



Institute
and Faculty
of Actuaries

Social Security Programmes

Proposal for the introduction of a new
Actuarial Profession Standard APS X4: Social
Security Programmes

by the Regulation Board

Exposure Draft 36
Consultation paper

April 2019

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1. Introduction

I would like to invite you to participate in this consultation about the Institute and Faculty of Actuaries' (IFoA's) proposal to introduce a new Actuarial Profession Standard (APS) adopting requirements applicable to actuarial work on financial analysis of Social Security Programmes outside the UK.

Setting standards for actuarial work is an important method by which the IFoA can promote the high quality of its Members' actuarial work and allows the IFoA to fulfil its objective of regulating the actuarial profession in the public interest.

The IFoA welcomes comments on the proposal from individual Members, employers of actuaries, other regulators and anyone else with an interest in the standards which the IFoA sets for its Members.

This consultation asks a number of questions and we would encourage you to provide comments to support your answers. The Working Party will take account of all comments and consider the extent to which the proposal ought to be implemented.

I look forward to receiving your responses.

Danny Quant
Chair of the ISAP 2 Working Party
17 April 2019

2. Outline and Background

The IFoA is considering introducing an Actuarial Profession Standard setting out standards applicable to Members carrying out actuarial work on financial analysis of Social Security Programmes outside of the UK which will be known as APS X4.

APS X4 draws upon and incorporates into the IFoA framework of standards the provisions of the second version of the model standard International Standard of Actuarial Practice 2 (ISAP 2) adopted by the International Association of Actuaries (IAA) on 01 December 2018.¹

Social Security Programmes are important methods by which governments support their citizens, often the most vulnerable, with an income or lump sum payment. Often a significant part of the population is covered by these schemes. Actuaries are employed in the financial analysis of these programmes and actuarial projections are often relied upon by policy makers. This actuarial work has therefore been identified as high risk given the significant implications the work can have.

Currently the IFoA does not have in place any specific standards or guidance for its Members carrying out this type of work. The proposed introduction of the standard is designed to help the IFoA meet its Royal Charter objective of protecting the public interest.

¹ More information on the IAA and its model standards can be found on the IFoA website <https://www.actuaries.org/iaa/IAA/Publications/ISAPs/IAA/Publications/05ISAPs.aspx?hkey=334b21a7-a3ac-4e0e-8294-3cbc755ab14a>

The proposals have been developed by an IFoA Working Party constituting Members who do this type of work, representatives from the UK's Financial Reporting Council's Actuarial Policy Team, a lay (non-actuary) member of the IFoA's Regulation Board and the IFoA's Executive Regulation Team.

ISAP 2 sets out technical requirements and therefore, for work with the UK Geographic Scope,² the responsibility for setting such standards falls within the remit of the Financial Reporting Council (FRC).³ The FRC have produced Actuarial Statement of Recommended Practice (ASORP 1) for work in the scope of ISAP 2 falling within the UK Geographic Scope.⁴

The Working Party have had regard to the terms of ASORP 1 in the preparation of APS X4.

3. International Standard of Actuarial Practice 2

As an international membership organisation with members around the world, the IFoA is actively engaged with developments in international actuarial standards setting.

It is also a member body of the IAA; the international association for actuarial professional membership bodies which has developed a number of international model standards (known as 'International Standards of Actuarial Practice' or 'ISAPs'). Member associations and actuarial standard-setting bodies are encouraged to consider acting upon those model standards. Individual actuaries are not required to comply with a model standard unless their member association or standard-setting body chooses to act upon it.

The IAA sets out a number of ways in which ISAPs can be acted upon:

- Adoption of the ISAP as a standard (with appropriate modification as necessary);
- Endorsement of the ISAP as a standard (including, where appropriate, as an alternative to existing standards);
- Modification of existing standards to obtain substantial consistency with the ISAP; or
- Confirmation that existing standards are already substantially consistent with the ISAP.

ISAP 2 is the second International Standard of Actuarial Practice adopted by the IAA. The purpose of ISAP 2 is to provide guidance to actuaries performing financial analyses of Social Security Programmes, or reviewing, advising on, or opining on such analyses, to give intended users confidence that:

- Actuarial services are carried out professionally and with due care;

² "UK Geographic Scope" refers to work done in relation to the UK operations of entities, as well as to any overseas operations which report into the UK, within the context of UK law or regulation (regardless of the location or domicile of the person carrying out the work).

³ In line with the division of standards setting responsibilities agreed in the Memorandum of Understanding between the IFoA and FRC <https://www.actuaries.org.uk/documents/memorandum-understanding-between-financial-reporting-council-and-institute-and-faculty>

⁴ The consultation on ASORP 1 closed on 31 January 2019.

- 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.

Some other member associations of the IAA will have adopted ISAP 2 or adapted their existing standards to reflect its requirements. Members should therefore consider whether there are other standards that are relevant to their work. APS X1 and the supporting Guide set out how Members can make this determination.⁵

4. Draft APS X4

APS X4 has been drafted to require Members carrying out actuarial work within the defined scope to apply the terms of the second version of ISAP 2 as adopted by the IAA on 01 December 2018 with minimal changes. The APS also applies the terms of the ISAP Glossary that is in force on that date. This method of application was chosen so that a form of ISAP 2 closest to the version in force could be applied. The Working Party did consider adapting the terms of ISAP 2, making the necessary changes and bringing the language in line with that of other IFoA standards. However, it was acknowledged that there was a risk that some of the requirements could be inadvertently changed or become ambiguous.

