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## **Annexes of Commission Delegated Regulation (EU) 2015/35**

**of 10 October 2014**

### **supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)**

**(Text with EEA relevance)**

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## ANNEX III

### FACTOR FOR GEOGRAPHICAL DIVERSIFICATION OF PREMIUM AND RESERVE RISK

1. For all segments set out in Annexes II and XIV, the factor for geographical diversification of a particular segment  $s$  referred to in Articles 116 and 147 shall be equal to the following:

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$$DIV_s = \frac{\sum_r (V_{(prem,r,s)} + V_{(res,r,s)})^2}{(\sum_r (V_{(prem,r,s)} + V_{(res,r,s)}))^2}$$

where:

- each of the sums cover all the geographical regions set out in paragraph 8;
- $V_{(prem,r,s)}$  denotes the volume measure for premium risk of the segment  $s$  and the region  $r$ ;
- $V_{(res,r,s)}$  denotes volume measure for reserve risk of the segment  $s$  and the region  $r$ .

2. For all segments set out in Annexes II and XIV and all geographical regions set out in paragraph 8, the volume measure for premium risk of a particular segment  $s$  and a particular region  $r$  shall be calculated in the same way as the volume measure for non-life or NSLT health premium risk of the segment  $s$  as referred to in Articles 116 and 147, but taking into account only insurance and reinsurance obligations where the underlying risk is situated in the region  $r$ .

3. For all segments set out in Annexes II and XIV and all geographical regions set out in paragraph 8, the volume measure for reserve risk of a particular segment  $s$  and a particular region  $r$  shall be calculated in the same way as the volume measure for non-life or NSLT health reserve risk of the segment  $s$  as referred to in Articles 116 and 147, but taking into account only insurance and reinsurance obligations where the underlying risk is situated in the region  $r$ .

4. For the purpose of the calculations set out in paragraphs 2 and 3, the criteria set out in Article 13(13) of Directive 2009/138/EC in the case of non-life insurance and the criteria set out in Article 13(14) of Directive 2009/138/EC in the case of life insurance shall be applied as if references in those criteria to Member States extended to regions also.

5. Notwithstanding paragraph 1, the factor for geographical diversification shall be equal to 1 for segments 6, 10, 11 and 12 set out in Annex II and for segment 4 set out in Annex XIV.

6. Notwithstanding paragraph 1, the factor for geographical diversification for a segment set out in Annex II shall be equal to 1 if insurance and reinsurance undertakings use an undertaking-specific parameter for the standard deviation for non-life premium risk or non-life reserve risk of the segment to calculate the non-life premium and reserve risk sub-module.

7. Notwithstanding paragraph 1, the factor for geographical diversification for a segment set out in Annex XIV shall be equal to 1 if insurance and reinsurance undertakings use an undertaking-specific parameter for the standard deviation for NSLT health premium risk or NSLT health reserve risk of the segment to calculate the NSLT health premium and reserve risk sub-module.

8. Regions for the calculation of the factor for geographical diversification

	Region	Territories that the region consists of
1	Northern Europe	Denmark (except Greenland), Estonia, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Sweden, United Kingdom (except Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Montserrat, Pitcairn Islands, Saint Helena, Turks and Caicos Islands)
2	Western Europe	Austria, Belgium, France (except French Guiana, French Polynesia, Guadeloupe, Martinique, Mayotte, New Caledonia, Réunion, Saint Barthélemy, Saint Martin, Saint Pierre and Miquelon, Wallis and Futuna), Germany, Liechtenstein, Luxembourg, Monaco, Netherlands (except Aruba, Bonaire, Curaçao, Saba, Sint Eustatius, Sint Maarten), Switzerland
3	Eastern Europe	Belarus, Bulgaria, Czech Republic, Hungary, Moldova, Poland, Romania, Russia, Slovakia, Ukraine
4	Southern Europe	Albania, Andorra, Bosnia and Herzegovina, Croatia, Cyprus, the former Yugoslav Republic of Macedonia, Gibraltar, Greece, Italy, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, Vatican City State
5	Central and Western Asia	Armenia, Azerbaijan, Bahrain, Georgia, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen
6	Eastern Asia	China, Japan, Mongolia, North Korea, South Korea, Taiwan
7	South and South-Eastern Asia	Afghanistan, Bangladesh, Bhutan, Brunei, Burma/Myanmar, Cambodia, India, Indonesia, Iran, Laos, Malaysia, Maldives, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, East Timor, Vietnam
8	Oceania	American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Wallis and Futuna

