

Final Report

on

Public Consultation No. 14/036 on

Guidelines on

application of outwards reinsurance

arrangements to the non-life

underwriting risk sub-module

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1. Executive summary

Introduction

According to Article 16 of Regulation (EU) No 1094/2010 (EIOPA Regulation) EIOPA may issue guidelines addressed to National Competent Authorities (NCAs) or financial institutions.

According to Article 16 of the EIOPA Regulation, EIOPA shall, where appropriate, conduct open public consultations and analyse the potential costs and benefits. In addition, EIOPA shall request the opinion of the Insurance and Reinsurance Stakeholder Group (IRSG) referred to in Article 37 of the EIOPA Regulation.

According to Article 105(2) of Directive 2009/138/EC¹ (Solvency II Directive) and according to Article 119 to Article 135, Article 208 and Article 214 of the Implementing Measures², EIOPA has developed guidelines to ensure a common, uniform and consistent application of the undertaking's outwards reinsurance arrangements in relation to the non-life catastrophe risk sub-module.

As a result of the above, on 2 June 2014 EIOPA launched a Public Consultation on the draft guidelines on the application of outwards reinsurance arrangements to the non-life catastrophe risk sub-module. The Consultation Paper is also published on EIOPA's website³.

These guidelines were issued to NCAs to:

- Ensure a common, uniform and consistent application of the undertaking's outwards reinsurance arrangements in relation to the non-life catastrophe risk sub-module;
- Make reference to the "flowchart for the non-life underwriting risk" which represents the different sub-modules that compose the non-life catastrophe risk sub-module of the solvency capital requirement standard formula, according to the Implementing Measures.

Content

This Final Report includes the feedback statement to the consultation paper (EIOPA-CP-14/036) and the Guidelines. The Impact Assessment and cost and benefit analysis, and the Resolution of comments are published on EIOPA'S website⁴.

Next steps

¹ OJ L 335, 17.12.2009, p. 1–155

² As published by the European Commission on 10 October 2014:

http://ec.europa.eu/internal_market/insurance/docs/solvency/solvency2/delegated/141010-delegated-act-solvency-2_en.pdf

^{3 4} <https://eiopa.europa.eu/consultations/consultation-papers/2014-closed-consultations/june-2014/public-consultation-on-the-set-1-of-the-solvency-ii-guidelines/index.html>

In accordance with Article 16 of the EIOPA Regulation, within 2 months of the issuance of these guidelines, each competent authority shall confirm if it complies or intends to comply with these guidelines. In the event that a competent authority does not comply or does not intend to comply, it shall inform EIOPA, stating the reasons for non-compliance.

EIOPA will publish the fact that a competent authority does not comply or does not intend to comply with these guidelines. The reasons for non-compliance may also be decided on a case-by-case basis to be published by EIOPA. The competent authority will receive advanced notice of such publication.

EIOPA will, in its annual report, inform the European Parliament, the Council and the European Commission of the guidelines issued, stating which competent authority has not complied with them, and outlining how EIOPA intends to ensure that concerned competent authorities follow its guidelines in the future.

2. Feedback statement

Introduction

EIOPA would like to thank the Insurance and Reinsurance Stakeholder Group (IRSG) and all the participants to the Public Consultation for their comments on the draft guidelines. The responses received have provided important guidance to EIOPA in preparing a final version of these guidelines. All of the comments made were given careful consideration by EIOPA. A summary of the main comments received and EIOPA's response to them can be found in the sections below. The full list of all the comments provided and EIOPA's responses to them is published on EIOPA's website.

General comments

During the public consultation on the proposal for guidelines, a total of 44 comments were received on the non-life catastrophe risk sub-module. Most of the comments proposed drafting suggestions to the guidelines to make the meaning clearer and the feedback from stakeholders welcomed the spreadsheet examples which were available on the EIOPA website. A common voice from stakeholders is to include more examples within the guidelines and/or to move explanatory text to the guidelines which may be difficult to interpret separately.

As part of the EIOPA review, no fundamental changes were made which would alter the content of the guidelines. The changes made in response of the comments are mainly of editorial nature. Whilst it is considered that worked examples were useful, these cannot be included as part of the guidelines due to the legal nature of the EIOPA guidelines.

Where suggestions were made to include elements of the explanatory text within the guideline, these were carefully considered by EIOPA. Where possible the relevant explanatory text was added to the guideline. In most cases the explanatory text provided non-exhaustive list of examples have not be included as part of the guideline.

General nature of the participants to the Public Consultation

EIOPA received five responses from other stakeholders to the public consultation. All the comments received have been published on EIOPA's website.

Respondents can be classified into two main categories: European trade, insurance, or actuarial associations; and other parties such as consultants and lawyers.

IRSG opinion

The IRSG opinion on the draft set 1 of the Solvency II Guidelines on Pillar 1 and Internal Models, as well as the particular comments on the Guidelines at hand, can be consulted on EIOPA's website⁵.

Comments on the Impact Assessment

A separate Consultation Paper was prepared covering the Impact Assessment for the Set 1 of EIOPA Solvency II Guidelines. Where the need for reviewing the Impact Assessment has arisen following comments on the guidelines, the Impact Assessment Report has been revised accordingly.

The revised Impact Assessment on the Set 1 of EIOPA Solvency II Guidelines can be consulted on EIOPA's website.

⁵ <https://eiopa.europa.eu/about-eiopa/organisation/stakeholder-groups/sgs-opinion-feedback/index.html>

Annex: Guidelines

1. Guidelines on application of outwards reinsurance arrangements to the non-life underwriting risk sub-module

Introduction

- 1.1. According to Article 16 of Regulation (EU) 1094/2010 of 24 November 2010 (hereafter EIOPA Regulation)⁶, Article 105(2) of Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)⁷, Article 119 to Article 135, Article 209 and Article 214 of the Implementing Measures, EIOPA is issuing Guidelines on the non-life catastrophe risk sub-module.
- 1.2. In particular, these Guidelines are intended to ensure a common, uniform and consistent application of the non-life catastrophe risk sub-module, including treatment of undertakings' outwards reinsurance arrangements.
- 1.3. These Guidelines are addressed to supervisory authorities under Solvency II.
- 1.4. The present Guidelines make reference to the "flowchart for the non-life underwriting risk" which represents the different sub-modules that compose the non-life catastrophe risk sub-module of the Solvency Capital Requirement standard formula, according to the Implementing Measures.
- 1.5. For the purpose of these Guidelines, the following definitions have been developed:
 - (a) 'Gross loss' means:
 - i. For risk mitigation being applied in a sub-module which has no dependency on other sub-modules, the loss calculated according to the formula in this sub-module;
 - ii. For risk mitigation being applied in a sub-module which does have a dependency on other sub-module(s), the loss calculated according to the formula in this sub-module but using, as inputs to the formula, the results from each sub-module net of risk mitigation applied (if any) in the sub-modules on which this sub-module depends.
 - (b) 'Aggregating catastrophe event' means a catastrophe event which accumulates and affects a group of policies together. Separate policy impacts cannot be readily identified.
 - (c) 'Risk catastrophe event' means an event which affects policies which can be identified specifically or a single policy.
 - (d) Gross event: specification of the event with the resolution required to be able to apply the outwards reinsurance programme. This is the term applied to the gross loss after disaggregation.

⁶ OJ L 331, 15.12.2010, p. 48–83

⁷ OJ L 335, 17.12.2009, p. 1-155

- (e) Catastrophe sub-module branches: branches of one of the four main non-life catastrophe risk sub-modules described in Article 119 of the Implementing Measures
- (f) Outwards reinsurance/outwards reinsurance protections: reinsurance arrangements where an undertaking cedes risk to a reinsurer.
- (g) Inwards reinstatement premium: any reinstatement premium which may be payable to an undertaking.
- (h) Clash cover: a reinsurance liability excess of loss contract relating to two or more coverages or policies, issued by the undertaking to be involved in a loss for coverage to apply. The attachment point of the reinsurance contract is usually above the limits of any one policy.
- (i) 1 in 200 year catastrophe event: a catastrophe event corresponding to a Value-at-Risk measure with a 99.5% confidence level as defined in Article 104 (4) of Solvency II.
- (j) Component: a self-contained calculation unit of the non-life catastrophe sub-module for which a Solvency Capital Requirement (SCR) can be determined. This may be at sub-module level or lower granularity e.g. region or EEA / non-EEA regions for the natural catastrophe perils.

1.6. If not defined in these Guidelines the terms have the meaning defined in the legal acts referred to in the introduction.

1.7. The Guideline shall apply from 1 April 2015.

Section I: Order of operation of the Guidelines

Guideline 1 – Order of operation of Guidelines

1.8. Undertakings should apply the sections of these Guidelines sequentially to assess their outwards reinsurance in respect of catastrophe risk.

Section II: Specification of events

Guideline 2 – Level of detail required to specify the catastrophic event

1.9. Based on Articles 119 to 135, undertakings should specify appropriate 1 in 200 year catastrophe events in enough detail to be able to apply the risk mitigation techniques.

Guideline 3 – Specification of catastrophes as aggregating catastrophe events or risk catastrophe events

1.10. Undertakings should specify the losses defined in the various catastrophe risk sub-modules as either “aggregating catastrophe events” or “risk catastrophe events” in which case undertakings should also specify whether these events are affecting specific known policies or not.

- 1.11. For each non-life catastrophe risk sub-module, undertakings should specify the type of event as follows:
- (a) Earthquake, windstorm, hail, flood and subsidence sub-modules specified as aggregating catastrophe event.
 - (b) Motor liability sub-module specified as risk catastrophe event affecting a single policy.
 - (c) Liability, Aviation, Marine and Fire sub-modules specified as risk catastrophe event affecting known policies
 - (d) Credit and suretyship sub-module as specified by Guidelines 13 and 14.
 - (e) Non-proportional property reinsurance sub-module as specified by Guideline 11.

Guideline 4 – Specification of number of events for natural catastrophe sub-modules in respect of EEA regions

- 1.12. Undertakings should consider the number of events for EEA regions gross losses as single or double events affecting one or more regions, and not assume that multiple events occur in each region.

Guideline 5 – Specification of number of events for natural catastrophe sub-modules in respect of non-EEA regions

- 1.13. For non-EEA regions where the number of aggregating catastrophe events that generate the gross loss has not been defined, undertakings should follow a similar approach to that applied under Guideline 4, for each specific sub-module.