The APS applies to those Members carrying out Actuarial Work (as defined) outside of the UK Geographic Scope. It states that Members “should” comply with ISAP 2. The use of “should” denotes that Members are expected to apply the APS but that there will be circumstances in which non-compliance might be justifiable.

ISAP 2 is a model standard and contains additional information and advice about how bodies can adopt it, so the APS need not apply these sections. These sections have been deleted for the reasons detailed:

- “Preface” – This provides the background to the IAA and ISAPs, and sets out how the model standards can be used, none of which is relevant to the application of the requirements;
- “Introduction” – This provides information on why a standard is required in this field of work, which is also not relevant to the application of the requirements; and,
- “Section 1. General” – This provides information guidance on the application of ISAP 2, all of which is dealt with in APS X4, the Actuaries’ Code and other IFoA standards such as APS X1.

Paragraph 2.5 of ISAP 2 has been deleted. This is simply a statement that financial analysis can be subject to review by independent experts. The Working Party felt that such a statement is not necessary as it does not impose any obligations or create any requirements, except potentially under paragraph 2.5.3. Paragraph 2.5.3 could be interpreted as if to require the actuary to hand

⁵ APS X1: Applying Standards to Actuarial Work <https://www.actuaries.org.uk/documents/aps-x1-applying-standards-actuarial-work> and the supporting non-mandatory guidance <https://www.actuaries.org.uk/upholding-standards/standards-and-guidance/non-mandatory-guidance>

over all material to a reviewer if called upon to do so. Despite the caveat that the material should only be provided “if the terms of the actuary’s engagement so permit” this might place the Member in a difficult position with respect to confidentiality and data protection.

Paragraph 2.6 has been deleted. It states that if an assumption or methodology is prescribed by law the actuary should not rely on paragraph 2.9 of ISAP 1, but instead should apply the guidance of paragraph 2.8 of ISAP 1 as if the assumption or methodology were prescribed by the principal. Paragraph 2.8 of ISAP 1 provides guidance where the actuary might be unwilling to support the prescribed assumption or methodology. The Working Party felt this guidance might put Members in a difficult position as it conflicts with their obligation to follow legal requirements. The Working Party felt that the guidance in paragraph 2.9 of ISAP 1 was more appropriate, and have therefore deleted paragraph 2.6 of ISAP 2.

Paragraph 3.1.4 has been deleted as it requires the actuary to include a statement that the work complies with the terms of ISAP 2. The IFoA does not believe there is merit in requiring compliance statements with professional standards. Such statements run a risk of causing confusion for users of work as it is unclear why compliance with certain standards must be referenced but others, and indeed other types of requirements such as legal requirements, are not.

Paragraph 1.6 of the APS requests that Members consider the principles underlying the requirements and apply the APS in spirit bearing in mind the purpose of the APS and the reasoning why ISAP 2 has been applied.

The Glossary to the APS contains a mixture of standard IFoA definitions and those terms in the APS that should be given the meaning in the ISAP Glossary.

The IFoA invites views on the method of implementing the terms of ISAP 2 as well as the content of APS X4, particularly with respect to the changes that are made in the APS.

5. Consultation Documentation

This consultation package includes the following document:

- Appendix 1: Proposed Actuarial Profession Standard APS X4: Financial Analysis of Social Security Programmes;
- Appendix 2: International Standard of Actuarial Practice 2 (2018): Financial Analysis of Social Security Programmes; and
- Appendix 3: Glossary of Defined Terms used in International Standards of Actuarial Practice (2018).

6. Questions

The IFoA invites your comments on the proposed introduction of APS X4. It would be helpful if you would offer them by responding to the following questions.

An online version of the questionnaire can be found on the IFoA's [website](#).

About you

1. Personal information

Name:	
Position:	

2. Region

UK	India	
Republic of Ireland	Asia - other	
Rest of Europe	Canada	
South Africa	USA	
Africa - other	South or Central America	
South East Asia	Australia	
Hong Kong	Oceania - other	
China		

3. Are you a Member of the IFoA?

Yes	No	
-----	----	--

4. If yes, which category of membership do you hold?

Affiliate	Honorary Fellow	
Associate	Retired	
Certified Actuarial Analyst	Student	
Fellow	Student Actuarial Analyst	

5. If you are an actuary, what is your main practice area? (Answer one option only)

Life Assurance	Enterprise Risk Management	
General Insurance	Health and Care	
Pensions	Resource and Environment	
Finance and Investment	Other	

If other, please specify:

6. Do you want your name to remain confidential?

Yes	No	
-----	----	--

7. Do you want your comments to remain confidential?

Yes	No	
-----	----	--

8. About your organisation (if applicable)

Name:

9. Type of organisation (Answer one option only)

Actuarial consultancy	Public body or Regulator	
Insurance company or reinsurer	Educational Establishment	
Bank or Building Society	Not applicable	
Investment Firm	Other	

If other, please comment:

10. How many IFoA Members (if any) does your organisation employ?

None	101+ Members	
2-10	Sole practitioner	
11-50	Don't know	
51-100	Not applicable	

11. Do you want the name of your organisation to remain confidential?

Yes	No	
-----	----	--

12. Do these comments represent your own personal views or your organisation's views?

Personal views	Organisation's views	
Both personal views and organisation's views		

APS X4

The following questions are in relation to your/your organisation's views on the proposed APS X4:

13. Do you agree that it is appropriate to introduce a standard with the objective of applying the terms of ISAP 2 to members carrying out actuarial work outside of the UK Geographic Scope?

Yes	No	
Comments (please specify):		

14. Do you consider that APS X4 achieves that objective?

Yes	No	
Comments (please specify):		

15. Do you consider that the overarching requirement for those carrying out work outside UK Geographic Scope to comply with ISAP 2 is appropriate and proportionate?

