



International Actuarial Association  
Association Actuarielle Internationale

**ISAP 6**

**International Standard of  
Actuarial Practice 6**

**Enterprise Risk Management  
Programs and  
IAIS Insurance Core Principles**

**1 December 2018**

# ISAP 6

## International Standard of Actuarial Practice 6

  

### Enterprise Risk Management Programs and IAIS Insurance Core Principles

Adopted by the IAA Council

1 December 2018



International Actuarial Association  
Association Actuarielle Internationale

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## Preface

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

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

- Adopting this ISAP as a standard with only the modifications in the Drafting Notes;
- Customizing this ISAP by revising the text of the ISAP 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 ISAP;
- Endorsing this ISAP by declaring that this ISAP is appropriate for use in certain clearly defined circumstances;
- Modifying existing standards to obtain substantial consistency with this ISAP; or
- Confirming that existing standards are already substantially consistent with this ISAP.

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

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

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

If this ISAP 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 1.6. Language of [ISAP 1](#), even if such verbs are not the literal translation of “must”, “should”, and “may”.

**ISAPs are model standards of actuarial practice and, as such, are not binding on any [actuary](#).**

This ISAP was adopted by the [IAA](#) Council on 1 December 2018.

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

1. *Replace “ISAP” throughout the document with the local standard name, if applicable;*
2. *Modify references to [ISAP 1](#) in paragraphs 1.3., 2.2. and 3.1. to point to the local standard(s) that are substantially consistent with [ISAP 1](#) rather than referring to [ISAP 1](#) directly, if appropriate;*
3. *Modify the reference to [ISAP 5](#) in the Introduction, if appropriate;*
4. *Choose the appropriate phrase and date in paragraph 1.6.;*
5. *Modify the references to regulations consistent with ICP 8 and ICP 16, if appropriate;*

6. *Review this standard for, and resolve, any conflicts with the local [law](#) and code of professional conduct; and*
7. *Delete this preface (including these drafting notes) and the footnote associated with paragraph 1.6.]*

## Introduction

This International Standard of Actuarial Practice (ISAP) provides guidance to [actuaries](#) who provide [actuarial services](#) involving enterprise risk management (ERM) programs that address insurer risks and are within the scope of regulations consistent with two of the Insurance Core Principles (ICP 8 and ICP 16) of the International Association of Insurance Supervisors (IAIS). Regulation of financial services businesses has evolved rapidly in the years following the Global Financial Crisis in 2008. While the most radical changes have been applied to banks, insurers have also been subject to enhanced scrutiny. An important component of this higher level of regulation is the assessment of ERM programs.

ERM programs include processes undertaken by insurers to identify, assess, measure, control, mitigate, monitor and communicate on risks in respect of the insurance enterprise. These programs have come to be seen by insurance supervisors globally as a critical activity of insurers. The IAIS has recognized the importance of ERM programs in two of the Insurance Core Principles (ICPs): ICP 8 Risk Management and Internal Controls and ICP 16 Enterprise Risk Management for Solvency Purposes. These ICPs are intended to encourage insurance supervisors around the world to incorporate the concepts expressed therein into the regulation of insurers. According to ICP 8 and ICP 16, an insurer's management is responsible for establishing and operating frameworks to manage the risks to which the insurer is exposed, recognising that the intrinsic nature of insurance is to share or to manage risk.

Depending on the level of sophistication, insurers' approaches to risk management may range from simple consideration of the adequacy of current financial resources to integrated holistic consideration and management of a wide range of risks. ICP 8 and ICP 16 encourage a supervisory-led minimum standard for these activities. Insurers, their stakeholders and supervisors all therefore have a strong interest in the reliable operation and transparent governance by insurers of an effective risk management system. The risk management system envisaged by ICP 8 and ICP 16 includes the identification and measurement of risks, a risk management policy including an explicit Asset and Liability Management (ALM) policy, investment policy and underwriting risk policy, the development and maintenance of a risk tolerance framework, and the Own Risk and Solvency Assessment (ORSA).

Many [actuaries](#) perform [actuarial services](#) in connection with ERM programs, including acting as an employee of an insurer, as an independent professional, as part of an external audit team or as a supervisor of insurers. In some jurisdictions, [actuaries](#) are called upon to give a professional [opinion](#) regarding the ERM program to the supervisor.