Guideline 6 – Catastrophe event selection

- 1.14. Where a number of 1 in 200 year catastrophe events can be defined, undertakings should derive events which are consistent with their risk profile and select the event which results in the highest catastrophe charge after the application of the risk mitigation techniques.

Guideline 7– Size of liability losses

- 1.15. To determine the size of the individual claims on which the calculation of the loss in basic own funds according to Article Article 133 of the Implementing Measures is based, undertakings should follow the process below:
- (a) Within each risk group, the n_i risks with the largest limits should be identified. For this purpose a "risk" consists of all policies written as part of a programme with the same or closely affiliated coverage and the same insured policy-holder (where the insured policy-holder is the policy-holder of the insurance contract) that are in force at the same time.
 - (b) The resulting n_i limits should each be multiplied by 1,15.

- (c) The n_i values calculated in (b), should be aggregated and deducted from $L_{(\text{liability}, i)}$ and any difference should be allocated proportionally using the actual limits of the n_i values.
- (d) The final resulting n_i values should be considered as individual claims from a single event, each associated with the risk from which they have been derived.

1.16. Undertakings should then be able to identify for each of the n_i claims which reinsurance covers apply, given the nature of the associated risk.

1.17. Undertakings should be prepared to demonstrate to the supervisory authority that their purchasing of outwards reinsurances has not been materially influenced by whether the risk would be one identified under this process.

Section III: Disaggregating the gross loss

Guideline 8 – Disaggregating the gross loss to individual countries or other components

1.18. Undertakings should use one of the methods specified below to disaggregate the gross loss to individual components where the gross impact on individual policies has not been identified so that outwards reinsurance protections can be applied:

- (a) Max method: The gross loss is allocated to the component which is the largest contributor of the gross loss pre-diversification.
- (b) Spread method: The gross loss is spread across relevant components in proportion to their contribution to the gross loss pre diversification; alternatively an approach using correlation matrices to share the loss may be adopted similar to that proposed for allocating the SCR to Lines of Business.
- (c) Blend method: This method selects the maximum (on the basis of largest net capital charge) of the Max and the Spread methods above.

Guideline 9 – Disaggregating the gross loss for Natural catastrophe sub-modules in relation to EEA scenarios

1.19. Undertakings should use the methods defined below to disaggregate the gross loss for natural catastrophe sub-modules, in relation to EEA scenarios.

1.20. When disaggregating the gross loss to regions, undertakings should use the Blend method for the windstorm and flood risk sub-modules and the Max method to disaggregate the earthquake and hail risk sub-modules.

1.21. When disaggregating the gross loss to business units, companies and lines of business, undertakings should use the Spread method.

1.22. If the undertaking has a risk profile such that the method specified above is not appropriate, the undertaking should select a more suitable approach and justify it to the supervisor.

Guideline 10 – Disaggregating the gross loss for Natural Catastrophes for non-EEA regions

- 1.23. Undertakings should apply to the non EEA regions, methods which are consistent with the methods applied for EEA perils in Guideline 9 to allocate the gross loss.
- 1.24. If the undertaking has a risk profile such that this approach is not appropriate, the undertaking should select a more suitable approach and justify it to the supervisor.

Guideline 11 – Disaggregating the gross loss for Natural Catastrophes for Non-Proportional Property

- 1.25. Undertakings should apply the Max method for the non-proportional property reinsurance sub-module to allocate the loss to a region. Undertakings should then estimate the exposure to the highest peril in this region and the number of events specified as in the relevant aggregating catastrophe event(s) that applies to the underlying contracts. Where two aggregate catastrophe events are defined, this should imply that both events occur within the same region.
- 1.26. If the undertaking has a risk profile such that this approach is not appropriate, the undertaking should select a more suitable approach. This approach should be justified to the supervisor.

Guideline 12 – Specifying the gross loss for man-made sub- modules: motor vehicle, marine, aviation, fire and liability risks

- 1.27. Undertakings should identify the particular policies impacted by the gross liability risk event by applying Guidelines 34 to 39. For the marine, aviation and fire scenarios the undertaking should identify the gross risks affected and hence which reinsurances apply (including per risk excess of loss protections) to the claims.
- 1.28. For motor vehicle liability risk, the undertaking should assume that the risk catastrophe event specified in the Implementing Measures arises from a single loss event. The undertaking should assume that the loss occurs in the region and/or business unit which generates the highest contribution to the gross loss pre diversification.
- 1.29. When applying the risk specific protections the undertaking should be able to satisfy their national supervisor that the purchase of outwards reinsurances has not been materially influenced by whether the risk is one identified as the gross event or a contribution to this gross event.

Guideline 13 – Disaggregating the gross loss for Credit and suretyship- large buyer scenario

- 1.30. In determining the largest credit exposures, undertakings should take account of exposure accumulations to entities within a group.

Guideline 14 – Disaggregating the gross loss for Credit and suretyship recession scenario

1.31. Where undertakings need to allocate the recession gross loss to different territories, industries, product types, or more generally to the respective scope of applicability of the reinsurance arrangement in order to apply their reinsurance protections, they should allocate the gross loss pro-rata based on gross premium volumes.

Section IV: Application of outwards reinsurance

Guideline 15 – Outwards reinsurance applicability

1.32. Undertakings should apply each outwards reinsurance protection to one of the levels specified below:

- (a) different zones within a single region single sub-module branch;
- (b) different regions within a single sub-module branch;
- (c) EEA/non-EEA grouping within a single sub-module; different catastrophe sub-modules branches within a catastrophe sub-module;
- (d) different catastrophe sub-modules e.g. as could be the case for stop-loss and aggregate covers across man-made and natural catastrophe sub-modules.

1.33. Undertakings can also apply line of business and business unit specific coverages.

1.34. Where a reinsurance protection covers other risks not captured by the catastrophe risk sub-module (e.g. a line of business stop loss), the undertaking should allow for these other risks when calculating the benefit of the protection under the catastrophe risk module.

1.35. Undertakings should apply outwards reinsurance consistently with Articles 209 to 214 of the Implementing Measures. Undertakings should ensure there is no double-counting of reinsurance recoveries Article 209 paragraph 1(e) of the Implementing Measures. Undertakings should ensure that the total recovery from risk mitigation methods that is allowed for in their calculation of net losses does not exceed the total amount possible under the terms of their risk transfer programme.

Guideline 16 – Inwards reinstatement premiums

1.36. Undertakings may allow for the receipt of inwards reinstatement premiums where it can be demonstrated to the supervisor that these will be triggered by the gross event specified in the catastrophe sub-module.

1.37. Undertakings should allow within their calculations of the gross loss for the additional exposures to any second or subsequent events that result from this inwards reinstatement premium.

Guideline 17 – Other impacts on basic own funds as a result of the trigger of the outwards reinsurance contract

- 1.38. Undertakings should allow for reinstatement premiums or other additional cash-flows which may result from the trigger of the outwards reinsurance protection.

Guideline 18 – Order of operation of reinsurance protections

- 1.39. Undertakings should apply reinsurance protections in the order specified in their contractual agreements as they apply to the underlying risk

Guideline 19 – Proportional reinsurance

- 1.40. For quota shares, surplus reinsurance and proportional facultative contracts, undertakings should do a pro rata allocation of the gross event across these reinsurance contracts.
- 1.41. Where the undertaking's proportional reinsurance contract is subject to an "event limit" or similar, the gross loss allocated to that contract cannot exceed such limit and any excess should be added back to the "net retained" share of loss.

Guideline 20 – Non-proportional reinsurance per risk

- 1.42. For risk excess of loss and non-proportional facultative contracts, undertakings should only use this non-proportional reinsurance under the standard formula if the gross event allows identification of the known policies of the underlying policies exposed. Guideline 3 specifies the sub-modules where this should be the case.

Guideline 21 – Non-proportional reinsurance per event

- 1.43. Undertakings should only apply non-proportional reinsurance to defined gross events if the loss can be split appropriately.
- 1.44. The undertaking should take due care to allow for less common contract features such as franchises and for part placements or coinsurance.

Guideline 22 – Non-indemnity contracts and Basis Risk

- 1.45. Undertakings should not apply non-indemnity contracts under the standard formula unless it can be demonstrated that the level of basis risk is not material by virtue of the definition of the scenario.

Guideline 23 – Application of aggregate contracts and clash covers

- 1.46. Undertakings should consider at which level to apply the aggregate reinsurance contracts within the calculation of the non-life catastrophe SCR. The choice should be driven by the substance of the risk mitigation mechanism and where reinsurance recoveries are expected if the gross event were to occur.

- 1.47. Where undertakings are estimating reinsurance recoveries from clash contracts they should demonstrate to the supervisor that the contracts would respond to the catastrophe events defined in the standard formula.
- 1.48. Undertakings should ensure that no double counting of reinsurance recoveries occurs and must be able to explain and demonstrate the logic of application to their supervisor.

Guideline 24 – Treatment of shared reinsurance covers

- 1.49. Where shared reinsurance covers exist, the undertaking should follow the principles in Guideline 32.

Guideline 25 – Treatment of outputs from lower aggregation levels

- 1.50. Undertakings should differentiate between reinstatement costs and reinsurance recoveries when aggregating SCRs across the non-life catastrophe sub-modules. If reinsurance at a given level does not apply to this combined amount then it will be necessary to split the costs as appropriate. In this case the spread method should be used.

Guideline 26 – Treatment of other contracts not specified here

- 1.51. Undertakings should apply the principles incorporated in the Guidelines above to other reinsurance contracts or features not explicitly captured here.

Section V: Re-aggregating the net losses

Guideline 27 – Re-aggregating the net losses to derive the SCR for catastrophe risk for the undertaking

- 1.52. Where undertakings have allocated a diversified gross loss to a more granular level (i.e. “the gross event”) in order to estimate their reinsurance recoveries, undertakings should add up the net components to derive the SCR.
- 1.53. Where undertakings have SCR output from different levels of the calculation, undertakings should combine the net components to derive the non-life catastrophe SCR.
- 1.54. Technical Annex I describes how to apply this Guideline.

Section VI: Documentation and Validation

Guideline 28 – Documentation and validation of catastrophe events selected

- 1.55. For the “Other” non-life catastrophe sub-module undertakings should explain the catastrophe events selected to their supervisor within regular supervisory report according to Article 309 (5) (a) of the Implementing Measures. The explanation should contain details of key decision points, discussion of

alternatives which could be selected for these key decision points and rationale for the final selections.