Yes	No	
Comments (please specify):		

16. Do you think the Actuarial Work to which APS X4 applies is sufficiently well defined? If no, how would you amend it?

Yes	No	
Comments (please specify):		

17. Do you agree with the deletion of particular sections of ISAP 2 as detailed in paragraph 1.4 of APS X4?

Yes	No	
Comments (please specify):		

18. Do you agree with the deletion of paragraph 2.6 of ISAP 2 as detailed in paragraph 1.5 of APS X4?

Yes	No	
Comments (please specify):		

19. Do you agree with the deletion of the other particular paragraphs of ISAP 2 as detailed in paragraph 1.5 of APS X4?

Yes	No	
Comments (please specify):		

20. Do you have any other comments on the requirements and provisions of the Draft APS X4?

Yes	No	
Comments (please specify):		

21. Do you think it would be helpful to have any guidance and/or training opportunities in this particular area? If so, what should this guidance/training include?

Yes	No	
Comments (please specify):		

22. Do you anticipate that there would be any practical or resource implications caused by the introduction of these proposals? If yes, what sort of implications do you anticipate?

Yes	No	
Comments (please specify):		

23. Do you have any other general comments or suggestions in relation to the proposals?

Yes	No	
Comments (please specify):		

7. How to Respond

The deadline for responses is 17 July 2019.

Responses should be sent to regulation@actuaries.org.uk

A link to an online version of the questionnaire can be found on the IFoA's website at <http://www.actuaries.org.uk/regulation/pages/consultations-and-discussion-papers>.

You can also send a response by post to:

The Institute and Faculty of Actuaries
Level 2 Exchange Crescent
7 Conference Square
Edinburgh
EH3 8RA

Please indicate whether you wish any of the information you supply in your response to be treated confidentially. Unless you so indicate, we may make responses to this paper available on our website at www.actuaries.org.uk

Consultation Meeting

We are planning a virtual consultation meeting and we encourage Members and interested stakeholders to attend to discuss and comment on these proposals. In order for us to gauge participant numbers, we should be grateful if you could please inform us via email to regulation@actuaries.org.uk if you would like to join the meeting.

The consultation meeting will be recorded and uploaded onto our website. In advance of a meeting we would invite members who are unable to join to provide questions or issues for discussions in advance by email to regulation@actuaries.org.uk to the address noted above. Please clearly mark your correspondence as being a question/issue for the consultation meeting. Please note that for practical reasons it may be the case that not all questions or issues can be dealt with at the meeting.

8. CPD

If you consider that in reading this consultation paper and engaging in the consultation process you have benefitted from learning about the proposed APS X4, you may claim up to one hour of private study CPD.

Category 2 members should record a learning outcome to reflect the benefit gained within their on-line CPD records.

Please note that Category 1 members cannot count private study activities towards their minimum CPD requirements.

Thank you for your time and interest.



APS X4: Social Security Programmes

Version: 1.0, effective from XXX 2019

Purpose: This **APS** adopts the terms of model standard **ISAP 2** for **Members** producing **Actuarial Work** outside the **UK Geographic Scope**. **ISAP 2** sets standards for **Members** to apply whilst performing **financial analyses** of **Social Security Programmes**, or reviewing, advising on, or opining on such analyses, to give **Users** confidence that:

- **Actuarial Work** is 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.

1. Application of ISAP 2

1.1. The requirements set out in this **APS** apply only to **Actuarial Work** that is outside the **UK Geographic Scope**.

1.2. **Members** performing **financial analyses** of **Social Security Programmes**, or reviewing, advising on, or opining on such analyses, should comply with **ISAP 2**.

1.3. **ISAP 2** should be read together with the **ISAP Glossary**. In the event of any inconsistency between the **ISAP Glossary** and this **APS**, this **APS** prevails.

1.4. The sections entitled "Preface", "Introduction" and "Section 1. General" of **ISAP 2** are to be treated as deleted.

1.5. Paragraphs 2.5, 2.6, and 3.1.4 of **ISAP 2** are to be treated as deleted.

1.6. In applying judgement to the application of this **APS Members** must consider the principles underlying the requirements, along with the spirit and reasoning behind the **APS**.

2. Interpretation and application

2.1. A failure to comply with this **APS** may result in a finding of misconduct in terms of the **IFoA's Disciplinary and Capacity for Membership Schemes**.

2.2. This **APS** uses the word "must" to mean a specific mandatory requirement. It uses the word "should" to indicate that, while the presumption is that **Members** will comply with the provision in question, there may be some circumstances in which **Members** are able to justify non-compliance.

2.3. In the event of any inconsistency between this **APS** and the **Actuaries' Code**, the **Actuaries' Code** prevails.

3. Definitions

Term	Definition
Actuarial Work	Work undertaken by a Member in their capacity as a person with actuarial skills on which the intended recipient of that work is entitled to rely. This may include carrying out calculations, modelling or the rendering of advice, recommendations, findings, or opinions.
Actuaries' Code	The ethical professional code for Members issued by the Institute and Faculty of Actuaries.
APS	Actuarial Profession Standard issued by the Institute and Faculty of Actuaries.
Financial analyses	Any formal actuarial analysis as defined by the ISAP Glossary.
IAA	The International Actuarial Association.
IFoA	The Institute and Faculty of Actuaries.
IFoA's Disciplinary and Capacity for Membership Schemes	The currently in force Disciplinary and Capacity for Membership Schemes of the Institute and Faculty of Actuaries, as may be amended from time to time.
ISAP Glossary	The Glossary of Defined Terms Used in International Standards of Actuarial Practice, adopted by the IAA on 01 December 2018.
ISAP 2	The second International Standard of Actuarial Practice adopted by the IAA on 01 December 2018.
Legal Requirement	A requirement of law or regulation, imposed by a body of lawful jurisdiction and directly enforceable by reason of national or local law.
Member	A member of the Institute and Faculty of Actuaries.
Social Security Programme	A programme with particular attributes as defined by the ISAP Glossary.
UK Geographic Scope	Refers to work done in relation to the UK operations of entities, as well as to any overseas operations which report into the UK, within the context of UK law or regulation (regardless of the location or domicile of the person carrying out the work).
User	The person, including a corporate entity, for whom the Actuarial Work is produced.