This ISAP addresses ERM programs that often involve [stress testing](#), [scenario testing](#) and other modeling techniques. [ISAP 5](#) (Insurer Enterprise Risk Models) provides helpful guidance on these subjects and [actuaries](#) reading this ISAP may find [ISAP 5](#) to be a valuable resource.

Some terms, such as risk appetite, risk tolerance or risk limit, are used both in this ISAP and in ICP 8 and ICP 16. When such terms are referenced without definition in this ISAP or in the associated Glossary, they are intended to have the meaning in the context with which they are used in ICP 8 and ICP 16.

This ISAP is intended to:

- Facilitate convergence in standards of actuarial practice within and across jurisdictions in connection with ERM programs that are within the scope of regulations consistent with ICP 8 and ICP 16;
- Increase public confidence in [actuarial services](#) for ERM purposes; and

- Demonstrate the [IAA](#)'s commitment to supporting the work of the IAIS in achieving effective ERM programs for insurers internationally.

## Section 1. General

- 1.1. Purpose** – This ISAP provides guidance to [actuaries](#) when performing [actuarial services](#) involving ERM programs that are within the scope of regulations consistent with two of the ICPs of the International Association of Insurance Supervisors, namely Risk Management and Internal Controls (ICP 8) and Enterprise Risk Management for Solvency Purposes (ICP 16). It is expected to help increase public confidence in the ERM [work](#) provided by [actuaries](#) by giving [intended users](#) confidence that:
- [Actuarial services](#) are carried out professionally and with due care;
  - The results are relevant to their needs, are presented clearly and understandably, and are complete; and
  - The assumptions and methodology used are disclosed appropriately.
- 1.2. Scope** – This ISAP applies to [actuaries](#) when performing [actuarial services](#) with responsibility for, or significant involvement in, the development, implementation, maintenance or review of some or all of the components of ERM programs, including ORSA, that are within the scope of regulations consistent with ICP 8 and ICP 16. This ISAP applies to an [actuary](#) only to the extent of the [actuary](#)'s responsibility and involvement.
- 1.3. Relationship to ISAP 1** – Compliance with [ISAP 1](#) is a prerequisite to compliance with this ISAP. References in [ISAP 1](#) to “this ISAP” should be interpreted as applying equally to this ISAP 6, where appropriate.
- 1.4. Defined Terms** – This ISAP uses various terms whose specific meanings are defined in the Glossary. These terms are highlighted in the text with a dashed underscore and in blue, which is a hyperlink to the definition (e.g., [actuary](#)).
- 1.5. Cross-References** – When this ISAP 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 ISAP. The referenced document may be amended, restated, revoked, or replaced after the [adoption date](#). In such a case, the [actuary](#) should consider the extent the modification is applicable and appropriate to the guidance in this ISAP.
- 1.6. Effective Date** – This ISAP is effective for {[actuarial services](#) performed/[actuarial services](#) commenced}<sup>1</sup> on or after [Date].

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<sup>1</sup> [Phrase to be selected and date to be inserted by standard-setter adopting or endorsing this ISAP.].



## Section 2. Appropriate Practices

- 2.1. Understanding of Insurer’s Risk Management System and ERM Framework** – The [actuary](#) should have, or obtain, sufficient understanding of the risk management system and ERM framework of the insurer and should consider whether the risk management elements required by regulations consistent with ICP 8 and ICP 16 are in place, including risk management policies, risk tolerance statements, an ORSA, and the insurer’s assessment of its regulatory capital requirements.
- 2.2. Proportionality** – In applying [ISAP 1](#) paragraph 1.5.2., the [actuary](#) should also consider proportionality in respect of the nature, scale and complexity of the underlying risks.
- 2.3. Identification, Assessment and Management of Insurer Risks for an ERM Program**
- 2.3.1. An [actuary](#) who is responsible for, or significantly involved in, identifying insurer risks should consider factors including, but not limited to, the following:
- a. The strategic objectives of the enterprise;
  - b. The processes for collecting information and whether the staff have adequate qualifications, training and experience to understand and identify the risks;
  - c. Whether the risk identification process is sufficient to identify current and emerging risks that are reasonably foreseeable, relevant, and material including risks that directly or indirectly impact the financial condition and other objectives of the insurer (e.g. reputational risk);
  - d. The risks specifically referred to in regulations consistent with ICP 8 and ICP 16;
  - e. The time frame over which the risks may emerge and may impact the insurer;
  - f. The risks that may arise from reasonably foreseeable changes in the business of the insurer (operations, markets, products) and from business conduct;
  - g. Whether underlying risks within financial structures that have limited transparency have been sufficiently identified (e.g. off-balance sheet exposures, complex asset or reinsurance structures);
  - h. Whether the reasonably foreseeable causes of insurer risks and their consequences have been sufficiently identified;
  - i. Risks arising or increasing as a consequence of risk management activities (e.g. credit risk arising from the transfer of risk);
  - j. The impact that an insurer’s culture, governance structure and remuneration systems may have on the ability and willingness of the management and staff to identify and manage risks, and whether culture, governance structure or remuneration generates, magnifies or mitigates risks; and
  - k. Input regarding the identification of risks from management, other knowledgeable persons within the insurer, other subject matter experts and supervisors.
- 2.3.2. An [actuary](#) who is responsible for, or significantly involved in, assessing the probability and impact of the insurer’s risks should consider factors including, but not limited to, the following:

