



**GROUPE CONSULTATIF ACTUARIEL EUROPEEN**  
EUROPEAN ACTUARIAL CONSULTATIVE GROUP

**SECRETARIAT, MAISON DES ACTUAIRES, 4 PLACE DU SAMEDI**  
**B-1000 BRUSSELS, BELGIUM**

TELEPHONE: (+32) 22 17 01 21 FAX: (+32) 27 92 46 48

E-MAIL: [groupe@gcactuaries.org](mailto:groupe@gcactuaries.org)

WEB: [www.gcactuaries.org](http://www.gcactuaries.org)

General Task Force  
Interim Actuarial Standards Sub-committee  
International Actuarial Association

The Standards Project Team of the Groupe Consultatif Actuariel Européen is pleased to submit some comments on the exposure draft of ISAP1, which was promulgated under cover of a letter from the President of the IAA on 26 July 2011.

The Groupe Consultatif is not itself a member association of the IAA, but almost all of its 37 Full Member Associations are also full members of the IAA. This response has not been through full due process to be deemed to represent formally the views of all our member associations, but has been prepared by the Groupe's Standards Project Team in the light of the Groupe Consultatif's own developing experience with thinking about international actuarial standards of practice. The draft has been shared with member associations and representatives of associations on the Standards, Freedoms and Professionalism Committee, and a number of their comments have been incorporated. Some individual member associations of the Groupe will submit their own responses in respect of ISAP1.

### **General**

The paper discussed at the IAA meetings in Zagreb concerning the objectives for IAA standards focused strongly on the need to promote high quality actuarial advice. Characteristics of high quality actuarial practice were stated to include consistency, usefulness and clarity. It seems appropriate to measure the exposure draft of ISAP1 against these, but that list is clearly not intended to be comprehensive. We have started from the presumption that ISAP1 should also promote other aspects of high quality actuarial practice.

The Groupe congratulates the IAA on taking the first step towards developing a generic international model standard of practice.

The Groupe Consultatif has been considering whether to issue model actuarial standards of practice in respect of specific aspects of actuarial work in the European context. At the present time this is expected to relate primarily to actuarial work in connection with the implementation by insurance firms of the requirements of the Solvency II Directive and associated regulations and guidelines.

Our first thought was to develop a generic standard of practice concerning the quality of actuarial work carried out by actuaries under Solvency II. Whilst we were beginning work on this we became aware of the development of the exposure draft of ISAP1 and, once the ISAP1 had been promulgated, we went through a process of removing from our draft the material which appeared to be covered by ISAP1, since our assumption is that the Groupe would defer to the IAA in respect of the development of global actuarial standards of practice and would only issue model standards which were supplementary to IAA

Final response to the IAA on the ISAP1 exposure draft, prepared by the Standards Project Team of the Groupe Consultatif Actuariel Européen, dated 30 November 2011.

standards in relation to application in Europe, or where standards were felt to be required on topics not covered by IAA standards.

Having gone through this process we were still left with a draft standard containing a significant amount of material. In discussion of this early draft at the Groupe Consultatif meetings held recently in Prague, and in comments received from some member associations, a number of concerns were expressed:

- that there may still be some overlap with ISAP1
- that the Groupe should defer to the IAA on the development of generic standards of practice and that one might expect everything that we need for our quality standard to be included in ISAP1
- that some of the material in our draft relates to issues traditionally covered by the code of conduct and should not therefore be included in a actuarial standard of practice.
- That the Groupe should seek to influence the IAA with regard to the content of ISAP1, in order to achieve a generic standard which would also meet our requirements and expectations.

We have not at this stage made any attempt to prepare a new draft of our standard but append the current working draft at Annex 1, as it forms the backdrop to many of our comments on the exposure draft of ISAP1.

## **Specific comments on the contents of the July 2011 exposure draft of ISAP1**

### Introduction 1

With regard to paragraph 2, an adopted standard would only be binding if the member association made it binding, and not simply because they had adopted it as a standard.

Individual paragraphs should be numbered, even in the introduction.

### 1.1 Purpose

The purpose in 1.1 seems excessively brief and does not really convey anything about the real intended purpose of the standard. The purpose of standards has been set out elsewhere by the IAA and should be quoted or cross-referenced here.

### 1.2 Scope

We are concerned that the scope may be overambitious at this stage in the development of international actuarial standards. A particular point is that it should not apply to an actuary who is acting in another capacity, such as an auditor or regulator, where different, and potentially conflicting, guidance may apply.

