This document contains the proposed *ISAP 2 - Financial Analysis of Social Security Programs.* The Social Security Task Force and the ASC approved this draft on 4 June 2013, for limited re-exposure to the commenters on the Exposure Draft published on 12 October 2012. Formatting and hyperlinks to the proposed Glossary will be finalized by the Secretariat.

International Actuarial Association

International Standard of Actuarial Practice 2 (ISAP 2)

Financial Analysis of Social Security Programs

Approved by the IAA Council

[Date]

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Preface

[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. *Choose the appropriate phrase and date in paragraph 1.5;*
3. *Review for, and resolve, any conflicts with the local law and code of professional conduct; and*
4. *Delete this preface (including these drafting notes).]*

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 consider taking one of the following courses of action, if it has been determined that this ISAP is relevant for actuaries in their jurisdiction:

- Adopting this ISAP as a standard with appropriate modification, where items covered in this ISAP are not currently contained in existing actuarial standards;
- Endorsing this ISAP as a standard as an alternative to existing standards;
- Modifying existing standards to obtain substantial consistency with this ISAP; or
- Confirming that existing standards are already substantially consistent with this ISAP.

Such an adopted standard (rather than this ISAP) applies to those actuaries who are subject to such body's standards, except as otherwise directed by such body (for example with respect to cross-border work).

If~~When~~ this ISAP is translated into a language other than English or French, 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 not binding upon an actuary unless the actuary states that some or all of the work has been performed in compliance with this ISAP.

This ISAP was adopted by the IAA Council in [month year].

Comment [sg1]: I understand what this is trying to get at, but it doesn't make much sense in the case of an actuary practicing in a jurisdiction that adopts the ISAP - so, it isn't binding on actuaries in such a jurisdiction if he/she doesn't state that he/she complies? Is this the intent?

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~~which~~ would not be acceptable under ISAP 1, it is clearly identified.

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~~will be~~ superseded by the adopted version of this ISAP.

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~~developments~~.

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).

Comment [sg2]: I would move this paragraph down one, as it interrupts the thoughts of the two adjoining paragraphs.

Comment [sg3]: Most companies have standards that can be applied to this area.

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 ~~in particular~~ that:

- Actuarial services are carried out professionally and with due care;
- The results are relevant to their needs, are presented clearly and understandably, 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 who are performing, reviewing, advising on, or opining on financial analyses of SSPs.

1.3. Compliance –There are situations where an actuary may deviate from the guidance of this ISAP but still comply with the ISAP:

1.3.1. Law may impose obligations upon an actuary. Compliance with requirements of law that conflict with this ISAP is not a deviation from the ISAP.

1.3.2. The actuarial code of professional conduct applicable to the work may conflict with this ISAP. Compliance with requirements of the code that conflict with this ISAP is not a deviation from the ISAP.

1.3.3. The actuary may depart from the guidance in this ISAP while still complying with the ISAP if the actuary provides, in any report, an appropriate statement with respect to the nature, rationale, and effect of any 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, and does not fall within the scope of this paragraph 1.3.

1.4. Relationship to ISAP 1 [1] – Any actuary who asserts compliance with this ISAP (as a model standard) must also comply with ISAP 1, 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 [caption] 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, where appropriate.

[1] *An actuarial standard-setter adopting ISAP 2 may need to modify this wording to point to the local standard(s) that are substantially consistent with ISAP 1, rather than referring to ISAP 1 directly.* *[note – I agree with footnotes 1 and 2, but wouldn't it be better to include this instruction in the Preface; otherwise it will remain in the standard.*

Comment [sg4]: I don't think it is in particular to anything.

Comment [sg5]: I think this comma should be "or" consistent with para 1.1.

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Comment [sg6]: I would replace "any" with something like "an applicable" – it isn't just any old report!

Field Code Changed

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1.5. Effective Date – This ISAP is effective for {actuarial services performed/actuarial services commenced/actuarial services performed relevant to an event}[2] on or after [Date].

