Quantitative Impact Study 3

Questions & Answers

QIS3 - List of Methodological Issues Raised by participants and supervisors

General Disclaimer

The answers given below are not official CEIOPS positions but tentative Working Group answers referring to QIS3 only.

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1.   General

1. Will there be a notification on the CEIOPS QIS3 page if **files** are **updated**? In case you make changes to any of the documents, it would help us to be aware of this.

   Answer: Updated files on the CEIOPS website will be announced.

2. Figures should be **reported in EUR**. What FX should be used?

   Answer: To allow comparability we like the companies to use the FX rates issued at 31 December 2006 for all figures.

3. How should insurers set the **level of materiality** and what is its value (materiality of products and risk in the overall portfolio/business)? What should insurers do with immaterial part of their business in order not to loose comparison with current balance sheet and capital requirements?

   06.06.07

   Answer: QIS3 is being conducted on a best efforts basis. There is no specific materiality threshold, but clearly the increased accuracy would not be worthwhile if it is less than the likely errors from approximations elsewhere or if the effort makes it impossible to fully consider the replies to the qualitative questionnaire and other general comments. More generally, it is for the firm to judge when the additional accuracy no longer justifies the effort, but it should be requested to explain what it has done and why. Firms may then use current bases for immaterial amounts of business.

4. Should the valuation of liabilities take into account those **contracts** that had been **underwritten before the reference date,** but where the **risk coverage** was **to commence after the reference date** (e.g. motor liability contracts entered into before 31 Dec 2006, where the insurer bears the risk beginning 1 Jan 2007)? Should QIS3 include premium provisions and/or profit or loss at inception relating to such contracts?

   11.06.07

<u>Answer</u>: Yes, the valuation under QIS3 should include these contracts.

5. General remark on the **tax treatment** in QIS3:

   The Solvency II project has prudential supervision as its exclusive purpose. Therefore, Solvency II is neutral and agnostic with regard to any issue concerning general financial statements or tax issues.

   As a consequence, any working hypothesis included in QIS3 should not be understood as impacting current accounting or taxation rules.

   Nevertheless, in accordance with QIS3 specifications, the QIS3 spread-sheet should be completed net of tax (see section on own funds). CEIOPS has taken as a working hypothesis the "worst case scenario", assuming any change in the valuation of assets or liabilities would be subject to the application of the national taxation rules. In particular, under this working hypothesis, any differences resulting from a reduction of technical provisions may give rise to a tax liability.

   However, participants are encouraged, if this working hypothesis has a material impact, to also report:

   1. In **Tab II.A.1**: Additional input cell (J23) for own funds **gross of deferred tax liabilities**

   2. In **Tab II.A.2**: Additional input cell (H19) for valuation adjustment **gross of deferred tax liabilities**

   25.06.07

2. Technical specifications - Part I

Section 1 - Valuation assumptions: standard approach

1. I.1.122 of the technical specifications states that the sum of current unearned premium provision and provision for unexpired risks is assumed to be an acceptable proxy of the sum of both the **best estimate of premium provisions** and its corresponding margin. Presuming that 'corresponding margin' in this context means the risk margin
   a) should the total amount be included in Cell D15 and E15 of the Sheet III.C.1 – III.C.15 (this would mean that the risk margin is taken into account twice) or
   b) should the sum of current unearned premium provision and the

provision for unexpired risks be reduced by the (assumed) risk margin, using the percentages as described under Point I.1.134 (backwards) and the difference be inserted in the respective cells or
c) is there any other solution?

Answer: 'Corresponding margin' does in this context indeed mean the risk margin. Concerning the different options, option A should be used: Cells D15 and E15 of the Tab III.C.1 – III.C.15 should be filled with the sum of unearned premiums and provision for unexpired risks as a proxy - without any deductions.
The use of the proxy does not necessarily result in a double counting of the risk margin since the proxy value might be less than the best estimate (for this reason the liability adequacy test was developed).

2. "NP reins xx" – does it refer just for reinsurance companies or also **insurance companies acting as reinsurers**? Could insurance companies allocate the business from the active reinsurance to lines together with the direct business?

Answer: An insurer writing non-proportional reinsurance should include this business, where possible, in Tabs III.C.13-15. Please be aware though of the distinction between reinsurance as a line of business and reinsurance as a separate entity (eg a subsidiary).

3. How shall be treated **capital participations in subsidiaries**? Should they be included in any tier? If yes, in which and in what amount. The availability of market prices may be limited e.g. in respect of 100% subsidiary.

Answer: The value of a participation (or a subsidiary) as an asset of the insurer should be assessed in accordance with paragraphs I.1.3 to I.1.7 of the specification. In particular, paragraph I.1.6 requires a prudent basis to be applied for illiquid assets.

In this context, it would be appropriate to take account of the full nature of the relationship between the parent undertaking and the related undertaking (in which a participation is held), including any transactions between the firms that may make it difficult to dispose of this participation, and so reduce its value.

The value of this participation should then be taken into account when assessing the market risk component of the SCR. In addition, there would be a counterparty default risk charge in respect of any

reinsurance from the parent insurance undertaking to the related undertaking.

For a participation in a non-life reinsurance undertaking, the effect of the non-life CAT sub-module on the value of any reinsurance between the parent undertaking and the related undertaking should also be considered (despite paragraph I.1.34 in the specification).

An alternative approach would be for the related undertaking to be considered together with the parent (assuming the parent undertaking has at least a 20% interest) and the available capital and the SCR of the parent would then be calculated on the basis that this was an insurance group comprising the parent undertaking together with the related undertaking. Any third party interest in the capital of the related undertaking should though only count towards available capital of the parent undertaking up to that third party's proportional share in the SCR of the related undertaking.

A second alternative approach to the above would be to deduct the value of the participation in full, and no capital charge would then be needed, other than a counterparty default risk charge in respect of any reinsurance from the insurance firm to the related firm. In addition, for a participation in a non-life reinsurance undertaking, the effect of the non-life CAT sub-module on the value of any reinsurance between the parent undertaking and the related undertaking should also be considered (despite paragraph I.1.34 in the specification).

4. The best estimate of non-life insurance liabilities should correspond to the net present value of non-life cash flows. In the QIS3 spreadsheets a split should be made between:

   a) Best estimate for premium provision

   b) Best estimate for claims provision

   These best estimates should also take into account expected future expenses (administrative, claims management, investment management, commissions expenses) for servicing a contract. The question is how to **allocate** these **different types of expenses to either premium of claims provisions**?

   Answer: Participants are encouraged to allocate any future expenses to the relevant provision using professional judgement and realistic assumptions. Any other expenses (see I.1.30 of the Technical Specifications) which cannot be allocated to one of the two categories should be allocated, by default, proportionately to the best estimate of those cash flows that could already be allocated to either premium or claims provisions. This simplification would also be in line with I.1.114

which allows a combined valuation of both premium and claims provision if no separate valuation is practicable. Participants that adopt a different allocation are encouraged to provide the rationale for it.

5. Should (voluntary) **expected future premiums** be **included in the valuation of savings products**? For instance, consider a savings contract that guarantees a relatively high rate of return at today's standards (e.g. the policy was issues a lot of years ago, when the market interest rates were much higher), and where the insurance company cannot refuse future (voluntary) premiums that are delivered by the policyholder.Should an assumption of these future (voluntary) premiums be included on the valuation of the best estimate (and corresponding future liabilities)? I.1.35 seems to point a "**No**" answer…?

25.05.07

Answer: As mentioned in I.1.35, no allowance should be given for future premiums in exceedance of the necessary level to support the obligations under an existing contract. However, where there is an obligation to accept future premiums on terms that may be disadvantageous to the insurer, proper provision should be made for this obligation. Accordingly, where there is an expected loss, expected future premiums should be brought into account, along with the corresponding additional payments to policyholders.

6. How should one read the last sentence of I.1.36, i.e. which **premiums** are **not to be included on the valuation process**? Premiums that both parties are free to refuse or premiums that either the insurance company or the policyholder are free to refuse?

25.05.07

Answer: If the insurance undertaking is obliged to accept the premium (though the policyholder may choose not to pay this), premiums should not be included in the valuation process. However, where there is an expected loss, expected future premiums should be brought into account along with the corresponding additional payments to policyholders.

7. How should **annual renewable term life insurance contracts** be valued? This type of contracts is usually bundled with a mortgage loan contract (but formally these are two separate contracts, i.e. the loan and the life insurance coverage). In theory, it is possible for the policyholder to lapse the term insurance policy at any renewal date

(yearly). But in practice, only a very low (negligible) proportion of policyholders do that. For this reason, a number of companies argue that the valuation of this type of term insurance should consider all the future premiums until the mortgage is paid off. However, a strict reading of paragraph I.1.36 seems to mean that the valuation should only consider the premiums/claims arising only until the next renewal date, i.e. maximum of one year of exposure. It should also be noted that term insurance mathematical provisions usually have a negative value, so the consideration of a larger horizon period does not exactly mean a more conservative approach.

<div align="right">**25.05.07**</div>

Answer: Based on I.1.36, future premiums (beyond the current one-year coverage period) stemming from annual renewable term life insurance that can be lapsed at the renewal date should not be included, i.e. the time horizon considered for valuation purposes will be restricted to one year or less. This is true unless there are legal or other requirements that restrict or condition the lapse option.

8. The description of **proxies for the computation of the risk margin** seem to imply that one has to compute SCR(0) and SCR(1) and then proxies are only allowed from t=2 onwards, and that the base reference will be SCR(1).Can't SCR(0) be used as the base reference, effectively allowing the use of proxies from year 1 onwards? This seems to be implied on the formula on I.1.69, which looks at odds with I.1.64.

<div align="right">**25.05.07**</div>

Answer: Proxies are allowed from year 1 onwards, using SCR(0) as the base reference. However, since the range of risks to be projected is different for year 1 (all risks) and for year 2 onwards (all risks except market, premium and credit other than reinsurance), some further calculation is required.

The proxy for year 1 can be computed directly as:

SCR(1)=X(1)*SCR(0)/X(0)

Where X(.) denotes the exposure measure over which the proxy is applied (see I.1.62-I.1.71)

On the other hand, the proxy for years 2 onwards can be computed as:

SCR(t)=X(t)*SCR'(0)/X(0), t=2,3,…

Where SCR'(0) differs from SCR(0) in the sense that is computed considering only the range of risks to which SCR(t) refers to (all risks except market, premium and credit other than reinsurance).

9. Can the **valuation of liabilities** be made **by reference to hedge instruments**, tailor-made to reflect the risk characteristics of the insurer's portfolio?

Answer: I.1.12 requires that hedge instruments belong to a deep liquid and transparent market. If the value of the tailor-made instrument can be verified by a reasonable extrapolation from directly observable prices on a deep, liquid and transparent market, it is possible to take account of the value of such a hedging instrument.

10. QIS3 spreadsheet, part III.C.1-12 Non-life insurance: **Technical provision for bonuses and rebates** according to current basis is the part of premium that will be used in the next year according to without claims period. Is this technical provision a **part of premium in calculation of the best estimate** value in non-life insurance according to QIS3 regulation? If not, where should this reserve be included?

Answer: Solvency I provisions for bonuses and rebates are technical provisions under QIS3. With respect to cells D7:I7 in the non-life risk groups sheets III.C.xx, the current value of these provisions as shown in current balance sheets should be filled in. These technical provisions are included in item C4 of the balance sheet in the undertaking's annual published accounts or the reporting reference date. The provision for bonuses and rebates shall comprise amounts intended for policyholders or contract beneficiaries by way of bonuses and rebates as defined in Article 39 (Directive 91/674 EEC) to the extent that such amounts have not been credited to policyholders or contract beneficiaries or included in an item Ba (Fund for future appropriations), as provided for in Article 22, first paragraph, or in item C(2).

With respect to cells D15:E16 in the non-life risk groups sheets III.C.xx, the following distinction should be made: If these are provisions for bonuses they should be claims provisions under QIS3. If these are provisions for rebates they should be premiums provisions under QIS3. If their status is undetermined to this respect they should be claim provisions by default.