There should perhaps be a definition of 'deviation'.

## Section 2. Definitions

The use of the term 'responsible actuary' is unfortunate, since this is a commonly used term in Europe for a statutory actuarial role, similar to the appointed actuary or the actuarial function-holder.

2.3 The application of any standard to oral communication will be impossible to check.

2.6 The entity might not be an enterprise. It could be a government department or agency, a social security institution, a pension fund, a group, a part of an enterprise, an individual, etc.

2.9 There should perhaps also be a definition of a qualified opinion, to cater for the situation where an actuary is unable to render a full opinion because some parts of the

standards could not be applied or because the information was for some reason incomplete.

2.10 Use of the word 'direction' may undermine the independence of the actuary. We suggest a re-wording of the first sentence as follows: "The Party who has the right to define the scope of the assignment to the provider of professional services."

2.12 Insert "Actuarial" before "services" at the start of the sentence. Actuaries may provide professional services in their capacity as a member of another profession and those should not be covered by the standard.

2.14 The definition of *report* should be restricted to written communications, consistent with section 4.2.

### Section 3. Appropriate Practices

3.1 We are not convinced that this section is appropriate for a standard. Detailed rules on acceptance of an assignment sit uneasily with a core technical standard, since they could be considered to be an elaboration of the code of conduct, or else operational instructions to actuaries. The style of this section is also too rules-based for an ISAP.

3.1.2 If included it may be better to split it into two sections

- a. any limitations to which the actuary is subject
- b. any additional requirements that the actuary is required to satisfy

3.1.3 We suggest adding 3.1.3:  
"In the case that some standards cannot be fully applied, or information is incomplete, an actuary can accept the assignment but must give a qualified opinion. The actuary should state what could not be applied or carried out."

3.2 Knowledge of relevant circumstances is part of competence and could be considered to be covered by the requirements of the code of conduct. If included it should be broadened to include familiarity with the wider environment as it affects the matter under consideration and the background to the particular situation on which advice is to be given, and not just generic familiarity with the entity.

3.3 This is more a question of definition and use of language and should be in the introductory or definitional sections rather than forming part of the standard itself.

3.4 This section on reliance would also appear to be more of an issue relating to the code of conduct and is too detailed (rules-based?) to be appropriate for an ISAP. In any case it should properly form part of the discussion on data.

3.5 The term *reasonable expectations* should perhaps be defined. We suggest adding a final sentence: "Materiality may be defined by the principal, but in this case the actuary should state how it has been defined."

3.6 and 3.7 In standard English, 'judgment' is used only of the sort of judgment handed down by a court. When exercised by an actuary it would be 'judgement'.

3.6.1 At the end, after "appropriate" add the words ", and note it in the report".

3.6.2 Some concerns have been expressed about how this might be interpreted.

3.6.4 This deals with data deficiencies but a similar set of considerations should apply (in 3.7) to deficiencies in available models and shortcomings in assumptions

3.7.3 Another important 'for example' to be mentioned might be changes in the mix of business.

3.7.4 Specific mention might be made of Court judgments (that are not directly concerning the intended user), which can have a material impact on the expected future claims development, particularly in some lines of property/casualty business.

3.8.1 The phrase 'assumption set' is ambiguous as 'set' might be a verb rather than a substantive. It would be better to refer to 'a set of assumptions' (this occurs three times in 3.8.1).

3.8.2 There should not only be consistency between assumptions used in a particular report but with assumptions used previously on a similar assignment, and, if the assumptions are not consistent with those used previously, this needs to be explained and the effect quantified. (See for example D.14.1 of draft GCASP1). In the last line of 3.8.2 'the' is missing before 'actuary's report'.

3.8.3 The actuary should document why particular decisions were made with regard to the choice of assumptions and methodology and should explain to the intended user the implications of changes to the assumptions (and/or methodology).

With regard to section 3.8 another important principle should be for the actuary to monitor the actual experience against the expected experience based on the assumptions adopted, and this comparison and review should form a significant part of the assumption-setting process (unless it is the first time that a task has been carried out).

3.8.4 This might also apply where an assumption is required by statute or regulation, or by a regulatory authority, which differs from what the actuary might assume otherwise. Should the disclosure indicate that the actuary does not take personal professional responsibility for results of calculations carried out on someone else's assumptions? This subsection might be rolled into 3.10.