International Actuarial Association
Association Actuarielle Internationale

1 December 2018

ISAP 2

**International Standard of
Actuarial Practice 2**

**Financial Analysis of Social
Security Programs**

ISAP 2

International Standard of Actuarial Practice 2

Financial Analysis of Social Security Programs

Adopted by the IAA Council 13 October 2013
Conformance changes adopted 23 April 2017
Conformance changes adopted 1 December 2018



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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”.

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

ISAP 2 was adopted by the [IAA](#) Council in October 2013. This conforming version was adopted on 1 December 2018.

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

- 1. Replace “ISAP” throughout the document with the local standard name, if applicable;*
- 2. Modify the wording in paragraph 1.4 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 1.6;*
4. *Review this ISAP 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 1.6.]*

ISAP 2 – Financial Analysis of Social Security Programs [1 December 2018]

Introduction

This International Standard of Actuarial Practice (ISAP) applies to [actuarial services](#) performed in the context of [social security programs \(SSPs\)](#). It is intended to:

- Promote the development of consistent actuarial practice for SSPs throughout the world; and
- Narrow the range of practice considered acceptable under ISAP 1 – General Actuarial Practice.

Where this ISAP defines as acceptable a practice that would not be acceptable under [ISAP 1](#), it is clearly identified.

Because of their significant expertise in preparing long-term financial projections, [actuaries](#) often play an important role in carrying out [financial analyses](#) of [SSPs](#). [Financial analyses](#) are commonly referred to as valuations. Due to the reliance placed on actuarial projections in public policy decision-making, it is important that the short- and long-term demographic and economic analyses of these [SSPs](#) provide objectively-prepared projections of their future conditions.

In this area of practice, the International Actuarial Association ([IAA](#)) previously adopted IASP 1– *Guidelines of Actuarial Practice for Social Security Programs*, which became effective on January 1, 2003. This was a level 4 standard (which has the effect of a current international actuarial note) and is superseded by the adopted version of this ISAP.

Few existing professional standards and guidelines specifically apply to [SSPs](#). Most countries have no specific standards in this area. The [IAA](#) has decided to issue this ISAP to fill this gap. Its action is supported within the International Social Security Association (ISSA) and the International Labour Organization (ILO).

Section 1. General

- 1.1. Purpose** – This ISAP provides guidance to [actuaries](#) performing [financial analyses](#) of [SSPs](#), or reviewing, advising on, or opining on such analyses, 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.
- 1.2. Scope** – This ISAP applies to [actuaries](#) when performing or reviewing, advising on, or opining on [financial analyses](#) of [SSPs](#).
- 1.3. Compliance** – An [actuary](#) may fail to follow the guidance of this ISAP but still comply with it where the [actuary](#):
- 1.3.1. Complies with requirements of [law](#) that conflict with this ISAP.
 - 1.3.2. Complies with requirements of the actuarial code of professional conduct applicable to the [work](#) that conflict with this ISAP.
 - 1.3.3. Departs from the guidance in this ISAP and provides, in any [report](#), an appropriate statement with respect to the nature, rationale, and effect of such departure.
- Paragraphs 2.6, 2.8, and 2.9 of [ISAP 1](#), as modified by paragraph 2.6 of this ISAP, cover the situation where the [actuary](#) is directed to use certain assumptions or methodology. The [actuary](#) who complies with these paragraphs is not deviating from this ISAP.
- 1.4. Relationship to ISAP 1**– Compliance with [ISAP 1](#) is a prerequisite to compliance with this ISAP, except where [ISAP 1](#) is overridden by this ISAP. Whenever guidance in this ISAP overrides the guidance in [ISAP 1](#) the caption [**This paragraph replaces paragraph x.y [title of paragraph x.y] in ISAP 1**] will be shown at the start of the paragraph. References in [ISAP 1](#) to “this ISAP” should be interpreted as applying equally to this ISAP 2, where appropriate.
- 1.5. 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 also a hyperlink to the definition (e.g., [actuary](#)).
- 1.6. 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. Consideration of all Relevant Features of the SSP and Law** – The [actuary](#) should consider all relevant [SSP](#) features, the policies and the stated intentions of the sponsoring organization, and current [law](#), if that information exists and is reasonably available to the [actuary](#). The [actuary](#) should also take into account established practice (if relevant) when no [law](#) exists with regard to certain benefit provisions or financial measures (for example, the basis for future indexation of retirement benefits). For a newly established or substantially changed [SSP](#), the [actuary](#) should take into account other relevant information, including relevant experience in comparable [SSPs](#).
- 2.2. Data** – The [actuary](#) should consider what [data](#) are required in order to perform, review, advise on, or opine on the [financial analysis](#) of the [SSP](#). These [data](#) might include:
- a. National or regional demographic statistics on variables such as fertility, mortality (life expectancy), morbidity, and migration (if such [data](#) are not available on a national or regional basis, the [actuary](#) might consider information from a wider geographical area that might apply, or it may be necessary to rely on relevant and reliable statistics of international organizations);
 - b. Demographic status and experience of the [SSP](#), as applicable;
 - c. Economic experience, labour market conditions, and inflation;
 - d. Financial attributes of the [SSP](#), such as contributions, investment earnings, and liquidity of assets;
 - e. Benefits of, or claims on, the [SSP](#);
 - f. Number and experience of classes of contributors and beneficiaries of the [SSP](#);
 - g. Covered salaries and past service credits; and
 - h. Censuses and population surveys covering, for example, family statistics.
- 2.3. Assumptions** – If the [actuary](#) sets the assumptions, the [actuary](#) should use neutral assumptions in a [financial analysis](#) of an [SSP](#). Neutral assumptions are such that the [actuary](#) expects that the resulting projection of the [SSP](#) experience is not a material underestimate or overestimate.
- 2.3.1. The [actuary](#) should consider performing an experience analysis to the extent that the available [data](#) permit, to analyze past experience and to set future assumptions.
 - 2.3.2. The [actuary](#) should select assumptions that reflect the time horizon of the analysis (which might be 75 years or more). The [actuary](#) may select different assumptions for different time intervals in the projection (e.g., a common technique for this is to use recent experience as the basis for the [model](#) assumptions for the first “n” years of projection, with longer-term trends applied to the ultimate assumptions after the first n years (select and ultimate)).
 - 2.3.3. The [actuary](#) should consider any automatic balancing mechanisms that exist in an [SSP](#) when selecting the [model](#) variables and assumptions for an [SSP financial analysis](#). The [actuary](#) should consider to what extent the [SSP](#) is “immunized” from the volatility of some variables (e.g., life expectancy) by the automatic balancing mechanisms.
 - 2.3.4. Credible experience [data](#) might not exist for a newly introduced [SSP](#), or for

