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# **EUROPEAN STANDARD OF ACTUARIAL PRACTICE 2 (ESAP 2)**

## **ACTUARIAL FUNCTION REPORT UNDER DIRECTIVE 2009/138/EC**

**Model standard of actuarial practice  
of the Actuarial Association of Europe**

*(Approved by the General Assembly on 31 January 2016)*

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## Preface

**This European Standard of Actuarial Practice (ESAP) is a model for actuarial standard-setting bodies to consider.**

The Actuarial Association of Europe (AAE) encourages relevant actuarial standard-setting bodies to maintain a standard or set of standards that is substantially consistent with this ESAP to the extent that the content of this ESAP is appropriate for **actuaries** in their jurisdiction. This can be achieved in many ways, including:

- adopting this ESAP as a standard with only the modifications in the Drafting Notes;
- customising this ESAP by revising the text of the ESAP to the extent deemed appropriate by the standard-setting body, while ensuring that the resulting standard or set of standards is substantially consistent with this ESAP;
- endorsing this ESAP by declaring that this ESAP is appropriate for use in certain clearly defined circumstances;
- modifying existing standards to obtain substantial consistency with this ESAP; or
- confirming that existing standards are already substantially consistent with this ESAP.

A standard or set of standards that is promulgated by a standard-setting body is considered to be substantially consistent with this ESAP if:

- there are no material gaps in the standard(s) in respect of the principles set out in this ESAP; and
- the standard or set of standards does not contradict this ESAP.

If an actuarial standard-setting body wishes to adopt or endorse this ESAP, it is essential to ensure that existing standards are substantially consistent with ESAP 1 as this ESAP relies upon ESAP 1 in many respects. Likewise, any customisation of this ESAP, or modification of existing standards to obtain substantial consistency with this ESAP, should recognise the important fact that this ESAP relies upon ESAP 1 in many respects.

If this ESAP is translated for the purposes of adoption, the adopting body should select three verbs that embody the concepts of “must”, “should”, and “may”, as described in paragraph 1.5.1 Language of this ESAP, even if such verbs are not the literal translation of “must”, “should”, and “may”.

**This ESAP is binding upon an **actuary** only if so directed by the **actuary’s** standard-setting body or if the **actuary** states that some or all of the work has been performed in compliance with this ESAP (e.g. if the **actuary** is directed by the principal to comply with this ESAP).**

This ESAP was adopted by the AAE General Assembly on 31 January 2016.

*[Drafting Notes: when an actuarial standard-setting organisation adopts this standard it should:*

1. *Replace “ESAP” throughout the document with the local standard name, if applicable;*
2. *Modify references to ESAP 1 in paragraphs 1.2.2 and 3.1.6 to point to the local standard(s) that are substantially consistent with ESAP 1, rather than referring to ESAP 1 directly, if appropriate;*
3. *Choose the appropriate date for insertion in paragraph 1.7.1;*
4. *Review this standard for, and resolve, any conflicts with the local law and code of professional conduct; and*
5. *Delete this preface (including these drafting notes and the reference in the Table of Contents) and the footnote associated with paragraph 1.7.1.]*

## Section 1. General

### 1.1. Purpose

- 1.1.1 This EUROPEAN STANDARD OF ACTUARIAL PRACTICE 2 (ESAP 2) provides guidance to **actuaries** when issuing an **Actuarial Function Report (AFR)** in connection with an **undertaking**'s compliance with the reporting requirements in Article 48 (1) of the **Solvency II Directive** and in paragraph 8 of Article 272 of the Commission delegated regulation (EU) 2015/35.
- 1.1.2 The purpose of ESAP 2 is that the **intended users** of the **AFR** should be able to place a high degree of reliance on the report, its relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the results stated in the report. In particular it does this by ensuring that the **AFR**
- includes sufficient information to enable **intended users** to judge the relevance of the contents of the **AFR**;
  - includes sufficient information to enable **intended users** to understand the implications of the contents of the **AFR**; and
  - such information is presented in a clear and comprehensible manner.
- 1.1.3 This standard will contribute to ensuring consistent, efficient and effective practices within the **Actuarial Function (AF)** across **undertakings** in the European Union concerning the preparation of the **AFR**. This will strengthen and contribute towards harmonised and consistent application of EU legislation.