3.9.1 We are not convinced that process management is an appropriate subject for ISAP1, at least in the sense of 3.9.1, and would prefer a different title to this subsection, which might cover reasonableness checks, appropriate level of peer review, appropriate documentation and ensuring that the underlying risks and uncertainties attaching to the results are adequately explained to the principal. The existing sentence on process controls is vague and unclear.

3.10.2a Whilst the actuary might not have a disclosure obligation, it would be appropriate for the actuary to document this conclusion for the record, and to inform any peer reviewer or subsequent actuary carrying out similar work.

3.12 This might refer specifically to the need for the standard of documentation to be sufficient to facilitate peer review. In line 2, 'assume' is an ambiguous word and might be better rendered by 'take on'.

#### Section 4: Communication and Disclosures

4.1.2 The form of communication should be appropriate to the scope of the assignment and to the capacity of the intended users to understand the information being communicated.

4.1.4 The last sentence seems to repeat a statement which appears in the IAA Code of Conduct. If ISAP1 is to add anything on this it might have to comment on the (hopefully

very limited) circumstances in which the actuary might not be available to provide explanations and information.

4.3 If a conflict exists between the standard and any applicable law or regulation, it would still be appropriate for the actuary to disclose the conflict, even though the requirements of the law or regulation should prevail.

### **Suggestions of other topics which might be covered by ISAP1**

The actuary should be required to take into account the impact of the advice on affected stakeholders and advise the principal accordingly, as in D.4.1 of the draft GCASP1. This also would underline the need for the results to be useful to the intended users, which the IASSC paper on Objectives of Standards mentions as one of the key characteristics of high quality actuarial advice.

The choice of methodology (and maybe assumptions) should be proportionate to the complexity of the situation, the data available and the significance of that particular part of the exercise in the overall context.

An actuary should ensure that any communication contains sufficient information to enable the intended users to gain an understanding of the risks inherent in the advice and the uncertainties about future outcomes (see D.10 of the draft of GCASP1).

Chris Daykin  
Convenor, Standards Project Team, Groupe Consultatif Actuariel Européen  
30 November 2011

## ANNEX 1



### **GROUPE CONSULTATIF ACTUARIEL EUROPEEN** EUROPEAN ACTUARIAL CONSULTATIVE GROUP

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## **GROUP CONSULTATIF ACTUARIAL STANDARD OF PRACTICE 1 (GCASP 1)**

**QUALITY OF ACTUARIAL WORK  
UNDER DIRECTIVE 2009/138/EC  
(the “Solvency II Directive”)**

# A. PURPOSE AND EFFECTIVE DATE OF THE STANDARD FOR QUALITY OF ACTUARIAL WORK UNDER DIRECTIVE 2009/138/EC

## A.1 PURPOSE

A.1.1 Groupe Consultatif Actuarial Standard of Practice 1 (GCASP1) provides guidance to **actuaries** when performing **professional services** in connection with an **insurance undertaking's** compliance with Directive 2009/138/EC.

A1.2 The purpose of GCASP1 is so that the management of **insurance undertakings**, as well as insurance supervisors and policyholders, should be able to place a high degree of reliance on the role played by professionally qualified **actuaries** in relation to different aspects of the implementation of Solvency II, including competence, quality, consistency, objectivity, transparency, sound exercise of judgement and communication of advice and recommendations.

A.1.3 The purpose of this standard is to assist the effective management of **insurance undertakings** subject to Directive 2009/138/EC (the "Solvency II Directive") by ensuring that in the performance of **professional services** within its scope:

- actuarial and risk management advice provided to managers and the governing body of an **insurance undertaking** is relevant, comprehensible and sufficient to support decisions about the business and includes information on risk and uncertainty and, if those decisions affect policyholders' benefits, on the implications for policyholders;
- actuarial information provided to policyholders and regulators and which forms part of public disclosure is relevant, comprehensible and sufficient for its purpose;
- calculations are carried out using suitable methods and assumptions and are performed correctly; and
- the key issues that affect the variability of projected cash-flows, interaction between assets and liabilities and uncertainty relating to the present value of cash-flows, are taken into account and explained appropriately.

A.1.4 Nothing in this standard should be taken to imply a requirement to depart from statutory provisions deriving from the **Solvency II Directive**, the **Omnibus II Directive**, the **regulations** issued by the Commission or the **Level 3 standards and guidelines** issued by EIOPA.

A.1.5. GCASP1 assumes that **actuaries** will also comply with **ISAP 1**, issued by the International Actuarial Association on [ ].

A.1.6 This standard applies to **professional services** completed after 31 December 2013.