Previous paragraph is a default option for QIS3. If a participant has a strong view that these provisions, as posted in the accounts, remain at its entire discretion – which would imply that they didn't raise any expectation from policyholders – they might then be not included in technical provisions, and considered *e.g.* as ordinary debt.

As to cells E7, E15 and E24 in sheet 'II.A.1 Balance sheets', provisions for bonuses and rebates should be subsumed in cell E7 and E15 (values of insurance liabilities under current as well as Solvency I balance sheet). As to Cell E24 (values of insurance liabilities under Solvency II balance sheet), provisions for bonuses and rebates (with their current value) should also be subsumed here (in addition to the best estimate + risk margin QIS3 values of premium provisions and provisions for outstanding claims).

11. Paragraph I.1.12: Can **CAT bonds** be regarded as **perfectly hedging** the related risk?

30.05.07

Answer: Cat bonds are in most cases linked to an index-based or parametric trigger which will not exactly cover the risk event. Hence, there still remains some basis risk for the insurer, i.e. the compensation for the event may deviate from the actual loss. Correlation of trigger and actual loss is not necessarily 1.

12. Paragraph I.1.12: Is there any **leeway on the "perfectly hedged … deep, liquid and transparent market"**? In particular, consider a financial risk on, for example, a UK equity fund that usually but not always tracks a specific index, with the risk hedged with an instrument linked to the same index. It is almost but not perfectly hedged. Can it be treated as hedged?

01.06.07

Answer: Perfect hedges are not very frequent in practice. The risk may be treated as hedged to the extent that it can be replicated by a portfolio of assets or financial instruments that are traded on a deep, liquid and transparent market, and for which there is a directly observable price. (Please see also the answer to question 9 in this section of the Q&A document).

13. Paragraph I.1.30: **Future economies of scale** are ruled out. How should a new company, with expenses substantially in excess of loadings allow for future expenses? Clearly if they were running off the

portfolio they could reduce costs, but the existing cost base is geared to a (presumably valid) business plan which eliminates the overrun in a few years. Allowance for this elimination seems to make sense but also seems forbidden. Please comment.

Answer: Firms may take account of the likely level of costs that would be incurred if the administration of existing policies were outsourced to a third party. Although not included in the QIS3 specification, further consideration may be given to the assessment of a capital component (in either Pillar 1 or Pillar 2) for potential expense overruns, following QIS3.

14. Paragraph I.1.72 describes the **Cost-of-Capital factor** as "6% above the risk free rate". II.1.14 uses the same rate as an example. In the Spreadsheet 0.3 cell D10, the CoC factor of 6% is described as "above the risk free rate". However, when used in V.A.4 tab in spreadsheet, it is 6% in total that is used, without any addition of the risk free rates from the Term Structure, which would bring the Cost of Capital to above 10% for all terms of 1 year and above. Please explain the difference between 6% and 6% above risk free rate.

Answer: The assumption is that the reference ROE for an undertakings with available capital at the level of the SCR is 6% above risk free rate. Another assumption is that this available capital is invested in assets that earn the risk free rate. In order to satisfy the first assumption, an additional 6% of each future SCR will need to be released each year. These additional releases are added, and discounted, to compute the overall cost of capital risk margin.

15. Paragraph I.1.87 and others: A UK style **With Profit Fund** is **100% ring-fenced for policyholders** and closed to new business. By definition, all the assets will go to the policyholders eventually. Does this imply Best Estimate Liability = Value of assets? What about risk margin? How is the SCR requirement to be met? How does the answer change if the company is a mutual? Please describe specifically how you expect the technical provisions in this example to be valued.

Answer: We assume that the firm's principles and practices are in effect (1) to distribute extra benefits in line with the profits that have

been earned and made available for distribution to policyholders, (2) that some profits may though be retained on the balance sheet to cover potential future adverse experience, but (3) that all profits within the fund will eventually be made available for distribution. In that case, the valuation of the technical provisions should take account of the expected extra benefits, but would be subject to the exclusion of any amounts that would meet the definition in paragraph I.1.98 of the specification.

16. How should **group contracts** (life or non-life) be reported? They are valued using the UPR and IBNR figures.

01.06.07

Answer: They should be reported, where possible, according to the segmentation suggested in paragraphs I.1.73 - I.1.77 (life) and I.1.110 – I.1.114 (non-life) of the specification.

17. In which segment do **unit/index-linked contracts with financial guarantees** (e.g. minimum guarantee) have to be classified ("contracts with profit" or "contracts where the policyholders bear the investment risk")?

01.06.07

Answer: These contracts should be classified as "unit-linked", except if some non-guaranteed benefits may be allocated to such contracts above the fixed minimum guarantee. The firm should then of course value this 'put option' to the policyholder as a part of the technical provisions, in accordance with paragraphs I.1.102 - I.1.104 of the specification. In addition, the calculation of the SCR would need to take account of these minimum guaranteed benefits, particularly when applying the market risk scenarios.

18. Tab II.A.1 cell E25 (**unit-linked liabilities**): Should this value be calculated using the para. I.1.99 in the technical specifications?

06.06.07

Answer: Provisions in respect of unit-linked policies should indeed be calculated in accordance with paragraph I.1.99 (and other relevant paragraphs) of the specification. However, for the purpose of the balance sheet presentation, these provisions should be divided into an

element corresponding to the value of units allocated to policyholders and an element in respect of future cashflows. The element corresponding to the value of units allocated to policyholders would then be shown in Cell E25 of Tab II.A.1, and the element in respect of future cashflows would be included in Cell E24 of Tab II.A.1.

19. Could the **best estimate of provisions in life insurance** be **negative**? It means, PV of future premium greater than PV of expenses and claims (lump sum, annuity). If yes, is my BE with negative mark or zero?

06.06.07

Answer: It is possible for the best estimate element of the provision to be negative, and this negative figure should then be entered in the relevant cells of the spreadsheet (where it will appear as a negative number). It is possible though that this could lead to some anomalous results in the calculation of the SCR and MCR, and CEIOPS may wish to look at this aspect further following QIS3.

20. Paragraph I.1.30 of the Technical Specifications, third bullet point: What does **economy of scale** mean? Is it a mechanism to lower companies' expenses? For example outsourcing? Does it mean also a new company with high expenses at the beginning, which will probably be lower in the future according to company's management and by growing of a number of clients and volume of premium?

06.06.07

Answer: Economies of scale in this context mean decreasing long-run average costs due to an expansion of the firm (growing volume of premiums, assets etc.). Please also refer to question 13 in this section of the Q&A document.

21. Should a **provision** be calculated **for future administrative costs**? Which assumptions should be made concerning future activity: going concern, run-off or transfer of portfolio; when insurer projects future cash-flows and determines provisions?

06.06.07

Answer: Provision should be made for future administrative costs in accordance with paragraph I.1.30 of the specification. These should be assessed on a going concern basis.

22. Insurer has **two best estimates of** its **liabilities**:

- estimate based on individual information from claim adjuster,
- estimate of the overall liabilities based on run-off triangle.

Which value is an appropriate value?

Answer: This is for the firm to judge, having regard to the nature of its business, the nature of its data and the accuracy of previous estimates by the adjuster. However estimates from the claim adjuster should be supplemented by IBNR provisions, and provisions for any notified claims that have yet to be considered by the adjuster. It may be that the most appropriate estimate reflects information from both sources.

23. When insurer determines SCR for year 1, it takes expected premiums (written or earned) to calculate premium risk for year 1 and takes premium provisions (unearned provision) to calculate risk charge for year 1 onward for unearned premium run-off. Expected earned premiums for year 1 include part of **provision for unearned premium** at the beginning of year 1. Isn't it double risk charge for provision for unearned premium?

Answer: The QIS3 specification does indeed require a calculation as you have described. It is arguable that this may overstate the allowance needed for premium risk on existing business, and this will be reviewed following QIS3. We would welcome comments on the methodology form participating firms.

24. Paragraph I.1.43: **Best estimate cannot be observed at Year1** (neither at Year0).

Answer: U/W and operational risks should be taken into account in Year 1, and also in each subsequent year of the projection. Suitable proxies may be applied to assess the value of SCR1, eg by taking SCR0 and ratioing this in line with TP1/TP0. For the purpose of assessing SCR0, the provisions TP0 should exclude any additional cost-of-capital risk margin (in order to avoid circularity in the calculation), and will therefore be based on a best estimate for non-hedgeable

risks. However, for hedgeable risks, TP0 would continue to be based on observable market prices, as envisaged by paragraph I.1.12 of the specification.
There is a helper Tab V.A.4 available in the spreadsheet to assist with the calculation of the cost-of-capital risk margin.

25. Paragraph I.1.73, It is not clear which sub-segment (2nd level segmentation) an **endowment policy** belongs to.

Answer: This will depend on the relative significance of the death and survivorship benefits. However, a standard endowment policy with the sum assured on death being the same as the sum assured on survival to the expected end-date, would normally be classified in the 4th sub-segment as a 'savings product'.

26. According to paragraphs I.1.87- I.1.98 of the specification, the provisions for with-profit life policies must include the value of statutory and **discretionary extra benefits** payable to policyholders. However, it is not clear whether these provisions must also include any corresponding payment **to shareholders**. For example, a typical profit-sharing clause would be that 90% of profits (which might arise in part form realised profits and in part from future investment returns that are in excess of some minimum rate) are distributed to policyholders, and 10% of profits are distributed to shareholders, when these profits become available for distribution. Should firms then only value the expected extra benefits to policyholders (arising from the 90% distribution of profits), or should they also include the value of the potential payments to shareholders within the value of the liabilities? Do you think the current QIS3 specification should be interpreted to mean that the value of shareholder payments should be included as a liability, or should they be disregarded in the balance sheet?

Answer: Firms should only value the expected extra benefits arising from the distribution of profits to policyholders.

27. Paragraph I.1.52-54: **Default technique 2** is not clear.

Answer: Default technique 2 requires the computation of an SCR per reporting segment assuming that the firm explores only one segment (per turn). For that, the overall asset portfolio needs to be split and allocated to each reporting segment. When the SCR is calculated for each separate segment the summation of the SCR's for each segment (SCR'1 in I.1.53) will generally exceed the SCR for the whole of the firm's business (SCR1) as the summation takes no account of diversification benefits. Para I.1.54 requests additional information to demonstrate the effect of allowing for full diversification benefits. CEIOPS would welcome disclosure by undertakings of the approach they have taken to carrying out the calculations under I.1.53 and I.1.54.

28. Paragraph I.1.31: Which kind of **taxation** should be recognized **when determining the best estimate**: tax on premiums or tax on result (corporate tax)?

15.06.07

Answer: Corporate tax payable on the result would not need to be taken into account when assessing the value of the provisions. Taxes on premiums which are only passed through the insurance undertaking should not be included in the provisions.

29. In cases where firms have **unrealized capital gains** because assets are booked at acquisition cost, a **tax liability** is constituted if firms plan to realize such gains in the future. How should these tax liabilities be treated in the QIS3? In case where assets are valued at market prices, should these values be net of potential future tax?

15.06.07

Answer: It is for the firm to determine, in accordance with the contract and custom on practice in the local market, how to take into account the potential tax liability when valuing policyholder liabilities. Participants are encouraged to comment on their choice when answering the qualitative questionnaire.

30. The **risk margin** in the provisions is shown as a separate item on the QIS3 balance sheet in Cell E23 of Tab II.A.1 of the spreadsheet. Does this risk margin also form **part of the eligible elements** of capital shown on Tab II.A.2 of the spreadsheet?

26.06.07

Answer: No, the risk margin forms part of the provisions for insurance liabilities, and therefore is not an eligible element of capital. Accordingly, when calculating the figure for the 'Net assets and liabilities valuation' shown in Cell E19 of Tab II.A.2, the risk margin should be treated as a liability ie as part of the QIS3 provisions. Please also note that the instruction for completing Cell E18 of tab II.A.2 was amended by question 4 on page 50 of the Q&A document, and now reads 'The total figure shown here in Cell E18 of Tab II.A.2 should be regarded as the balancing item to ensure that the total of Cells E16 - E19 on Tab II.A.2 is equal to Cell E22 in Tab II.A.1'.

Section 2 - Calculation of eligible capital

Section 3 - Solvency capital requirement: the standard formula

1. On page 51 of the technical specifications, paragraph **I.3.97-99**, some information is given regarding **how a risk mitigating effect is to be defined for spread risk**.

