover is often an extension of accident insurance • Other consumer accident: Property damage other than householders or motor vehicle. For example, travel insurance. • Other commercial accident: Commercial property insurance other than Fire and Industrial risk and MAT, and other than commercial long-term liability • Consumer credit: Guarantee of repayments on consumer credit contracts due to involuntary loss of employment • Consumer liability: Private individual's liability for personal injury through personal actions or property

Label	Segment	Definition
		Notes: 1 Products included in this segment are short term products 2 Products included in this segment typically permit the insurer to not offer to renew the policy. 3 In particular, in the context of accident and health policies offered by non-life insurers, the capacity of the insurer to not offer to renew the policy to specific policyholders indicates such products should be included in this segment (not in L_T02) 4 Both individual and group insurance products are included in this segment.
NL_T04	Non-proportional Motor, Property damage and APH	As above for the NL_T01, NL_T02 and NL_T03 (Motor, Property Damage, and Accident, Protection and Health (APH)) segments, non-proportional reinsurance assumed Notes: 1 This is principally a line of business for inwards reinsurance but some direct business may also fit into this segment. 2 See also Catastrophe Reinsurance definition (NT_T09).
NL_T05	Other liability	This includes, but is not limited to: • Products that provide covers for liabilities matters such as for personal injury, consequences of unsafe workplaces or products, negligent practices or other losses likely to take in excess of one year to settle. Such products include, but are not limited to: ○ Workers' compensation insurance ○ Public liability insurance for bodily injury or damage to property ○ Product liability insurance for bodily injury or damage to property for claims attributed to the use of products. ○ Professional indemnity for a professional person or organisation for claims for losses legal and other) attributed to professional negligence (and related) in the services provided. For example, medical malpractice and directors and officers insurance products ○ Builder warranty for private homes and other buildings following construction. Notes: 1 Products in this segment include those issued to both individuals and organisations, and to both private and commercial policies.

Label	Segment	Definition
NL_T06	Non-proportional Other liability	As above for the NL_T05 (Other liability) segment, non-proportional reinsurance assumed. Notes: 1 This is principally a line of business for inwards reinsurance but some direct business may also fit into this segment.
NL_T07	Marine, Air, Transport (MAT)	This includes: • All damage or loss of river, canal, lake and sea vessels, aircraft, goods in transit, liabilities from use of aircraft, ships and boats. • Loss or damage to property, consequential third party liability for damages to the property of others, and consequential third party liability for personal injury to operators, passengers and other should be included. Notes: 1 In essence, this segment refers to insurances for property which is moving (not stationary, see NL_T02) or to goods and materials that may be being moved with regard to the MAT component. 2 This segment focuses on commercial (not private or personal) insurance products.
NL_T08	Non-proportional MAT	As above for the NL_T07 (MAT) segment, non-proportional reinsurance assumed. Notes: 1 This is principally a line of business for inwards reinsurance but some direct business may also fit into this segment.
NL_T09	Catastrophe Reinsurance	Catastrophe Reinsurance is an inwards reinsurance line of business providing excess of loss protection or proportional protection in respect of aggregate losses arising from a single event or a combination of events. Typically, such business is covering damages to property and is sold with an 'hours' clause and provides protection against natural catastrophe perils such as windstorms, earthquakes and man-made catastrophe such as acts of terrorism. Notes: 1 Property Catastrophe Reinsurance would then be excluded from the definition of Non-proportional property business

Label	Segment	Definition
		2 Catastrophe Reinsurance will also include stop loss treaties when the main coverage is the combination of events. 3 This segment does not cover products in NL_T06 and NL_T08.
NL_T10	Other traditional - short-tail	Any non-life products which do not fit into the segments above, does not fit the definition of non-life non-traditional business and where claims are usually made during the term of the policy or shortly (typically, up to 1 year) up to after the policy has expired. This may include, but not be limited to: • Credit (trade credit) insurance: Insurance coverage against debtors failing to make due payments. Notes: 1 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported. 2 Both proportional and non-proportional reinsurance for products in this segment are included in this segment.
NL_T11	Other traditional – medium-tail	Any non-life products which do not fit into the defined segments above, does not fit the definition of non-life non-traditional business and where claims are usually made during the term of the policy or some time (typically between 1 and 5 years) after the policy has expired. Notes: 1 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported. 2 Both proportional and non-proportional reinsurance for products in this segment are included in this segment

Label	Segment	Definition
NL_T12	Other traditional - long-tail	Any non-life products which do not fit into the defined segments above, does not fit the definition of non-life non-traditional business and where claims may be made many years (typically 5 or more years) after the coverage period of the insurance has expired. Notes: 1 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported. 2 Both proportional and non-proportional reinsurance for products in this segment are included in this segment
Non-Life Insurance - Non-Traditional (NL_NT)		
NL_NT01	Mortgage Insurance	Indemnity to credit providers for losses due to the failure of a borrower to repay a loan secured by a mortgage over property Notes: 1 This includes both residential and non-residential property. 2 Both proportional and non-proportional reinsurance for products in this segment are included in this segment
NL_NT02	Commercial credit insurance including suretyship	Indemnity for financial losses due to the failure of a commercial entity to repay outstanding credit contracts or failure to perform contracted services or deliver contracted products other than short-term trade credit and suretyship insurance. Notes: 1 By 'short term' coverage at issue of one year or less is meant. Such short term policies should be reported under NL_T10. 2 Financial guarantee business should be captured in this category including insurance of public finance bonds, structured finance, and all other type of bonds. 3 Both proportional and non-proportional reinsurance for products in this segment are included in this segment