## B INTERPRETATION

### B.1 INTERPRETATION OF THE TEXT

B.1.1 All text in this standard has equal status unless stated otherwise.

B.1.2 An **actuary** will be expected to follow the principles in this standard in all material respects. 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 'shall' is used.

B.1.3 An **actuary** who does not comply with the principles of the standard in any material respect should disclose this and explain why non-compliance is appropriate.

B.1.4 Nothing in this standard should be interpreted as requiring **professional services** to be performed that are not **proportionate** to the scope of the decision or assignment to which they relate, or to the **insurance undertaking** concerned, or the benefit that **intended users** would be expected to obtain from the **professional services**. What **professional services** are **proportionate** is a matter for judgement and might depend on factors such as the size of the **insurance undertaking**, the nature of the risks underwritten and the expertise of **intended users** in the matters being reported on and their needs.

B.1.5 Part C of this standard includes references to **professional services** carried out by an **actuary**. What constitute **professional services** carried out by an **actuary** for this purpose depends on whether **intended users** would reasonably expect the work to be performed using actuarial techniques, and whether the work involves risk, uncertainty or modelling and the exercise of judgement by the **actuary** in a professional capacity. It is not intended to apply to work carried out by an **actuary** which does not involve the application of actuarial skills and judgement.

B.1.6 The form that is taken by any explanations, rationales, descriptions, indications or other analyses required by this standard will depend on the scope of the **professional services** performed and the benefit to **intended users**. The level of detail required is a matter for judgement. Unless stated otherwise, analyses may be quantitative or qualitative.

B.1.7 Lists are not intended to be exhaustive.

### B.2 DEFINITIONS

B.2.1 Terms appearing in **bold** in the text are used with the meanings set out below. The definitions are used consistently in Groupe Consultatif Actuarial Standards of Practice (GCASP).

**actuary** An **actuary** is a full member of a professional association of actuaries which is a Full Member of the Groupe Consultatif Actuariel Européen.

**Continuing Professional Development** The continuous acquisition of knowledge, keeping up-to-date with changes in the regulatory environment and familiarising oneself with relevant material, both technical and professional, throughout one's professional life. Members of the Groupe Consultatif may lay down specific requirements to be fulfilled in relation to Continuing Professional Development (CPD).

**data** Facts or information usually collected from records or from experience or observation. Examples include membership or policyholder **data**, claims **data**, asset and investment **data**, operating **data** (such as administrative or running costs), benefit definitions and policy terms and conditions.

to **document** To record in **documentation**.

**documentation** Records of facts, **opinions**, explanations of judgements and other matters. **Documentation** may be paper or electronic based. It is not necessarily provided to **intended users** but should be available to any reviewer. **Documentation** is **material** if it concerns a **material** matter.

**insurance business** The business of effecting or carrying out contracts of insurance.

**insurance undertaking** A direct life or non-life insurance undertaking which has received authorisation to carry out **insurance business** in accordance with Article 14 of Directive 2009/138EC.

**intended user** Any legal or natural person (usually including the **principal**) whom the **actuary** intends to use the **work product** at the time the **actuary** provides **professional services**.

**ISAP 1** International Standard of Actuarial Practice 1: General Actuarial Practice (issued by the International Actuarial Association on [ ]) )

**Level 3 standards and guidelines** Binding standards and non-binding guidelines issued by EIOPA under powers given by the **Omnibus II Directive**

**material** Matters are **material** if they could, individually or collectively, influence the decisions to be taken by **intended users** of the related actuarial information. Assessing **materiality** is a matter of reasonable judgement which requires consideration of the **intended users** and the context in which the work is performed and reported.

**measure** The approach that is used to define how an (uncertain) asset or liability amount is quantified. Two different **measures** of the same asset or liability may produce different results.

**method** The mechanism that is used to quantify an (uncertain) asset or liability amount.

**model** A representation of some aspect of the world which is based on simplifying assumptions. A **model** is defined by a **specification** that 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 parameters.

**Omnibus II Directive** Directive 2012/???/EC

**opinion** An opinion expressed by an **actuary** and intended by that **actuary** to be relied upon by the **intended users**.

**principal** The party who has the right to provide direction to the provider of **professional services**. The **principal** will usually be the client or the employer of the **actuary**.

**professional services** Services provided to a **principal** which may include the rendering of advice, recommendations, findings or **opinions** based upon actuarial considerations.

**proportionate** At an appropriate level of detail and complexity.

**regulations** Level 2 measures (*reference*) issued by the European Commission under powers contained within the **Solvency II Directive**.