[2] *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 entity, 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 ~~other~~ 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 mightay 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 appropriatelicable;

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;

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, both to analyze ~~the~~ past experience~~assumptions~~ 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~~and~~ longer-term trends applied to~~for~~ 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.

Comment [sg7]: If you don't include something like "include" this looks like experience is the only thing needed.

Comment [sg8]: "other" is incorrect here – it implies that the base for comparison is a comparable SSPs.

Comment [sg9]: I prefer "assumption" to be defined in the Glossary, as I know of some accountants this an assumption is necessarily subjectively determined.

Comment [sg10]: I think think this is referring to an analysis of past experience and not past assumptions.

2.3.4. Credible experience data might not exist for a newly introduced SSP, or for 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~~group~~ through surveys or enquiries until credible data are available;

Comment [sg11]: This isn't group insurance

b. consider the relevant external experience, including ~~of~~:

i. other SSPs (including the program being replaced, if any), or

ii. other countries;

c. use reasonable proxies or default values as may be appropriate~~necessary~~.

Comment [sg12]: I don't know what "necessary" implies here – according to regulation, …?

If credible experience data do not exist, the actuary should disclose in the report that the financial analysis has been based on limited data (and perhaps none relating to the SSP itself), and should consider recommending that financial analyses should be performed more frequently than would be suitable for a longer established program which provided more data.

Comment [sg13]: I'm unsure of the right word, but won't there always be limited data? This surely is not what is intended here!

Comment [sg14R13]:

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Comment [sg15]: I am uncomfortable about implying that financial analyses should not be assessed frequently. I know that in the U.S. new and old programs are analyzed at least annually. Shouldn't this better relate to a frequency 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~~rationale~~ for the margins and explain the relationship between the result using the assumptions that include margins and the result using neutral assumptions.

Comment [sg16]: Maybe both the rationale and basis would be appropriate here.

2.3.6. The actuary should consider including in the analysis projections based on alternative~~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 from and benefits for~~of~~ both current and future participants are considered. If, however, in the professional judgment of the actuary, an alternative approach is deemed to be more appropriate, that approach should be used accompanied by a~~with~~ justification communicated in the report. In such circumstances, the actuary may also consider reporting the results of the financial analysis under the open group methodology.

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 one of the following methodologies that the actuary considers appropriate for the financial analysis:

a. A closed group methodology, under which only current participants are considered, with or without their assumed future benefit accruals;

b. An open group methodology; or

c. A methodology incorporating both closed and open group aspects.

Comment [sg17]: "aspects"? might this be "elements"?

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 1.3.2 of this ISAP.

2.5. **Independent Expert Review –** A financial analysis is often subject to review by an independent expert.

2.5.1. This review might address:

i. whether the assumptions used in the financial analysis are within a reasonable range, both separately and in the aggregate, or

ii. whether the results of the financial analysis are within a reasonable range, or

iii. other aspects of the financial analysis.

2.5.2. ~~I~~An independent expert is~~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 was~~ere~~ prescribed by the principal or another party.

Field Code Changed

Comment [sg18]: Shouldn't the title ("Assumptions…") be either italicized or be in quotes?

Comment [sg19]: Needs to be singular because "or" was used.

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~~which~~:

a. includes enough information to enable sound decisions to be made;

b. discloses ~~clearly~~ 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 ~~any~~ future cash flows being quantified;

d. states the nature and significance of ~~any~~ material risks faced by the SSP;

e. explains the approach taken to the risks 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 mechanisms the actuary might use to present the results, including:

a. projected cash flows and ending positions

b. discounted cash flows

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:

i. Valuation date;

ii. Report date;

iii. 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.

3.2. Actuarial Opinion – The actuary should provide an opinion on the actuary's assignment:

3.2.1. In the case of a free-standing financial analysis 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

Comment [sg20]: Including "clearly" implies that the other items don't have to be clear?