Label	Segment	Definition
NL_NT03	Other Non-Life Non-Traditional insurance	Any other non-life non-traditional insurance products other than the above and not included in non-life traditional insurance segments above. This includes, but is not limited to: • Financing or monetising Insurance-linked securities (ILS, for example catastrophe bonds). For example, embedded Value/Present Value of Future Profit securitisations, ILS with financial risk as material trigger condition. Notes: 1 A brief description of products included in this segment is to be provided in the Questionnaire, including a summary of their relative contribution to the insurance data reported. 2 Both proportional and non-proportional reinsurance for products in this segment are included in this segment

Annex 2 Mapping of Jurisdictional Segments to Field Testing Line of Business Segmentation

Australia

Mapping to IAIS	Code	Segment Level 1	Segment Level 2	Description
Life Insurance				
L_T06	L1	Conventional Participating		Includes whole of life policies and endowment policies (participating).
L_T06	L2	Participating Investment Account		Investment account business within the meaning of section 14 of the *Life Insurance Act 1995* that pays participating benefits within the meaning of Section 15 of the Act (participating).
L_T05	L3	Annuity with Longevity Risk		Annuities providing periodic payments that are dependent of the continuance of human life (non-participating).
L_T01	L4	Individual Lump Sum Risk		Lump sum risk policies issued on an individual (retail) basis. Includes non-participating conventional policies (non-participating).
L_T02	L5	Individual Disability Income Insurance		Disability income insurance policies issued to individuals (non-participating).
L_T01	L6	Group Lump Sum Risk		Lump sum risk policies issued on a group (wholesale) basis (non-participating).
L_T02	L7	Group Disability Income Insurance		Disability income insurance policies issued on a group (wholelsale) basis (non-participating).

L_T04	L8	Investment Linked		Investment linked policies where policy benefits are associated with the perfomance of the supporting assets (non-participating).
L_NT01 and L_NT03	L9	Non-participating Investment Policy with Discretionary Additions		Investment account business within the meaning of section 14 of the *Life Insurance Act 1995* that pays non-participating benefits within the meaning of section 15 of the Act (non-participating).
L_T04	L10	Other Non-participating Investment Policy		Includes all other non-participating investment products not specifically categorised in 'Investment Linked' or 'Non-participating Investment Policy with Discretionary Additions'. However, do not use this Product Group unless APRA has been consulted beforehand (non-participating).
L_T05	L11	Annuity without Longevity Risk		Annuities providing periodic payments that are not dependent on the continuance of human life (non-participating).
L_T07	L12	Other		Includes all other policies not specifically categorised above. However, do not use this Product Group unless APRA has been consulted beforehand (both participating and non-participating).
Friendly societies - we provide these for completeness, however have not mapped these as friendly societies will not be within a GSII				
NA	F1	Education		
NA	F2	Investment Account		As defined in section 14 of the *Life Insurance Act 1995.*
NA	F3	Annuity & Superannuation		

NA	F4	Defined Benefit Risk		All products classified as defined benefit, including defined benefit funeral products.
NA	F5	Capital Guaranteed Defined Contribution Funeral		Capital guaranteed funeral products that are classified as Defined Contribution.
NA	F6	Investment Linked		As defined in section 14 of the *Life Insurance Act 1995*.
General Insurance		Direct classes of business		
NL_T02 NL_T04 (RI Non-prop)	GI1		Householders	This class covers the common Householders policies, including the following classes/risks: • Contents; • Personal property; • Arson; and • Burglary. Public liability normally attaching to these products is to be separated and included in the Public and Product Liability class of business – item (m). Similarly, Domestic Workers' Compensation attaching to these products is to be separated and included in the Employers' Liability class of business – item (o).

NL_T01 NL_T04 (RI Non-prop)	GI2		Commercial Motor	Motor vehicle insurance (including third party property damage) other than insurance covering vehicles defined below under Domestic Motor. It includes long and medium haul trucks, cranes and special vehicles, and policies covering fleets.
NL_T01 NL_T04 (RI Non-prop)	GI3		Domestic Motor	Motor vehicle insurance (including third party property damage) covering private use motor vehicles including utilities and lorries, motor cycles, private caravans, box and boat trailers, and other vehicles not normally covered by business or commercial policies.
NL_T03 NL_T04 (RI Non-prop)	GI4		Travel	Insurance against losses associated with travel including loss of baggage and personal effects, losses on flight cancellations and overseas medical costs.
NL_T03 NL_T04 (RI Non-prop)	GI5		Fire and Industrial Special Risks	Fire Includes all policies normally classified as 'Fire' and includes: • Sprinkler leakage; • Subsidence; • Windstorm; • Hailstone; • Crop; • Arson; and • loss of profits and any extraneous risk normally covered under fire policies, e.g. flood. ISR Standard policy wordings exist for this type of policy. All policies that contain such standard wordings or substantially similar wording are to be classified as ISR.
NL_T07 NL_T08 (RI Non-prop)	GI6		Marine	Includes Marine Hull and Marine Liability (including pleasure craft), and Marine Cargo (including sea and inland transit insurance).

NL_T07 NL_T08 (RI Non-prop)	GI7		Aviation	Aviation (including aircraft hull and aircraft liability).
NL_NT01	GI8		Mortgage	Insurance against losses to a lender in the event of borrower default on a loan secured by a mortgage over residential or other property.
NL_T03 NL_T04 (RI Non-prop)	GI9		Consumer Credit	Insurance to protect a consumer's ability to meet the loan repayments on personal loans and credit card finance in the event of death or loss of income due to injury, illness or unemployment.
NL_T03 NL_T04 (RI Non-prop)	GI10		Other Accident	Includes the following types of insurance: • Miscellaneous accident (involving cash in transit, theft, loss of money); • All risks (baggage, sporting equipment, guns); • Engineering when not part of ISR or Fire policy; • Plate glass when not part of packaged policy (e.g. Householders); • Livestock; • Pluvius; and • Sickness and Accident, which, by the terms of the policy, provides benefits for no more than 3 years.
NL_T10 or NL_T11 or NT_T12	GI11		Other	All other insurance business not specifically mentioned elsewhere. It includes: • Trade Credit; • Extended Warranty (includes insurance by a third party for a period in excess of the manufacturer's or seller's normal warranty); • Kidnap and Ransom; and • Contingency.
NL_T01	GI12		Compulsary Third Party	This class consists only of CTP business.