   The formula that is given for the capital charge for spread risk is a function of:

   - the credit risk exposure
   - duration of the credit risk exposure
   - rating

   Liabilities do not enter this calculation as far as we can see. Can you please give some more information as to how being able to change future sharing rates should affect the capital charge?

   Answer: Incorporating the risk mitigating effects of future profit sharing into the spreadsheet can indeed raise difficulties for participants. As in the other market risk submodules, there is no prescribed way on how to calculate KC. In the case of spread risk, a decomposition of KC into rating classes may prove impracticable. However, any results for KCsp based on auxiliary calculations may be entered directly into cell G12 of tab IV.A.1. Firms should estimate how future bonuses might alter in each of the respective 1 in 200 year scenarios which they would need to assess themselves (a simplifying assumption might of course be no change in bonuses), and then set KC for each of these components equal to the value of the assumed reduction in bonuses in that scenario. However, if a participant wishes

to simplify the calculation of the SCR standard formula, or KC$_{sp}$ is assumed to be immaterial, participants should enter "zero" for this effect (cf. II.3.26 in the specifications).

Participants are highly encouraged to provide opinions on the practicability of KC calculations as well as an outline of their used methodology when answering question Q.S.8 of the Qualitative Questionnaire for Solo Undertakings.

2. Should a participation in a **non-life reinsurance captive** be treated as an asset, or should it be out of scope of the exercise?

   Answer: All assets should be included in the market risk calculations, some of them may be ignored in the optional valuation of market risks without free assets. In the latter case please explain if this participation would simultaneously be deducted from the capital eligible element.

   For a non-life reinsurance captive, the effect of the non-life CAT sub-module on the value of reinsurance may be worth considering, despite I.1.34.

   Considering the firm and his captive as a group and providing information to the supervisor following the group methodology would also be a valuable input to CEIOPS thinking on the application of the standard formula at the group level.

3. In the QIS3 specifications on page 69, in paragraphs **I.3.182 - I.3.184**, it is stated that "the result of the scenario should be determined under the condition that the participant is able to **vary its assumptions on future bonus rates** in response to a 1 in 200 year life CAT event". However it is not clear exactly how this should be performed. For starters, the exact nature of the life CAT event will determine the effect (for example, if only mortality rates are affected, or only morbidity rates). Secondly, reducing profit-sharing would presumably only affect the TP and surrender strain linked fields (as specified on page 68) - hence the capital at risk would increase, which means the risk mitigating effect would be negative.

   We also are probably not in a position to perform a detailed cash flow analysis in the event of a life CAT event. Could you please give some guidance as to how this risk mitigating effect can be calculated?

   Answer: Please refer to our answer on the risk mitigating effect in the context of spread risk and health underwriting risk. Further, for estimating the risk mitigation effect of future profit sharing for life CAT risk, it is not intended that the formulae in I.3.180 and I.3.181 are re-

applied on basis of a valuation of technical provisions that has changed through reduced profit-sharing. Rather, these formulae are meant to deliver an appropriate capital charge "gross" of the risk mitigation effect of profit sharing. In cases where participants could quantify (in addition to the factor-based calculations) a reduction of technical provisions that would result from a reduction of future profit-sharing in response to a life CAT event (based on reasonable expectations and having regard to plausible management decisions, cf. II.3.21 in specifications), this could be used to determine the risk mitigation effect KC_CAT. (and hence the capital charge "net" of the effects of future profit sharing). The relevant cell to be filled with results from such auxiliary calculations is J14 in tab IV.A.3.

4. In the QIS3 final specifications, we noted that there are **now risk mitigating effects** for **health expense risk**, health claim/mortality/cancellation risk and health epidemic/accumulation risk. We have decided to use the "young and small insurer undertakings" option for the capital charge calculations, due to limited data availability, however it is not clear to us how we are supposed to calculate capital charges assuming that we can modify our future bonus rates.

    For example, the capital charge for expense risk is:

    lambda * sigma * Premium

    I believe the lambda is selected to reach a 99.5% VaR, the sigma is 2% and the premium is specified by us. How exactly should we "carry out the calculation under the assumption that the participant is able to vary its assumptions on future bonus rates in response to a 1 in 200 year health expense risk event" (I.3.200) ? As far as we can see, we do not perform the calculation of a 99.5% VaR level ourselves - we simply supply the premium. The only "free" variable here would be the sigma - but it is not clear to us how to determine its value under the assumption that we can vary future bonus rates.

    We have similar issues with the other two risk mitigating effects for health UW.

    We would appreciate some guidance on how to calculate these three capital charges assuming we can modify our future bonus rates.

    Answer: Please refer to our answer on the risk mitigating effect in the context of spread risk. Analogously to spread risk, participants are not expected to change the sigma or any other part of the formula which determines the SCR of the particular submodule. The relevant cells to be filled with results from auxiliary calculations are D9:F9 in tab IV.A.4

5. Should the the term "**combined ratio**" in **I.3.234 and I.3.237** not read "loss ratio"?

   Answer: Paragraphs I.3.234 and I.3.237 relate to the overall derivation of the charge for the combined premium and reserve risk. This is based on the overall standard deviation sigma for the overall risk (and not just the premium risk).

   Therefore, it would not be correct to only refer to the loss ratio here - in fact, conceptually this overall sigma is related to the standard deviation of the underwriting result (relative to the overall volume measure). However, it can be argued that the term "combined ratio" (which is meant to refer to this overall underwriting result, relative to the overall volume measure) may be misleading.

   To remedy this, CEIOPS could have simplified the wording of the two paragraphs as follows:

   - In I.3.234 CEIOPS could have written: "standard deviation for the overall portfolio risk" instead of "standard deviation of the combined ratio for the overall portfolio"

   - In I.3.237 CEIOPS could have written: "standard deviation sigma for the overall non-life insurance portfolio risk" instead of "standard deviation sigma of the combined ratio for the overall non-life insurance portfolio"

   However, the point is not that critical for the calculations as such since the wording of paras. I.3.234 and I.3.237 is not directly related to the specifications for determining sigma itself - these are included in other paras. (e.g. I.3.242 to I.3.244, I.3.246 and I.3.248).

6. Should **bank deposits and floating rate notes** be included in the concentration risk submodule (see paragraph I.3.105)?

   Answer: Yes. In paragraph I.3.105 fixed income investments should be understood to include these items.

7. **Non-life annuities** are subject to the **revision risk**. But one may say that they are also sensible to the other life risks drivers. Should the relevant provisions be totally removed from the NL provision volume measure, and be instead included in the life risk module? In some countries, this can have a material impact on the overall result in some LoB (e.g. motor liability).

Answer: Annuities should be evaluated with respect to revision risk, longevity risk and (life u/w) expense risk. The development of the revision risk module demonstrates the intention of CEIOPS to completely exclude the existing annuities from the non-life u/w risk.

Should a participant not be able to separate the annuities from its claim provisions, they may be included in the non-life reserve risk instead.

However, CEIOPS is interested in the suitability of this approach, so firms are invited to test both approaches (include non-life annuities both within life and non-life risk modules) and provide a comparison of results.

8. Have the **subordinated liabilities** included in the eligible elements of capital to be stressed when calculating the **interest rate risk** module?

Answer: For QIS3 purposes, subordinated liabilities do not have to be stressed in the interest rate risk module. Valuation changes of subordinated liabilities are reflected in the available capital instead: Hidden reserves in subordinated liabilities are part of the overall hidden reserves recognised as tier 1 capital, the market value of subordinated liabilities is recognised as available capital (tier classification according to the principles outlined in I.2.7 – I.2.9 of the Technical Specifications). Appreciations or depreciations in the market value of subordinated liabilities may change the composition of the available capital (between the different tiers), but do not change the overall amount of capital.

9. The products operated in Czech Republic (daily indemnity in case of short-term disability or hospitalisation with a level premium and long-term premium reserve) have similar characteristics as **health products** in Germany and Austria and in some cases are operated by separate entities in groups. Should they be reported in Non-life business or separately in "Health (similar to life)"?

Answer: The Czech products of health insurance (B2) are only supplementary to the public health insurance system, which is regulated by special laws and is not supervised by the Czech National Bank. The Czech Insurance Act does not include any special provisions for health insurance as it is in Austria or Germany (e. g. §18c of the Austrian Insurance Supervision Act) and in the Directive 73/239/EEC, Article 16a (6) (there is a small mistake in the technical specification, which makes a cross-reference to paragraph 4 of the Article 16a).

Therefore, the Czech products should be included within Non-life business.

10. Where should **non-life riders** (accident, dread disease, waiver of premium etc) **concluded to life assurance** contracts be reported?

Answer: In principle, these should be included in the disability risk sub-module for the purpose of assessing the SCR.

11. What's the **definition of disability**? It is not clear to us how to include benefits from non-life riders (accident, dread disease, waiver of premium etc) if these riders are reported within life.

Does the line 05 (D19) of tab IV.A.3 consist of lump-sum benefits and the line 06 (D20) of recurring benefits such as waived amounts of premium? As well, we suggest filling the short term recurring benefits (such as hospitalisation) into D19 as contracted daily benefit times average number of days. Can you confirm this approach?

How is defined the sum insured (line 05, D19) for accident insurance where the benefit is set up as a certain percentage of the contracted sum insured, e.g. permanent consequences of accident?

Answer: We confirm that the approach you describe in the second paragraph above should be suitable for the purpose of QIS3.

For accident insurance, we suggest that for the purpose of QIS3, firms should assume the maximum level of sum insured payable in the event of an accident.

12. Should the **loss ratios** filled in E23-E37 of tabs III.C.1-15 include or exclude **catastrophic claims**?

Answer: If catastrophic claims cannot be extracted their inclusion may lead to double counting (cat risk plus premium risk) and possibly strong effects on premium risk requirements, as standard deviation may be considerably biased due to a catastrophic event. However, we are not sure whether it is always possible to separate the Catastrophe claims, and thus "clean" the loss ratio.

13. What should be filled into **Future disc benefits** (line 03, J9 of tab IV.B.2)? What is the definition of the discretionary benefit (the same as in IFRS)?

Answer: An explanation of how to value future discretionary benefits is given in paragraphs I.1.87 - I.1.98 of the specification.

14. **Spread Risk** is a function of the effective duration of the credit risk exposure (I.3.91 to I.3.96). At footnote 28 (page 51 of the Technical Specifications), it is stated that "If the bond has no embedded options, or behaves like an option-free bond, effective duration can be estimated using modified duration". The problem, in our point of view, relates to the use of modified duration in **bonds with variable interest rate**, as they are option-free bonds. The modified duration for these bonds, provided by Bloomberg (the most commonly used source), is just the time remaining to the next coupon payment... This means that you can have a bond with several years to maturity for which you consider a 0.75 years duration, for example. Does this procedure actually understate the economic risk of bonds with variable interest rates?

Answer: Floating rate notes (FRN) can be exposed to substantial spread risk; the sharp decline in prices of FRN issued by Ford or General Motors in spring 2005 is just one recent example. For QIS3 purposes, participants are therefore invited to estimate the duration of the bond by considering this to be a fixed income security with coupon payments equal to the current floating rate of interest.

15. Although in the **counterparty default risk** module reinsurer ratings are explicitly recognized, the model does not account for hedging techniques. Firms that **use rating trigger clauses** in their reinsurance contracts are treated equal to those that do not use such clauses. Shouldn't the model aim for an advantageous treatment of those insurers trying to minimize the effect of a default of their reinsurers?

22.05.07

Answer: The counterparty default risk module implicitly takes into account certain kinds of rating trigger clauses. A clause which allots a payment to the insurer when the reinsurer is downgraded effectively reduces the replacement cost of this contract. However, it has to be assured that the payment generates from collateral posted ex ante by

the reinsurer, so there is no further credit risk attached to this payment.

16. Should **earned premium** in I.3.231 exclude following payments:

- payment (% of premium) to state budget, it could be regarded as form of tax

- payments to guarantee scheme (motor third party liability)?

Answer: Taxes and other surcharges on premiums which are only passed through the insurance undertaking are not to be included in the earned premiums figure.