- 1.56. Undertakings should also include details of any challenge that has occurred internally to devise suitable catastrophe events within their documentation.

Guideline 29 – Documentation of disaggregation methodology

- 1.57. Undertakings should document the disaggregation mechanism used in order to apply the reinsurance programme by sub-module. This should include the rationale for the selected approach, discussion of possible alternatives where there are multiple reasonable methods available and the calculations performed in order to achieve the disaggregation.

Guideline 30 – Documentation of netting down and re-aggregation procedures

- 1.58. Undertakings should document the process used to net down the gross event. This includes a description of
- a) the undertaking's reinsurance programme;
 - b) the netting down calculations;
 - c) details of the allocation of any recoveries to the relevant insurance sub-modules;
 - d) details of how the re-aggregation to derive the SCR_{NICAT} was performed.
- 1.59. Undertakings should also demonstrate in their documentation that there is no double counting of reinsurance recoveries assumed.
- 1.60. Where undertakings have assumed adjustable premium features (e.g. inwards and outwards reinstatement premiums), the documentation should justify the methodology and assumptions used to derive these.

Section VII: Particular considerations for solo undertakings which are part of groups

Guideline 31 – Treatment of internal reinsurance arrangements

- 1.61. For solo undertakings, the undertaking should treat outwards reinsurance arrangements which may exist with other group undertakings ("internal reinsurance") in the same way as they would treat arrangements with external third parties.

Guideline 32 – Estimating the reinsurance recovery that would be due to a solo undertaking in respect of a group reinsurance contract for aggregating catastrophe events

- 1.62. When estimating the reinsurance recovery due on an aggregate reinsurance contract, (i.e. a contract which protects against accumulated aggregate losses

from several group undertakings) each solo undertaking should separately follow the steps below:

- (a) Determine the gross 1 in 200 year catastrophe loss for the solo undertaking;
- (b) Determine the gross 1 in 200 year catastrophe loss for the group;
- (c) Estimate reinsurance recoveries on the group reinsurance contract;
- (d) Allocate reinsurance recoveries according to contractual agreements where these exist, otherwise estimate the reinsurance recoveries due to the solo as the ratio of gross losses (a)/(b) multiplied by the amount estimated in (c).

Guideline 33 – Estimating the reinsurance recovery that would be due to a solo undertaking in respect of a group reinsurance contract for risk catastrophe events

1.63. When estimating the reinsurance recovery due on an risk specific contract (i.e. a contract which protects against specific risk(s)) solo undertakings should follow the steps below:

- (a) Determine whether the specific risk(s) triggering the 1 in 200 year loss for the solo is the same as the specific risk(s) triggering the 1 in 200 year loss at the group level;
- (b) If there is some overlap, estimate reinsurance recoveries due to the solo on the group reinsurance contract.

Section VIII: Allocation of Insurance Policies to Liability Risk Groups for the Man-Made Liability Catastrophe Risk Sub-Module

Guideline 34 – Liability Risk Group 1

1.64. Undertakings should, for the liability risk group 1 referred to in Annex XI of the Implementing Measures include the policies for professional malpractice liability insurance which provide coverage to professional practitioners against potential liability claims.

1.65. Undertakings should include in this risk group a range of liability products including:

- (a) Medical malpractice liability insurance including specialist or general practitioners, hospitals and other healthcare providers when they bear medical malpractice liability;
- (b) Errors and omissions (E&O) or professional indemnity insurance or other malpractice policies where there are third parties to whom the insured owes a duty of care;
- (c) Coverage for failure to perform and associated financial loss arising from the services provided by a company;

- (d) Coverage for breach of warranty or intellectual property;
- (e) Coverage for all bodily injury liability or property damage (whether material or financial) and the associated damages and defence costs insurance resulting from errors or negligence of a professional in the course of its activity.

Guideline 35 - Liability Risk Group 2

- 1.66. Undertakings should, for the liability risk group 2 referred to in Annex XI of the Implementing Measures include the policies for employers' liability which provide coverage for any liability that might be imposed on an employer if an employee is injured in the course of his or her employment.
- 1.67. Undertakings should include in this risk group obligations which cover:
- (a) The provision of preventive or curative medical treatment or care relating to accident at work, industrial injury or occupational diseases;
 - (b) Financial compensation for such treatment;
 - (c) Financial compensation for accident at work, industrial injury or occupational diseases.

Guideline - 36 Liability Risk Group 3

- 1.68. Undertakings should, for the liability risk group 3 referred to in Annex XI of the Implementing Measures include the policies for directors and officers liability insurance which provide coverage for liability and defence costs to the directors and officers of a company, or to the organization(s) itself, in the event they suffer losses as a result of a lawsuit for alleged wrongful acts while acting in their capacity as directors and officers for the organization, including the coverage of defence costs arising out of criminal and regulatory investigations and/or trials.
- 1.69. Undertakings should include in this risk group the policies for management liability and employment practice liability.

Guideline 37 - Liability Risk Group 4

- 1.70. Undertakings should, for the liability risk group 4 referred to in Annex XI of the Implementing Measures include the policies which cover all liabilities arising from negligent acts and/or omissions resulting in bodily injury and/or property damage to third parties other than:
- (a) Those included in motor vehicle liability and marine, aviation and transport
 - (b) Those included in liability risk groups 1,2,3 and 5 of Annex XI of the Implementing Measures;

- (c) Third party liability coverage provided to individual householders, individuals in a private capacity (including when hunting) and self-employed crafts-persons or 'artisans';
- (d) Third party liability coverage provided in respect of damage or injury caused by domestic pets.

Guideline 38 - Liability Risk Group 5

1.71. Undertakings should, for the liability risk group 5 referred to in Annex XI of the Implementing Measures include non-proportional reinsurance policies for all liability risk groups defined in that Annex.

Guideline 39 - Allocation and Unbundling

1.72. Where insurance or proportional reinsurance of liability are sold on a packaged basis, including covers that fall into more than one of the above risk groups, undertakings should unbundle and allocate the premiums for each cover to the most appropriate risk group for that cover.

1.73. Undertakings should be able to provide supporting evidence and rationale for such allocations.

1.74. Undertakings should apply proportionality considerations when applying the unbundling guidance above.

Section IX – Particular considerations for the group calculation

Guideline 40 – Deeming of reinsurance

1.75. Where the intra-group reinsurance inures to the benefit of any of an undertaking's external reinsurance, the participating undertaking should 'deem' the internal reinsurance in place for the purpose of calculating the impact of the external reinsurance.

Compliance and Reporting Rules

- 1.76. This document contains Guidelines issued under Article 16 of the EIOPA Regulation. In accordance with Article 16(3) of the EIOPA Regulation, national competent authorities shall make every effort to comply with guidelines and recommendations.
- 1.77. Competent authorities that comply or intend to comply with these Guidelines should incorporate them into their regulatory or supervisory framework in an appropriate manner.
- 1.78. Competent authorities shall confirm to EIOPA whether they comply or intend to comply with these Guidelines, with reasons for non-compliance, within two months after the issuance of the translated versions.
- 1.79. In the absence of a response by this deadline, competent authorities will be considered as non-compliant to the reporting and reported as such.

Final Provision on Reviews

- 1.80. The present Guidelines shall be subject to a review by EIOPA.

Technical Annex I: working of the disaggregation or re-aggregation approaches

This annex describes how to apply Section V and more generally how the disaggregation/re-aggregation approaches are working in order to apply a relevant and consistent approach for the different reinsurance covers within the non-life catastrophe sub-module. 2 methods are shown and the undertaking will need to establish which of these are most suitable

Principle behind method 0:

When estimating reinsurance recoveries from aggregate covers using Method 0, the undertaking applies the joint cover to the output from each sub-module separately and ensures the reinsurance recoveries assumed are within the policy limits

Principle behind method 1:

When estimating reinsurance recoveries from aggregate covers using method 1, undertakings should identify the most granular component (or earliest common ancestor) within the flowchart for non-life underwriting risk which spans the relevant sub-modules.

- (a) For an aggregate cover protecting against wind and hail losses, this component would be Nat Cat;
- (b) For an aggregate cover protecting against wind and motor losses, this component would be NL Cat.

The next step is to work out the gross diversified loss for this component or common ancestor and then allocate back to more granular components in order to apply the aggregate cover. The resulting components are then combined to calculate the $SCR_{NL\ cat}$.

1) Windstorm – reinsurance at country(/region) level - EEA

- (a) Calculate gross diversified loss at EEA level taking into account diversification effects between countries/regions;
- (b) Allocate back (disaggregation according to GL 7) to country level within EEA (gross country but EEA diversified);
- (c) Apply country-level reinsurance cover to gross diversified EEA country loss;
- (d) Add up net diversified country components to get SCR_{wind} net of country level reinsurance cover.

2) Windstorm (EEA and non EEA) - reinsurance at country/region level for EEA and non EEA and reinsurance aggregate cover (all territories)

- (a) Steps in (1) for country level reinsurance cover within EEA;
- (b) Steps in (1) for country level reinsurance cover within non EEA (substituting non EEA for EEA and substituting GL8 for GL7);

- (c) Calculate gross diversified loss at peril windstorm level (net of country level reinsurance covers and taking into account diversification effects between EEA and non EEA);
- (d) Apply EEA and non EEA aggregate reinsurance cover to obtain net SCR_{wind} (net of both country level and EEA/nonEEA reinsurance covers).

3) Windstorm – reinsurance at country level followed by aggregate reinsurance of Windstorm and Hail.

It would typically be expected that the method below to be used for the joint wind hail cover.

Method 1

- (a) Do steps in (2) (steps in (1) sufficient if no EEA/non-EEA aggregate cover) for windstorm and hail separately to get net SCR_{wind} and net SCR_{hail} (net of country level reinsurance covers);
- (b) Calculate diversified loss at Nat Cat level (net of country level cover taking into account diversification effects between all Nat Cat sub-modules but of aggregate reinsurance cover);
- (c) Allocate back to wind and hail sub-modules (probably spread) to obtain SCR_{wind}^* and SCR_{hail}^* (net of country level reinsurance covers but Nat Cat diversified);
- (d) Apply aggregate reinsurance cover across net SCR_{wind}^* and net SCR_{hail}^* to obtain net $SCR_{windhail}$ (net of both country level and aggregate Windstorm and hail reinsurance covers);
- (e) Add net $SCR_{windhail} + net\ SCR_{earthquake} + net\ SCR_{flood} + net\ SCR_{subsidence}$ to get net SCR_{natcat} (net of both country level and aggregate Windstorm and hail reinsurance covers).