- a. The qualitative assessment of risks in addition to, or instead of, assessing them quantitatively;
  - b. Risk correlations, risk aggregations and tail risks (e.g. catastrophe and pandemic risks, and complex outsourcing risks);
  - c. The appropriateness of the risk modelling, [stress testing](#), [reverse stress testing](#) and [scenario testing](#) techniques that are applied;
  - d. The extent to which the risk [models](#) that measure the probability and impact of risks provide results that are consistent with information expressed by market prices for the risks concerned or related risks;
  - e. The consistency among the various valuation methodologies underlying the ERM program;
  - f. The operation and effectiveness of the processes and mechanisms used to address risk control and risk mitigation;
  - g. The appropriateness of the assumptions regarding future actions taken by management and by external parties, taking into account prior experiences in the industry with similar actions;
  - h. Input regarding probability and impact from management, other knowledgeable persons within the insurer, other subject matter experts and supervisors; and
  - i. Consistency of risk assessments over time.
- 2.3.3. An [actuary](#) who is responsible for, or significantly involved in, implementing or maintaining risk management controls, mitigation, monitoring or communication and reporting of the insurer's risks should consider factors including, but not limited to, the following:
- a. The insurer's risk management policies and risk appetite and tolerance statements;
  - b. The relationship between the insurer's financial strength and risk profile, and the insurer's risk management system;
  - c. Any significant inconsistency in the evaluation of the insurer's risk tolerances and risk limits;
  - d. The extent to which the results of the risk [models](#) used to measure the economic costs and benefits of risk mitigation are consistent with information expressed by market prices for the risks concerned or related risks;
  - e. The operation and effectiveness of the processes and mechanisms used to address risk control and risk mitigation;
  - f. The appropriateness of the assumptions regarding future actions taken by management and by external parties, taking into account prior experiences in the industry with similar actions;
  - g. The culture within the insurer to commit to, and implement, risk mitigation actions when needed;

- h. The impact of reasonably foreseeable future adverse circumstances on the availability and effectiveness of future risk mitigation practices;
- i. The existence and effectiveness of feedback loops in the risk management process; and
- j. How the nature and relative importance of risks may change over time.

## 2.4. Enterprise Level Risk Management

- 2.4.1. An [actuary](#) who is responsible for, or significantly involved in, performing an aggregate risk assessment of the insurer should, in addition to assessing the elements as addressed in section 2.3. above, consider factors including, but not limited to, the following:
  - a. The financial strength, risk profile, business management, governance structure and risk environment of the insurer;
  - b. Whether the risk management processes are suitably aligned with the insurer's objectives and strategy, regarding aggregate risk taking and regarding each major risk category, as reflected by the risk appetite, risk tolerance and risk limits;
  - c. The interdependence of risks relating to the insurer's assets and liabilities, noting that correlation of risks between different asset classes, products and business lines may not be linear, and may change under stressed conditions;
  - d. Off-balance sheet exposures that may revert to the insurer in times of difficulty; and
  - e. Diversification benefits that result from aggregation of risks.
- 2.4.2. An [actuary](#) who is responsible for, or significantly involved in, developing, implementing, maintaining or reviewing the insurer's ERM framework should, in addition to assessing the elements as addressed in section 2.4.1. above, consider factors including, but not limited to, the following:
  - a. The engagement of the Board in assessing, setting, monitoring and reviewing the insurer's risk appetite and risk profile, and whether the interests of policyholders and other relevant stakeholders are considered appropriately within those processes;
  - b. The adequacy of the risk management resources and capabilities within the insurer for the current and expected risk profile and risk management strategies;
  - c. The quality, extent and effectiveness of independence, challenge and monitoring reflected in the framework;
  - d. The extent and results of recent reviews and audits of control effectiveness, and management's response to the findings;
  - e. The management of potential conflicts of interest;
  - f. The extent to which risk management and risk assessments are used in the decision-making practices of the insurer;