NL_T05 NL_T06 (RI Non-prop)	GI13		Public and Product Liability	Public Liability covers legal liability to the public in respect of bodily injury or property damage arising out of the operation of the insured's business. Product Liability includes policies that provide for compensation for loss and/or injury caused by, or as a result of, the use of goods and environmental clean-up caused by pollution spills where not covered by Fire and ISR policies. • Includes Builders Warranty Insurance. • Includes public liability attaching to Householders policies.
NL_T05 NL_T06 (RI Non-prop)	GI14		Professional Liability	• PI covers professionals against liability incurred as a result of errors and omissions made in performing professional services that has resulted in economic losses suffered by third parties. • Includes Directors' and Officers' Liability insurance plus legal expense insurance. Cover for legal expenses is generally included in this type of policy.
NL_T05 NL_T06 (RI Non-prop)	GI15		Employers' Liability	Includes: • Workers' Compensation; • Seamen's Compensation; and • Domestic Workers' Compensation.
		Reinsurance classes of business		
As per the direct classes above	GI16		Proportional reinsurance	This refers to either: (i) traditional forms of quota share and/or surplus reinsurance placed on a treaty reinsurance basis; or (ii) reinsurance written on an individual offer and acceptance basis; where the reinsurer and reinsured share, in proportion, the premium and losses of the reinsured.

See above	GI17		Non-proportional reinsurance	This refers to either: (i) traditional forms of excess of loss reinsurance arrangements written on a treaty reinsurance arrangement basis; or (ii) reinsurance written on an individual offer and acceptance basis; where the reinsurer pays losses only above an agreed retention/deductible up to an agreed maximum limit.

Mapping to IAIS	Code	Segment Level 1	Segment Level 2	Description
L_T01			Term Life Insurance	Group and individual term life including term to 100, accidental death, and all other non-participating life policies with immaterial surrender values.
L_T02			Accident And Health	Group and individual disability, medical, critical illness, long-term care, and all other miscellaneous non-participating health policies with immaterial surrender values
L_T03			Life Insurance With Nonforfeiture Benefits	Group and individual non-participating life products having material surrender values that are contractually specified and do not depend on experience, including whole life, traditional universal life, endowments, and other cash-value policies.
L_T04			Savings Without Guarantees Or Living Benefits	Mutual funds, variable annuities, segregated funds and variable universal life policies with no guarantees or with only death benefit guarantees.

L_T05			Annuities	Non-participating group and individual payout annuities, including deferred, immediate, term certain, indexed and life annuities, and retirement products.
L_T06			Participating Products	All participating insurance, annuity and retirement products that pay meaningful discretionary dividends.
L_T07			Other Traditional Life And Health	Includes accident and health policies having material surrender values.
L_NT01			Separate Accounts With Guarantees	Segregated funds and variable annuities with GMMB, GMIB, GMWB, or any other living benefits, but excluding funds with GMDB only. Variable universal life products with minimum return guarantees or other guaranteed living benefits.
L_NT03			Separate Accounts With Portfolio Choice And Guarantees	The subset of products in L_NT01 where the policyholder has the right to move the account value between different investment funds.
L_NT04			GICs	All GICs including group and individual savings products.
To be mapped to similar IAIS segments as for similar products that are not adjustable			Adjustable Products	Products with adjustable premiums

EU

Mapping to IAIS	Code	Segment Level 1	Segment Level 2	Description	Mapping to IAIS
Life					
L_T02	LoB29	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.	
L_T05 L_T06 (a)	LoB30	Insurance with profit participation		Insurance obligations with profit participation other than obligations included in line of business 33 and 34.	(a) For the business with profit participation in the form of Annuities
L_T04 L_NT01 (b)	LoB31	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.	(b) For the business with guarantees implies also identifying the subcomponents included in L_NT02 and L_NT03).
L_T01 L_T03 L_T05 L_T07	LoB32	Other life insurance		Other life insurance obligations other than obligations included in lines of business 29 to 31, 33 and 34.	

L_T05	LoB33	Annuities stemming from non-life insurance contracts and relating to health insurance obligations			
L_T05	LoB34	Annuities stemming from non-life insurance contracts and relating to insurance obligations other than health insurance obligations			
L_T02	LoB35	Health reinsurance		Reinsurance obligations which relate to the obligations included in lines of business 29 and 33.	
L_T01 (c)	LoB36	Life reinsurance		Reinsurance obligations which relate to the obligations included in lines of business 30 to 32 and 34.	(c) Expected to be allocated mainly to L_T01, but could be allocated to other L_T lines where relevant.

Non-Life					
NL_T03	LoB1 LoB13	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.	
NL_T03	LoB2 LoB14	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.	
NL_T05	LoB3 LoB15	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.	
NL_T01	LoB4 LoB16	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).	
NL_T01	LoB5 LoB17	Other motor insurance		Insurance obligations which cover all damage to or loss of land vehicles (including railway rolling stock).	

NL_T07	LoB6 LoB18	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).	
NL_T02 NL_T09 (d)	LoB7 LoB19	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.	(d) Regarding the Proportional Reinsurance part.
NL_T05	LoB8 LoB20	General liability insurance		Insurance obligations which cover all liabilities other than those in the lines of business 4 and 6.	
NL_T10 (e) NL_NT02	LoB9 LoB21	Credit and suretyship insurance		Insurance obligations which cover insolvency, export credit, instalment credit, mortgages, agricultural credit and direct and indirect suretyship.	(e) Regarding the short term business.
NL_T11 (f)	LoB10 LoB22	Legal expenses insurance		Insurance obligations which cover legal expenses and cost of litigation.	(f) Allocated fully to Medium Tail for simplification.
NL_T10	LoB11 LoB23	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.	