Method 0 – (not expected to be used, but a description of the method is shown below):

- (a) Do steps in (2) for windstorm and hail separately to get net SCR_{wind} and net SCR_{hail} ;
- (b) Apply the joint cover separately to wind and hail sub-modules;
- (c) Diversify all the natural catastrophe sub-modules to generate net SCR_{natcat} ;
- (d) Check that net SCR_{natcat} does not generate recoveries on the joint reinsurance cover that are greater than the maximum permissible;
- (e) If this is the case, method 1 has to be used.

4) Reinsurance at country level for windstorm and risk specific for motor, followed by Aggregate Cover windstorm and motor TPL.

As above, we would expect method 1 to be used.

Method 1

- (a) Windstorm steps in (2) (steps in (1) sufficient if no EEA/non EEA aggregate cover) to get SCR_{wind} (net of country level reinsurance covers);
- (b) Apply Motor TPL specific reinsurance cover to get SCR_{motor} (net of risk specific reinsurance cover);

- (c) Calculate diversified loss at SCR_{natcat} and $SCR_{man-made}$ level (net of country level reinsurance cover within Windstorm and net of motor TPL risk specific reinsurance cover) using outputs from other sub-modules of SCR_{natcat} and $SCR_{man-made}$;
- (d) Calculate diversified loss at SCR_{cat} level taking into account diversification effects between SCR_{natcat} and $SCR_{man-made}$ (net of country level reinsurance covers and motor risk specific reinsurance cover but gross of aggregate windstorm and motor reinsurance cover) and allocate back (disaggregation with spread method) to SCR_{natcat}^* and $SCR_{man-made}^*$ and back again to SCR_{wind}^* and SCR_{motor}^* (net of country level Windstorm and motor TPL specific reinsurance but SCR_{cat} diversified);
- (e) Apply aggregate windstorm and motor TPL reinsurance cover to get net $SCR_{windmotor}$;
- (f) $SCR_{cat} \text{ (after aggregate cover)} = SCR_{cat} \text{ (before aggregate cover)} - SCR_{wind} - SCR_{motor} + \text{net } SCR_{windmotor} \text{ (after aggregate cover)}$.

Questions for consultation

In addition to providing comments against each Guideline, EIOPA would like to understand:

Q1: Are the examples for performing the re-aggregation sufficiently clear?

Q2: Are there any further topics not covered by the Guidelines where undertakings would like guidance?

Q3: Are the Guidelines themselves sufficiently clear and if not where would the undertakings like more clarity?

2. Explanatory text

Section I: Order of operation of guidelines

Guideline 1 – Order of operation of guidelines

Undertakings should apply the sections of these Guidelines sequentially to assess their outwards reinsurance in respect of catastrophe risk.

- 2.1. Undertakings have to apply sections 1 and 2 of these Guidelines in order to determine the specifics of the gross event which gave rise to gross catastrophe loss for each catastrophe sub-module specified in Articles 119 to 135 of the Implementing Measures.
- 2.2. Undertakings need then to apply section 3 of these Guidelines in order to calculate the net losses.
- 2.3. Finally undertakings need to apply section 4 of the Guidelines to re-aggregate the net losses developed in section 3 to calculate the overall impact on the undertaking's basic own funds of the non-life catastrophe sub-module.
- 2.4. If we consider a specific example where allocation to regions is required for a particular natural catastrophe peril in order to estimate recoveries on a proportional reinsurance contract, undertakings have to perform the allocation to region first based on Guidelines 9 and 10, and then estimate the proportional reinsurance recoveries based on Guideline 19.

Section II: Specification of events

Guideline 2 – Level of detail required to specify the catastrophic event

Undertakings should specify appropriate 1 in 200 year catastrophe events in enough detail to be able to apply the risk mitigation techniques.

- 2.5. It is recognised that the generation of catastrophe events will rely on a significant element of expert judgement and it is expected the generation and suitable challenge of events will include involvement of the relevant experts within the undertaking, e.g. experts that understand:
 - (a) the underlying exposures;
 - (b) potential for claims;
 - (c) context of the current market environment, and;
 - (d) the details of the risk mitigation techniques available.

Guideline 3 – Specification of catastrophes as aggregating catastrophe events or risk catastrophe events

Undertakings should specify the losses defined in the various catastrophe risk sub-modules as either "aggregating catastrophe events" or "risk catastrophe events" in

which case undertakings should also specify whether these events are affecting specific known policies or not.

For each non-life catastrophe risk sub-module, undertakings should specify the type of event as follows:

- (a) Earthquake, windstorm, hail, flood and subsidence sub-modules specified as aggregating catastrophe event.
- (b) Motor liability sub-module specified as risk catastrophe event affecting unspecified policies.
- (c) Liability, Aviation, Marine and Fire sub-modules specified as risk catastrophe event affecting known policies
- (d) Credit and suretyship sub-module specified by Guidelines 13 and 14.
- (e) Non-proportional property reinsurance sub-module specified by Guideline 11.

2.6. An example of an aggregating catastrophe event is an earthquake which simultaneously affects a large number of properties. An example of a risk catastrophe event is the aviation scenario which applies to the largest risk in the insurance / reinsurance portfolio

Guideline 4 – Specification of number of events for natural catastrophe sub-modules in respect of EEA regions

Undertakings should consider the number of events for EEA regions gross losses as single or double events affecting one or more regions, and not assuming that multiple events occur in each region.

2.7. Therefore the windstorm gross loss at EEA level consists of 2 events where the regions impacted are to be determined using the methods in Guideline 7.

Guideline 5 – Specification of number of events for natural catastrophe sub-modules in respect of non-EEA regions

For non EEA regions where the number of aggregating catastrophe events that generate the gross loss has not been defined, undertakings should follow a similar approach for each specific sub-module as that for the EEA regions.

- **Windstorm, Hail, Flood:** therefore the gross loss $L_{i,other}$ is split into two events using the same proportions as the EEA events – both the medium/medium and high/low scenarios should be considered⁸.
- Earthquake:** Therefore the gross loss $L_{i, other}$ arises from a single event.

Guideline 6– Catastrophe event selection

Where a number of 1 in 200 year catastrophe events can be defined, undertakings should derive events which are consistent with their risk profile and select the event which results in a highest catastrophe charge after the application of the risk mitigation techniques.

⁸ E.g. for windstorm these are 80/40 and 100/20 scenarios. But note that the loss is already 100% so this has to be split into $80/120 * L$ and $40/120 * L$ etc.

- 2.8. This is relevant for the catastrophe sub-modules where the gross loss is based on a factor-based approach and the event needs to be specified in more detail in order to apply a reinsurance programme.
- 2.9. When the outcome is dependent on the timing of loss during the year, the timing that generates the highest net of reinsurance losses have to be assumed unless an alternative assumption can be justified e.g. losses arising from an event which can be shown to be seasonal.

Guideline 7 – Size of liability losses

To determine the size of the individual claims which the calculation of the loss in basic own funds is based on, undertakings should follow the process below:

- (a) Within each risk group, the n_i risks with the largest limits should be identified. For this purpose a "risk" consists of all policies written as part of a programme with the same or closely affiliated coverage and the same insured policy-holder (where the insured policy-holder is the policy-holder of the insurance contract) that are in force at the same time.
- (b) The resulting n_i limits should each be multiplied by 1.15.
- (c) The sum of these n_i values should be calculated and deducted from $L_{(liability, i)}$ and any difference should be allocated proportionally using the actual limits of the n_i values.
- (d) The final resulting n_i values should be considered as individual claims from a single event, each associated with the risk from which they have been derived.

Undertakings should then be able to identify for each of the n_i claims which reinsurances apply, given the nature of the associated risk.

Undertakings should be prepared to demonstrate to the supervisory authority that their purchasing of outwards reinsurances has not been materially influenced by whether the risk would be one identified under this process; i.e. all other things being equal, one would not expect a risk identified by this process to have a materially different net retention to one which is not picked up in the n_i claims.

- 2.10. For example, for commercial policies issued to cover several subsidiaries of the same company, the primary policy issued to the subsidiary and excess policy covering, that (and other) subsidiaries have to be aggregated for the purposes of determining the largest limits.
- 2.11. A demonstration to the supervisory authority that the undertaking's purchasing of outwards reinsurances has not been materially influenced by whether the risk would be one identified under this process would be that all other things being equal, a risk identified by this process does not have a materially different net retention to the ones which are not picked in the n_i claims.

Section III: Disaggregating the gross loss

2.12. So far the gross loss for each catastrophe sub-module has been split into events. In some cases this will be sufficient to enable the reinsurance programme to be applied. Where this is insufficient, the undertaking will need to further disaggregate the gross loss to derive the gross event. As defined in 1.5(a), the relevant 'gross loss' at any step of the calculation will be net of any reinsurance applied lower down the hierarchy (see appendix for explanation of the hierarchy.)

This concept is similar to the "UNL" or "ultimate net loss" concept on which the recoveries from any reinsurance contract depend.

For example, an aggregate reinsurance contract will often apply only to the losses net of any event reinsurance i.e. the UNL for the aggregate contract will be net of the event contract recoveries. In the context of these guidelines the 'gross loss' in the sub-module in which the aggregate cover applies will be calculated from the loss net of reinsurance from the sub-modules in which the event reinsurance has been applied.

Depending on what a risk mitigation contract actually cover, the loss net of reinsurance for a sub-module may have been:

- directly calculated from the sub-module's gross loss and the risk mitigation contract;
- be the result of the process of disaggregation, application of risk mitigation contract to the relevant parts and re-aggregation.

Guideline 8 – Disaggregating the gross loss to individual countries or other components

Undertakings should use one of the methods specified below to disaggregate the gross loss to individual components where the gross impact on individual policies has not been identified so that outwards reinsurance protections can be applied:

- (a) Max method: the gross loss is allocated to the component which is the largest contributor of the gross loss pre-diversification;
- (b) Spread method: spread the gross loss across relevant components in proportion to their contribution to the gross loss pre diversification; alternatively an approach using correlation matrices to share the loss may be adopted similar to that proposed for allocating the SCR to Lines of Business;
- (c) Blend method: this method selects the maximum of the Max and the Spread methods above.