### 1.2 Scope

- 1.2.1 This ESAP applies to **actuaries** performing **actuarial services** when issuing an **AFR** in connection with an **undertaking**'s compliance with Article 48 (1) of the **Solvency II Directive** and paragraph 8 of Article 272 of the Commission delegated regulation (EU) 2015/35.
- 1.2.2 ESAP 2 assumes that **actuaries** will also comply with ESAP 1, approved as a model standard by the AAE on 3 October 2014.

### 1.3 Underlying Principles

- 1.3.1 This ESAP is based on four principles, which should be borne in mind in any assessment of compliance with this ESAP.
- 1.3.2 **Principle 1:** **Actuarial services** related to the **AFR** must be carried out consistently with Solvency II regulations and guidelines.

- 1.3.3 **Principle 2:** Actuarial services related to the AFR should be carried out in a way which is proportional to the nature, scale and complexity of the underlying risks of the undertaking. (Principle of Proportionality)
- 1.3.4 **Principle 3:** Actuarial services related to the AFR should be consistent with the code of professional conduct of the actuarial profession and with any applicable general actuarial standards.
- 1.3.5 **Principle 4:** The AFR should be structured according to the needs of the intended users, in particular the Administrative, Management or Supervisory Body (AMSB).

## 1.4 Materiality

- 1.4.1 A failure to follow the principles in this standard need not be considered a departure if it does not have a material effect. The contents of this standard should be read in that context, even where the term material is not explicitly used or where the word “must” is used.

## 1.5 Language

- 1.5.1 Some of the language used in all ESAPs is intended to be interpreted in a very specific way in the context of a decision of the actuary. In particular, the following verbs are to be understood to convey the actions or reactions indicated:
- “must” means that the indicated action is mandatory and failure to follow the indicated action will constitute a departure from this ESAP.
  - “should” (or “shall”) means that, under normal circumstances, the actuary is expected to follow the indicated action, unless to do so would produce a result that would be inappropriate or would potentially mislead the intended users of the actuarial services. If the indicated action is not followed, the actuary should disclose that fact and provide the reason for not following the indicated action.
  - “may” means that the indicated action is not required, nor even necessarily expected, but in certain circumstances is an appropriate activity, possibly among other alternatives. Note that “might” is not used as a synonym for “may”, but rather with its normal meaning.
- 1.5.2 This document uses various expressions whose precise meaning is defined in section 2. Words and expressions which are included in section 2 are shown in bold elsewhere in the document. Headings are shown in bold whether or not they contain defined terms.

## 1.6 Cross references

- 1.6.1 When this standard refers to the content of another document, the reference relates to the referenced document as it is effective on the adoption date as shown on the cover page of this ESAP. The referenced document may be amended, restated, revoked or replaced after the adoption date. In such case, the actuary should consider the extent the modification is applicable and appropriate to the guidance in this ESAP.

## 1.7 Effective Date

- 1.7.1. This standard applies to [actuarial services](#) relating to an [Actuarial Function Report](#) completed after [Date<sup>1</sup>].

## Section 2. Definitions

The terms below are defined for use in this ESAP.

- 2.1 Actuarial Function (AF)** - An administrative capacity to undertake the particular governance tasks described in Article 48 of the [Solvency II Directive](#).
- 2.2 Actuarial Function Report (AFR)** - The report from the [Actuarial Function](#) to the [AMSB](#) in accordance with Article 48 of the [Solvency II Directive](#) and associated regulations, standards and guidelines. The [AFR](#) may consist of multiple components, and these components may be issued at different dates.
- 2.3 Actuary** - An individual member of one of the member associations of the Actuarial Association of Europe.
- 2.4 Actuarial services** - Services, based upon actuarial considerations, provided to [intended users](#) that may include the rendering of advice, recommendations, findings or opinions.
- 2.5 AF** - [Actuarial Function](#)
- 2.6 AFR** - [Actuarial Function Report](#)
- 2.7 AMSB** - Administrative, management or supervisory body.
- 2.8 Conflict of interest** - Occurs when an individual or organisation is involved in multiple interests, one of which could possibly corrupt the motivation for an act in the other or result in work which is not, or is not perceived to be, objective and impartial.
- 2.9 Data** - Data means all types of quantitative and qualitative information.
- 2.10 Intended user** - Any legal or natural person (usually including the principal) whom the [actuary](#) intends, at the time the [actuary](#) performs the [actuarial services](#), to use the report.
- 2.11 Material** - Matters are material if they could, individually or collectively, influence the decisions to be taken by [intended users](#) on the basis of the relevant information given. Assessing whether something is material is a matter of reasonable judgement which recommends consideration of the [intended users](#) and the context in which the work is performed and reported (similarly materiality).