**report** An **actuary's** communication presenting the results of **professional services**.

**Solvency II Directive** Directive 2009/138/EC.

**specification** A description of a **model** that describes the matters to be represented, the inputs and their interactions with each other, and the outputs to be produced.

**work product** The totality of the **professional services** provided by an **actuary** to **intended users** including any **opinion** or **report**, as well as any supporting calculations and documentation.

## C SCOPE

### C.1 WORK WITHIN THE SCOPE OF THIS STANDARD<sup>1</sup>

#### **Actuarial function**

C.1.1 This standard applies to all **professional services** in respect of the actuarial function under Article 48 of the **Solvency II Directive**, including providing the **opinions** required on an **insurance undertaking's** overall underwriting policy and adequacy of reinsurance arrangements, contributing to the effective implementation of the risk management system and reporting to the management of the **insurance undertaking** on the responsibilities of the actuarial function.

#### **Risk management function**

C.1.2 This standard applies to all **professional services** in respect of the risk management function under Article 44 of the **Solvency II Directive**, including the development of any full or partial internal **model**.

#### **Solvency capital requirement**

C.1.3 This standard applies to all **professional services** in respect of determining the solvency capital requirement of an **insurance undertaking** using full or partial internal **models** under Subsection 3 of the **Solvency II Directive**.

#### **Own risk and solvency assessment**

C.1.4 This standard applies to all **professional services** in respect of the Own Risk and Solvency Assessment under Article 45 of the **Solvency II Directive**.

#### **Report on solvency and financial condition**

C.1.5 This standard applies to all **professional services** in respect of the report on solvency and financial condition under Article 51 of the **Solvency II Directive**, including sign-off of such a report under personal professional responsibility.

#### **Identifying and reporting on deteriorating financial condition**

C.1.6 This standard applies to all **professional services** in respect of identifying and reporting on deteriorating financial condition under Article 136 of the **Solvency II Directive**.

#### **Information for policy holders**

C.1.7 This standard applies to all **professional services** in respect of the provision of information to policyholders under Article 185 of the **Solvency II Directive**.

C.1.8 The **professional services** in the above paragraphs include:

- providing information to support the choice of appropriate **measures** and **methods**
- providing information to support the setting of assumptions;
- selecting and analysing **data**;
- making any required calculations;
- monitoring experience against estimated outcomes;
- providing a professional **opinion**; and

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<sup>1</sup> The principles in this standard may be applicable to a much wider range of actuarial work but GCASP1 is issued within the specific context of actuarial work for an insurer which is carried out to enable insurance firms to comply with the Solvency II Directive.

- providing any **report** required by the management of the **insurance undertaking**.

## D GENERAL PRINCIPLES

### D.1 INTRODUCTION

D.1.1 This Part contains general principles relating to the provision of **professional services** for **insurance undertakings** which support the purpose of the standard set out in Part A. It should be interpreted as described in Part B and applies to the **professional services** specified in Part C.

#### Judgement concerning application

D.1.2 Judgements concerning the application of the standard should be exercised in a reasoned and justifiable manner.

D.1.3 Judgement might be needed on matters such as:

- whether the work is within the scope of the standard;
- the derivation of assumptions; and
- the selection of **models**.

D.1.4 The standard does not require the **documentation** or disclosure of judgements concerning its application unless stated otherwise.

### D.2 COMPETENCE

D.2.1 An **actuary** should not provide the **professional services** unless:

- a) he or she has an appropriate level of relevant knowledge and skill; or
- b) he or she is acting on the advice of an individual who has the appropriate level of relevant knowledge and skill and all interested parties are aware that this is the case; or
- c) he or she is acting under the direct supervision of another **actuary** who is taking professional responsibility for the **work product**.

D.2.2 An **actuary** should consider whether advice from a member of another profession or other specialist is necessary to ensure the relevance and quality of the **professional services**.

D.2.3 An **actuary** should keep him- or herself up-to-date in all technical, regulatory and professional matters relating to the **professional services** to be carried out and should complete an appropriate amount of **Continuing Professional Development** on a regular basis.

### D.3 UNDERSTANDING OF BACKGROUND AND ENVIRONMENT

D.3.1 An **actuary** should ensure before advising that he or she acquires adequate familiarity with the background to the situation and the wider environment as it affects the matter under consideration.