9	Northern Africa	Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Côte d'Ivoire, Egypt, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, South Sudan, Sudan, Togo, Tunisia
10	Southern Africa	Angola, Botswana, Burundi, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Namibia, Congo, Réunion, Rwanda, São Tomé and Príncipe, Seychelles, Somalia, South Africa, Swaziland, Uganda, Tanzania, Zambia, Zimbabwe
11	Northern America excluding the United States of America	Bermuda, Canada, Greenland, Saint Pierre and Miquelon
12	Caribbean and Central America	Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Bonaire, British Virgin Islands, Cayman Islands, Costa Rica, Cuba, Curaçao, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Barthélemy, Saba, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Eustatius, Sint Maarten, Trinidad and Tobago, Turks and Caicos Islands, US Virgin Islands
13	Eastern South America	Brazil, Falkland Islands, French Guiana, Guyana, Paraguay, Suriname, Uruguay
14	Northern, southern and western South America	Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Venezuela
15	North-east United States of America	Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
16	South-east United States of America	Alabama, Arkansas, Florida, Georgia (US), Kentucky, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, West Virginia
17	Mid-west United States of America	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Wisconsin
18	Western United States of America	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, Wyoming

## ANNEX XIII

### LIST OF REGIONS FOR WHICH NATURAL CATASTROPHE RISK IS NOT CALCULATED BASED ON PREMIUMS

- Member States of the European Union
- Principality of Andorra
- Republic of Iceland

- Principality of Lichtenstein
  - Principality of Monaco
  - Kingdom of Norway
  - Republic of San Marino
  - Swiss Confederation
  - Vatican City State
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## ANNEX XVIII

# INTEGRATION TECHNIQUES FOR PARTIAL INTERNAL MODELS

### A. General provisions

(1) For the purposes of this Annex, the following definitions shall apply:

- (a) ‘unit of the partial internal model’ is a component of the partial internal model that is separately calculated and not aggregated within the partial internal model;

(2) Where insurance and reinsurance undertakings apply integration techniques 1 to 5, their Solvency Capital Requirement shall be the sum of the following items:

- (a) the Basic Solvency Capital Requirements as laid down in sections C to F;
- (b) the capital requirement for operational risk as laid down in Article 107 of Directive 2009/138/EC, where that capital requirement is not within the scope of the partial internal model, and calculated with the partial internal model, where that capital requirement is within the scope of the partial internal model;
- (c) the adjustment for the loss-absorbing capacity of technical provisions and deferred taxes, as laid down in paragraph 3, where that adjustment is not within the scope of the partial internal model, and calculated with the partial internal model where that adjustment is within the scope of the partial internal model.

(3) Where the adjustment for the loss-absorbing capacity of technical provisions and deferred taxes is not within the scope of the partial internal model, it shall be calculated as laid down in Articles 205 to 207, but with the following changes:

- (a) the Basic Solvency Capital Requirement referred to in Articles 206(1) and (2) and 207(1) is calculated in accordance with sections B to F;
- (b) points (a) to (d) of Article 206(2) apply only to calculations with the standard formula;
- (c) for the purposes of Article 206(2) the capital requirements used in the calculation of the Basic Solvency Capital Requirement that are calculated with the partial internal take into account the risk-mitigating effect provided by future discretionary benefits of insurance contracts;
- (d) the capital requirement for operational risk referred to in Article 207(1)(c) is calculated in accordance with paragraph 2(b).

## B. Integration technique 1

The Basic Solvency Capital Requirement shall be equal to the sum of the capital requirements for the units of the partial internal model, the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks that are out of the scope of the partial internal model and the capital requirement for intangible asset risk as set out in Article 203.

## C. Integration technique 2

(1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{\sum_{i,j} Corr_{(i,j)} \times SCR_i \times SCR_j} + SCR_{int}$$

where:

- (a) the sum covers all possible combinations  $(i,j)$  of the aggregation list set out in paragraph 2;
- (b)  $Corr_{(i,j)}$  denotes the correlation parameter, for items  $i$  and  $j$  of the aggregation list;
- (c)  $SCR_i$  and  $SCR_j$  denote the capital requirements for the items  $i$  and  $j$  of the aggregation list respectively;
- (d)  $SCR_{int}$  denotes the capital requirement for intangible asset risk as set out in Article 203.