17. Isn't there a **double loading** between the 75% **life lapse**, **cat risk loading and the non-cat life lapse loading** (+50% annual lapse rate)? If no, do we have some explanations on the calibration? Is it associated with a 99.5% probability?

Answer: There is the potential for some overlap between these two components of the SCR. Accordingly, CEIOPS would like to see the relevant figures for this calculation from a number of firms, so that calculations can be further refined, in order to avoid an inappropriate result.

18. **Interest rate risk** uses a couple of components (impact Before RPS, associated KC) which are computed as the one with the highest impact value before RPS. In some cases, the highest net of RPS impact can be another option. What should be done in such a case?

Answer: The calculation of the components of the SCR net of RPS would be more meaningful, in most cases. Indeed, this particular approach would normally seem to result in a higher figure for the BSCR, so it would appear to be more prudent as well. However, the QIS3 specification is based on the components gross of RPS. Accordingly, it would seem that this latter calculation will need to be performed for the purpose of QIS3.

19. I.3.32 asks for a **valuation using the risk-free curve**. Which valuation should be retained as a reference when this calculation gives a value which is not the same as the market value for bonds?

Answer: This issue may arise where either (a) the CEIOPS prescribed risk-free interest rates differ from those derived from government bonds, or (b) there is a risk premium to be considered and quantified relating to the credit risk on corporate bonds. For the purpose of QIS3, the discounted cashflow valuation would be a sensible reference point for the SCR interest rate risk component, in order to ensure consistency between the starting value of the bond and the value following a change in interest rates.

20. Para I.3.104 states that all **entities in the same group** should be considered **as a single counterparty**, which can become a problem if we are exposed to several entities within the group and these same entities have **different ratings**. Which one of these ratings shall we use for the purposes of this module, considering the overall exposure to the group?

Answer: To assess the overall exposure to a group consisting of subsidiaries with different ratings, one may use a weighted rating, whereby the risk weights are the respective exposures to the group's subsidiaries. Only if the parent company assumes responsibility for the debt of its entities (for instance via guarantees), one may also use the parent company's rating instead to assess the overall exposure. In cases where it is not certain whether the parent company assumes any responsibility, this simplifying approach proves unsuitable and thus may not be used.

21. Our question relates to the **factor based approximations for lapse risk**: In this approximation the insurance company should use the amount of **surrender release** and the amount of **surrender strain**. Surrender release is defined as the sum of differences between technical provisions held for policies which can be lapsed or surrendered, and the amount currently payable on surrender. I am interested about technical provisions held. Does it mean the best estimate of technical provisions or is it a currently held technical provision? The difference between best estimate of technical provisions and the amount currently payable can be bigger if my best estimate is less than my currently held technical provisions. Same question relates

to surrender strain and potential release (Technical specification, Part II, page 28, 29 - II.3.41 and II.3.45).

<div align="right"><u>**25.05.07**</u></div>

<u>Answer</u>: For the purpose of calculating the components of the SCR, and in particular the surrender release, surrender strain and potential release, the technical provisions held should be the best estimate of the provisions as assessed for QIS3. This is in line with paragraph I.3.5 of the specification.

22. IV.A.3 Life underwriting, **CAT subrisk** details: Should the **net technical provisions** be the best estimate or the net technical provisions currently held?

<div align="right"><u>**25.05.07**</u></div>

<u>Answer</u>: For the calculation of the SCR Cat sub-risk, the net technical provisions held should be the best estimate, net of reinsurance, of the provisions as assessed for QIS3.

23. The **counterparty default risk on reinsurers** is **net of collaterals** (I.3.116). We understand that the off-balance collaterals are also to be excluded from the market and concentrations risks module. Could you confirm this interpretation?

<div align="right"><u>**30.05.07**</u></div>

<u>Answer</u>: The interpretation is correct – i.e., when calculating the replacement cost of an exposure (within the counterparty default risk module, see para. I.3.116 of the Technical Specifications), off-balance sheet collaterals should be subtracted, and also off-balance sheet collaterals are not included in the calculations within the market risk sub-modules. However, in its further technical work CEIOPS will consider the potential need to include off-balance sheet collaterals into the market and default risk modules calculations in cases where the insurer bears part of the market or credit risks arising from such collateral.

24. Paragraph I.3.32: Our **annuity liabilities**, as per Solvency I, are **tightly matched with gilts**. Because the QIS3 best estimate liabilities have a shorter duration, this will create a higher than appropriate capital charge under the Market interest rate risk module. Under the real Solvency II world, we will rebalance to shorter bonds

and incur less of a capital charge. Can we assume appropriate rebalancing before calculating the charge?

Answer: The QIS3 is intended to evaluate the effects of potential future requirements within Solvency II. However, QIS3 is a test and still in no way identical to Solvency II. In order to test potential consequences of supervisory rules it is therefore indispensable that the numbers filled in reflect the actual company status. However, it would be useful to know as additional information the approximate effect on the capital requirement (ie SCR and MCR) if the portfolio were rebalanced as you suggest.

25. Paragraph I.3.117: The PDs are unfairly penal for **unrated reinsurers**, especially when it is **within a group** where, despite undoubted financial strength, a rating is unnecessary and has not been sought. Can we re-assign unrated to one of the other rating boxes?

Answer: If the reinsurer is part of a group and the (rated) parent company assumes responsibility for the debt of its entities (for instance via guarantees), participants may also use the parent company's rating to assess the PD of the subsidiary. In cases where it is not certain whether the parent company assumes any responsibility, this simplifying approach proves unsuitable and thus may not be used. Further note that unrated reinsurers subject to Solvency II regulation can be treated as rating class 3 (see para. I.3.119 of the Technical Specifications).

26. Paragraph I.3.118: All ratings shown are Standard and Poor's. Is there a **standard mapping of other agencies' ratings** to these available?

Answer: Participants may follow the mapping rules according to local banking acts implementing the capital requirements directive of Basel II.

27. Paragraph I.3.135: The footnote recommends **unbundling of mortality and longevity risks** and applying separate shocks. But the same policyholder cannot both die quickly and live long so there is no

sense in doing the two shocks separately. The most one should consider is the higher of the two, but the best approach is surely the last sentence in the footnote, although this is only offered if unbundling is impractical.

Answer: The risk exposure for mortality risk (ie sum at risk) is different from that for longevity risk (ie the potential release of technical provisions). In addition, the cohorts of policyholders affected by mortality and longevity risk are generally different, so that different risk drivers may apply. Accordingly, a separation has been maintained between the mortality and longevity risk modules. Unbundling of contracts is only required where this is both relevant and practical.

28. Regarding the **life underwriting risk sub-modules** we understand that the technical provisions held refer to the **technical provisions assessment consistently with the Section 1**. Could you confirm this interpretation?

Answer: Yes, but please see also the second sentence of paragraph I.3.5 of the specification. We confirm that paragraph I.3.5 is relevant to all the SCR sub-modules.

29. I.3.5 states "to avoid any circularity in the calculation, any reference to technical provisions within the calculations for the individual SCR modules is to be understood to exclude the cost-of-capital risk margin." However, alternative methods are allowed for **non-life long-tail business**. In such cases should references to **technical provisions include the risk margin**, as circularity is no longer an issue?

Answer: For consistency of approach, the SCR should still be calculated by reference to the best estimate element of the technical provisions i.e. any risk margins should be excluded from the provisions for the purpose of the calculation of the SCR.

30. Paragraph I.3.32: **Policies where policyholders bear investment risk** are **excluded from** consideration from **interest rate risk**, but not from equity or property risk. This seems inconsistent. In particular,

a linked single premium portfolio will have significant sensitivity, via management charge, to all asset valuation changes, including bond movements. Should all business not be included here?

Answer: Noted. Participants may choose a method which is considered reasonable by them. Reasoned comments on this methodology will be welcomed from QIS3 participants. Participants are invited to explain their choice when answering the qualitative questionnaire.

31. Paragraph I.3.150 covers disability, including critical illness type policies. We write a lot of unit-linked policies were the critical illness benefit is written as an "accelerated benefit" and reduces the remaining death benefit on claim payment. Clearly the **mortality and disability risks** on these policies are negatively correlated. However, the correlation matrix in I.3.132 uses 0.5 for this correlation. How should we correctly apply the requirements on the mortality and disability modules for these policies?

Answer: Noted. Reasoned comments on this methodology and calibration will be welcomed from QIS3 participants. Participants are invited to further elaborate on this issue in the qualitative questionnaire.

32. Paragraph I.3.166 is very clear about **flexible charges and expense shock**. However, exactly the same situation can occur regarding **mortality** charges. Are there limits to what the company can assume in terms of increased charges, and how soon?

Answer: The constraints set out in paragraphs I.1.84-86 and II.1.26-27 would need to be applied, when considering the extent to which mortality charges might be increased.

33. Paragraph I.3.177 is restricted to linked business. In the event that **non-linked business** has a **surrender strain**, should it not also be included?

Answer: This has not been included in QIS3, but may be considered further in due course.

34. Paragraph I.3.231 (and related inputs in sheets III.C cells E23-E37): Should these **loss ratios** be based on the undiscounted provisions as provided for at the time or should those provisions be restated to allow for discounting? Should it be the provisions from the financial statements at the time or should subsequent run-off information be used? Actually, so long as a consistent approach is used, does it matter? Those inputs all go to compute an undertaking-specific estimate of the standard deviation for premium risk, which is then (only if $n_{lob} \geq 7$) combined with the market-wide estimate. The resulting premium risk standard deviation measure is subsequently combined with the market standard deviation for reserve risk to get the final standard deviation that is actually used.

01.06.07

Answer: The objective is to derive an undertaking-specific estimate of the volatility of the premium risk. From a theoretical point of view, restating historical provisions to allow for discounting at the historical risk free curve – but excluding the subsequent run-off information – and also restating the premiums rates that would have been charged if the QIS3 assumptions were in force would give an unbiased estimator. From a practical point of view, realistically restating historical premiums may prove difficult. Instead, using a consistent approach such as the real values used in the historical financial accounts can be seen as a suitable approximation. Firms can provide comments on this approximation in their qualitative reply. They are also asked, on an optional basis, to report their best estimate of the true volatility of the premium risk. Theses additional estimates will help CEIOPS to refine the current assumptions post-QIS3.

35. Paragraphs I.3.5, I.5.7: Technical provisions excludes CoC RM. What about **technical provisions for hedgeable risks**?

11.06.07

Answer: As indicated in reply to the question 24 in section 2.1 of this document; for hedgeable risks, TP0 would continue to be based on observable market prices, as envisaged by paragraph I.1.12 of the specification, for the purpose of assessing the SCR.

36. Paragraph I.3.69: It is not clear what **Liab$_{ij}$** means.

Answer: Basically, there are different ways to express liabilities. First, one may differentiate according to the duration band (i) and, second, whether inflation is relevant to the size of the liability (j).

37. Paragraph I.3.160: It is not clear which changes go together in **lapseshock**. Is it like taking the greater of the two figures below?

   - 50% increase in assumed lapse rates,

   - 3% p.a. increase of assumed lapse rates for policies where TP<SV and 50% decrease in assumed lapse rates for policies where TP>SV.

Answer: It is meant to be the greater of the 2 figures derived from the following 2 sets of assumptions:

   - 50% increase in assumed lapse rates for policies where TP<SV and 50% decrease in assumed lapse rates for policies where TP>SV

   - 3% p.a. increase of assumed lapse rates for policies where TP<SV and 50% decrease in assumed lapse rates for policies where TP>SV

38. Paragraph I.3.166: It is not clear how to take into account **expshock**. Is it like taking the greater of the two figures below?

   - 10% increase in assumed expense rates for each year

   - an expense for each year calculated by assuming a 1% p.a. higher than assumed expense inflation

   - 75% of these additional expenses can be recovered year 2 onwards through increasing the charges payable by policyholders.

Answer: It is meant to be calculated by applying the changed assumptions in all the bullet points above. In other words, the base level of expenses would be assumed to increase by 10%, and also the rate of inflation of expenses would increase by 1% per annum.

39. Paragraph I.3.170: Does revision risk include **legal risk** (court decision may not be linked directly to a specific index)?

