



ISAP 1A

**International Standard of
Actuarial Practice 1A
Governance of Models
(ISAP 1A)**

Adopted by the IAA Council

21 November 2016

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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 is 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”.

This ISAP is a model standard of actuarial practice and, as such, is not binding on any [actuary](#).

This ISAP was adopted by the [IAA](#) Council in November 2016.

[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 paragraph 1.3. to point to the local standard(s) that are substantially consistent with [ISAP 1](#), rather than referring to [ISAP 1](#) directly, if appropriate;*
3. *Choose the appropriate phrase and date in paragraph 1.5.;*
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 footnote associated with paragraph 1.5.]*

Section 1. General

- 1.1. Purpose** – This ISAP provides guidance to [actuaries](#) on [model governance](#) when performing [actuarial services](#) involving [models](#), to give [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 (including, but not limited to, [models](#) and modelling techniques) used are disclosed appropriately.
- This ISAP addresses how modelling activities in which an [actuary](#) may be involved should be governed, rather than how these activities should be performed.
- 1.2. Scope** – This ISAP applies to all [models](#) that support an [entity](#)'s decision making. It provides guidance to [actuaries](#) on appropriate [model governance](#) to manage the risks inherent in selecting an existing [model](#), modifying an existing [model](#), developing a new [model](#), or using a [model](#).
- 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 1A, 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. Effective Date** – This ISAP is effective for {[actuarial services](#) performed/[actuarial services](#) commenced/[actuarial services](#) performed relevant to an event}¹ on or after [Date].

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

Section 2. Appropriate Practices

2.1. Overview – [Model governance](#) is important for all [models](#), from those using simple spreadsheets to those including complex simulations. The level of governance should be proportionate to the risk to the [intended user](#) as a result of an incorrect conclusion being drawn from the results of the [model](#).

The [actuary](#) involved in selecting, modifying, developing, or using [models](#) should:

2.1.1. Be satisfied that there is in place an appropriate [model risk](#) management framework that addresses identification of [model risks](#), assessment of these risks, and appropriate actions to mitigate these risks such as adequate model validation, documentation, and process controls.

2.1.2. Be satisfied that an appropriate model validation has taken place. For the purpose of this standard, validation includes assessments that the:

- [Model](#) reasonably fits its intended purpose. Items that the [actuary](#) should consider, if applicable, include the availability, granularity, and quality of data and inputs required by the [model](#), the appropriateness of the relationships recognized, and the [model](#)'s ability to generate an appropriate range of results around expected values;
- [Model](#) meets its specifications; and
- Results of the [model](#) can be appropriately reproduced.

The validation should be performed by individual(s) who did not develop the [model](#), unless to do so imposes a burden that is disproportionate to the [model risk](#).

2.1.3. Understand the context in which the [model](#) will be used, how model input will be provided, and how the [actuary](#) expects the results of the [model](#) will be used.

2.2. Selecting an Existing Model – The [actuary](#) who selects an existing [model](#) (whether developed in-house or by a third party) should:

2.2.1. Understand the [model](#).

2.2.2. Understand the conditions under which it is appropriate for the [model](#) to be used, including any limitations of the [model](#).

2.2.3. Be satisfied that there is adequate documentation of the [model](#) construction and operation (including where appropriate scope, purpose, methodology, statistical quality, calibration, and fitness for intended purpose), and of the conditions under which it is appropriate to use the [model](#), including any limitations of the [model](#).

2.3. Modifying an Existing Model – The [actuary](#) who modifies an existing [model](#) should:

2.3.1. Understand the [model](#).

2.3.2. Document, as appropriate, the changes made to, and any material impact of the changes on, the [model](#)'s scope, purpose, methodology, statistical quality, calibration, fitness for intended purpose, and conditions under which it is appropriate to use the [model](#), including any limitations of the [model](#).

2.3.3. Be satisfied that an appropriate change control process is in place for the [model](#). A change control process avoids unauthorized changes to the [model](#), documents any changes made, and allows any changes to be reversed.

2.4. Developing a New Model – The [actuary](#) who develops a new [model](#) should:

- 2.4.1. Document, as appropriate, the [model](#) design, construction, and operation (including where appropriate scope, purpose, methodology, statistical quality, calibration, and fitness for intended purpose), and conditions under which it is appropriate to use the [model](#), including any limitations of the [model](#).

2.5. Using a Model – The [actuary](#) who uses a [model](#) should:

- 2.5.1. Understand the [model](#).
- 2.5.2. Be satisfied that the conditions to use the [model](#) are met.
- 2.5.3. Be satisfied that there are appropriate controls on inputs and outputs of the [model](#).
- 2.5.4. Consider whenever the [model](#) is used, whether the validation described in 2.1.2. should be redone in whole or in part.
- 2.5.5. Understand and, if appropriate, explain material differences between different runs of the [model](#), and be satisfied that there is an adequate control process for production runs. In the case of stochastic [models](#), be satisfied that a sufficient number of runs of the [model](#) are made, and understand the material differences between different runs of the [model](#).
- 2.5.6. Understand management actions or responses assumed within the [model](#) and consider whether any changes to the [model](#) are needed.
- 2.5.7. Document, as appropriate, limitations, inputs, key assumptions, intended uses, and model output.

Section 3. Communication

- 3.1. Disclosures** – In addition to complying with [ISAP 1](#) Section 3. Communication, the [actuary](#) should include in the [actuary's report](#) any disclosures that the [actuary](#) considers to be appropriate so that the [intended users](#) of the [model](#) or its results are able to understand the:
- a. Limitations and uncertainties, and their implications; and
 - b. Management actions or responses assumed in the [model](#), and their implications.