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<sup>1</sup> Date to be inserted by standard-setter adopting or endorsing this ESAP

- 2.12 Model** - A simplified representation of some aspect of the world. A model is defined by a specification which describes the matters that should be represented and the inputs and the relationships between them, implemented through a set of mathematical formulae and algorithms, and realised by using an implementation to produce a set of outputs from inputs in the form of [data](#) and assumptions, usually involving judgement of the [actuary](#).
- 2.13 Professional judgement** – The judgement of the [actuary](#) based on actuarial training and experience.
- 2.14 Solvency II Directive** - Directive 2009/138/EC.
- 2.15 Special Purpose Vehicle (SPV)** - A special purpose vehicle (SPV) means any [undertaking](#), whether incorporated or not, other than an existing insurance or reinsurance [undertaking](#), which assumes risks from insurance or reinsurance [undertakings](#) and which fully funds its exposure to such risks through the proceeds of a debt issuance or any other financing mechanism where the repayment rights of the providers of such debt or financing mechanism are subordinated to the reinsurance obligations of such an [undertaking](#).
- 2.16 Technical Provisions** – The technical provisions of an [undertaking](#) calculated under the valuation principles of the [Solvency II Directive](#) (Articles 75 to 86).
- 2.17 Undertaking** - An insurance or reinsurance undertaking which has received authorisation to carry out the business of insurance or reinsurance in accordance with Article 14 of the [Solvency II Directive](#).
- 2.18 Underwriting** - The process of defining, evaluating and pricing insurance or reinsurance risks, including the acceptance or rejection of insurance or reinsurance obligations.

## Section 3. Appropriate Practices

### 3.1 General principles

#### THE ACTUARIAL FUNCTION REPORT and its CORE PARTS

- 3.1.1 The **Actuarial Function (AF)** must produce a written report (the **Actuarial Function Report (AFR)**) to be submitted to the administrative, management or supervisory body (**AMSB**), at least annually. The **actuary** should consider that the **intended user** is the **AMSB** but may also include other functions of the **undertaking** or any related **undertaking** and the relevant supervisory authorities.
- 3.1.2 The **AFR** should have a form, structure, style, level of detail and content which is appropriate to the particular circumstances, taking into account the **intended users**. This may lead to an **AFR** consisting of several component reports focusing on specific content which may be provided to the **AMSB** separately and at different points of time.
- 3.1.3 The **AFR** should:
- (a) state which Actuarial Standards apply to the work that has been carried out and whether the work complies with those Actuarial Standards;
  - (b) state which Actuarial Standards apply to the **AFR** and whether the **AFR** complies with those Actuarial Standards; and
  - (c) give particulars of any **material** departures from the Actuarial Standards referred to in (a) and (b) above.

#### THE ACTUARIAL FUNCTION

- 3.1.4 The **AFR** must document a summary of all major tasks that have been undertaken by the **AF** and their results.
- 3.1.5 The **AFR** should set out information identifying relevant **conflicts of interest** and describing how they have been managed including any potential **conflicts of interest** between the individual **undertaking** and any group of which it is a part.
- 3.1.6 In applying 3.3 and 4.2.3.f of ESAP 1 the **AF** should disclose any **material** reliance on other work and how the **AF** gained assurance on the reliability of the other work.
- 3.1.7 The **AFR** must identify the individuals responsible for writing the **AFR**, and, if applicable, the person taking overall responsibility for its production.
- 3.1.8 The **AFR** may provide information to demonstrate that each of the contributors to the **AFR**, and, if applicable, the individual taking overall responsibility for the **AFR**, has the relevant knowledge and experience to fulfil the role.