Comment [sg21]: To me, "any" implies that even immaterial cash flows need to be separately quantified

Comment [sg22]: "any" may imply to some one risk

Comment [sg23]: I don't understand why "mechanisms" is the right word here – shouldn't this be "measures" or "types of values" or …?

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aggregate and individually; and

c. The methodology employed is appropriate and consistent with accepted actuarial practice.

3.2.2. In the case of a free-standing financial analysis the opinion should include~~comment~~ a statement with respect to~~on~~ 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.

Comment [sg24]: It seems to me that an opinion can't comment.

Field Code Changed

3.2.3. The actuary may answer questions about an existing financial analysis of an SSP ~~based on an existing financial analysis~~ (whether or not it was prepared by the actuary). (For example the actuary might be asked to estimate the effect~~impact~~ 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.

Comment [sg25]: I don't know why this parenthetical is relevant or adds anything.

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~~ standard~~s~~ of practice or this model ISAP.

Appendix

Possible Report Content

Note: This appendix is provided for informational purposes, and~~but~~ is not part of the ISAP. It contains lists the Task Force drafting the ISAP assembled to show possible items covered~~contents~~ of the various sections of the actuary's report.

1. Description of the provisions of the SSP related to:

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   a. Coverages provided;

Comment [sg26]: Possibly add a couple of examples, e.g., retirement and unemployment benefits?

   b. Nature of the SSP, e.g., defined benefit or defined contribution;

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   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;
      ii. Dependency ratios;
      iii. Employment earnings by age groups and gender, and averages;
      iv. Contributory earnings by age groups and gender, and averages; and
      v. 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. S~~tatistics and s~~ummaries of the data used as a basis for the SSP financial analysis assumptions, and as a starting point for the projections; and

Comment [sg27]: I can't figure out what statistics mean here – mean and standard deviations?

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   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:

Comment [sg28]: Interesting that 3a items are almost, but not quite identical to that of 2c items. Make them exactly the same? Or possible to combine them (i.e., historical and projected…

      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.

b. Financial projections showing detailed 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 tangible assets / funded assets;
   xii. Reserve; and
   xiii. Value of notional, non-financial or virtual assets.

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

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; and

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~~evious~~ report, along with explanations of significant changes in results.

   b. Discussion of the pattern of financial projections ~~over the years~~ (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 alternative levels of~~with respect to~~ inflation or~~,~~ economic growth ~~or both~~ and during which part of the projection period, as an indicator of potential stability or instability of the system in the longer term.

Comment [sg29]: Although suggestive only, I'm not sure how useful "detailed" is – I would delete this word, as there is always way too much detail to include in a report!

Field Code Changed

Comment [sg30]: I don't know what "reserve" is, since this isn't a balance sheet – I suggest deleting or making it clear what it is – fundvalue, if any?

Comment [sg31]: I can't figure out what a virtual asset is.

Comment [sg32]: Bi has contributions; premiums/taxes aren't included here

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Comment [sg33]: I think this is what is meant, but it isn't clear.

c. Effect, if material, of any subsequent event.

d. Sensitivity of results to variations in one or more assumptions.

e. 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 retirement~~pension~~ age, or determination of benefits) and how the alteration of the key parameters changes the amounts paid to beneficiaries.

f. Findings with respect to~~Conclusions on~~ 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.

g. Indications of possible sources of future financial instability (e.g., depreciation of future benefits either because of non-indexation or because ~~of~~ indexation may lag~~ging~~ behind economic growth, or inadequacy of future contributions due to non~~-~~indexation of contribution limits).

h. Potential recommendations on possible measures to ensure the long-term financial sustainability of the SSP.

i. Impact of any options or guarantees embedded in the benefits of the SSP on the cash flows shown.

j. The suitability of the~~any approach for~~ calculation of capitalised value of liabilities used for an SSP in light of the particular funding method and the time horizon used.

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Comment [sg34]: Put f and h next to each other, as both relate to sustainability.

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Comment [sg35]: "capitalized value" may not be obviousl to many readers.

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