Answer: Revision risk captures the risk of adverse variations of an annuity's amount. Hence, it should also cover legal risks that have corresponding effects.

40. Paragraph I.3.173: Does the **3% increase** mean an increase p.a. **for each year remaining**? Or just for the next year?

Answer: An annual increase of three percent for the remaining time is meant.

41. Paragraph I.3.230: Since traditional PCO is just a proxy of part of the total TP, if one does not use this proxy but determine the total TP from first principles then it is not clear **how PCO is defined**.

Answer: We suggest that undertakings apply suitable approximations on a best efforts basis to estimate the proportion of the TP that is represented by PCO; where PCO represents the provisions for outstanding claims (including incurred but not reported claims).

42. Paragraph I.3.249: Does it mean that the **correlations within the premium risk section and within the reserve risk section** are identical and the correlation between $Prem_i$ and Res_j is 50% of the correlation between $Prem_i$ and $Prem_j$?

Answer: Right. Since underwriting risk basically consists of two risks, reserve and premium risk, those risks also have to be correlated, whereby the correlation is assumed to be 50 percent of the correlation within the respective risk factor.

43. According to I.3.160, the definition of **lapse shock** scenario (2) is the following: „an increase in absolute terms of 3% per annum in the assumed rate of lapsation, for policies where the surrender value

currently exceeds the technical provisions held; together with a 50% reduction in the assumed rates of lapsation for policies where the surrender value is currently less than the technical provisions held". Does **„technical provisions held"** refer to current bases, or QIS3 best estimate? Does **„currently"** mean the reference date, or should a projection of the technical provisions and surrender values be used on an ongoing basis for each policy?

Answer: The "technical provisions held" should be the best estimate element of the provisions, as assessed for QIS3. However, if this is not practicable for some firms, then the current provisions could be utilised instead as an approximation in this calculation. "Currently" means the reference date, so that a projection does not need to be made of the surrender values and technical provisions each year. This is a simplification that was included in the specification, and comments on the suitability of this assumption would of course be welcome.

44. One participant found the **calibration of counterparty default risk** strange: for example, assuming a single BB-rated reinsurance counterparty, following I.3.117 and I.3.125 the risk charge is equal to the full exposure. Is this intentional?

Answer: It is indeed correct that the formula as currently calibrated gives a risk charge equal to 100% of the replacement cost for a single BB or lower rated reinsurance counterparty. As QIS3 is a calibration exercise, we will closely study the results for all formulas, including the counterparty default risk module, and assess their appropriateness. Any specific views you may have are very welcome and may be shared through answering the qualitative questionnaire, notably question Q.S.6.

45. Do the different SCR modules include **unit linked business**? Whenever a SCR formula depends on a measure like assets and technical provisions or surrender release/strain, should these include unit linked business? This is not explicitly mentioned in the QIS3 Tech Spec, but in the QIS2 Tech Spec it was excluding UL business.

Answer: For the purpose of QIS3, the values of assets, provisions and surrender release/strain, should include the relevant figures in respect of unit-linked business, unless these are said to be specifically excluded. Please see also the answer to question 30 in this section of the Q&A document.

46. Ad I.3.16: Where does the **risk of a run** fall?

15.06.07

Answer: Due to the structure of an insurance company and its business the probability of a run, as it is observed in the banking industry, is a rather uncommon event but needs to be considered when assessing the SCR to cover 1 in 200 year events. For the purpose of QIS3, it may be best subsumed among the class of reputational risks forming part e.g. of the lapse Cat risk sub-module.

47. Paragraphs I.3.107, I.5.17: It is not clear what the "**look-through**" basis means?

15.06.07

Answer: As regards equity risk and interest rate risk, investment funds have to be treated by transparency and through the look-through principle should be applied. The treatment of investment funds that lack transparency and the handling of other possibly non-transparent investments (e.g. hedge funds) should be consistent. A CRD compatible approach would be to assume that investment funds are invested according to their mandate and to assume that first the maximum amount is invested in the riskiest asset class, and then the second (third…) riskiest class is filled until all investments are being dealt with.

48. Paragraphs I.3.230, 234, 237, 242, 244: In spite of further advice in Q&A (25 May 2007) on the problem of **non-life loss ratio vs. combined ratio**, there seems to be a technical problem in the specification.

- There is a contradiction between paragraphs I.3.230 and I.3.234 in the definition: whether the net loss ratio (LR) or the (net) combined ratio should be taken into account.

- The calculation of the standard deviation in I.3.246 depends on LR, which is defined in I.3.230 as loss ratio. This would imply the use of the loss ratio throughout. It is not clear what the

standard deviations in I.3.242 and 244 represent (loss or combined ratio).

Answer: As already outlined in the answer to question 5 in this section of the Q&A document, the use of the term "combined ratio" was not intended in the Technical Specifications. Paragraphs I.3.234 and I.3.237 relate to the overall derivation of the charge for the combined premium and reserve risk. This is based on the overall standard deviation sigma for the overall risk (and not just the premium risk). Also the standard deviations in I.3.242 and I.3.244 are intended to be based on the relative movement in claim provisions over 12 months, and the loss ratios, respectively.

49. Paragraph I.3.246: P^y_{lob} **is not defined**. Either define it as a function of $P^{y,w}_{lob}$ and $P^{y,e}_{lob}$ or define it as $V_{(prem,lob)}$.

Answer: P^y_{lob} should read $P^{y,earned}_{lob}$. This is the only time series (besides LR^y_{lob}) defined in para. I.3.230 and also used for calculation in the QIS3 spreadsheet (tabs III.C.1-15).

50. We have a question regarding **spread risk**: Should **mortgage loans** be included in the spread risk volume? Due to the mortgages (usually cars) the credit risk of these loans is insignificant. If these loans are included, how can the low risk be reflected in the ratings?

Answer: For most mortgage loans, there is a credit spread as these would be issued at a premium to LIBOR (if floating) or to risk-free interest rates (if fixed). As para. I.3.91 defines the credit risk exposure as exposure at default, there is no recognition of risk mitigating instruments within this module (any risk mitigating effect of collaterals would only change the loss given default). Accordingly, mortgage loans should be included in the spread risk module.

51. Regarding **concentration risk**, paragraph I.3.106 is very clear, stating that financial derivatives should be considered in the calculation. However, the example provided is the easiest one possible, as everyone agrees that a put option can eliminate the negative effects deriving from the additional volatility of a

concentrated portfolio or the potential default of the issuer of the underlying "name". What about **currency and interest rate derivatives**? Should we consider a similar effect?

Answer: Currency and interest rate derivatives should be ignored in the calculation of concentration risk. The different treatment is justified by the fact that these derivatives cannot eliminate the risks identified above (additional volatility of a concentrated portfolio and the potential default of the issuer of the underlying "name"). If the value of the underlying asset fluctuates or reaches zero, these derivatives will be unable to compensate for it. For that reason, they should not affect the concentration risk charge.

52. In paragraph I.3.44 it is stated that **hedging instruments** should only be allowed with the **average protection level** over the next year. Does this mean that if a hedge ends in March, you are only allowed to take into account one quarter of the protection? Even though you will buy a new protection that starts in March?

Answer: Hedging mechanisms that are only in force during parts of the year can only be partially recognised depending on the average protection level. If the protection is (timely) renewed, it can be taken into account as a whole in accordance with paragraph I.1.84. However, the cost of renewing the option during the year would need to be taken into account when applying paragraph I.1.84. Some allowance would be needed when assessing the SCR for the possibility that the cost of renewing the option might be significantly higher than at the start of the year.

53. Our question relates to IV.A.3 **Life Underwriting** and specially **Cat subrisk** as a function of the Life $_{mort+disability}$. After our calculations: Cat risk = € 5 mill. However, the company has a **Catastrophe Excess of Loss Cover** (Reinsurance Agreement) = € 4 mill, beyond our retention (roughly, this can be interpreted into Cat risk = € 1 mill). Should this be included (somewhere) in the cat risk submodule? If it is included, Cat risk will drop significantly and so will the SCR$_{life}$.

Answer: Yes, the capital at risk is intended to be net of reinsurance, and it would be reasonable to take into account all relevant

reinsurance arrangements for this purpose, when assessing the SCR component for life Cat risk. Given that cat risk assessment is on a balance sheet (impact on assets and liabilities) basis, account should also therefore be taken of the cost of reinstatement premiums (if applicable) and of issues such as specific and additional costs incurred in the management (e.g. claims management) of the cat event consequences.

Section 4 - Solvency capital requirement: internal models

Section 5 - Minimum capital requirement

1. It is not clear to us what provisions shall be filled into cells **Provisions TP$_{wp}$, TP$_{surrender}$ and TP$_{benefits}$** (line 05, D19, E19, F19 of tab IV.B.3). The definitions provided in the Guidance are not sufficient for us to calculate appropriate figures. Could you provide us with the guidance / examples? Are these figures already filled in any of previous sheets?

   Answer: TP$_{wp}$ is meant to be the net technical provisions in both life and health insurance contracts (health insurance similar to life insurance as practised in Germany and Austria) which allot future profit sharing. TP$_{surrender}$ is the sum of surrender values of benefits guaranteed under these contracts. The difference of these two variables (see I.5.13 of the Technical Specifications) is therefore analogous to the calculation of the variable "surrender strain linked" in the Life$_{CAT}$ submodule (see I.3.177). TP$_{benefits}$ is the technical provision for non-guaranteed (discretionary) future profit sharing.

2. In the formula for the MCR for interest rate risk, under the alternative 2 approach, the terms $D_{FI}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{up}$ and $D_{FI}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{down}$ can be regarded as an approximation for the generalized duration. These terms will be higher for longer maturities, and so the MCR might be an increasing function of the duration.

$$MCR_{int} = \max \left\{ \begin{array}{c} 0 \\ FI \cdot D_{FI}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{up} - TP \cdot D_{TP}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{up} \\ FI \cdot D_{FI}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{down} - TP \cdot D_{TP}^{mod} \cdot r(D_{FI}^{mod}) \cdot s^{down} \end{array} \right\}$$

   However, in the calculation of the SCR for interest rate risk using the scenario approach, the applied shocks are lower for longer maturities.

Therefore, it can be expected that the SCR will be a decreasing function of the duration.

$$Mkt_{int} = max \left\{ \begin{array}{c} 0 \\ \Delta NAV \mid upwardshock \\ \Delta NAV \mid downwardshock \end{array} \right\}$$

Is it therefore reasonable to have an **MCR and SCR behaving in opposite directions** when the maturity of fixed income instruments or insurance liabilities becomes longer? Given that the interest rate risk charges are a quite substantial part of the overall SCR and MCR, this could potentially lead to instances where the MCR is bigger that the SCR.

22.05.07

Answer: Noted. CEIOPS will take this comment into consideration when further developing the SCR and MCR formulae. Participants are invited to further elaborate on this issue in their answers to the qualitative questionnaire.

3. There may be some **inconsistencies in the definitions of potential release and net death benefits**. These definitions are:

- Definition potential release (II.3.41), SCR proxy for life: "total of (net) technical provisions, net of any benefits payable on immediate death"

- Definition net death benefits (I.5.30), MCR: "Sum of net technical provisions net of any benefits payable on immediate death in respect of contracts which give rise to a financial surplus on immediate death of the insured"

Is the financial surplus mentioned in the second definition for the insured? Is the difference between the two definitions intentional?

25.05.07

Answer: The difference between the definitions in II.3.41 and I.5.30 is not intentional. Rather, the definition in I.5.30 attempts to clarify that contracts with negative potential release (i.e. where the death benefit is higher than the provision) are excluded from this calculation. The financial surplus mentioned in this definition is a surplus for the insurer (i.e. the insurer gains from the immediate death of the insured).

The factor-based formula mentioned in II.3.41 may be used to approximate the impact of the longevity shock specified in the description of the longevity-risk sub-module of the SCR standard

formula (paras. I.3.142 to I.3.149). At the beginning of this sub-module, it is specified (see I.3.143) that: "It is applicable to the class of insurance contracts contingent on longevity risk (i.e., where there is no death benefit, or where the amount currently payable on death is less than the technical provisions held, and therefore a decrease in mortality rates is likely to lead to an increase in technical provisions." This shows that there is in effect (i.e., by also considering I.3.143) no differences in the definitions.