NL_T11 (g)	LoB12 LoB24	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.	(g) Allocated fully to Medium Tail for simplification.
NL_T04 NL_T06 (h)	LoB25	Non-proportional health reinsurance		Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 1 to 3.	(h) Regarding the Workers' Compensation component.
NL_T06	LoB26	Non-proportional casualty reinsurance		Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 4 and 8.	
NL_T08	LoB27	Non-proportional marine, aviation and transport reinsurance		Non-proportional reinsurance obligations relating to insurance obligations included in line of business 6.	
NL_T04 (i) NL_T09	LoB28	Non-proportional property reinsurance		Non-proportional reinsurance obligations relating to insurance obligations included in lines of business 5, 7 and 9 to 12.	(i) For any business not fulfilling the definition of NL_T09.

Japan

Mapping to IAIS	Code	Segment Level 1	Segment Level 2	Description
Life				
	L1	Individual Life		Any insurance if insurers offer some protection to an individual should be categorised.
L_T03, L_T06			Whole Life Insurance	This insurance has following features: A) providing death protection over the insured's whole life. B) its accumulated fund can be payable upon surrender. Also it has usually (not always) participating feature.
L_T01, L_T06			Term Insurance	This insurance provides death protection for a set period. Also it has usually (not always) participating feature.
L_T03, L_T06			Endowment Insurance	This insurance enables assets formation over a set period while providing death benefit. That means the same amount of benefit is payable at maturity or at prior death. Also it has usually (not always) participating feature.
L_T02, L_T03, L_T06			Medical Life Insurance	This insurance covers hospitalisation and surgery, etc. Please note cancer incurance should be included in this product.
L_T06			Variable Life	The maturity benefit and surrender value of this insurance vary according to the investment performance of separate account. However the death benefit is guaranteed.
L_T06			Nursing Care Ins.	This Insurance provides benefit to meet specified conditions requiring the insured to be nursed. Also it has usually (not always) participating feature.

Depending on the nature of insurance			Others	Other individual life insurance not listed above should be included.
	L2	Individual Annuity		
L_T05			Fixed Annuity	This insurance provides an arrangement under which the policyholder is guaranteed to receive benefit over a fixed or variable period, commencing either immediately or at some future date.
L_T04, L_NT01, L_NT02, L_NT03			Variable Annuity	This insurance provides an arrangement under which the policyholder receives benefit over a fixed or variable period, commencing either immediately or at some future date under assuming investment risk. Therefore surrender value, maturity benefit and death benefit can rise or fall depending on the investment performance of the separate account. Also there is variable annuity product with guaranteed benefit.
	L3	Group Life		Insurance protecting a group of persons, usually employees of an entity and their dependents. A single insurance contract is issued to their employer or other representative of the group.
L_T01, L_T06			Group Term	This insurance provides a one-year term insurance with death protection for groups. This segment includes general welfare group term insurance which plans for retirement funds payable on employee's death and condolence payments.
L_T06			Group Credit	This insurance is another kind of term insurance that is issued to borrowers for the amount and term of the outstanding debt. It is usually associated with residential mortgage and consumer debt, and provide benefit should the borrowers die before the debt is repaid or expire at the end of the term.

Depending on the nature of insurance			Others	Other group life insurance not listed above should be included.
L_T05	L4	Group Annuity		This insurance provides annuity benefit for groups. Under the insurance, an employee of the group is eligible to receive annuity benefit for whole life or a fixed term depending on the contract.
Depending on the nature of insurance	L5	Others		Any other life insurance not listed above should be included (e.g. Workers' Asset-Formation Insurance).
Non-Life				
NL_T02, NL_T04, NL_T09	NL1	Fire		This insurance covers property damage for either commercial or household caused by fire, windstorm, hail, water damage and earthquake
	NL2	Marine		
NL_T07, NL_T08			Hull	This insurance covers damage of vessel.
NL_T07, NL_T08			Cargo	This insurance covers damage on good and property in transit by vessel.
NL_T07, NL_T08	NL3	Transit		This insurance is called as Inland marine, which covers property being transported by other than vessel or aircraft.
NL_T03, L_T02, L_T07	NL4	Personal Accident		This insurance covers loss by accidental bodily injury. Under this insurance, policyholder is reimbursed based on actual losses occurred or receives a fixed benefit due to a certain accident event. Long term personal accident insurance and long term income indemnify insurance should be classified into 'L_T07' under the IAIS segmentation.
NL_T01	NL5	Automobile		This insurance covers personal injury or automobile damage sustained by the insured and liability to third parties for losses caused by the insured. Please note fleet automobile insurance should be included here.

	NL6	Others		
NL_T07, NL_T08			Aviation	This insurance covers aircraft, goods or property in transit by aircraft and launch to the space, and liability arising from the loss of or damage to the goods or property in transit or bodily injury or property loss or damage to third parties.
NL_T10, NL_NT01, NL_NT02			Guarantee Ins.	This insurance covers financial loss caused by the insolvency or payment default of customers to whom credit has been granted.
NL_T02, NL_T04			Machinery	This insurance protects the insured against loss incurred as a result of machinery breakdown.
NL_T05, NL_T06			General Liability	This insurance covers any legal obligations to pay compensation and costs for bodily injury, property loss or damage to third parties.
NL_T02, NL_T04			Contractor's All Risks	This insurance is purchased by contractors to cover damage to property under construction.
NL_T02, NL_T04			Movables All Risks	This insurance covers loss or damage to property other than motor, aircraft and vessel.
NL_T05, NL_T06			Workers' Compensation	This insurance covers no-fault basis compensation payments to employees who sustained bodily injury or occupational disease during or which arises out of the course of their employment, and provides employers with protections against claims which their employees make for bodily injury or occupational disease caused by tort.
NL_T10			Misc. Pecuniary Loss	This insurance provides the insured with tailor-made covers for consequential losses that are not covered by any other classes of insurance.