ISAP 2 – Financial Analysis of Social Security Programs [1 December 2018]

new benefits to be provided by an existing [SSP](#). To establish assumptions in such cases, the [actuary](#) may:

- a. Investigate the risk characteristics of the potential covered population through surveys or enquiries until credible [data](#) are available;
- b. Consider the relevant external experience, including:
 - Other [SSPs](#) (including the program being replaced, if any), or
 - Other countries;
- c. Use reasonable proxies or default values as may be appropriate.

If credible experience [data](#) do not exist, the [actuary](#) should disclose in the [report](#) that the [financial analysis](#) has been based on incomplete [data](#) (and perhaps none relating to the [SSP](#) itself), and should consider recommending that [financial analyses](#) should be performed again as new information becomes available.

2.3.5. If the [actuary](#) uses assumptions that include margins, then the [actuary](#) should disclose in the [report](#) the basis and rationale for the margins and explain the relationship between the result using the assumptions that include margins and the result using neutral assumptions.

2.3.6. The [actuary](#) should consider including in the analysis projections based on other sets of assumptions such as those that would result in high projected costs and those that would result in low projected costs when such projections are helpful in analysing the uncertainty of the projections and communicating the financial status of an [SSP](#).

2.4. Consistency with the Financing Method – The [actuary](#) should use a methodology that is consistent with the financing method used for the [SSP](#).

2.4.1. For pay-as-you-go or partially funded [SSPs](#), the analysis should use an open group methodology, under which contributions and benefits of both current and future participants are considered.

2.4.2. For fully funded [SSPs](#) (that is, where accrued liabilities are intended to be funded over participants' working years), the analysis should use a closed group methodology, under which only current participants are considered, with or without their assumed future benefit accruals.

However, if the [actuary](#) judges an alternative approach to be more appropriate, that approach should be used with justification communicated in the [report](#). In such circumstances, the [actuary](#) may also consider reporting the results of the [financial analysis](#) under:

- a. An open group methodology for pay-as-you-go or partially funded [SSPs](#); and
- b. A closed group methodology for fully funded [SSPs](#).

If the [law](#) specifies a methodology for measuring the actuarial assets and obligations that does not follow either section 2.4.1 or 2.4.2, as applicable, the [actuary](#) should communicate that fact. The [actuary](#) should also comply with the guidance of paragraph 2.6 of this ISAP.

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2.5. **Independent Expert Review** – A [financial analysis](#) is often subject to review by an independent expert.

2.5.1. This review might address:

- a. Whether the assumptions used in the [financial analysis](#) are within a reasonable range both separately and in the aggregate;
- b. Whether the results of the [financial analysis](#) are within a reasonable range; or
- c. Other aspects of the [financial analysis](#).

2.5.2. “Independent expert” means a suitably experienced reviewer who:

- a. Has not been involved in preparing the [work](#) that is subject to review; and
- b. Is not employed by the [principal](#) or its sponsoring agencies.

In this context a reviewer contracted by the [principal](#) to perform the review is not considered to be employed by the [principal](#) or its sponsoring agencies.

2.5.3. The [actuary](#) who prepared the [financial analysis](#) should cooperate with the reviewer by providing the reviewer with any requested material in the [actuary's](#) possession if the terms of the [actuary's](#) engagement so permit, and by being available to discuss [data](#), methodology, assumptions, and other factors as necessary, with the reviewer.

2.6. **Assumptions and Methodology Mandated by Law** – [This paragraph replaces paragraph 2.9 “Assumptions and Methodology Mandated by Law” in ISAP 1] When an assumption or methodology is mandated by [law](#), the [actuary](#) should apply the guidance of paragraph 2.8 of [ISAP 1](#) as if the assumption or methodology were prescribed by the [principal](#) or another party.