4. Should **TP_Long** and **CAR** (para. I.5.30 and further) take account of **unit-linked contracts**? Paragraph I.5.33 seems to imply that they exclude this type of contracts.

<u>**30.05.07**</u>

<u>Answer</u>: When calculating TP_Long and CAR, unit-linked contracts are not to be included. Instead, these are to be included solely in TP_UL. Note that the formula for MCR_UL in para. I.5.33 of the Technical Specifications was updated in the Errata document and is now based on TP_UL.

5. Paragraph I.5.15 of the specification requires the exclusion of assets covering unit-linked assets but not the **exclusion of** the **unit-linked liabilities** themselves. We assume that the intention is to exclude unit-linked liabilities and have told them so. However, we would appreciate confirmation of this view.

<u>**06.06.07**</u>

<u>Answer</u>: We confirm that unit-linked liabilities are excluded from the MCR market risk calculation.

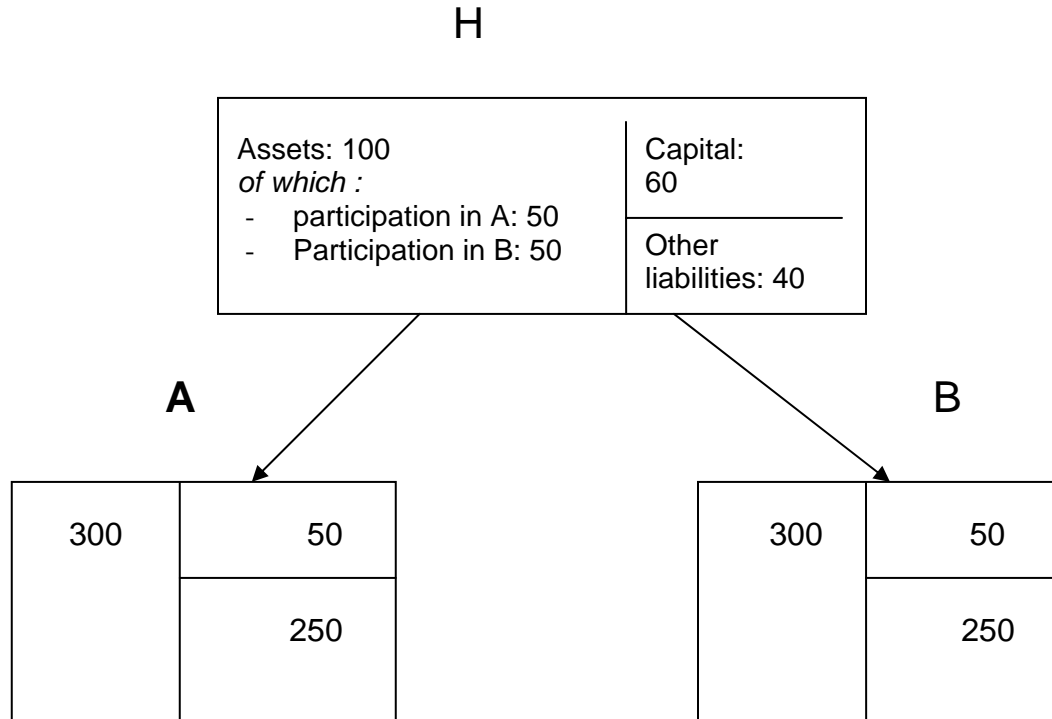## *Section 6 - Specifications for standard formula group data*

1. How is the **capital surplus in third countries** on the basis of "**local rules**" to be calculated? How to deal with holding companies? (see example)

<u>**21.06.07**</u>

<u>Answer</u>:

Let us consider a holding company named 'H' (located in the EEA fully owning two insurance companies:

- A is in a third country;

- B is in the EEA.

H

| Assets: 100
of which :
- participation in A: 50
- Participation in B: 50 | Capital:
60
<hr>Other
liabilities: 40 |

A

300	50
	250

B

300	50
	250

B has a SCR of 20.

According to "local rules", the Capital requirement of A is 15 with the following "local regulatory balance sheet" (translated into euros):

300	32
	268

<u>Solution</u>:

The distribution of capital within the group is the following (assuming that the debt issued by the holding company is not eligible):

	Available capital	Capital requirement	Surplus capital
Country A	50 **- 18**[1]	15	17
Country B	50	20	30
Holding	-40	-	-40
Total	**60 - 18 (=42)**	**35**	**+7**

That means that available capital for the third country institution is 32 in comparison to the 50 accounted for with the standards of the consolidated accounts. The difference of 18 is due to difference in valuation of TP in local regulatory rules and valuation principles of the consolidating entity of the group. The surplus capital is 17 (=32-15), constituting the difference between available capital according to local rules and the local capital requirement.

The available capital of the group is 42 (capital at holding level minus difference in valuation).

The rules of eligibility and the limits to be applied for the debt issued by each holding company in a group should be considered, for QIS3 purposes, according to the local rules of the country in which the holding companies are established. For EEA institutions QIS3 standards are to be considered.

3. Technical specifications - Part II

Section 1 - Valuation assumptions: standard approach

Section 2 - Calculation of eligible capital

Section 3 - Solvency capital requirement: the standard formula

1. When one insurer uses the **fund structure approach** (II.3.27), how should the results be reported? One spreadsheet per fund? Should all

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[1] Difference in valuation of TP in local regulatory rules and valuation principles of the consolidating entity of the group.

the assets covering own capital be allocated to the remaining business or should one use another allocation method (e.g. pro rata of respective provisions)?

22.05.07

Answer: Participants are invited to produce a separate spreadsheet for each fund. Assets would be allocated on the most appropriate basis, taking account of the legal structure of the undertaking, any existing regulatory constraints, and the custom and practice of the undertaking.

2. **SCR to be calculated per fund**: Clearly not practical, as dozens of funds can exist on a single insurer. How can we find a more practicable solution?

25.05.07

Answer: For QIS3 purposes, firms for which this separate calculation is overly burdensome are allowed to calculate the SCR for the whole portfolio, i.e. ignoring the fund structure. They are asked to give this information on the qualitative questionnaire, so that CEIOPS is able to measure the practicability of such calculation.

Section 4 - Minimum capital requirement

4. Technical specifications – Annexes

5. Calibration papers

6. Spreadsheets

CEIOPS has released a revised spreadsheet version for QIS3 on 8 May, incorporating many amendments proposed by the participants in the QIS. As specific problems only emerge when actively working with the spreadsheet, further changes will appear to be necessary. Participants will already have started to fill the spreadsheet; therefore providing a new version seems overly burdensome for participants as all data would have to be copied to the

new sheet. CEIOPS therefore provides a patching tool that can be applied to the working version already in use. It can be downloaded from the QIS3 section of the CEIOPS website and should be applied by all participants. It can be applied at any time in the process and several times without causing a problem. Before submitting the result the patch should have been applied by the participant.
Nevertheless, CEIOPS will also keep the downloadable full version of the spreadsheet up to the changes made.

Thus you can
- either download the most recent untouched spreadsheet version or
- apply the patch to an already available and filled older version.

If you find a bug in the spreadsheet, first apply the patching tool to your spreadsheet. If this does not generate the intended fix, please report the problem to CEIOPS.

1. Regarding the various formulae that are used in **tab V.A.4** of the spreadsheet, BSCR_CoC,2 (**L10**) is described as being "without market risk and non reinsurance credit risk" – however both market risk and reinsurance credit risk are included in the matrix used for the calculations. This means that the "mkt and non reins credit grossing factor" in cell L15 will always be equal to 1.

   Answer: There is an error in Cell I10 of Tab V.A.4 which should be set to zero. **FIXED IN NEW SPREADSHEET VERSION 20070508**

2. Also, the operational risk scaling amount (**F16** in **tab V.A.4**) currently uses BSCR_Coc,1 – however since the future SCR's after time 1 are not to include market risk, and the future SCR at time 1 calculations already include the additional market risk scaling amount, we believe that this operational risk grossing factor formula should refer to R10 instead (BSCR_Coc,3).

   Answer: Noted, this is only a Helper tab, but we shall consider this point further.

3. We are not entirely clear about what these calculations from **rows 63-83** in **tab V.A.4** are meant to be doing – if you could provide some more information about the calculations, this would be much appreciated as well. We have read the section in the QIS3 specifications on the calculation of the risk margin.

Answer: We include a copy of a note that you may find useful which explains the rationale for the calculation of the risk margin in Tab V.A.4 (see Annex 1 to this document).

4. In **row 81** in **tab V.A.4**, it appears that all the values for the life risk drivers will be the same - is this intentional? I think this might relate to our question above as to exactly what calculations are performed in this section.

Answer: Line 83 is only utilised to provide additional information premium run-off information for non-life business.

5. Also in **cell D22** in **tab V.A.4**, at the moment the text reads "Premium run-off (Y>1)". Should this read Y=1? The formula refers to calculations that are done at year 1 (in row 83).

Answer: This line is intended to refer to 'Unearned premium run-off', so it will apply for y>1 and not just for Y=1.

6. In the technical specifications on **page 34 [I.3.17]**, the **formula for operational risk** given uses "total life insurance technical provisions" however in the spreadsheet, cell B9 refers to "Life technical provisions (w/o unit linked)". I believe life technical provisions without unit linked were used in earlier versions of the spreadsheet - should this now read "Total life technical provisions"?

Answer: Cell B9 in tab IV.B.1 should read „Total life technical provisions". **FIXED IN NEW SPREADSHEET VERSION 20070508**

7. How should **deferred acquisition costs** be recognised in the Excel file? Should they be included in assets or should they decrease the amount of Insurance liabilities by appropriate amount?

Answer: Reduction of insurance liabilities would be in line with the approach used in tab II.A.1 for completing the current basis or Solvency I summary balance sheet. Deferred acquisition costs should not though arise in the QIS3 calculations of the value of assets and liabilities.

8. Should the sum of **Best Estimates in III.A** be equal to Insurance liabilities in II.A.1 or the sum of Insurance liabilities in II.A.1 and the risk margin?

   Answer: On sheet III.A only the best estimate should be provided, so the figure in the cell D15 should be equal to Insurance liabilities in II.A.1.

9. The description to **Non-hedgeable risks** (line 16, D20, E20 **in III.A**) suggests that this item consists of Best Estimate and Risk Margin. On the other hand, we understand that the line 10 (cells D13, E13 in III.A) consist just Best Estimate. Thus, is the sum of line 15 and 16 in III.A equal to line 10 (D13, E13) in III.A?

   Answer: The risk margin for non-hedgeable risks should appear on lines 6, 22, and 42 of Tab II.A.3 Activity summary. Accordingly, the sum of line 15 and line 16 on Tab III.A should equal line 10 on that Tab.

10. Is the **breakdown of Insurance liabilities** in line 10 (D13, E13) to lines 11 – 14 (D14-D17, E14-E17, **III.A**) essential?

    Answer: The information therein is not essential to the calculations in the spreadsheet. However, we appreciate if these cells can be filled.

11. In **II.A.1 cell I29** (referring to J30 and J31) contains the heading **"% of assets included"**. However, it is clear from the description that it is anything excluded that should be reported, especially if greater than 5%, so the heading should be "% of assets excluded".

    25.05.07

    Answer: Participants are advised to follow the nomenclature of the spreadsheets and the spreadsheet instructions.

12. In **sheet IV.A.1**, there s a slight problem currently with the **formulae on row 12**. For example, assume that the risk mitigating effects of profit sharing completely negate the Property shock in D25. The correct entry then for D26 is zero. However, F12 will then return zero instead of (D25-0), negating the profit absorbing effect. This is easily countered by either entering 0.01 in D26 or overwriting F12's

formula, but the issue might be missed by some participants. The same thing occurs throughout row 12.

25.05.07

Answer: This bug is fixed by spreadsheet patch version 20070523.

13. **IV.B.3** Instructions for **J19** say input a calculation result. However, the **cell is protected** but empty so this is impossible. Also, it seems that the necessity for inputting a result here (instead of having the required min(max) formula is in case there are for than one fund with different relationships of (TPwp-TPsurrender) vs. TPbenefits. However, couldn't that also be the case for different policies within the same fund, so the requirement should perhaps be to do this calculation at policy level.