2.13. The catastrophe sub-modules specify a 1 in 200 year gross loss for each sub-module after diversification.

2.14. It is this 1 in 200 year post diversification gross loss which may need to be allocated to a more granular level to apply the reinsurance programme and

correctly identify the 1 in 200 year capital requirement. For the max and spread methods of allocation, this allocation is achieved by allocating to the component which is the largest contributor of the gross loss pre diversification and spread across the components in proportion to their contribution to the gross loss pre diversification respectively.

- 2.15. Some non-life catastrophe sub-modules require undertakings to find a particular set of policies that would lead to the maximum loss in a given general risk catastrophe event (the “policies known” cases described in Guideline 2 above). In this case a unique set of policy losses will be known to the undertaking and they can explicitly apply their reinsurance programme as they would in a real scenario affecting those policies.
- 2.16. The blend method may be more suitable for peak risks (e.g. windstorm) where although exposure could occur across several countries, one country is likely to be worst affected.

Other non-life Catastrophe Risk Example

- 2.17. If an undertaking has written more than one of lines of business 1-5 as defined in Annex NLUR11, the undertaking will need to determine which line of business is most likely to generate a 1 in 200 year loss. This will be based on a relative consideration of the exposure at risk, and the likelihood of a 1 in 200 year claim event occurring across all the classes.
- 2.18. So if it has written 20 million euros of transport other than marine and aviation e.g. brown water marine comprised of barges and riverboats and 100 million euros of payment protection insurance (PPI), and 50 million euros of non-proportional casualty, lines of business 1, 3 and 4 respectively then the capital charge may be calculated as:

	LOB in Annex NLUR11	C	Premiums	c x P	(c x P)²
Transport other than marine and aviation	1	100%	20	20	400
PPI	3	40%	100	40	1,600
Non proportional casualty	4	250%	50	125	15,625
Total			170	185	17,625
Capital charge					133

- 2.19. From the calculation it is apparent that the non-proportional casualty line of business is the single largest contributor to the capital charge, with the contributions being immaterial and hence the instantaneous 1 in 200 year loss has to be assigned to this line of business. (In the situation, the contributions from other classes were more material a spread or blend method described in Guideline 6 could be used to allocate the loss). Within the non-proportional

casualty line an undertaking may be covering many different industries and territories e.g. France, Germany and the UK. The risk mitigation which the undertaking has in place may be specific to a region (but not to an industry), in this situation, the undertaking will need to divide up the instantaneous loss between the different territories in order to apply the risk mitigation.

2.20. Here the undertaking has a choice as to whether it assigns the whole of the loss to a specific territory or it spreads the loss across different territories. The key decision which will drive this will depend on whether an instantaneous loss scenario could be the aggregate of linked events occurring in different territories simultaneously. This could happen as a result of an industrial disease or a link established between mobile phones and brain tumours. In this situation the loss can be assigned across the different territories pro rata using the premiums written in the different regions.

2.21. If it is determined that the undertaking's underlying exposure and risk profile (i.e. the types of policies written) does not expose them to an event of this nature, then the loss will need to be assigned to a single region which will probably be the region where the largest premium volume is written. The example is provided below.

NP Casualty	Premium split	Loss Spread	Single Loss
France	20	53	133
Germany	15	40	
UK	15	40	
Total	50	133	133

The risk mitigation can now be applied.

Guideline 9– Disaggregating the gross loss for Natural catastrophe sub-modules in relation to EEA scenarios

Undertakings should use the methods defined below to disaggregate the gross loss for natural catastrophe sub-modules according to Article 120 of the Implementing Measures, in relation to EEA scenarios.

When disaggregating the gross loss to regions, undertakings should use the Blend method for the windstorm and flood risk sub-modules and the Max method to disaggregate the earthquake and hail risk sub-modules.

When disaggregating the gross loss to business units, companies and lines of business, undertakings should use the Spread method.

If the undertaking has a risk profile such that the method specified above is not appropriate, the undertaking should select a more suitable approach and justify it to the supervisor.

2.22. The natural catastrophe sub-modules specify a 1 in 200 year gross loss for each

peril and country combination. The total gross loss to the undertaking at a 1 in 200 year level is the loss event after diversification of the individual components. This approach ensures that the correct level of 1 in 200 year gross loss calculated for an undertaking writing only in one country/region as well as an undertaking writing across multiple countries/regions.

- 2.23. It is the 1 in 200 year post diversification gross loss which needs to be allocated to a specific country/region in order to apply the reinsurance programme and correctly identify the 1 in 200 year capital requirement.
- 2.24. Where multiple allocations need to be performed in order to apply the reinsurance programme and an allocation to regions is included then the undertaking has to allocate to regions first.

Guideline 10 – Disaggregating the gross loss for Natural Catastrophes for non-EEA regions

Undertakings should apply to the non EEA regions, methods which are consistent with the methods applied for EEA perils in Guideline 9 to allocate the gross loss.

If the undertaking has a risk profile such that this approach is not appropriate, the undertaking should select a more suitable approach and justify it to the supervisor.

- 2.25. Consider an undertaking which writes US, Japanese, Australian and EEA windstorm risks. For non-EEA risks assume that the company writes more premium in the south east US than any other region – then, according to the above proposal, the company has to allocate both windstorm events to the south east US.
- 2.26. Counter-example: An undertaking may have a large portfolio (measured by premium) in, for example, Russia but spread across the region; conversely it may have a strong concentration in, for example, Florida although smaller when measured by premium. In this case it would be more likely the windstorm loss would occur in Florida. This is an example where the risk profile of the undertaking means that the default method is not appropriate.

Guideline 11 – Disaggregating the gross loss for Natural Catastrophes for Non-Proportional Property

Undertakings should apply the max method for the non-proportional property reinsurance sub-module to allocate the loss to each region. For this sub-module undertakings should estimate the exposure to the highest peril and the number of events specified as in the relevant aggregating catastrophe event(s) that applies to the underlying contracts. Where two aggregate catastrophe events are defined, this should imply that both events occur within the same region.

If the undertaking has a risk profile such that this approach is not appropriate, the undertaking should select a more suitable approach. This approach should be justified to the supervisor.

2.27. If most of the Non-Proportional Property Reinsurance exposures are exposed to windstorm losses, then the number of events is as specified for the underlying contracts i.e. in Article 121 of the Implementing Measures. A similar argument applies to the other perils.

Guideline 12 – Specifying the gross loss for man-made sub-modules: motor vehicle, marine, aviation, fire and liability risks

Undertakings should identify the particular policies impacted by the gross liability risk event by applying guidelines 34 to 39. For the marine, aviation and fire scenarios the undertaking should identify the gross risks affected and hence which reinsurances apply (including per risk excess of loss protections) to the claims.

For motor vehicle liability risk, the undertaking should assume that the risk catastrophe event specified in the Implementing Measure arises from a single loss event. The undertaking should assume that the loss occurs in the region or business unit which generates the highest contribution to the gross loss pre diversification.

In applying of the risk specific protections the undertaking should be able to satisfy to their national supervisor that the purchase of outwards reinsurances has not been materially influenced by whether the risk is one identified as the gross event or a contribution to this gross event.

2.28. There are circumstances (e.g. fronting where the undertaking cedes 100% of the risk to a reinsurance undertaking) where the reinsurance on the largest risks is such that the net position will be unrealistically low for an estimate of the loss at the 99.5% percentile. In such situations, the undertaking has to be able to demonstrate that the net position used is not inconsistent with that calculated using the largest risks that are covered by reinsurance more typical to the overall portfolio.

Guideline 13 – Disaggregating the gross loss for Credit and suretyship-Large Buyer Scenario

In determining the largest credit exposures, undertakings should take account of exposure accumulations to entities within a group.

2.29. We have assumed that the intention of Article 134 in the Implementing Measures is that all credit exposure (included that from Suretyship) in the lines of business 9 and 21 needs to be included in determining the two largest exposures.

2.30. The largest credit exposures for Credit and Surety typically arise from the accumulation of credit exposure on a group of legal entities (for example a group with a holding company at its head with multiple legal entities daughter firms it controls). The undertaking needs to have adequate systems and controls in place to correctly identify these group structures.

Guideline 14 – Disaggregating the gross loss for Credit and suretyship recession scenario

Where undertakings need to allocate the recession gross loss to different territories, industries, product types, or more generally to the respective scope of applicability of the reinsurance arrangement in order to apply their reinsurance protections, they should allocate the gross loss pro-rata based on gross premium volumes.

2.31. The recession scenario is a frequency scenario and needs to be considered as an aggregating catastrophe event.

Section IV: Application of outwards reinsurance

Guideline 15 – Outwards reinsurance applicability

Undertakings should apply each outwards reinsurance protection to one of the levels specified below:

different zones within a single country single sub-module branch;

- (a) different regions within a single sub-module branch;
- (b) EEA /non EEA grouping within a single sub-module; different catastrophe sub-modules branches within a catastrophe sub-module;
- (c) different catastrophe sub-modules e.g. as could be the case for stop-loss and aggregate covers across man-made and natural catastrophe sub-modules.

Undertakings can also apply line of business and business unit specific coverages.

Undertakings may also be able to apply reinsurance protections across premium risk and catastrophe modules in some cases.

Undertakings should apply outwards reinsurance consistently with Articles 209 - 214 of the Implementing Measures. Undertakings should ensure there is no double-counting of reinsurance recoveries (Implementing Measures, article 209 paragraph 1e). Undertakings should ensure that the total recovery from risk mitigation methods that is allowed for in their calculation of net losses does not exceed the total amount possible under the terms of their risk transfer programme.

2.32. The explanatory text describes the hierarchies and structure within the flowchart for the non-life underwriting risk, which is important to refer to in the context of this Guideline and Guideline 27 on re-aggregation. Hierarchy: The different levels of sub-module and regions that apply in the non-life underwriting risk module.