(2) The items on the aggregation list shall meet the following requirements:

- (a) they shall cover each of the units of the partial internal model;
- (b) they include each of the following sub-modules of the standard formula excluding those within the scope of the partial internal model:
  - (i) the sub-modules of the non-life underwriting risk module set out in Article 114(1);
  - (ii) the sub-modules of the life underwriting risk module set out in Article 105(3) of Directive 2009/138/EC;
  - (iii) the sub-modules of the health underwriting risk module set out in Article 151(1);

(iv) the sub-modules of the market risk module set out in Article 105(5) of Directive 2009/138/EC;

(c) they include the counterparty default risk module of the standard formula unless it is within the scope of the partial internal model.

However, where none of the sub-modules of a module of the standard formula are within the scope of the partial internal module, the aggregation list shall include that module instead of its sub-modules.

(3) The correlation parameters referred to in point (b) of paragraph 1 shall comply with the following requirements:

(a) for all items  $i$  and  $j$  from the aggregation list the correlation parameter  $Corr_{(i,j)}$  shall not be less than  $-1$  and shall not exceed  $1$ ;

(b) for all items  $i$  and  $j$  from the aggregation list the correlation parameters  $Corr_{(i,j)}$  and  $Corr_{(j,i)}$  shall be equal;

(c) for all items  $i$  from the aggregation list the correlation parameter  $Corr_{(i,i)}$  shall be equal to  $1$ ;

(d) for any assignment of real numbers to the items of the aggregation list the following shall hold:

$$\sum_{i,j} Corr_{(i,j)} \times x_i \times x_j \geq 0$$

where:

(i) the sum covers all possible combinations  $(i,j)$  of the aggregation list;

(ii)  $x_i$  and  $x_j$  are the numbers assigned to the items  $i$  and  $j$ , respectively, of the aggregation list;

(e) where the items  $i$  and  $j$  from the aggregation list are modules of the standard formula, the correlation parameter  $Corr_{(i,j)}$  shall be equal to the correlation parameter of the standard formula that is used to aggregate those two modules;

(f) where the items  $i$  and  $j$  from the aggregation list are sub-modules of the same module of the standard formula, then the correlation parameter  $Corr_{(i,j)}$  shall be equal to the correlation parameter of the standard formula that is used to aggregate those two sub-modules;

(g) for all items  $i$  and  $j$  from the aggregation list the correlation parameter  $Corr_{(i,j)}$  shall not be less than  $Corr_{(i,j)}^{min}$  and shall not exceed  $Corr_{(i,j)}^{max}$ , where  $Corr_{(i,j)}^{min}$  and  $Corr_{(i,j)}^{max}$  are appropriate lower and upper bounds selected by the undertaking.

Insurance and reinsurance undertakings shall choose the correlation parameters referred to in point (b) of paragraph 1 in such a way that no other set of correlation parameters that meets the requirements set out in points (a) to (g) results in a higher Solvency Capital Requirement, calculated in accordance with paragraph 1.

### D. Integration technique 3

(1) The Basic Solvency Capital Requirement shall be equal to the following:

$$BSCR = \sqrt{S_2^S + 2 \times S_S \times (\omega_1 \times P_C + \omega_2 \times P_S) + P^2} + SCR_{int}$$

where:

- (a)  $S_G$  denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks not covered by the partial internal model;
- (b)  $\omega_1$  denotes the first implied correlation parameter as set out in paragraph 2;
- (c)  $P_C$  denotes the capital requirement reflecting the risks that are both within the scope of the standard formula and the partial internal model, calculated with the partial internal model;
- (d)  $\omega_2$  denotes the second implied correlation parameter as set out in paragraph 3;
- (e)  $P_S$  is the capital requirement reflecting the risks within the scope of the partial internal model but not within the scope of the standard formula, calculated with the partial internal model;
- (f)  $P$  denotes the capital requirement reflecting the risks that are within the scope of the partial internal model, calculated with the partial internal model.
- (g)  $SCR_{int}$  denotes the capital requirement for intangible asset risk as set out in Article 203.