25.05.07

Answer: This bug is fixed by spreadsheet patch version 20070523.

14. In **V.A.4 (helper tab)**, the **allocation of the CoC result** across cells I32-L32 seems incomplete if there is no Disability business. This is because the non-lapse CAT risk result is spread according to the disability result, but not spread if there is no disability at all. However, the result arises from the sums payable on disability or death (spreadsheet instruction IV.A.3 for cell D19 and Technical Specification I.3.176) so the spread could be attributed to some combined effect of mortality and disability not just disability.

25.05.07

Answer: This bug is fixed by spreadsheet patch version 20070523.

15. In **V.C.2**, the **description for cells L12 and L20** says "risk mitigating effects of FPS", but the corresponding entry in the Instruction document says "enter the change in NAV…taking into account the risk mitigating etc." These are directly contradictory instructions.

25.05.07

Answer: Participants are advised to follow the nomenclature of the spreadsheets.

16. In **V.C.2** the **result in cell J33** is insensitive to entries in L11etc. and returns the usual Market Risk SCR result. I think this is because J33 uses the vector of market risks Mkt.Components (refers to cells D5:I5 in IV.A.1 instead of using D33:I33 in V.C.2 which appears to be unnamed.

<div align="right">**25.05.07**</div>

Answer: This bug is fixed by spreadsheet patch version 20070523.

17. **Cell B5 of Tab V.B.1 - Concentration Risk**: We noticed that this formula, that calculates the capital charge for concentration risk, only works if K15 is different from zero. The problem may arise if the first exposure entered by the undertaking does not exceeds the defined thresholds (K15 will be zero), as this will return a zero capital charge, no matter what we enter in rows 16 and below.

<div align="right">**25.05.07**</div>

Answer: This bug is fixed by spreadsheet patch version 20070523.

18. Regarding the patching tool and the new spreadsheet version (23.5.2007), we would like to inform you that, only for the equity risk (cell E12), the **row 12 in the Tab IV.A.1** is not correct. In fact the old version was

IF(F22;MAX(F19-F22;0);0)

whereas now is

IF(ISNUMBER(F22);MAX(F22-F19;0);0)

therefore we believe that you have inverted the cells in the new formula.

<div align="right">**01.06.07**</div>

Answer: This bug is fixed by spreadsheet patch version 20070604.

19. We would like to clarify why is there a **different treatment of deferred acquisition costs between Life and Non-Life calculations** in the spreadsheets (**III.A and III.C**). Is it deliberate (and why?), or some kind of error in the formulas?

In both cases, the spreadsheet instructions state that values to be entered for Provision for Unearned Premiums (cell D5 in III.A and F.5

in III.C) should be the value consistent with item C1 of the insurance accounts directive 91/647/EEC. In our view, this means that the value to be entered is gross of Deferred Acquisition Costs, for both life and non-life (III.A and III.C)

Deferred acquisition costs are then entered in cells D12 (III.A) and F12 (III.C), consistent with item G of the referred directive. This means that, in our view, both values should be positive, although there is a "minus" sign in cell B12 of III.A sheets that puzzles us...

But the main problem (from our point of view) is that formulas used to calculate the "total value current bases" are not consistent in both cases. In III.A, the value of deferred acquisition costs is subtracted in the calculation (we agree with this), but that same value is ignored in III.C calculations.

Is this correct, considering that our previous assumptions are also correct (provision is gross of deferred acquisition costs and these costs are entered as positive values)?

01.06.07

Answer: In some countries, the surrender value of a life insurance contract is net of deferred acquisition costs. So the current existing net commitment in life is net of deferred acquisition costs. For the sake of comparability between current bases and QIS3 bases, this item should be deducted from the TP current bases in these countries. In non-life, the guarantee/commitment to policyholders cannot be reduced based on the existence of some deferred acquisition costs.
National supervisors can adjust the relevant formula to allow for national discrepancies in the current regime.

20. **Tab III.C.13**: We are required to split out lines 1 to 12 into Direct business and Proportional reinsurance business - how should we classify **Non proportional reinsurance business** - ie in direct column or proportional column?

01.06.07

Answer: The direct and proportional reinsurance written should be in III.C.1-12, so that III.C.13-15 contain only the non-proportional business. We suggest you use the direct insurance column in these tabs.

21. In the sheet **II.A.2. Eligible elements**, what is the difference between the item **"Net assets and liabilities valuation"** which is included in Tier 1 capital, and **"Basic own funds"** of sheet II.A.1.

Balance sheets? It seems to us that Tier 1 capital is part of Basic own funds but at the same time Basic own funds = Net Asset valuation.

Answer: The item named 'Net assets and liabilities valuation' in Cell E19 of Tab II.A.2 is described in the spreadsheet instructions document. Essentially, it is meant to represent the sum of the increase in the value of assets less any increase in the value of liabilities, between the current Solvency I basis and QIS3.

22. In the sheet **V.A.4**. **CoC Risk margin**, the calculation of Total CoC RM in cell H27 makes reference to BSCR CoC3 (cell R10). Why is no separate calculation of Total CoC RM made with also reference to BSCR CoC1 and BSCR CoC2? Is **BSCR CoC3** the **default choice** of CEIOPS?

Answer: The calculation of the risk margin in Tab V.A.4 follows the methodology set out in Part 1 of the specification. Therefore, the figures for BSCR CoC1 and BSCR CoC2 are only relevant to the calculation of the projected SCR for year 1, and these are incorporated in the figures in Row 81 of this Tab (through Cell L15 and implicitly through the ratio of figures in rows 71 and 73).

23. In the sheet **IV.C.2**. **Group solo inputs**, what is meant by **SCR floor1** (cell K6) and **SCR floor 2** (cell L6)? Is this the same as MCR1 (cell K15) and MCR2 (cell L15) except that these are for the solo entity results?

Answer: These are the floors indicated by paragraph I.6.12 of the specification. The figure in Cells K17 and L17 should be the sum of the MCR's for each solo firm within the group (based on Alternative approach 1 and Alternative approach 2 for the MCR respectively).

7. Spreadsheet Instructions

1. **Instruction for II.A.1 E7** refers to unit-linked liabilities but E7 is actually for insurance liabilities. Similarly, the instruction for E8 has the opposite error. Similar mistaken descriptions occur in E15 and E16.

   Answer: Participants are advised to follow the nomenclature of the spreadsheets. The instructions are wrong in this respect. However it is not planned to update this document.

2. **IV.A.3 Instructions** for E48-E52 should be for F48-F52.

   Answer: Noted. The instructions are wrong in this respect. However it is not planned to update this document.

3. **IV.B.3 Spreadsheet instructions** for D57 require net administrative expenses to be input but cell B57 and the Technical Specification in I.5.30 require this to be Technical Provisions. This change in the Errata was missed for the Spreadsheet instructions.

   Answer: The instructions are wrong in this respect. However it is not planned to update this document.

4. Regarding the Eligible elements, in the **Spreadsheet instructions** (Spreadsheet **Tab II.A.1 cell ref. E22**) we agreed that the firms have to exclude also the value of all subordinated loans. Nevertheless always in the Spreadsheet instructions (Spreadsheet Tab II.A.2 cell ref. E18) we decided that the total figure shown here should be regarded as the balancing item to ensure that the total of Cells E16-E21 and F21-F24 (it is not clear because the cell F21 is dark) and G34-G35 equals Cell E22 in Tab II.A.1. How do the undertakings get this equals if in the first instruction we have decided that the firms have to exclude the value of all subordinated loans whereas in the second instruction the subordinated liabilities are included (Tab II.A.2 - cell E21)?

   Answer: The instruction for Cell E18 in Tab II.A.2 is indeed incorrect and should be revised to read: "The total figure shown here should be

regarded as the balancing item to ensure that the total of Cells E16-E19 of this Tab equals Cell E22 in Tab II.A.1".

8. Term structures

9. Qualitative questionnaires

Annex 1

The rationale for Calculation of Risk Margin in QIS3 Spreadsheet (tab V.A.4)

The methodology for the calculation of the Cost-of-Capital risk margin is described in paragraphs I.1.39 – I.1.72 of the specification.

A key part of this calculation are the SCR components for life underwriting risk, non-life underwriting reserve risk and reinsurance counterparty risk. The relevant components of the SCR at Time 0 for each of these risks can be found at Cells F71 – M71, N6 – AB66, and P10 respectively; ie these cells contain the SCR calculated for the entire business for each of these components, before any allowance for diversification.

A second key part of the calculation is the projection of the best estimate provisions (or other relevant risk drivers) from year 2 onwards, as a proportion of the best estimate provision at Time 0. These proportions are input at Cells F88 – AB136.

A third key part of the calculation is the addition for market risk, other non-reinsurance credit risks, and non-life premium risk, which are included in the SCR for year 1.

(i)   The additions in year 1 for market risk, and other credit risks are calculated from the figures for the relevant SCR components at time 0 as shown in Cells C10, D10 and F15.

(ii) The adjustments in year 1 for premium risk (as required by paragraph I.1.45 of the specification) are derived from the calculations for the combined premium and reserve risk SCR component for each line of business in Cells N71 – AB71.

A fourth assumption is that the UPR for non-life business will have an SCR associated with it from Year 2 onwards based on the reserve volatility (ie the combined risk margins for UPR and claim provisions can be derived by rationing the SCR for reserve risk by (UPR_0 + $\{Claim\ Provisions\}_0$) / $\{Claim\ Provisions\}_0$). In addition, the projected run-off pattern for best estimate non-life provisions should take account of both UPR and claim

provisions. The relevant calculation in respect of the UPR risk margin (for Years 2 onwards) is shown at Cells E83 – AB83.

The risk margin for all lines of business together, and with no allowance for any diversification between non-life lines of business, or between life underwriting risk sub-components, can then be derived from the calculations at Cells E81 – E86 and H27, which are based on the above underlying assumptions, along with an addition for operational risk based on the overall SCR operational risk component.

The allocation of the risk margin to individual lines of business is then shown at Row 32.

(1) For non-life business, the allocation is proportional to the reserve risk for each line of business.

(2) For life business, the allocation between each class of business (as shown in paragraph I.1.73 of the specification) assumes that mortality risk is apportioned by the size of provisions in each class of business for 'death' policies, longevity risk is apportioned by the size of provisions in each class of business for survivor policies, disability risk and non-lapse cat risk are apportioned by the size of provisions in each class of business for disability policies, lapse risk is apportioned by the size of provisions in each class of business for savings policies', lapse cat risk is all apportioned to linked policies; and expense risk is allocated uniformly across all life policies by size of provision.

Annex 2

QIS3 application to groups – Input data required to complete the spreadsheet including Key Data items to be provided

This note is to be read in conjunction with the set of instructions provided by CEIOPS for completion of the spreadsheet and the QIS3 specification document.

The relevant input data should be entered into the cells that are coloured blue in the spreadsheet.

Step 1

Please complete Rows 4 – 10 of Tab I.A.2 with information about the number of entities within the group, and the number of countries in which these operate; and Rows 13 – 24 of this Tab with the revenues (ie premium income receivable in the last financial year for insurance activities), insurance provisions (on the current reporting basis for the accounts), value of investments relating to insurance activities, and total balance sheet amount (ie the total value of assets) for the group as a whole.

Step 2

Please calculate the best estimate provisions, the risk margin, MCR, SCR, and eligible elements of capital, for each solo entity included within the group (following the steps in Part 1 of this guide and/or on an approximate basis, if need be, for relatively smaller parts of the group). The relevant totals should then appear on Tab IV.C.1 Group output.

Copy (and paste special 'values') the numbers from Tab IV.C.1 Group output for each solo entity to Rows 18 etc on Tab IV.C.2 Group solo inputs.

These are all key figures that are needed for the preparation of the Group calculations.

Step 3

Please calculate the best estimate provisions, the risk margin, eligible elements of capital, MCR, and SCR components for the consolidated group based on consolidated group data (following the steps in Part 1 of this guide). This will show the full potential value of diversification benefits before allowing for restrictions on transferability etc. The relevant totals should then appear on Tab IV.C.1 Group output (and will be transferred automatically to Row 16 of Tab IV.C.2 Group Solo Inputs).