- (a) Aggregation hierarchy: The hierarchical structure which is used in these guidelines to describe 4 aggregation levels of the calculation of the capital requirement for the non-life catastrophe underwriting risk as defined in the articles 119 to 135 of the Implementing Measures;
- (b) Aggregation level x: A level x in the aggregation hierarchy which can have values from 0 to 5;

- (c) Aggregation level 5: Aggregation of the non-life catastrophe, premium and reserve risk sub-modules to form non-life underwriting risk;
- (d) Aggregation level 4: Aggregation of the underlying sub-modules to form the non-life catastrophe underwriting risk capital requirement according to article 86 (2);
- (e) Aggregation level 3: Aggregation of the underlying sub-modules to form the natural catastrophe risk capital requirement according to article 87 (2) and aggregation of the underlying sub-modules to form the Man-made catastrophe risk according to article 95 (2);
- (f) Aggregation level 2: Aggregation to form the separate underlying natural catastrophe sub-modules and separate underlying man-made catastrophe sub-modules: i.e. windstorm, earthquake, flood, hail and subsidence and motor, marine, aviation, fire, liability and credit and suretyship sub-modules;
- (g) Aggregation level 1: Aggregation at the EEA and non-EEA regions of the windstorm, earthquake, flood, hail and subsidence risk capital requirement according to articles 88 to 92 respectively;
- (h) Aggregation level 0: Aggregation at the level of individual regions of the windstorm, earthquake, flood, hail and subsidence risk capital requirement according to articles 88 to 92 respectively;
- (i) Node: The point at which Catastrophe sub-module branches come off from a higher to the next lower aggregation level in the aggregation hierarchy;
- (j) Catastrophe sub-module branches: Branches of one of the four main non-life catastrophe risk sub-modules described in Article 119 of the implementing measures;
- (k) Parent: The immediate node that gives rise to the branch;
- (l) Grandparent: The node that gives rise to the parent of a branch.

Guideline 16 – Inwards reinstatement premiums

Undertakings may allow for the receipt of inwards reinstatement premiums where it can be demonstrated to the supervisor that these will be triggered by the gross event specified in the catastrophe sub-module.

Undertakings should allow within their calculations of the gross loss for the additional exposures that result from this inwards reinstatement premium.

Guideline 17 – Other impacts on basic own funds as a result of the trigger of the outwards reinsurance contract

Undertakings should allow for reinstatement premiums or other additional cash-flows which may result from the trigger of the outwards reinsurance protection.

Guideline 18– Order of operation of reinsurance protections

Undertakings should apply reinsurance protections in the order specified in their contractual agreements as they apply to the underlying risk.

Guideline 19 – Proportional reinsurance

For quota shares, surplus reinsurance and proportional facultative contracts, undertakings should do a pro rata allocation of the gross event across these reinsurance contracts.

Where the undertaking's proportional reinsurance contract is subject to an "event limit" or similar, the gross loss allocated to that contract cannot exceed such limit and any excess should be added back to the "net retained" share of loss.

- 2.33. The pro rata method will generally involve splitting the gross sums insured that were input to the basic gross loss calculation across the various proportional treaties and the undertaking's net retention.
- 2.34. Note that with proportional reinsurance generally being placed on a "Risks Attaching During" basis, it may be necessary in the "spread" calculation to consider two underwriting years' sets of proportional reinsurance contracts. In doing so, an assumption will need to be made on the timing of the loss during the year.

Guideline 20 – Non-proportional reinsurance per risk

For risk excess of loss and non-proportional facultative contracts, undertakings should only use this non-proportional reinsurance under the standard formula if the gross event allows appropriate specification of the underlying policies exposed.

Guideline 21 – Non-proportional reinsurance per event

Undertakings should only apply non-proportional reinsurance to defined gross events if the loss can be split appropriately.

The undertaking should take due care to allow for less common contract features (such as franchises) and for part placements or coinsurance.

Guideline 22 – Non-indemnity contracts and Basis Risk

Undertakings should not apply non-indemnity contracts under the standard formula unless it can be demonstrated that the level of basis risk is not material by virtue of the definition of the scenario.

- 2.35. Most reinsurance contracts are on an indemnity basis. This means that the recovery is a function of the reinsured's own loss. Under a non-indemnity

contract the payout will also depend on other values (e.g. an actual industry loss, a modelled industry loss, physical parameters of an event.) This results in basis risk. The Article 210(2) of the Implementing Measures requires consideration of the materiality of any basis risk before permitting benefit being taken for such covers. Typically the non-materiality or otherwise of basis risk cannot be demonstrated within the constraints of the standard formula unless it is deemed to be zero or minimal by virtue of the scenario definition.

- 2.36. Some reinsurance contracts bought by insurers of aviation business contain an “original loss warranty” (OLW). This provides that the contract will only pay out to the reinsured if the original gross event to the insurance market as a whole exceeds a certain size. From the definition of the aviation risk catastrophe event, a total loss to the risk is assumed. Hence, provided that the OLW is less than the total limit on the original policies, it clearly will have triggered and can therefore be allowed for by the undertaking.

Guideline 23 – Application of aggregate contracts and clash covers

Undertakings should consider at which level to apply the aggregate reinsurance contracts within the calculation of the non-life catastrophe SCR. The choice should be driven by the substance of the risk mitigation mechanism and where reinsurance recoveries are expected if the gross event were to occur in real life.

Where undertakings are estimating reinsurance recoveries from clash contracts they should demonstrate to the supervisor that the contracts would respond to the catastrophe events defined in the standard formula.

Undertakings should ensure that no double counting of reinsurance recoveries occurs and must be able to explain and demonstrate the logic of application to their supervisor.

- 2.37. Certain types of reinsurance (Stop loss and aggregate covers) are bought to protect the undertaking from adverse frequency of events. In such cases they may be applied to the individual scenarios. However, it could also instead be appropriate to apply them at a higher level of the calculation.

- 2.38. In addition, there are some covers where, to properly reflect their risk mitigation effect, it will be appropriate to allow for non-catastrophe losses. This might include needing to allow for losses that occur on average in the normal course of events. For example, where a stop loss cover attaches at a 120% loss ratio, it would be necessary to allow for the normal or average level of loss in addition to any losses coming from the premium or catastrophe risk modules. Such normal level of loss has to be based on the figures used in the premium risk calculation.

Guideline 24 – Treatment of shared reinsurance covers

Where shared reinsurance covers exist, the undertaking should follow the principles in Guideline 32.

- 2.39. An undertaking may have a reinsurance cover it shares with other undertakings where no other relationship exists between them.

Guideline 25 – Treatment of outputs from lower aggregation levels

Undertakings should differentiate between reinstatement costs and reinsurance recoveries when aggregating SCRs across the non-life catastrophe sub-modules. If reinsurance at a given level does not apply to this combined amount then it will be necessary to split the costs as appropriate. In this case the spread method should be used.

- 2.40. It is important to note that when aggregating SCRs from lower sub-modules, the amounts carried forward from lower levels are a mixture of net losses and reinstatement costs (see the flowchart for the non-life underwriting risk).
- 2.41. Example 1: A typical aggregate cover may not provide recoveries in respect of the reinstatement premium from a lower level
- 2.42. Example 2: A reinstatement premium protection would provide a recovery only in respect of the reinstatement premium (and not the remaining portion of the insurance loss)

Section V: Re-aggregating the net losses

Guideline 27 – Re-aggregating the net losses to derive the SCR for catastrophe risk for the undertaking

Where undertakings have allocated a diversified gross loss to a more granular level (i.e. “the gross event”) in order to estimate their reinsurance recoveries, undertakings should add up the net components to derive the SCR.

Where undertakings have SCR output from different levels of the calculation, undertakings should combine the net components to derive the non-life catastrophe SCR.

The Technical annex describes how to apply this guideline.

- 2.43. Undertakings applying section III of the guidelines will have calculated their net losses. The output after application of section III may be at various levels dependent on the specifics of their reinsurance programme. Indeed some of the reinsurance arrangements may be specific to the sub-module and level such that the reinsurance recoveries arising can be estimated independently of other sub-modules and levels on the direct gross loss (pre diversification).
- 2.44. This will require some method of re-aggregation to derive the undertaking’s SCR for catastrophe risk. Undertakings have to start at the lowest level of granularity and work upwards as described in this Guideline.
- 2.45. Where undertakings have allocated a diversified gross loss to a more granular level (i.e. “the gross event”) in order to estimate their reinsurance recoveries, undertakings should add up the net components to derive the SCR.

- 2.46. Where undertakings have SCR output from different levels of the calculation, they need to combine the net components to derive the non-life catastrophe SCR. This combination would work as follows. The component SCRs may be for a given sub-module in the case of the man-made modules: i.e. SCR sub-module x, level 2 or at the level of EEA and non EEA for a given natural catastrophe sub-module: i.e. SCR sub-module y, EEA, level 1, SCR sub-module y, non EEA, level 1 etc. using the hierarchy specified in the flowchart for the non-life underwriting risk document.
- 2.47. Once the component SCR level x has been derived, undertakings have to combine with other component SCRs level x in order to calculate the SCR level x+1. Where reinsurance arrangements apply across different components across level x+1, undertakings have to take this input SCR level x+1 and apply the relevant reinsurance arrangements in order to estimate the output SCR level x+1. In cases where there is no aggregate reinsurance at this level, the input and output SCRs will be the same.
- 2.48. The undertaking has to repeat the process in order to arrive at the SCR non-life catastrophe calculation. Examples of doing the re-aggregation are provided in the Technical Annex. These examples have to be examined together with the flowchart for non-life catastrophe risk.
- 2.49. Undertakings have to take care to ensure that the method used to estimate reinsurance recoveries due from any joint or multiple reinsurance covers (i.e. reinsurance covers which span more than one sub-module) does not assume more recoveries will be received by the undertaking than the maximum allowed under the limits of the treaty. Also if a reinsurance contract has been applied at a node (and other sub-modules at this level), then it is deemed to have already been applied to the parent and may not be applied to the grandparent or other ancestors.
- 2.50. The SCR nICAT which is the output of this guideline represents the change in the undertaking's basic own funds as a result of the non-life catastrophe module.

Section VI: Documentation and Validation

Guideline 28 – Documentation and validation of catastrophe events selected

For the “Other” non-life catastrophe sub-module undertakings should explain the catastrophe events selected to their supervisor within regular supervisory report according to [Article 298 SRS5 (4) point (a) of draft delegated acts Solvency II]. The explanation should contain details of key decision points, discussion of alternatives which could be selected for these key decision points and rationale for the final selections.

Undertakings should also include details of any challenge that has occurred internally to devise suitable catastrophe events within their documentation.

Guideline 29 – Documentation of disaggregation methodology

Undertakings should document the disaggregation mechanism used in order to apply the reinsurance programme by sub-module. This should include the rationale for the selected approach, discussion of possible alternatives where there are multiple reasonable methods available and the calculations performed in order to achieve the disaggregation.