(2)The first implied correlation parameter shall be equal to the following:

$$\omega_1 = \frac{S^2 - S_G^2 - S_C^2}{d_1 + 2 \times S_G \times S_C}$$

where:

- (a)  $S$  denotes the capital requirement calculated in the same way as the Basic Solvency Capital Requirement by means of the standard formula, but where capital requirements for modules or sub-modules are replaced by capital requirements for those modules or sub-modules that are calculated with the partial internal model where possible;
- (b)  $S_C$  denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks that are within the scope of the standard formula and the partial internal model, but where the capital requirements for the modules and sub-modules are replaced by capital requirements for those modules or sub-modules that are calculated with the partial internal model;
- (c)  $S_G$  is defined as in paragraph 1(a);
- (d)  $d_1$  is equal to 1 where  $S_G$  or  $S_C$  are zero and equal to zero where  $S_G$  and  $S_C$  are different from zero.

(3)The second implied correlation parameter shall be equal to the following:

$$\omega_2 = \omega_1 \times \omega_3 + \frac{1}{2} \times \sqrt{(1 - \omega_1^2) \times (1 - \omega_3^2)}$$

where  $\omega_1$  is as defined in paragraph 2 and  $\omega_3$  is the third implied correlation parameter as set out in paragraph 4.

(4)The third implied correlation parameter shall be equal to the following:

$$\omega_3 = \frac{P^2 - P_S^2 - P_C^2}{d_1 + 2 \times P_S \times P_C}$$

where:



- (a)  $P$ ,  $P_s$  and  $P_c$  are as defined in paragraph 1;
- (b)  $d_2$  is equal to 1 where  $P_s$  or  $P_c$  are zero and equal to zero where  $P_s$  and  $P_c$  are different from zero.

#### E. Integration technique 4

(1) The Basic Solvency Capital Requirement shall be equal to the following:

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$$BSCR = \sqrt{P^2 + S_2^S + \sum_{j=k+1}^n 2 \times S_j \times \left( \sum_{i=1}^l Corr_{(i,j)} \times P_i + \sum_{i=l+1}^k Corr_{(i,j)} \times S_i \right)} + SCR_{int}$$

where:

- (a)  $P$  denotes the capital requirement reflecting the risks that are within the scope of the partial internal model, calculated with the partial internal model;
- (b)  $S_2^S$  denotes the capital requirement derived by applying the standard formula for the Basic Solvency Capital Requirement only to the risks not covered by the partial internal model;
- (c)  $k$  denotes the number of modules of the standard formula that are within the scope of the partial internal model;
- (d)  $n$  denotes the number of modules of the standard formula;
- (e)  $l$  denotes the number of modules of the standard formula for each of which the capital requirement can be calculated with the partial internal model;
- (f)  $Corr_{(i,j)}$  denotes the correlation parameter of the standard formula for the aggregation of modules  $i$  and  $j$ ;
- (g)  $P_i$  denotes the capital requirement for the module  $i$  of the standard formula, calculated with the partial internal model;
- (h)  $S_i$  and  $S_j$  denote the capital requirement for modules  $i$  and  $j$  of the standard formula respectively which are calculated in the following way:
- (i) the module is calculated with the standard formula provided that the module does not consist of sub-modules;
  - (ii) the module is calculated in accordance with paragraph 2 provided that the module consists of sub-modules.
- (i)  $SCR_{int}$  denotes the capital requirement for intangible asset risk as set out in Article 203.

(2) For all modules of the standard formula referred to in paragraph 1(h)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:

- (a)  $P$  denotes the capital requirement reflecting the risks of the sub-modules of that particular module which are within the scope of the partial internal model, calculated with the partial internal model;
- (b)  $S_S$  denotes the capital requirement derived by applying that particular module only to the risks not covered by the partial internal model;
- (c)  $k$  denotes the number of sub-modules of that particular module that are within the scope of the partial internal model;
- (d)  $n$  denotes the number of sub-modules of that particular module;
- (e)  $l$  denotes the number of sub-modules of that particular module for each of which the capital requirement can be calculated with the partial internal model;
- (f)  $Corr_{(i,j)}$  denotes the correlation parameter of the standard formula for the aggregation of sub-modules  $i$  and  $j$  of that particular module;
- (g)  $P_i$  denotes the capital requirement for the sub-module  $i$  of that particular module, calculated with the partial internal model;
- (h)  $S_i$  and  $S_j$  denote the capital requirement for sub-modules  $i$  and  $j$  of that particular module respectively which are calculated in the following way:
  - (i) the sub-module is calculated with the standard formula provided that the sub-module does not consist of other sub-modules;
  - (ii) the sub-module is calculated in accordance with paragraph 3 provided that the sub-module consist of other sub-modules.