L_T02			Nursing Care Ins.	This Insurance provides benefit to meet specified conditions requiring the insured to be nursed. Under this insurance, policyholder is reimbursed based on actual cost incurred or receives a fixed benefit for nursing care.
Depending on the nature of insurance			Others	Any other non-life insurance not listed above should be included

Mapping to IAIS	Code	Segment Level 1	Segment Level 2	Description
Life				
L_T01 - Protection - Protection - life		Term life - level term		Term product with level premiums for a specified length of time that becomes annually renewable term after level term period.
L_T01 - Protection - Protection - life		Term life - yearly renewable term		Tem product with annually increasing premiums.
L_T01 - Protection - Protection - life		Group Term		Term product sold to employees of sponsoring groups.
L_T02 - Other Life - Protection - Accident & Health		Waiver of Premium		Disability provision attached to a Group Life policy to help totally disabled employees maintain adequate life insurance protection. Coverage generally stops at a specified age but some provide lifetime coverage a reduced amount after normal retirement age.
L_T02 - Other Life - Protection - Accident & Health		Accidental Death and Dismemberment		Provides insurance payment upon accidental death or dismemberment.
L_T02 - Other Life - Protection - Accident & Health		Long-term care - non-participating		Long-term care - non-participating
L_T02 - Other Life - Protection - Accident & Health		Individual Short Term Disability Income		Short term income replacement insurance which usually covers 13 weeks to 2 years of disability.
L_T02 - Other Life - Protection - Accident & Health OR (for par)		Individual Long Term Disability Income		Provides partial replacement of an employee's lost earnings during an extended period of disability.

L_T06L_T02 - Other Life - Protection - Accident & Health				
L_T02 - Other Life - Protection - Accident & Health		Group Short Term Disability		Short term income replacement insurance which usually covers 13 weeks to 2 years of disability.
L_T02 - Other Life - Protection - Accident & Health		Group Long Term Disability		Provides partial replacement of an employee's lost earnings during an extended period of disability.
L_T02 - Other Life - Protection - Accident & Health		Fixed Indemnity - Critical Illness		Critical Illness - Long Term (pmt on specified illness/treatment)
L_T02 - Other Life - Protection - Accident & Health		Fixed Indemnity - ICU		Intensive Care - Long Term (payment on admission to an ICU)
L_T02 - Other Life - Protection - Accident & Health		Fixed Indemnity - Accident		Accident - Long Term (pmt on covered accident/treatment)
L_T02 - Other Life - Protection - Accident & Health		Fixed Indemnity - Accident & Sickness		Accident, Sickness (long-term); fixed indemnity payment related to accident or illness (includes hospital indemnity in the U.S.)
L_T02 - Other Life - Protection - Accident & Health		Dental		Provides reimbursement for certain costs or fixed indemnity benefits associated with Dental Care
L_T02 - Other Life - Protection - Accident & Health		Vision		Provides reimbursement for certain costs or fixed indemnity benefits associated with Vision Care
L_T02 - Other Life - Protection - Accident & Health		Accident & Health - Expense Reimbursement - Medicare Supplement		Private form of medical insurance for Medicare beneficiaries. Benefits help cover gaps left my Medicare such as deductibles, co-pays and co-insurance.

L_T03 - Other Life - Protection - Other		Whole Life - Limited Payment		Level premium, level death benefit plans with premiums payable to a specified age or for a specified period of time.
L_T03 - Other Life - Protection - Other		Whole Life / Adjustable Life - Non-Participating		Whole Life policy with no policyholder dividends
L_T03 - Other Life - Protection - Other		Whole Life - Single Premium		Whole Life with non-guaranteed interest rate and no policyholder dividends
L_T03 - Other Life - Protection - Other		Endowment		Level premium and level death benefit policies whose death benefit is paid at the earlier of the endowment age/endowment date or the date of death; death benefit during insurance period, survival benefit after expiration of insurance period.
L_T04 - Other Life - Savings without guarantees or living benefits		Group Variable Universal Life		Employee pay Variable Universal Life product sold to employees of sponsoring groups.
L_T04 - Other Life - Savings without guarantees or living benefits		Variable Universal Life		Life insurance policy whose premiums are deposited into a fixed account or various separate account investment funds based on the decisions of the policyholder. Changes in investment fund values are passed to the policyholder and the policy is charged periodic deductions for mortality, rider benefits, and expenses.
L_T04 - Other Life - Savings without guarantees or living benefits		Variable Deferred Annuity - with death benefit only		Deferred annuity whose premiums are deposited into a fixed account or various separate account investment funds based on the decisions of the policyholder. Changes in investment fund values are passed to the policyholder and policy is charged periodic deductions for rider benefits and expenses. GMBD-only guarantee provides minimum death benefit.

L_T04 - Other Life - Savings without guarantees or living benefits		Variable Deferred Annuity - No Guarantee		Deferred annuity whose premiums are deposited into a fixed account or various separate account investment funds based on the decisions of the policyholder. Changes in investment fund values are passed to the policyholder and policy is charged periodic deductions for rider benefits and expenses.
L_T04 - Other Life - Savings without guarantees or living benefits		Indexed Annuities		Performance linked to equity/bond index performance
L_T04 - Other Life - Savings without guarantees or living benefits		Variable Universal Life - Secondary Guarantees		VUL policy that is guaranteed to stay in-force so long as a minimum premium amount is paid on a periodic basis. Guarantee durations are for a specified number of years or to a particular age.
L_T05 - Annuities		Book Value Separate Account		Product established to fund nonqualified annuities for retired executives of corporate employers. Annuities are nonparticipating, life-contingent annuities.
L_T05 - Annuities		Annuity - Immediate, Single Premium		Immediate annuity purchased directly by annuitant. Income payable for lifetime of annuitant or in case of joint and survivorship annuity, so long as either annuitant is living. Payouts are level for majority of policies but there are some with increasing payment amounts.
L_T05 - Annuities		Annuity - Certain		Individual annuity contract with non-life contingent payout period. Includes annuitised lottery.
L_T05 - Annuities		Group Annuity - Single Premium, Charitable Gift		Single premium group annuity contracts purchased by non-profit institutions sponsoring charitable gift annuity programs that specifies fixed periodic payments.