Guideline 30 – Documentation of netting down and re-aggregation procedures

Undertakings should document the process used to net down the gross event. This includes a description of the undertaking’s reinsurance programme, the netting down calculations, details of the allocation where relevant of the recoveries due from the risk mitigation technique to the relevant insurance sub-modules and details of how the re-aggregation to derive the SCR_{NICAT} was performed.

Undertakings should also demonstrate in their documentation that there is no double counting of reinsurance recoveries assumed.

Where undertakings have assumed adjustable premium features (e.g. inwards and outwards reinstatement premiums), the documentation should justify the methodology and assumptions used to derive these.

Section VII: Particular considerations for solo undertakings which are part of groups

Guideline 31 – Treatment of internal reinsurance arrangements

For solo undertakings, the undertaking should treat outwards reinsurance arrangements which may exist with other group undertakings (“internal reinsurance”) in the same way as they would treat arrangements with external third parties.

Guideline 32 – Estimating the reinsurance recovery that would be due to a solo undertaking in respect of a group reinsurance contract for aggregating catastrophe events

When estimating the reinsurance recovery due on an aggregate reinsurance contract, (i.e. a contract which protects against accumulated aggregate losses from several group undertakings) each solo undertaking should separately follow the steps below:

- (a) Determine the gross 1 in 200 year catastrophe loss for the solo undertaking.
- (b) Determine the gross 1 in 200 year catastrophe loss for the group.
- (c) Estimate reinsurance recoveries on the group reinsurance contract.
- (d) Allocate reinsurance recoveries according to contractual agreements where these exist, otherwise estimate the reinsurance recoveries due to the solo as the ratio of gross losses (a)/(b) multiplied by the amount estimated in (c).

- 2.51. This guideline only applies to reinsurance covers protecting the group entities against aggregate catastrophe situations i.e. where a high frequency of losses accumulate together to form the event.
- 2.52. When estimating the capital requirements for the solo firm of interest, in the absence of any contractual arrangements which may exist to allocate the reinsurance recoveries to legal entities, there are 2 steps required. Firstly, the 1 in 200 year loss for the solo needs to be developed. Then consistent with this scenario, the loss which would apply for other group entities when the group experiences a 1 in 200 year loss, given the solo has experienced a 1 in 200 year loss, needs to be assessed. In this guideline, the assumption is made that the 1 in 200 year group loss given that the 1 in 200 year loss to the solo has occurred is identical to the unconditional 1 in 200 year group loss. Once this has been done, the amount of any reinsurance recovery that the solo undertaking would receive in respect of the group reinsurance programme can be assessed.

2.53. Numerical example: 2 solo undertakings A and B form a group. We are interested in the reinsurance recovery to solo A.

	Gross 1 in 200 year loss
A	10m
Group	15m

2.54. Here the reinsurance recovery to A needs to be estimated as the share of total Group reinsurance recovery based on a share of 10 / 15 i.e. 0.6667.

2.55. Situations where shared reinsurance cover has been bought outside of a group, may be considered similarly. Where the data is not available to perform the calculation above, undertakings have to base their expected reinsurance recoveries on the share of the premium they pay in respect of the reinsurance contract relative to the total premium payable. This approach still requires knowledge of the total 1 in 200 year loss and hence total anticipated reinsurance recovery experienced by the parties participating in the shared reinsurance cover.

2.56. If contractual arrangements are present which determine how the reinsurance recoveries to group needs to be allocated to the solo legal entities these have to be used and will override the estimation methodology set out above.

Guideline 33 – Estimating the reinsurance recovery that would be due to a solo undertaking in respect of a group reinsurance contract for risk catastrophe events

When estimating the reinsurance recovery due on an risk specific contract (i.e. a contract which protects against specific risk(s)) solo undertakings should follow the steps below:

- (a) Determine whether the specific risk(s) triggering the 1 in 200 year loss for the solo is the same as the specific risk(s) triggering the 1 in 200 year loss at the group level.
- (b) If there is some overlap, estimate reinsurance recoveries due to the solo on the group reinsurance contract.

2.57. Certain sub-modules of the catastrophe sub-module represent risk specific events. The 1 in 200 year risk event at the solo level could be different to the 1 in 200 year risk event at the group level. The group protection is likely only to be triggered in a solo 1 in 200 year scenario, if there is sufficient overlap between the specific risks triggered in the solo and group 1 in 200 year events.

Section VIII: Allocation of Insurance Policies to Liability Risk Groups for the Man-Made Liability Catastrophe Risk Sub-Module

Guideline 34 – Liability Risk Group 1

Undertakings should, for the liability risk group 1 referred to in Annex XI of the Implementing Measures include the policies for professional malpractice liability insurance which provide coverage to professional practitioners against potential liability claims.

Undertakings should include in this risk group a range of liability products including:

- (a) Medical malpractice liability insurance including specialist or general practitioners, hospitals and other healthcare providers when they bear medical malpractice liability;
- (b) Errors and omissions (E&O) or professional indemnity insurance or other malpractice policies where there are third parties to whom the insured owes a duty of care;
- (c) Coverage for failure to perform and associated financial loss arising from the services provided by a company;
- (d) Coverage for breach of warranty or intellectual property;
- (e) Coverage for all bodily injury liability or property damage (whether material or financial) and the associated damages and defence costs insurance resulting from errors or negligence of a professional in the course of its activity.

2.58. Examples of errors and omissions (E&O) or professional indemnity insurance include notaries public, real estate brokers, appraisers, management consultants or website developers, surveyors, accountants and lawyers

Guideline 35 - Liability Risk Group 2

Undertakings should, for the liability risk group 2 referred to in Annex XI of the Implementing Measures include the policies for employers' liability which provide coverage for any liability that might be imposed on an employer if an employee is injured in the course of his or her employment.

Undertakings should include in this risk group obligations which cover:

- (a) The provision of preventive or curative medical treatment or care relating to accident at work, industrial injury or occupational diseases;
- (b) Financial compensation for such treatment;
- (c) Financial compensation for accident at work, industrial injury or occupational diseases

Guideline 36 - Liability Risk Group 3

Undertakings should, for the liability risk group 3 referred to in Annex XI of the Implementing Measures include the policies for directors and officers liability insurance which provide coverage for liability and defence costs to the directors and officers of a company, or to the organization(s) itself, in the event they suffer losses as a result of a lawsuit for alleged wrongful acts while acting in their capacity as directors and officers for the organization, including the coverage of defence costs arising out of criminal and regulatory investigations and/or trials.

Undertakings should include in this risk group the policies for management liability and employment practice liability.

Guideline 37 - Liability Risk Group 4

Undertakings should, for the liability risk group 4 referred to in Annex XI of the Implementing Measures include the policies which cover all liabilities arising from negligent acts and/or omissions resulting in bodily injury and/or property damage to third parties other than:

- (a) Those included in motor vehicle liability and marine, aviation and transport;
- (b) Those included in liability risk groups 1,2,3 and 5 of Annex XI of the Implementing Measures;
- (c) Third party liability coverage provided to individual householders, individuals in a private capacity (including when hunting) and self-employed crafts-persons or 'artisans';
- (d) Third party liability coverage provided in respect of damage or injury caused by domestic pets.

- 2.59. Note in particular that third party liability resulting from the use of yachts, pleasure craft, fishing boats etc., are included in marine and transport and they have to be considered as covered by the man-made marine scenario and not here.
- 2.60. The category of self-employed crafts-persons or 'artisans' is intended to cover occupations such as potters, basket weavers, glassworkers, embroiderers, lace makers and leather workers, making small house ware, clothing or decorative items for non-structural household use.
- 2.61. This risk group contains a wide range of liability products, including:
- General Liability also known as General Third Party Liability;
 - Public Liability;
 - Product Liability;
 - Event organiser's liability;
 - Tour operator's liability;

- Cyber Liability;
- Landlord's Liability and/or Property Manager's Liability;
- Contractor's all risk or Construction project liability;
- Nuclear power operator's liability;
- Environmental pollution/damage liability.

Guideline 38 - Liability Risk Group 5

Undertakings should, for the liability risk group 5 referred to in Annex XI of the Implementing Measures include non-proportional reinsurance policies for all lines of business.

Guideline 39 - Allocation and Unbundling

Where liability insurance and proportional reinsurance are sold on a packaged basis, including covers that fall into more than one of the above risk groups, undertakings should unbundle and allocate the premiums for each cover to the most appropriate risk group for that cover.

Undertakings should be able to provide supporting evidence and rationale for such allocations.

Undertakings should apply proportionality considerations when applying the unbundling guidance above.

- 2.62. For example, where premiums are not recorded for the separate components, undertakings could consider the nature of the claims made against such policies taking into account an appropriate period of claims history, where this is available, that captures similar coverage features of premiums that were written over the last 12 months. Undertakings have to allocate the premiums for this type of policy to the risk group into which the majority of such claims, by value, appear to fall.

Section IX – Particular considerations for the group calculation

Guideline 40 – Deeming of reinsurance

Where the intra-group reinsurance inures to the benefit of any of an undertaking's external reinsurance, the participating undertakings should 'deem' the internal reinsurance in place for the purpose of calculating the impact of the external reinsurance.

- 2.63. In a group calculation, the impact of any internal participation on reinsurance contracts to the reinsured and reinsuring undertakings will offset, leaving a zero net impact. In the deeming situation undertakings will need to calculate the impact of the internal reinsurance on the receiving undertaking in order to work out the recovery due on the external reinsurance.

Appendix: Flowchart for the non-life underwriting Risk

The non-life SCR calculation can be expressed as a tree structure where certain initial calculations are carried out and then aggregated with others in a hierarchy until the final stage where the non-life SCR is calculated.

A mathematical "rooted" tree is a structure consisting of connected "nodes" (in the case of Solvency II these are the calculation steps above). A single initial node called the "root node" (in our case the final SCR calculation) is connected to one or more "child" nodes, these in turn can each have "children" connected to other nodes. A node may not have children and be termed a "leaf" node; nodes with children are called "branch nodes". The analogy of a tree arises naturally, the root node is the base of the tree, the branch nodes split and stretch out from the root and finally the structure ends in the leaves (these are the initial calculations of the SCR in our example). If a node X has a child Y then we say that X is the "parent" of Y. If Y has a child Z then we say that X is the "grandparent" of Z and so on.