(i)  $SCR_{int}$  shall be set to zero.

(3) For all sub-modules of the standard formula referred to in paragraph 2(h)(ii), the capital requirement of a particular sub-module shall be calculated with the formula set out in paragraph 1, applying the following denominations:

- (a)  $P$  denotes the capital requirement reflecting the risks of the sub-modules of that particular sub-module which are within the scope of the partial internal model, calculated with the partial internal model;
- (b)  $S_S$  denotes the capital requirement derived by applying that particular sub-module only to the risks not covered by the partial internal model;
- (c)  $k$  denotes the number of sub-modules of that particular sub-module that are within the scope of the partial internal model;
- (d)  $n$  denotes the number of sub-modules of that particular sub-module;
- (e)  $l$  denotes the number of sub-modules of that particular sub-module for each of which the a capital requirement can be calculated with the partial internal model;
- (f)  $Corr_{(i,j)}$  denotes the correlation parameter of the standard formula for the aggregation of sub-modules  $i$  and  $j$  of that particular sub-module;
- (g)  $P_i$  denotes the capital requirement for the sub-module  $i$  of that particular sub-module, calculated with the partial internal model;
- (h)  $S_i$  and  $S_j$  denote the capital requirement for sub-modules  $i$  and  $j$  of that particular sub-module respectively which are calculated in the following way:
  - (i) the sub-module is calculated with the standard formula provided that the sub-module does not consist of other sub-modules;

- (ii) the sub-module is calculated in accordance with this paragraph provided that the sub-module consist of other sub-modules.

(i)  $SCR_{int}$  shall be set to zero.

## F. Integration technique 5

(1)The Basic Solvency Capital Requirement shall be equal to the following:

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$$BSCR = \sqrt{P^2 + S_G^2 + \frac{2 \times P}{\sqrt{\sum_{i=1}^k \sum_{j=1}^k Corr_{(i,j)} \times S_i \times S_j}} \times \sum_{j=k+1}^n \sum_{i=1}^k Corr_{(i,j)} \times S_i \times S_j} + SCR_{int}$$

where:

- (a)  $P, S_G, k, n, Corr_{(i,j)}$  and  $SCR_{int}$  are defined as in paragraph 1 of section E;
- (b)  $S_i$  and  $S_j$  denote the capital requirement for modules  $i$  and  $j$  respectively of the standard formula which are calculated in the following way:
  - (i) the module is calculated with the standard formula provided that the module does not consists of sub-modules;
  - (ii) the module is calculated in accordance with paragraph 2 provided that the module consist of sub-modules.

(2)For all modules of the standard formula referred to in paragraph 1(b)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:

- (a)  $P, S_G, k, n, Corr_{(i,j)}$  and  $SCR_{int}$  are defined as in paragraph 2 of section E;
- (b)  $S_i$  and  $S_j$  denote the capital requirement for sub-modules  $i$  and  $j$  of that particular module respectively which are calculated in the following way:
  - (i) the sub-module is calculated with the standard formula provided that the sub-module does not consists of other sub-modules;
  - (ii) the sub-module is calculated in accordance with paragraph 3 provided that the sub-module consist of other sub-modules.

(3) For all modules of the standard formula referred to in paragraph 2(b)(ii), the capital requirement of a particular module shall be calculated with the formula set out in paragraph 1, applying the following denominations:

- (a)  $P$ ,  $S_G$ ,  $k$ ,  $n$ ,  $Corr_{(i,j)}$  and  $SCR_{int}$  are defined as in paragraph 3 of section E;
- (b)  $S_i$  and  $S_j$  denote the capital requirement for sub-modules  $i$  and  $j$  of that particular module respectively which are calculated in the following way:
  - (i) the sub-module is calculated with the standard formula provided that the sub-module does not consist of other sub-modules;
  - (ii) the sub-module is calculated in accordance with this paragraph provided that the sub-module consist of other sub-modules.