Section 3. Communication

3.1. Report on Financial Analysis –

- 3.1.1. The [actuary](#) should communicate the results of any [financial analysis](#) in a [report](#) that:
- a. Includes enough information to enable sound decisions to be made;
 - b. Discloses who the [principal](#) is, what the purpose of the [financial analysis](#) is, and the instructions given to the [actuary](#);
 - c. Indicates the nature and timing of future cash flows being quantified;
 - d. States the nature and significance of material risks faced by the [SSP](#);
 - e. Explains the approach taken to the risk in the analysis;
 - f. Indicates the nature and extent of any material uncertainty in the information it contains; and
 - g. Indicates the sensitivity of the results to variations in key assumptions and methodology.
- 3.1.2. There are several measures the [actuary](#) might use to present the results, including:
- a. Projected cash flows and ending positions;
 - b. Discounted cash flows; and
 - c. Required contribution rates for sustainability.
- 3.1.3. This section applies specifically to [reports](#) concerning the projected financial status of an [SSP](#). The [actuary](#) should include at least the following information in an [SSP financial analysis report](#). The appendix (which is educational and not part of the guidance of this ISAP) shows lists of possible content for most sections of a [report](#).
- a. Description of the relevant provisions of the [SSP](#);
 - b. Key dates:
 - [Valuation date](#);
 - [Report date](#); and
 - Date up to which all relevant information had been taken into consideration, if it differs from the [report date](#).
 - c. Methodology, [data](#), and assumptions;
 - d. Results and findings;
 - e. Analysis of results; and
 - f. The actuarial [opinion](#).
- 3.1.4. The [actuary](#) should include a formal statement in the [report](#) that the [report](#) has been prepared, and the [actuary](#)'s [opinion](#) given, in accordance with the applicable local standards of practice or this model ISAP.

3.2. Actuarial Opinion – The actuary should provide an [opinion](#) on the [actuary](#)'s assignment:

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- 3.2.1. Unless paragraph 3.2.3 applies, the [opinion](#) should state the extent to which the following hold, or do not hold:
 - a. The [data](#) upon which the [report](#) is based are sufficient and reliable;
 - b. The assumptions used for the [report](#) are reasonable and appropriate both in the aggregate and individually; and
 - c. The methodology employed is appropriate and consistent with [accepted actuarial practice](#).
- 3.2.2. Unless paragraph 3.2.3 applies, the [opinion](#) should include a statement with respect to the extent to which the [SSP](#) is financially sustainable over the period covered by the projections used for the [financial analysis](#). Financial sustainability of an [SSP](#) relates to its continuous capacity to support the benefits offered by the [SSP](#) when considering the applicable financing rules and the future demographic and economic environment in which it will operate.
- 3.2.3. The [actuary](#) may answer questions about an existing financial analysis of an [SSP](#). (For example, the [actuary](#) might be asked to estimate the effect of using a revised population projection while keeping all other assumptions the same.) In such case the [opinion](#)'s scope (especially what is not included) should be clearly articulated and pertinent to the question.

APPENDIX

Possible Report Content

Note: this appendix is provided for informational purposes, and is not part of the ISAP. It contains lists the task force drafting the ISAP assembled to show possible items covered by the various sections of the [actuary's report](#).

1. Description of the provisions of the [SSP](#) related to:
 - a. Coverage;
 - b. Nature of the [SSP](#), e.g., defined benefit or defined contribution;
 - c. Financing approach, e.g., pay-as-you-go, partially funded, or fully funded;
 - d. Source of funding, e.g., worker or employer contributions, transfers from government revenues, including legislated or contractual contribution rates; and
 - e. Benefit provisions, e.g., contingencies covered, formulae, amounts, restrictions, and eligibility conditions.
2. Methodology, [data](#), and assumptions:
 - a. Description of the methodology used;
 - b. Key demographic assumptions such as mortality (longevity), morbidity, fertility, migration, and unemployment;
 - c. Key historical demographic [data](#), such as:
 - i. Eligible and beneficiary population by relevant demographic characteristic groupings, and how these populations compare to the total population;
 - ii. Dependency ratios;
 - iii. Employment earnings by age groups and gender, and averages;
 - iv. Contributory earnings and averages by age groups and gender;
 - v. Labour force participation rates by age groups and gender; and
 - vi. Covered payroll and workforce;
 - d. Key economic [data](#) and assumptions such as rates of inflation, economic growth, and return on investments (if any);
 - e. The extent, if any, of interdependency among assumptions;
 - f. Summaries of the [data](#) used as a basis for the [SSP financial analysis](#) assumptions, and as a starting point for the projections; and
 - g. Sources, quality, and relevance of the [data](#) used.
3. Results and findings:
 - a. Projected demographic values at selected future points in time, such as:
 - i. Eligible and beneficiary population by relevant demographic characteristic groupings, and how these populations compare to the total population;
 - ii. Dependency ratios;
 - iii. Employment earnings by age groups and gender, and averages;
 - iv. Contributory earnings and averages by age groups and gender;
 - v. Labour force participation rates by age groups and gender; and
 - vi. Covered payroll and workforce.

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- b. Financial projections showing cash flows and balance sheet values for the recent past and for the future, such as:
 - i. Contributions;
 - ii. Investment earnings;
 - iii. Other income;
 - iv. Total income;
 - v. Benefits or claims;
 - vi. Administrative expenses;
 - vii. Total expenditures;
 - viii. Annual balance (income minus expenditure);
 - ix. Actuarial deficit and funded ratio as of [valuation date](#) and other representative dates (for fully-funded pension schemes);
 - x. Nature of assets and/or individual accounts;
 - xi. Market value of financial or tangible assets;
 - xii. Fund value, if any; and
 - xiii. Value of notional assets (such as value of future contributions, if that is recognized as an asset).