L_T05 - Annuities		Group Annuity - Closeout Contracts		Group annuity benefits purchased for retired and terminated employees or employees covered under terminating or ongoing pension plans. Both immediate and deferred annuities may be purchased by a single premium at issue.
L_T05 - Annuities		Group Annuity - Terminal Funding		Non-participating group annuity that is available for purchasing guaranteed payout annuities for employees upon retirement or termination of employment. May be life contingent or non-life contingent.
L_T05 - Annuities		Structured Settlements		Customised annuities designed to serve as an alternative to a lump-sum payment in a lawsuit initiated because of personal injury, wrongful death, workers' compensation claim or other claim for damages.
L_T05 - Annuities		Group Annuity - Separate Account - Immediate Participation Guarantee		Funds to pay benefits to participants are accumulated in an unallocated Pension Reserve Account that then pays benefits to group annuitants.
L_T05 - Annuities		Group Annuity - Separate Account Participating Contracts		Group annuity benefits purchased for retired and terminated employees or employees covered under terminating or ongoing pension plans. Both immediate and deferred annuities may be purchased by a single premium at issue.
L_T05 - Annuities		General Account Immediate Participation Guarantee		Funds to pay benefits to participants are accumulated in an unallocated Pension Reserve Account that then pays benefits to group annuitants.
L_T05 - Annuities		Survivor Income Contracts		At insured's death monthly benefit is paid to beneficiaries for life or in case of spouse may end upon remarriage.
L_T05 - Annuities		Supplementary Contracts not		Settlement option purchased by policy proceeds that provides for periodic payments and may be commutable.

		Involving Life Contingencies		
L_T05 - Annuities		Supplementary Contracts Involving Life Contingencies		Provides income payable for lifetime of annuitant or if joint, for as long as either annuitant is living. May involve a term certain period.
L_T05 - Annuities		Immediate annuities - with surrender		
L_T06 - Participating products		Group Universal Life		Employee pay Universal Life product sold to employees of sponsoring groups.
L_T06 - Participating products		Deferred Annuity - Flexible Premium		Fixed Account deferred annuity that allows ongoing deposits and provides current guaranteed interest rate(s) for a specified period, typically subject to a contractual minimum interest rate.
L_T06 - Participating products		Deferred Annuity - Single Premium		Fixed Account deferred annuity that provides current guaranteed interest rate(s) for a specified period, typically subject to a contractual minimum interest rate.
L_T06 - Participating products		Universal Life		Life insurance policy whose premiums are deposited into policyholder accumulation funds with periodic deduction of charges for mortality, rider benefits and expenses. Interest is credited to fund based on declared credited rate and there are guarantees related to minimum credited rates and maximum policy charges.
L_T06 - Participating products		Universal Life - General Account - COLI/BOLI		COLI: Life insurance designed to meet the needs of supplemental executive compensation marketplace. Flexible premium. BOLI: Life insurance designed to allow banks to use life insurance to fund certain benefit-related expenses. Both: Provide term insurance and a discretionary fund.

L_T06 - Participating products		Universal Life - Separate Account - COLI/BOLI		COLI: Life insurance designed to meet the needs of supplemental executive compensation marketplace. Flexible premium. BOLI: Life insurance designed to allow banks to use life insurance to fund certain benefit-related expenses. Both: Provide term insurance and a discretionary fund that is housed in a separate account. COLI:Life insurance designed to meet the needs of supplemental executive compensation marketplace. Flexible premium.
L_T06 - Participating products		Whole Life - Participating		Whole Life paying dividends based on underlying portfolio experience
L_T06 - Participating products		Whole Life - Industrial		Participating whole life policies with small face amounts. Premium payments have been waived.
L_T06 - Participating products		Whole Life - Reduced Paid-Up		Participating whole life policy that has gone into non-forfeiture status.
L_T06 - Participating products		Universal Life - participating		Universal Life policy that pays dividends. Includes maximum loan products
L_T06 - Participating products		Long-term care - participating		Long Term Care - participating
L_T06 - Participating products		Retained Asset Account		Policy settlement option where policy proceeds are deposited into a fund with a guaranteed minimum interest rate and penalty free immediate withdrawals or a fund with a guaranteed interest rate for a specified period at time with a penalty for withdrawals.

L_T06 - Participating products		Universal Life - with secondary guarantees		Universal Life policy that stays in-force so long as a secondary account value is greater than zero. Charges and interest credited rates for the secondary account are guaranteed and the secondary account is not available as a dollar amount upon surrender.
L_NT01 - Other non-traditional - Separate accounts with guarantees		Variable Deferred Annuity - with living benefits		Deferred annuity whose premiums are deposited into a fixed account or various separate account investment funds based on the decisions of the policyholder. Changes in investment fund values are passed to the policyholder and policy is charged periodic deductions for rider benefits and expenses. GMxB guarantee provides minimum accumulation benefit, minimum withdrawal benefit, or minimum income benefit (and perhaps a minimum death benefit also)
L_NT04 - GICs & Synthetic GICs - Guaranteed Investment Contracts		Funding Agreements		Funding Agreements credits with a fixed rate of interest for the life of the contract. Earned interest is capitalised and paid out with principal to the contract holder on the maturity date. Includes the FarmerMac Funding Agreement program (that sells funding agreements collateralised by agricultural mortgage loans to FarmerMac) Includes General Account Life Insurance Funding Accounts, that allow pre-funding of the cost of employee retiree life plan. Funding Agreements credits with a fixed rate of interest for the life of the contract. Earned interest is capitalised and paid out with principal to the contract holder on the maturity date.
L_NT04 - GICs & Synthetic GICs - Guaranteed Investment Contracts		Guaranteed Investment Contracts		A fixed or floating rate contract that provides a guarantee of principal and interest for a stated term with a fixed maturity date(s). Includes the following GIC types: Stable Value, Trust, Municipal, Global
Non-Life/P&C				