## CONTENT OF THE ACTUARIAL FUNCTION REPORT

- 3.1.9 The **AFR** must clearly identify any deficiencies and give recommendations as to how such deficiencies should be remedied having regard to **materiality** and proportionality.
- 3.1.10 The **AFR** should include sufficient information and discussion about each area covered so as to enable the **AMSB** to judge its implications.
- 3.1.11 The **AFR** should summarise the key **data** used to reach the opinions expressed and should draw attention to any **material** areas of uncertainty and their sources, and also to any **material professional judgement** made in the assessments by the **AF**.

## FEEDBACK ON THE ACTUARIAL FUNCTION REPORT

- 3.1.12 The **AF** should discuss its conclusions and recommendations with management when finalizing the **AFR**. After submission of an **AFR** to the **AMSB**, the **AF** should seek feedback from the **AMSB** on the contents of the report and should have regard to that feedback when preparing future reports.
- 3.1.13 Details of whether recommendations in the **AFR** have been accepted and, if so, on progress towards implementation, should be summarised in the next **AFR**.

## 3.2 Technical Provisions

### 3.2.1 Conclusions on adequacy and reliability of Technical Provisions

- 3.2.1.1 The **AFR** must clearly state the conclusions of the **AF** with regard to its analysis of the adequacy and reliability of the **Technical Provisions**. The conclusions should include any concerns the **AF** has in this regard and identify **material** shortcomings or deficiencies, with recommendations as to how these could be remedied.
- 3.2.1.2 The **AFR** should include the results of an assessment whether the **Technical Provisions** have been calculated in accordance with Articles 75 to 86 of the **Solvency II Directive** and advise if any changes are necessary in order to achieve compliance.
- 3.2.1.3 The **AFR** must clearly state the sources and degree of uncertainty the **AF** has assessed in relation to the estimates made in the calculation of the **Technical Provisions**. The **AFR** should explain the potential sources of uncertainty and, where appropriate, illustrate uncertainty by reference to possible scenarios.

### **3.2.2 Important information about Technical Provisions**

- 3.2.2.1 The **AFR** should ensure that the factors which have a **material** impact on the amount of **Technical Provisions**, including risk drivers and assumptions, are made clear in the **AFR**.
- 3.2.2.2 In particular the **AFR** should draw attention to any **material** judgements made in the calculation of **Technical Provisions**.

### **3.2.3 Disclosure of opening and closing Technical Provisions**

- 3.2.3.1 The **AFR** should disclose the opening and closing **Technical Provisions**, split, to the extent possible, between best estimate and risk margin. A commentary on the impact on the Own Funds of the main items of movement of **Technical Provisions** should be provided.

### **3.2.4 Co-ordination of process**

- 3.2.4.1 The **AFR** should include a broad overview of the overall process employed in respect of the calculation of the **Technical Provisions**.

### **3.2.5 Sufficiency and quality of data**

- 3.2.5.1 The **AFR** must include an overview of the controls surrounding the **data** used in the calculation of **Technical Provisions** and an explanation of how the **AFR** is comfortable that the **data** is appropriate, accurate, reliable and complete.
- 3.2.5.2 The **AFR** must identify any **material** uncertainties or limitations in the **data** and outline the approach taken to these in the context of the calculation of **Technical Provisions**. Limitations might include, but are not restricted to, its fitness for purpose, consistency over time, timeliness, information technology systems, availability of individual policy **data** and of historical **data**.
- 3.2.5.3 The **AFR** should give an overview of the business covered by the **Technical Provisions**, the split of **data** into homogeneous risk groups and how this split has been assessed for appropriateness in relation to the underlying risks of the **undertaking**.
- 3.2.5.4 The **AFR** should consider relevant information provided by financial markets and generally available **data** on **underwriting** risks and explain how it is integrated into the assessment of the **Technical Provisions**.