The results may be expressed in relation to one or more relevant volume measures, such as the size of the jurisdiction's economy.

- c. Cost rates as appropriate:
 - i. Pay-as-you-go cost rate;
 - ii. General average premium or partially funded cost rate; or
 - iii. Fully funded cost rate.
 - d. A presentation designed to provide an indication of the financial sustainability of the [SSP](#), if appropriate.
4. Analysis of results:
- a. Reconciliation with the prior [report](#), along with explanations of significant changes in results.
 - b. Discussion of the pattern of financial projections (e.g., as a result of the ageing of the population, maturity of the [SSP](#), and recent changes in [SSP](#) design or financing) and the implications thereof. The [actuary](#) may include a comparison of how benefits are projected to grow or decline as a result of different levels of inflation or economic growth and during which part of the projection period, as an indicator of potential stability or instability of the system in the longer term.
 - c. Sensitivity of results to variations in one or more assumptions.
 - d. Effect of automatic balancing mechanisms (if any) under each scenario used for the projections in the [report](#), where “effect” covers both how the automatic balancing mechanism alters the key parameters of the [SSP](#) (such as the pension age, or determination of benefits) and how the alteration of the key parameters changes the amounts paid to beneficiaries.
 - e. Findings with respect to the short-, medium-, and long-term financial sustainability of the [SSP](#) with due regard to the funding rules under the [law](#) if such funding rules exist.

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- f. Indications of possible sources of future financial instability (e.g., depreciation of future benefits either because of non-indexation or because indexation may lag behind economic growth, or inadequacy of future contributions due to non indexation of contribution limits).
- g. Potential recommendations on possible measures to ensure the long-term financial sustainability of the [SSP](#).
- h. Impact of any options or guarantees embedded in the benefits of the [SSP](#) on the cash flows shown.
- i. The suitability of the approach for calculation of any capitalized value of liabilities used for an [SSP](#) in light of the particular funding method and the time horizon used.



International Actuarial Association
Association Actuarielle Internationale

Glossary of Defined Terms Used in International Standards of Actuarial Practice

Glossary

1 December 2018

Glossary of Defined Terms Used in International Standards of Actuarial Practice

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Glossary of Defined Terms Used in ISAPs

This glossary is the single repository of all defined terms used in the International Standards of Actuarial Practice (ISAPs). It is not an ISAP and has no authority of its own. Any defined term used in an ISAP (including any standard created by the adaptation of an ISAP by a standard-setter) takes the authority of that ISAP or adaptation. Defined terms and references to ISAP 1 are indicated in ISAPs in blue text with a dotted blue underline (e.g. [defined term](#)).

Accepted Actuarial Practice (ISAP 1, 2) – A practice or practices that are generally recognized within the actuarial profession as appropriate to use in performing [actuarial services](#) within the scope of an ISAP or the applicable professional standards of practice.

Accounting Policies (ISAP 3) – As defined by the International Accounting Standards Board (IASB) in paragraph 5 of IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*, “the specific principles, bases, conventions, rules and practices applied by a [reporting entity](#) in preparing and presenting financial statements.”

Actuarial Services (ISAP 1, 2, 3, 5, 6) – Services based upon actuarial considerations provided to [intended users](#) that may include the rendering of advice, recommendations, findings, or [opinions](#).

Actuary (ISAP 1, 2, 3, 5, 6) – An individual member of one of the member associations of the [IAA](#).

Adoption Date (ISAP 1, 6) – The date on which this ISAP was adopted as a final document by the [IAA](#) Council.

Communication (ISAP 1, 2, 3, 5, 6) – Any statement (including oral statements) issued or made by an [actuary](#) with respect to [actuarial services](#).

Constructive Obligation (ISAP 3) – As defined by the IASB in paragraph 10 of IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, as amended in October 2010, by IFRS 9, *Financial Instruments*: “an obligation that derives from a [reporting entity](#)'s actions where:

- a. by an established pattern of past practice, published policies or a sufficiently specific current statement, the [reporting entity](#) has indicated to other parties that it will accept certain responsibilities; and
- b. as a result, the [reporting entity](#) has created a valid expectation on the part of those other parties that it will discharge those responsibilities.”

In paragraph 4(c) of [IAS 19 Employee Benefits](#), the IASB further states “Informal practices give rise to a constructive obligation where the [reporting entity](#) has no realistic alternative but to pay [employee benefits](#).”

Data (ISAP 1, 2, 3, 5) – Facts often collected from records, experience, or observations. Data are usually quantitative but may be qualitative. Examples of data include membership or policyholder details, claims details, asset and investment details, operating expenses, benefit definitions, and policy terms and conditions. Assumptions are not data, but data are commonly used in the development of actuarial assumptions.

Employee Benefits (ISAP 3) – As defined by the IASB in paragraph 8 of [IAS 19 Employee Benefits](#), as amended through September 2014: “all forms of consideration given by a [reporting entity](#) in exchange for service rendered by employees or for the termination of employment.”

Enterprise Risk Model (ISAP 5) – Those [models](#) that are developed to comprehensively and consistently evaluate the risks of an organization. Examples include internal models as specified by the International Association of Insurance Supervisors (IAIS), and capital models.

Financial Analysis (ISAP 2) – Any formal actuarial analysis. What constitutes a formal actuarial analysis is a matter for the [actuary](#)'s judgment but might include work required by law and work requested by the principal to inform decisions. A financial analysis might include but is not limited to:

- a. Determination of discounted point in time values,
- b. Projection of cash flows and associated fund values, and
- c. Determination of future contribution rate(s).