### D.4 CONSIDERATION OF STAKEHOLDERS

D.4.1 The **actuary** should take care that the **professional services** delivered are appropriate to the instructions and needs of the **principal**, including the legal and other rules which may govern the matter, having due regard to others such as

policyholders of an **insurance undertaking**, or any analogous persons whose interests are affected by the results and recommendations arising from the **professional services**.

## **D.5 CONFLICT RECOGNITION AND MANAGEMENT**

D.5.1 An **actuary** should disqualify him- or herself from acting where there is a conflict of interest that cannot be reconciled.

D.5.2 An **actuary** should document the steps he or she has taken to reconcile a conflict and should agree those steps with the **principal** if they would be ineffective without agreement.

## **D.6 COMPLIANCE**

D.6.1 An **actuary** must comply with all relevant legal, regulatory and professional requirements, take reasonable steps to ensure that he or she is not placed in a position of not being able to comply, and should challenge non-compliance by others.

D.6.2 An **actuary** must speak up to his or her **principal** if the actuary believes, or reasonably ought to believe, that a course of action is unlawful, unethical or improper.

D.6.3 An **actuary** must fulfil any obligations to report information to relevant regulatory authorities.

## **D.7 OBJECTIVITY**

D.7.1 An **actuary** should not allow bias, conflict of interest or the undue influence of others to override professional judgement.

D.7.2 An **actuary** should ensure that his or her ability to provide objective advice to a **principal** is not, and cannot reasonably be seen to be, compromised.

## **D.8 QUALITY**

D.8.1 An **actuary** should strive to produce **professional services** of high quality appropriate to the purpose and scope of the work.

## **D.9 PROPORTIONALITY**

D.9.1 The investigations and analyses carried out by the **actuary** should be **proportionate** in relation to the complexity and risk exposure of the **insurance undertaking** and the lines of business underwritten.

## **D.10 CONSIDERATION OF RISK AND UNCERTAINTY**

D.10.1 An **actuary** should ensure that any communication contains sufficient information to enable the **intended users** to gain an understanding of the risks inherent in the advice and the uncertainties about future outcomes.

## D.11 DOCUMENTATION, AUDIT TRAIL AND REVIEW

D.11.1 An actuary should maintain full and sufficient **documentation** in order to facilitate peer review and audit of all the calculations, assumptions, **models** and processes.

## D.12 COMMUNICATION

D.12.1 An **actuary** should ensure that any communication, whether written or oral, is clear (indicating how any further explanation can be obtained) and timely, and that the method of communication is appropriate, having regard to:

- a) the intended audience;
- b) the purpose of the communication;
- c) the significance of the communication to its intended audience; and
- d) the capacity in which the member is acting.

D.12.2 An **actuary** should take such steps as are sufficient and available to ensure that any communication with which he or she is associated is accurate and not misleading, and contains sufficient information to enable its subject matter to be put in proper context.

## D.13 MODELS AND CALCULATIONS

D.13.1 Reports should explain any changes in the **measures, methods** or assumptions between two similar and related exercises and quantify the overall effect on results.

## D.14 CONSISTENCY

D.14.1 Assessments carried out by an **actuary** should be consistent from time period to time period, subject to taking into account a) any relevant new **data** and information, b) changed circumstances since the last evaluation and c) revised **models** and assumptions stemming from monitoring past experience against previous models and assumptions and making appropriate adjustments and improvements.

## D.15 ACTUARIAL CONTROL CYCLE

D.15.1 An **actuary** should monitor experience outcomes against previous **models** and assumptions, with a view to making appropriate adjustments and improvements to **models** or assumptions or both.

## D.16 TRANSPARENCY

D.16.1 The **data, models** and assumptions used by the **actuary** should be transparent to the management of the **insurance undertaking** and to reviewers and should be fully **documented**, so that they can be understood and evaluated by a peer reviewer or auditor.

## D.17 ACCOUNTABILITY

D.17.1 The **actuary** is individually accountable for his or her work and should be available to answer supplementary questions and give necessary explanations.

## **D.18 REPRODUCIBILITY**

D.18.1 Projections and analysis carried out by an **actuary** should be capable of being reproduced when carried out on a subsequent occasion or by a peer reviewer or auditor. Sufficient **documentation** should be maintained to enable this to be done.

## **D.19 EXPERT JUDGEMENT**

D.19.1 Where judgement is required in relation to the application of **data**, choice of **model** or assumptions, or the conclusions to be drawn from the work carried out, it should be exercised in a reasoned and justifiable manner. Where judgements have been made, this should be explicitly stated, and the judgements should be fully **documented**.