- g. The effectiveness of risk communication channels within the insurer, including risk escalation processes, and with its supervisors;
  - h. The effectiveness and timeliness of the reporting of, and response to, incidences and breaches related to the operation of the ERM framework within the insurer;
  - i. The operational quality and effectiveness of key ERM framework related policies, processes and mechanisms, including, but not limited to, outsourcing management, business continuity management (including pandemic response management), whistle blowing policies, fraud and privacy risk management, model risk management and business conduct risk management;
  - j. The extent to which the ERM framework is adaptive to changes to the insurer and to its environment;
  - k. The extent that the ERM framework complies with regulatory requirements and guidelines applicable to it;
  - l. The adequacy of the insurer's ORSA; and
  - m. Contingency plans to restore the insurer's financial strength and viability in severe adverse circumstances.
- 2.4.3. In applying sections 2.4.1. and 2.4.2., if the insurer is part of a group, the [actuary](#) should consider factors including, but not limited to, the following:
- a. The risks and benefits of belonging to a group structure, recognizing potential limits on fungibility of capital and on transfer of assets between separate legal entities;
  - b. Reasonably foreseeable changes in the group structure which could impact the capital and solvency of the insurer and its ability to continue in business;
  - c. Risk modelling, [stress testing](#), [reverse stress testing](#) and [scenario testing](#) should include changes in the group structure and in the support that the insurer receives from other members of the group;
  - d. Assumptions that may be suitable for a self-standing insurer may not be suitable when the insurer is part of a larger group;
  - e. Imposition of risk management controls and tolerance limits by group management;
  - f. Differences in legal and regulatory requirements between jurisdictions; and
  - g. Contagion effect of adverse circumstances in other members of the group which could impact the capital and solvency of the insurer.

## 2.5. Own Risk and Solvency Assessment

- 2.5.1. The [actuary](#) responsible for, or significantly involved in, developing, implementing, maintaining or reviewing an ORSA for an insurer, should consider, in addition to the items in sections 2.3. and 2.4. above, factors including, but not limited to, the following:
- a. The time horizon considered by the ORSA;

- b. Whether the qualitative and quantitative risk assessments and the financial projections used in the ORSA are appropriate for their intended purpose;
- c. Any changes to the insurer’s risk profile and risk appetite since the previous ORSA;
- d. The various accounting bases of the insurer;
- e. Reasonably foreseeable changes in the external environment;
- f. Allowance for new business, and for the run-off of existing and new business;
- g. Access to new capital in times of financial stress;
- h. Differences between the insurer’s regulatory capital requirements and the insurer’s own assessment of its capital needs;
- i. The quality and adequacy of the insurer’s capital resources in relation to quality and adequacy criteria established by the supervisor;
- j. The degree of severity reflected in the risk modelling, [stress testing](#), [reverse stress testing](#) and [scenario testing](#); and
- k. The circumstances that may trigger an ORSA to be performed at a time other than during the regular review schedule.

### Section 3. Communication

**3.1. Disclosures** – In addition to complying with [ISAP 1](#) Section 3. Communication the [actuary](#) should disclose, as applicable to the [actuarial services](#) provided:

- 3.1.1. Where risk management elements required by regulations consistent with ICP 8 and ICP 16 are not in place (2.1.);
- 3.1.2. Where risk exposures cannot be, or are not, reliably or meaningfully identified or quantified (2.3.1., 2.3.2., 2.4.1., 2.4.2.);
- 3.1.3. Where the selected assumptions or risk scenarios adopted give rise to ranges of outcomes or frequencies that are materially less severe or frequent than indicated by historic risk experience, known and expected future changes or reasonably foreseeable potential extreme adverse events (2.3.2., 2.4.1.); and
- 3.1.4. Any significant inconsistency that exists between the insurer’s financial strength and risk profile, and the insurer’s risk management system (2.3.3.).