IAA (ISAP 1, 2, 3, 5, 6) – The International Actuarial Association.

IAS 19 (ISAP 3) – International Accounting Standard 19 Employee Benefits, including any Interpretations from the International Financial Reporting Interpretations Committee or the Standing Interpretations Committee thereon, as issued through September 2014.

International Financial Reporting Standards (IFRSs) (ISAP 3) – As defined by the IASB in paragraph 7 of IAS 1 *Presentation of Financial Statements*, as amended in June 2011, by *Presentation of Items of Other Comprehensive Income (Amendments to IAS 1)*: “Standards and Interpretations issued by the International Accounting Standards Board (IASB). They comprise:

- a. International Financial Reporting Standards;
- b. International Accounting Standards; and
- c. [International Financial Reporting Interpretations Committee] IFRIC Interpretations; and
- d. [the former Standing Interpretations Committee] SIC Interpretations.”

Intended User (ISAP 1, 2, 3, 5, 6) – Any legal or natural person (usually including the [principal](#)) whom the [actuary](#) intends to use the output of the [actuarial services](#) at the time the [actuary](#) performs those services.

Law (ISAP 1, 2, 3, 5, 6) – Applicable acts, statutes, regulations or any other binding authority (such as accounting standards and any regulatory guidance that is effectively binding).

Measurement Date (ISAP 3) – The date as of which the value of an asset or liability is presented, whether or not the actual calculations have been made as of a different date and rolled forward or back to the measurement date.

Model (ISAP 1, 2, 3, 5, 6) – A simplified representation of relationships among organizations or events using statistical, financial, economic, or mathematical concepts. A model has a specification, uses assumptions, [data](#), and methodologies to produce results that are intended to provide useful information on that system.

Model Governance (ISAP 1) – The application of a set of procedures and an organizational structure designed so that [intended users](#) can place their confidence in the results of the [model](#).

Model Risk (ISAP 1) – The risk that, due to deficiency in the [model](#) or in its use, an [intended user](#) of the results of the [model](#) will draw an incorrect conclusion from those results.

Opinion (ISAP 1, 2, 3, 6) – An opinion expressed by an [actuary](#) and intended by that [actuary](#) to be relied upon by the [intended users](#).

Principal (ISAP 1, 2, 3) – The party who engages the provider of [actuarial services](#). The [principal](#) will usually be the client or the employer of the [actuary](#).

Professional Judgment (ISAP 1, 2, 3, 5) – The judgment of the [actuary](#) based on actuarial training and experience.

Report (ISAP 1, 2, 3) – The [actuary](#)'s [communication\(s\)](#) presenting some or all of the output of [actuarial services](#) to an [intended user](#), including any results, advice, recommendations, findings and [opinions](#) in any recorded form, including paper, word processing or spreadsheet files, e-mail, website(s), slide presentations, and audio or video recordings.

Report Date (ISAP 2) – The date on which the [actuary](#) issues a [report](#) to [intended users](#). It usually follows the [valuation date](#).

Reporting Entity (ISAP 3) – As defined by the IASB in paragraph 8 of *Framework for the Preparation and Presentation of Financial Statements*, adopted in April 2001: “an entity for which there are users who rely on the financial statements as their major source of financial information about the entity.”

Reverse Stress Test (ISAP 6) – A process for identifying events or scenarios that would lead to a predetermined adverse outcome for an organization.

Scenario Test (ISAP 5, 6) – A process for assessing the impact of one possible event or several simultaneously or sequentially occurring possible events on an organization's financial position.

Social Security Program (ISAP 2) – A program with all the following attributes regardless of how it is financed and administered:

1. Coverage is of a defined segment, or all, of the population, often on a compulsory or automatic basis;
2. Benefits are provided to, or on behalf of, individuals;
3. The program, including benefits and financing method, is prescribed by [law](#);
4. The program is not financed through private insurance;
5. Program benefits are principally payable or delivered upon old age, retirement, death, disability, and survivorship, and the following benefits (if provided) are only ancillary to the principal benefit(s):
 - a. Unemployment benefits;
 - b. Medical expenses;
 - c. Benefits provided due to work-related injuries, work-related death

- or occupational diseases;
- d. Short term social assistance benefits (e.g. food stamps);
 - e. Benefits provided for disaster relief (e.g. insurance, or recovery funding, for flood, drought, hurricane/typhoon, earthquake/tsunami); and
 - f. Financial insurance or financial guarantees (e.g., for loans, bank deposits, pension payments, financial securities, insurance payments from insolvent insurers).

SSP (ISAP 2) – [Social Security Program](#)

Stress Test (ISAP 5, 6) – A process for measuring the impact of adverse changes in one or relatively few factors affecting an organization’s financial position.

Subsequent Event (ISAP 1, 2) – An event of which the [actuary](#) becomes aware after the [valuation date](#) (or date to which the [actuarial services](#) refer) but before the [actuary](#)’s [communication](#) on the results of these [actuarial services](#) is delivered.

Valuation Date (ISAP 2, 5) – The effective date of the analysis by the [actuary](#). It usually precedes the [report date](#).

Work (ISAP 1, 2, 3, 5, 6) – All actuarial activities performed by an [actuary](#) related to [actuarial services](#). It usually includes acquisition of knowledge of the circumstances of the assignment; obtaining sufficient and reliable [data](#); selection of assumptions and methodology, calculations, and examination of the reasonableness of their result; use of other persons’ work; formulation of opinion and advice; documentation; reporting; and all other [communication](#).