However, if consolidated data are not available, groups are encouraged to complete Tab IV.C.1 of the spreadsheet with "combined data" (paragraph I.6.69). In case that even these data are not reasonably obtainable, Tab IV.C.1 and hence row 16 in Tab IV.C.2 should be left blank. Please make sure that in this latter case, Cell E13 in Tab IV.C.1 contains a "No".

A figure should also then be added in Cell L9 of Tab IV.B.2 SCR and BSCR for your own estimate of the reduction in diversification benefits that would apply as a result of restrictions on transferability (see paragraphs I.6.6 and I.6.69 of the specification).

The key figure of the groups calculation from this step is the assessment of the amount of eligible capital for the group, as shown on Tab II.A.2 Eligible elements. You may find Tab V.B.3 helpful to complete this information about eligible capital. *Note: If it not practicable to calculate group eligible capital, then please enter the eligible elements for capital for the parent company in Tab II.A.2 Eligible elements.*

The remaining figures will though be relevant to an assessment of an alternative calculation of the Group SCR, allowing for full diversification benefits, and based on consolidated group data.

Overall, one spreadsheet for each solo entity plus a spreadsheet for the consolidated data, i.e. as if the different EEA entities were one, have to be filled out. In practice that means that a group consisting of two EEA subsidiaries and one operative EEA parent insurance company has to fill out four spreadsheets, i.e. one for each entity and one for the consolidated group ("group as if solo"). In case of a holding company structure, only three spreadsheets (two subsidiaries, plus group as if solo) have to be filled out because the holding company cannot provide relevant data. As explained in step 2 above, the numbers from Tab IV.C.1 Group output for each solo entity are to be copied to Rows 18 etc. on Tab IV.C.2 Group solo inputs of the spread sheet of the consolidated group ("as if solo"). Otherwise, row 16 (group as an EEA solo entity) in Tab IV.C.2 would refer to the wrong data, e.g. a subsidiary instead of the consolidated group.

Step 4

Please calculate the SCR components for market risk, separately for the life, non-life and health[2] group entities respectively, as explained in

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[2] if applicable

paragraphs I.6.53 to I.6.56 of the specification, and enter these figures in Cells AK13 to BB13 of Tab IV.C.1 Group output (as explained in the spreadsheet instructions).

Please calculate the SCR non-life underwriting risk as described in paragraphs I.6.38 to I.6.42 of the specification, and enter these figures in Cells U8 and AA8 to AB8 of Tab IV.C.2 Group solo inputs (as explained in the spreadsheet instructions). Enter the overall CoC risk margin in Z8.

Please calculate the SCR component for counterparty default risk as described in paragraph I.6.43 of the specification, and enter this figure in Cell E14 of Tab IV.B.4 Group results.

These are all key figures that are needed for the preparation of the group calculations.

Please enter the results from any internal model calculations for the group as a whole in Row 9 of Tab IV.C.2 Group solo inputs.

Step 5

Please complete the blue cells on Tab IV.B.4 Group results as explained in the spreadsheet instructions for this Tab. **The key figures are those to be entered in Rows 29-35 and in Column H**.

This Tab will then show a summary of the group results.

(a) Cells I6 – K6 show the result of the standard groups calculation for the SCR as proposed by CEIOPS.

(b) Cells D27 – F27 show the result of an alternative groups calculation of the SCR based on consolidated groups data.

(c) Cells D28 – F28 show the results for an SCR based simply on an aggregation of the figures from solo entities (without respect to diversification)

(d) Cells D29 – F29 should show the results for an SCR based on an aggregation of the figures from solo entities, but adjusted to eliminate intra-group transactions.

(e) Cells D32 – F32 show the results of the SCR calculation based on internal model results

(f) Cells D35 – F35 show the present Solvency I figures for comparison.

(g) Cells I28 – J28 show a comparison of available capital with a Group MCR based on consolidated data (and Alternative Approach 1 for market risk).

(h) Cells I29 – J29 show a comparison of available capital with a Group MCR based on consolidated data (and Alternative Approach 2 for market risk)

(i) Cell I31 shows the aggregation of Solo MCR's based on the Alternative 1 approach for market risk.

(j) Cell I32 shows the aggregation of Solo MCR's based on the Alternative 2 approach for market risk.

(k) Cells I30 – J30 show a comparison of available capital with the sum of Solo MCR's based on Alternative Approach 1 for market risk, but adjusted to eliminate intra-group transactions.

(l) Cells I30 – J30 show a comparison of available capital with the sum of Solo MCR's based on Alternative Approach 2 for market risk, but adjusted to eliminate intra-group transactions.

Step 6

Please complete Tab I.A.4 Group questions with the answers to questions Q.G.6, and Q.G.35 in the Groups questionnaire.

Annex 3

A short layout of Composite Insurance Companies' approach to completing QIS3

The QIS specifications set out two possible ways for composite insurance companies to use the spreadsheets provided by CEIOPS:

1. the **default method** is filling it in 'as if solo', that is using the total company figures and enter them in the respective solo sheets

2. the **alternative method**, which is more demanding but also more rewarding in terms of interpreting the output is using the spreadsheets 'as if a group'

CEIOPS will be grateful for voluntary submissions following the alternative second method; some supervisory authorities (e.g. Austria) even recommend the use of the latter method, because they see merit in the possibility to better understand the effects and peculiarities of the QIS3-framework for this specific group of companies.

The following **description** is aiming to clarify the way to use the spreadsheets when filling them in according to the second, **alternative method**.

For making the explanation easier to comprehend, a sample insurance group structure is introduced, which will be referred to in the following:
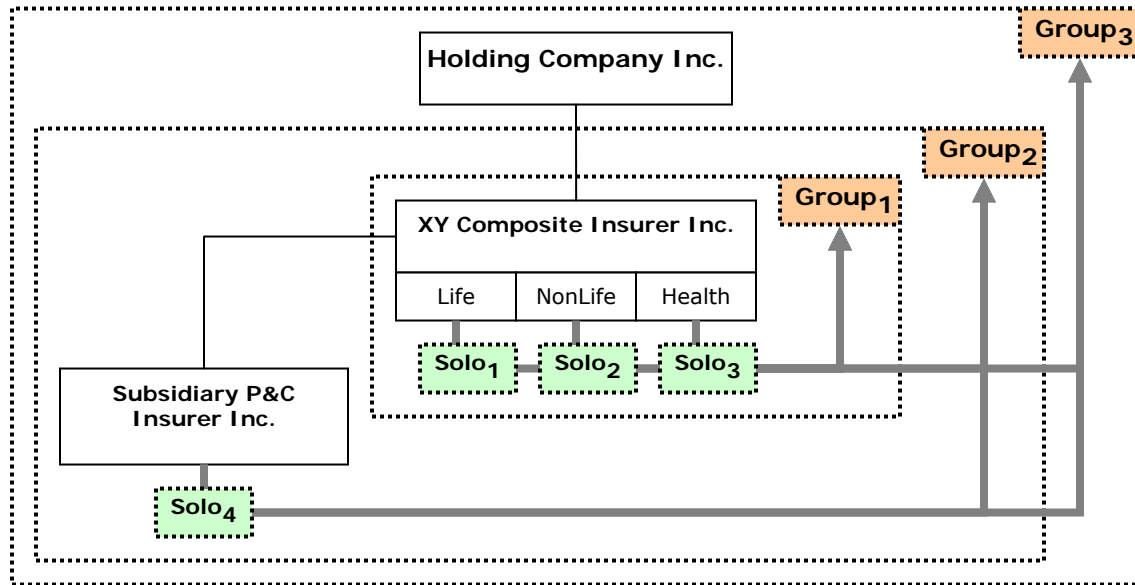
Figure: Illustrative group structure with composite insurer

The figure contains coloured boxes which symbolise the completion of one QIS3 Excel spreadsheet each.

- The green boxes represent QIS3 reports on a solo basis, which means that cell D9 in table I.A.1 of the spreadsheet is switched to 'legal entity'.

- The orange boxes represent QIS3 reports on a group basis, which means that cell D9 in table I.A.1 of the spreadsheet is switched to 'group basis'. For completing the group information, the respective basis of consolidation is framed.

This sample structure consists of a composite insurer '*XY Composite Insurer Inc.*' running all three activities:

- Life business

- Non-life business

- Health business

The three sub-boxes in the figure named 'life', 'non-life' and 'health' symbolise the three balance sheet compartments of the composite insurer .

Of course, any combination of two activities (instead of three) is to be handled correspondingly.

Further, this composite insurer has a subsidiary '*Subsidiary P&C Insurer Inc.*`, running one activity (here: non-life business) only. Of course this subsidiary could itself be a composite insurer; whose individual treatment would then correspond to the one explained for '*XY Composite Insurer Inc.*'.

On top, there is assumed to be a holding company '*Holding Company Inc.*' that holds assets which contribute to the group solvency according to the current Insurance Group Directive. It may thus contribute to the solvency position of the whole group.

The composite insurance company

The composite insurance company, which is to be treated as if it were a group of separate entities, shall complete three spreadsheets $Solo_1$, $Solo_2$, $Solo_3$, one for each balance sheet compartment (life, non-life, health), thus generating three output vectors IV.C.1.

These output vectors IV.C.1 are then copied into a new, fourth spreadsheet, $Group_1$. These vectors cover row 18 – 20 (for the three "artificial subsidiaries") in tab IV.C.2 of the $Group_1$ spreadsheet. This fourth spreadsheet shall further be filled with all the 'consolidated' data of the composite insurance company, thus yielding the 'as if solo' result for comparison, i.e. the result it might have reached given the segregation of activities were not obligatory. Any free assets not a priori attributable to any of the three balance sheet compartments shall be included in the 'group' consolidated data.

These four spreadsheets - $Solo_1$, $Solo_2$, $Solo_3$, $Group_1$ - shall then be sent to the supervisor responsible for solo supervision of the composite insurance company, marking them in a way that makes the attribution of the solo spreadsheets to the composite easy (e.g naming the notional solo entity e.g. '*XY Composite Insurer Inc., Life*' in I.A.1 cell D5. The $Group_1$ spreadsheet will then have the entry '*XY Composite Insurer Inc.*' in I.A.1 cell D5.

NB: The default method 1. will result in the $Group_1$ 'as if solo' part, without any group input vectors and group calculation used.

The additional subsidiary ('Subsidiary P&C Insurer Inc.')

First of all, the subsidiary completes a spreadsheet for its own business – $Solo_4$ – which it will send to its responsible supervisor. In this spreadsheet, cell D5 in I.A.1 will state '*XY Composite Insurer Inc.*' as the group name (unless there is a holding company on top, which is subject to group supervision and shall therefore deliver the group result). This solo spreadsheet will yield an output vector IV.C.1.

Now the group has to fill in a new group spreadsheet $Group_2$, which contains the first 'real' group calculation. The solo output vectors from each segregated activity $Solo_1$, $Solo_2$, $Solo_3$ from '*XY Composite Insurer Inc.*' plus the solo output vector from $Solo_4$ are taken as group solo input in tab IV.C.2 of group spreadsheet $Group_2$ (row 18 to 21 in tab IV.C.2).

If group spreadsheet $Group_1$ and the 'as if solo' output vector which it produces itself is used as an input to $Group_2$, then the group correlation matrix will not yield as favourable a result as when imputing all separate solo vectors.

Filling the consolidated composite + subsidiary data into the 'solo-parts' of $Group_2$ will then yield the 'group as if solo' result needed for assessing the QIS3 group calculation method.

The resulting $Group_2$ spreadsheet shall be submitted to the relevant group supervisor.

The free assets not a priori attributable to any of the three main activities in the composite shall, again, be included in the group consolidated data.

A holding company on top ('Holding Company Inc.')

Some participants in QIS3 will have to include a holding company into its calculations. This is easy, as it does not write any own business but only supports the capital basis of the group. Therefore, it will produce a spreadsheet $Group_3$ which will be filled with input from $Solo_1$, $Solo_2$, $Solo_3$, and $Solo_4$. The changes will mainly occur on the capital and asset tables.

The resulting Group$_3$ spreadsheet shall be submitted to the relevant group supervisor.