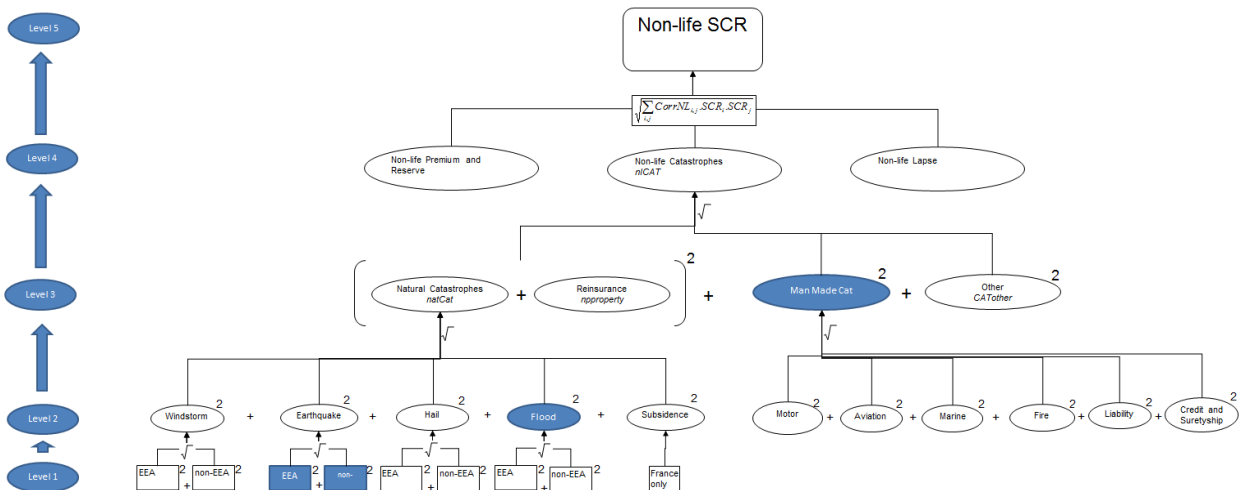
Mathematical trees are often illustrated 'upside down' with the root node as the top or pinnacle of the structure. This is arbitrary, but can be useful, as in the context of the SCR calculation with the final answer at the top of a hierarchy of "aggregation levels". Specifically we can count the number of nodes from the root node. In the non-life catastrophe element of Solvency II the fourth aggregation level below takes us to the calculation of the non-life catastrophe risk capital requirement. In keeping with the concept that the SCR calculation should be the final aggregation step and the initial calculations are first aggregated at their parent node we define the following "aggregation levels". Please note that these only apply to the catastrophe element of the calculation, although the aggregation to non-life underwriting risk is shown for completeness:

- (a) Aggregation level 5: Aggregation of the non-life catastrophe, premium and reserve risk sub-modules to form non-life underwriting risk;
- (b) Aggregation level 4: Aggregation of the underlying sub-modules to form the non-life catastrophe underwriting risk capital requirement according to Article 86 (2) of Solvency II;
- (c) Aggregation level 3: Aggregation of the underlying sub-modules to form the natural catastrophe risk capital requirement according to article 87 (2) and aggregation of the underlying sub-modules to form the Man-made catastrophe risk according to Article 95 (2) of Solvency II;
- (d) Aggregation level 2: Aggregation to form the separate underlying natural catastrophe sub-modules and separate underlying man-made catastrophe sub-modules: i.e. windstorm, earthquake, flood, hail and subsidence and motor, marine, aviation, fire, liability and credit and suretyship sub-modules;
- (e) Aggregation level 1: Aggregation at the EEA and non-EEA regions of the windstorm, earthquake, flood, hail and subsidence risk capital requirement according to Articles 88 to 92 of Solvency II respectively;

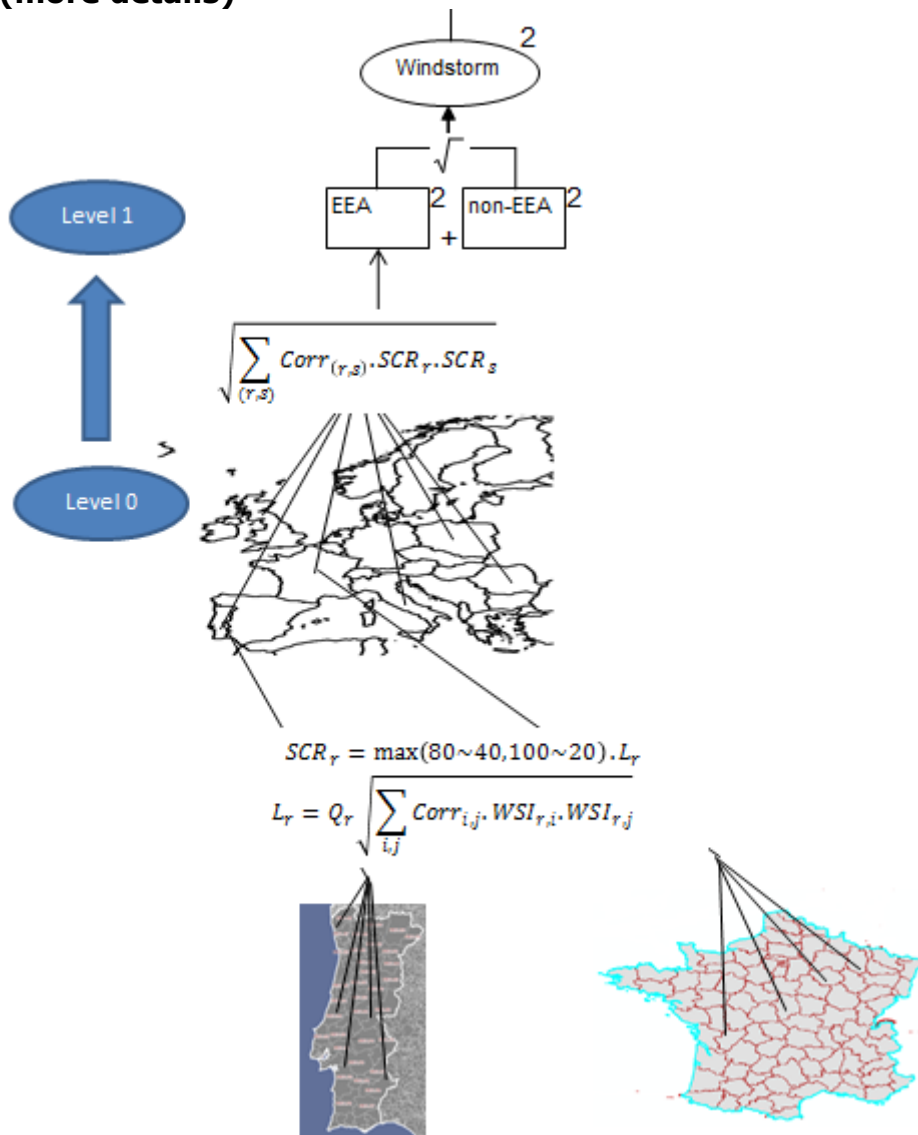
- (f) Aggregation level 0: Aggregation at the level of individual regions of the windstorm, earthquake, flood, hail and subsidence risk capital requirement according to Articles 88 to 92 of Solvency II respectively.

The terms defined above are used freely in the reinsurance guidelines. When speaking of going "up" a level aggregating the results of the calculations in the previous step is meant - i.e. to an aggregation level with a number one higher than the current level. In practice the aggregation levels correspond to features such as: country splits, mixtures of man-made and natural events and finally mixtures of catastrophe and non-catastrophe claims. Reinsurance can (and in practice does) apply at any one of these levels. Stop loss covers often apply to total claims for example (i.e. at the highest aggregation levels), whereas some reinsurance is country and natural peril specific (i.e. at the lowest level). The guidelines are designed to respect the variety of contracts available in the market place and to allow the calculation to follow the economics of those contracts.

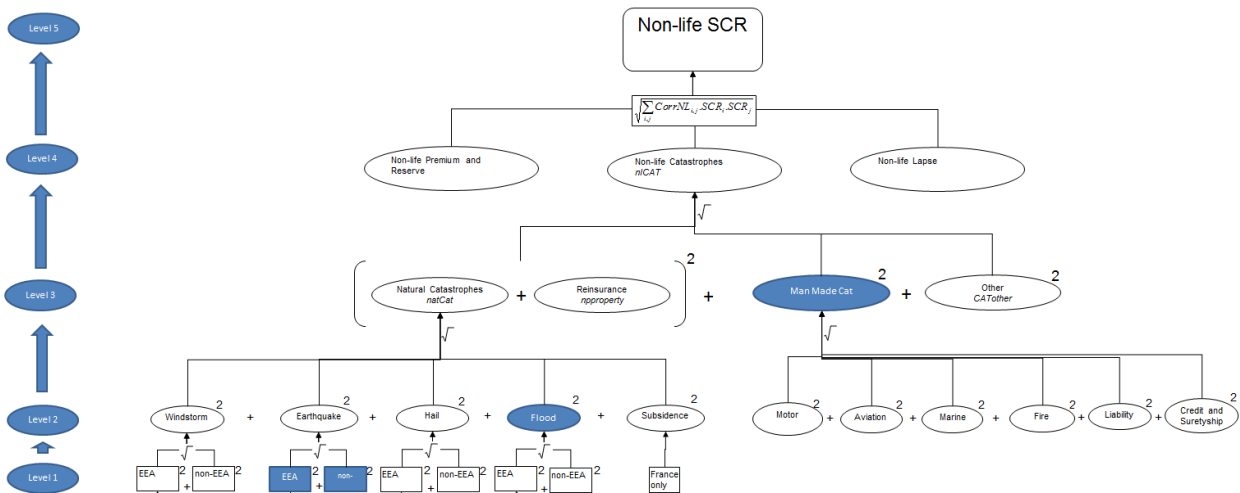
1. Flow chart illustrating non-life SCR calculation



2. Level 0 (more details)



3. Example of applying complex coverages: Guideline 19



Consider the flow diagram above. The general rule is that if you have applied a reinsurance contract to a node (and possibly others at that level) then it is deemed to have already been applied to the parent (and may therefore not be applied to its grandparents and so on).

Example 1 (allowed, provided overall recovery is within programme terms): See diagram above. A reinsurance contract is applied at: level 1 earthquake EEA, level 1 earthquake non-EEA. Level 2 flood. Level 3 Man-made.

Example 2 (not allowed): A reinsurance contract is applied at level 1 windstorm EEA and again at level 3 nat. cat. – this is double counted because level 3 nat. cat. is the grandparent of level 1 windstorm EEA.