NL_T01 - Motor		Auto physical damage		Any motor vehicle insurance coverage (including collision, vandalism, fire and theft) that insures against material damage to an insured's vehicle.
NL_T02 - Property - Property damage (divided between NL_T02 and NL_T05)		Homeowners/farm owners		Homeowners: coverage for personal property and/or structure with broad personal liability coverage, for dwelling, appurtenant structures, unscheduled personal property and additional living expenses. Farmowners: similar, for farming and ranching risks; property + liability coverages for personal and business losses, on farm dwellings and contents (e.g. mobile equipment and livestock), barns, stables, other farm structures and farm inland marine.
NL_T02 - Property - Property damage		Special property		Various, including: fire; allied lines; inland marine; earthquake; burglary and theft. Fire insurance includes the loss to real or personal property from damage caused by the peril of fire or lightning, including business interruption, loss of rents, etc. Allied lines are coverages generally written with property insurance, e.g., glass; tornado; windstorm and hail; sprinkler and water damage; explosion, riot, and civil commotion; growing crops; flood; rain; and damage from aircraft and vehicle, etc. Inland marine is coverage for property that may be in transit, held by a bailee, at a fixed location, a movable good that is often at different locations (e.g., off road construction equipment), or scheduled property (e.g., Homeowners Personal Floater) including items such as live animals and property with antique or collector's value. This line also includes instrumentalities of transportation and communication, such as bridges, tunnels piers, wharves, docks, pipelines, power and phone lines, and radio and television towers.

NL_T03 - Property - Accident, protection and health (APH)		Private passenger auto liability/medical		Coverage for financial loss resulting from legal liability for motor vehicle related injuries (bodily injury and medical payments) or damage to the property of others caused by accidents arising out of the ownership, maintenance or use of a motor vehicle. Does not include coverage for vehicles used in a commercial business.
NL_T03 - Property - Accident, protection and health (APH)		Commercial auto/truck liability/medical		Similar to private passenger auto liability/medical, except for commercial vehicles.
NL_T05 - Casualty - Other liability		Workers' Compensation		Employer's liability for injuries, disability or death to employees without regard to fault, as prescribed by workers' compensation laws or other statutes. Includes employer's liability coverage against common law liability for injuries to employees. Does not include excess workers' compensation.
NL_T05 - Casualty - Other liability (when also property risk, split between T05 and T02)		Commercial multi-peril		Two or more insurance coverages for a commercial enterprise, including various property and liability risks. Frequently includes fire, allied lines (coverages which are generally written with property insurance, e.g., glass, tornado, windstorm and hail, sprinkler and water damage, explosion, riot, growing crops, flood and damage from aircraft and vehicle, etc.), various other coverages (e.g., differences in conditions) and liability coverage. Includes multi-peril policies (other than farmowners, homeowners and automobile policies) that include coverage for liability other than auto.
NL_T05 - Casualty - Other liability		Medical professional liability - occurrence		For a licensed health care provider or health care facility against legal liability resulting from the death or injury of any person due to the insured's misconduct, negligence, or incompetence in rendering professional services. The insurance covers events occurring during the policy coverage period.

NL_T05 - Casualty - Other liability		Medical professional liability - claims made		Same type of insurance as medical professional liability – occurrence above except that the insurance covers claims presented during the period of coverage. The insurable event does not need to occur during the policy period.
NL_T05 - Casualty - Other liability		Other liability - occurrence		Against legal liability resulting from negligence, carelessness, or a failure to act causing property damage or personal injury to others. Typically, coverage includes liability for the following: construction and alteration; contingent ; contractual; elevators and escalators; errors and omissions; environmental pollution; excess stop loss, excess over insured or self-insured amounts and umbrella; liquor; personal injury; premises and operations; completed operations; nonmedical professional, etc. Also includes indemnification coverage provided to self-insured employers on an excess of loss basis (excess workers' compensation). The insurance covers events occurring during the policy coverage period.
NL_T05 - Casualty - Other liability		Other liability - claims-made		Same types of coverages as other liability – occurrence above except that the insurance covers claims presented during the period of coverage. The insurable event does not need to occur during the policy period.

NL_T05 - Casualty - Other liability		Products liability		Products liability - occurrence: covers events occurring during coverage period Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product. Products liability - occurrence: covers events occurring during coverage period Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product. Products liability - occurrence: covers events occurring during coverage period Products liability - claims made. - covers claims made during the coverage period. Coverage for the manufacturer, distributor, seller, or lessor of a product against legal liability resulting from a defective condition causing personal injury, or damage, to any individual or entity, associated with the use of the product.
NL_T06 - Casualty - Non-proportional Other liability		Reinsurance - nonproportional assumed property		Nonproportional assumed liability reinsurance in fire allied lines, ocean marine, inland marine, earthquake, group accident and health, credit accident and health, other accident and health, auto physical damage, boiler and machinery, glass, burglary and theft and international (of the foregoing).
NL_T06 - Casualty - Non-proportional Other liability		Reinsurance - nonproportional assumed liability		Nonproportional assumed liability reinsurance in farmowners multiple-peril, homeowners multiple-peril, commercial multiple-peril, medical professional liability, workers' compensation, other liability, products liability, auto liability, aircraft (all perils) and international (of the foregoing).