### 3.2.6 Methods and models

- 3.2.6.1 The **AFR** must provide an overview about how the appropriateness of the methods and **models** used in the calculation of the **Technical Provisions** has been assessed with regard to the main drivers of risk, the lines of business of the **undertaking** and the way in which the business is being managed.
- 3.2.6.2 The **AFR** should draw attention to any unusual or non-standard method not within usual market practices which has been used to calculate **Technical Provisions**, including a description of the rationale for the choice of method.
- 3.2.6.3 The **AFR** should include, where appropriate, an overview of the methods used to calculate **Technical Provisions** in respect of contracts where the insufficiency of the **data** has prevented the application of a reliable actuarial method, specifically those cases referred to in Article 82 of the **Solvency II Directive**. The **AFR** should include an assessment of the appropriateness of the approximations used in the calculations of **Technical Provisions** for such contracts.
- 3.2.6.4 The **AFR** must include an assessment of the appropriateness of the methods and **models** used in the calculation of options and guarantees included in insurance or reinsurance contracts.
- 3.2.6.5 The **AFR** should indicate if the **AF** assesses that the information technology systems used in the calculation of **Technical Provisions** do not sufficiently support the actuarial and statistical procedures.
- 3.2.6.6 Where the calculation of **Technical Provisions** depends on multiple methods or **models**, the **AFR** should make reference to any **material** differences between the results according to these methods or **models** and what allowance has been made for the differences.
- 3.2.6.7 The **AFR** should disclose and justify any **material** changes in methods from those used in the previous **AFR** and quantify the effect on the **Technical Provisions**.

### 3.2.7 Assumptions

- 3.2.7.1 The **AFR** must include a description of how the appropriateness of the **data** and methods used to determine the assumptions underlying the **Technical Provisions** have been assessed.
- 3.2.7.2 The **AFR** should disclose the key assumptions underlying the calculation of the **Technical Provisions** and explain their appropriateness in relation to the main drivers of risk likely to affect the insurance or reinsurance obligations of the **undertaking**.
- 3.2.7.3 The **AFR** should disclose any **material** changes made to the assumptions used compared to the previous **AFR**.

3.2.7.4 The **AFR** should disclose its assessment of the appropriateness of **material** judgements made in the determination of assumptions. These may include, but are not restricted to, assumptions or interpretations made in relation to the following:

- contractual options and guarantees;
- policyholder behaviour;
- future management actions;
- amounts recoverable from counterparties;
- areas of future discretion exercised by the **undertaking** which might impact its insurance or reinsurance obligations; and
- obligations which might exist over and above contractual obligations.

### **3.2.8 Comparing best estimates against experience**

3.2.8.1 The **AFR** should include an overview of the process used to compare best estimates against actual experience and must draw attention to any concerns the **AF** has in regard to the effectiveness of this process.

3.2.8.2 The **AFR** should disclose the findings of the **AF**'s review of the quality of past best estimates and the conclusions from this in relation to the appropriateness of **data**, methods or assumptions used in the calculation of the **Technical Provisions**. In reviewing the quality of past estimates, the **AFR** should draw attention to those areas where actual experience has deviated in a **material** way from the assumptions made and provide a commentary in this regard. It may assist understanding if this commentary distinguishes between deviations which are judged to arise from volatility of the underlying experience and those which are viewed as relevant to the appropriateness of the **data**, methods or assumptions used. The **AFR** should disclose any **material** judgement when such a distinction is made.

### **3.2.9 Sensitivity analysis**

3.2.9.1 The **AFR** must report on the results of an analysis of the sensitivity of the **Technical Provisions** to each of the major risks underlying the obligations which are covered in the **Technical Provisions**.

## **3.3 Opinion on underwriting policy**

### **3.3.1 Opinion on the overall underwriting policy of the undertaking**

3.3.1.1 The **AFR** must express an opinion on the overall **underwriting** policy of the **undertaking**.

3.3.1.2 The **AFR** should set out how the **AF** has arrived at its opinion on the overall **underwriting** policy of the **undertaking**.

3.3.1.3 The **AFR** should explain any concerns which the **AF** may have as to the suitability of the overall **underwriting** policy.

3.3.1.4 The **AFR** should outline recommendations to remedy any deficiencies the **AF** has identified in relation to the overall **underwriting** policy having regard to **materiality** and proportionality.

### **3.3.2 Areas of consideration**

3.3.2.1 An assessment of the suitability of the overall **underwriting** policy should at least include the areas set out in 3.3.3 to 3.3.7.

### **3.3.3 Sufficiency of premiums**

3.3.3.1 The **AFR** must conclude whether the premiums are expected to be sufficient in the light of the operation of the overall **underwriting** policy. The assessment must take into consideration the impact of the underlying risks (including **underwriting** risks) to which the business is exposed and the impact on the sufficiency of premiums of options and guarantees included in insurance and reinsurance contracts.