NL_T07 - Other Non-Life - Marine, Aviation and Transport (MAT)		Special liability		Various insurance coverages including ocean marine, aircraft (all perils), and boiler and machinery. Ocean marine is coverage for ocean and inland water transportation exposures; such as goods or cargoes; ships or hulls; earnings; and liability. Aircraft is coverage for aircraft (hull) and their contents; aircraft owner's and aircraft manufacturer's liability to passengers, airports and other third parties. Boiler and machinery is coverage for the failure of boilers, machinery and electrical equipment. Coverage includes the property of the insured, which has been directly damaged by an accident, costs of temporary repairs and expediting expenses and liability for damage to the property of others.
NL_NT01 - Mortgage insurance		Mortgage insurance		Mortgage guaranty is indemnification of a lender from loss if a borrower fails to meet required mortgage payments.
NL_NT02 - Commercial credit insurance including Suretyship		Fidelity/surety		Fidelity is a bond covering an employer's loss resulting from an employee's dishonest act (e.g., loss of cash, securities, or valuables). Surety is a three-party agreement where the insurer agrees to pay a second party or make complete an obligation in response to the default, acts, or omissions of a third party.
NL_NT02 - Commercial credit insurance including Suretyship		Financial Guaranty		Financial guaranty is a surety bond, insurance policy, or when issued by an insurer, an indemnity contract and any guaranty similar to the foregoing types, under which loss is payable upon proof of occurrence of financial loss to an insured claimant, oblige or indemnitee as a result of failure to perform a financial obligation.
NL_NT03 - Other non-traditional - Other Non-Life Non-Traditional Insurance		Other		Coverages not included elsewhere which includes credit coverages and accident and health.

NL_NT03 - Other non-traditional - Other Non-Life Non-Traditional Insurance		Other non-traditional Non-Life insurance		
Depends on the underlying product		Reinsurance - nonproportional assumed financial lines		Nonproprotional assumed reinsurance in the following lines: mortgage guaranty, financial guaranty, fidelity, surety, credit, and international (in the foregoing).

Annex 3 Supplementary Definitions of Key Terms

This list is supplementary in nature. It is not meant to be an exhaustive index. Further definitions can be found in the Technical Specifications. Should you require further clarifications of any terms used in beyond what is provided in these Specifications or this Annex, please send a question to IAIS_Field_Testing@bis.org (and cc your Relationship Manager).

Terminology	Meaning
Infrastructure	Infrastructure includes all instruments secured by the assets a particular infrastructure item itself or an entity set up solely for the purpose of owning and operating the infrastructure item (e.g. a toll road or company set up solely to manage a particular toll road). Amounts should not be included here where there is a general claim on a company or government body related to borrowing to construct an infrastructure item where the terms of the security do not directly relate to the infrastructure assets.
Insurance activities	For the purposes of field testing, insurance activities are: activities of licensed insurers and regulated and unregulated entities that support the insurance activities (for example, subsidiaries that provide claims management or asset management acting mainly for the insurance entities)
Insurance Linked Securities (ILS)	Insurance Linked Securities (ILS) are securities whose return depends on the occurrence of a specific insurance event. From the July 2012 IAIS Paper "Reinsurance and Financial Stability" the following additional definition can be found: '… a broad category including catastrophe bonds (or cat bonds in short) and various variants of securitisation products in the life insurance sector… does not include derivative products such as CDS, which were developed outside the insurance sector and are not treated as insurance products for regulatory and accounting purposes.' Examples of insurance linked securities include: any investments in catastrophe bonds, longevity swaps, life settlements securitisation, embedded value securitisation, and reserve funding securitisation.
Life annuity	Also sometimes known as a perpetual annuity.
Non-financial activities	For the purposes of field testing, non-financial activities are: any activities conducted by non-financial entities that are not reported under insurance activities, regulated banking activities, unregulated banking activities or securities activities. Financial activities conducted by non-financial entities are to be reported as non-financial activities unless they qualify as shadow banking activities as set out in Q1.2.2 above. For example, an entity that manufactures motor vehicles that has a derivative portfolio, would report that activity as nonfinancial activity.
Non-residential Mortgage Loans	refer to "Residential Mortgage Loans"
Residential Mortgage Loans	The Template provides for a separation between residential mortgage loans and non-residential mortgage loans. The separation is based on the underlying security for the mortgages rather than the characteristics of the borrower. Therefore, residential mortgage loans will be those secured by residential dwellings and non-residential mortgage loans will be those secured by other types of property.
Securities activities	For the purposes of field testing, securities activities are: all activities conducted from subsidiaries that are supervised or regulated by a securities

	regulator or supervisor. This would include, for example, asset management activity subject to securities regulation (rather than insurance regulation or banking regulation) but excluding the asset management activities captured as part of the insurance activities (see above)
Unregulated banking activities	For the purposes of field testing, 'Unregulated banking activities' are: financial activities that are conducted outside of a regulated insurance company or regulated banking subsidiary. Unregulated banking business is conducted from a subsidiary to which no regulatory capital requirement is applied. All financial activities conducted from unregulated entities should be included in unregulated banking business. For example, aircraft leasing carried out by a non-regulated subsidiary should be reported as related to unregulated banking activities. Activities that classify as shadow banking according to FSB's definition (http://www.financialstabilityboard.org/publications/r_130829c.pdf) should be reported as unregulated banking activities, regardless of their legal form. The FSB definition is based on the assessment of 5 economic functions: · management of collective investment vehicles with features that make them susceptible to runs, · loan provision that is dependent on short-term funding, · intermediation of market activities that is dependent on short-term funding or on secured funding of client assets, · facilitation of credit creation