### **3.3.4 Environmental Changes**

3.3.4.1 The **AFR** should describe the external environmental factors which have the potential to influence the profitability of new business including renewals. These factors might include inflation, legal risk and changes in the market in which the **undertaking** operates affecting business volumes and business mix.

### **3.3.5 Adjustments to Premiums**

3.3.5.1 For products where premiums may be adjusted in response to experience, the **AFR** must comment on the effect of systems which adjust the premiums policy-holders pay upwards or downwards depending on their claims history (bonus-malus systems) or similar systems, implemented in specific homogeneous risk groups.

### **3.3.6 Anti-selection**

3.3.6.1 The **AFR** must include the **AF**'s conclusions concerning anti-selection risks within the **undertaking**'s portfolio of contracts if these risks might have an adverse impact on the **Technical Provisions** or sufficiency of premiums. The **AFR** should outline the **AF**'s recommendations for improvements to the **underwriting** policy which might mitigate these risks.

### **3.3.7 Interrelationships**

3.3.7.1 The **AFR** should outline the extent to which the overall **underwriting** policy of the **undertaking** is not consistent with other relevant policies of the **undertaking**.

3.3.7.2 This should at least include an assessment of the consistency with the risk appetite, the reinsurance arrangements and the **Technical Provisions** of the **undertaking**.

## **3.4 Opinion on reinsurance arrangements**

### **3.4.1 Opinion on the adequacy of reinsurance arrangements**

3.4.1.1 The **AFR** must express an opinion on the adequacy of the reinsurance arrangements.

3.4.1.2 The **AFR** should explain any concerns which the **AF** may have concerning the adequacy of the reinsurance arrangements.

3.4.1.3 If the **AF** identifies deficiencies the **AFR** should outline recommendations to improve the reinsurance arrangements, including actions which might be taken to:

- eliminate inconsistencies in reinsurance coverage;
- reduce the risk of non-performance by reinsurance counterparties; and
- extend coverage of **material** risks.

3.4.1.4 The **AFR** should set out how the **AF** has arrived at its opinion.

### **3.4.2 Interrelationships**

3.4.2.1 The **AFR** should outline the extent to which the reinsurance arrangements of the **undertaking** are not consistent with the **undertaking**'s:

- risk appetite;
- **underwriting** policy; and
- **Technical Provisions**,

and include recommendations as to how any inconsistencies should be remedied.

3.4.2.2 The commentary on interrelationships should incorporate the **AF**'s assessment of the credit standing of reinsurance counterparties.

### 3.4.3 Effectiveness of reinsurance arrangements

- 3.4.3.1 The **AFR** should include assessments of how the reinsurance arrangements, including any **SPVs**, might respond in a number of stressed scenarios or refer to where this is considered in the ORSA. The scenarios might include:
- catastrophic claims experience;
  - risk aggregations;
  - reinsurance defaults; and
  - reinsurance exhaustion.
- 3.4.3.2 The assessments should include indications of:
- the amounts recoverable from reinsurance contracts and **SPVs**; and
  - the impact on the **undertaking**'s own funds.
- 3.4.3.3 The assessments should consider, if appropriate, the impact of reinstatements or renewal of reinsurance cover and the potential unavailability of reinsurance cover.
- 3.4.3.4 The **AFR** might include an assessment of the effectiveness of the reinsurance arrangements in mitigating the volatility of the **undertaking**'s own funds.

### 3.5 Contribution to risk management

- 3.5.1 The **AFR** should describe the areas where the **AF** has made a **material** contribution to the implementation of the risk management system and the work performed. In particular, this should cover the contribution of the **AF** to the risk modelling underlying the calculation of the capital requirements. Other examples might include the role of the **AF** and its contribution in relation to the internal model, the identification of **material** deviations in the company's risk profile from the assumptions underlying the standard formula and the contribution of the **AF** to the ORSA process, including its views in relation to the stress- and scenario-testing undertaken.
- 3.5.2 The **AFR** may summarise the main findings of these activities and in such cases should provide appropriate reference to reporting from the risk management function.