



Institute  
and Faculty  
of Actuaries

# Principles for Technical Actuarial Work

Guidance on the application of Technical  
Actuarial Standard 100

by the Regulation Board

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## 1. Introduction

- 1.1. Responsibility for setting Technical Actuarial Standards (TASs) rests with the Financial Reporting Council (FRC). The FRC has published a new suite of TASs, effective for 'technical actuarial work' completed on or after 1 July 2017.
- 1.2. This new framework of TASs will replace the original TASs and consists of:
- i. a framework document: [Framework for FRC technical actuarial standards](#)<sup>1</sup> (the *Framework*) which explains the status of the TASs and how they should be applied;
  - ii. a generic TAS: [Technical Actuarial Standard 100: Principles for Actuarial Work](#)<sup>2</sup> which applies to all 'technical actuarial work' carried out within the FRC's UK Geographic Scope<sup>3</sup>;
  - iii. three revised Specific TASs which replace the original Insurance, Pensions, Funeral Plans and Transformations TASs:
    - [TAS 200: Insurance](#)<sup>4</sup>
    - [TAS 300: Pensions](#)<sup>5</sup>
    - [TAS 400: Funeral Plan Trusts](#)<sup>6</sup>; and
  - iv. a [Glossary of defined terms used in FRC technical actuarial standards](#)<sup>7</sup> which replaces the glossaries included in each of the original TASs.
- 1.3. It was agreed during the development of TAS 100 that it would be useful for the IFoA to prepare guidance material to assist members with its practical application. This guidance has therefore been prepared by the TAS 100 Guidance Working Group, and is issued by the Regulation Board of the IFoA. It is not intended to be a comprehensive guide to TAS 100, but rather aims to assist members with its practical application and the interpretation of some of its key provisions.
- 1.4. It is anticipated that this guidance will be used mainly by members of the IFoA. Users and employers of members, and those non-members who choose to apply the TASs, may also find the material in this guidance useful.
- 1.5. This guidance is a non-mandatory resource for members; it imposes no obligation upon members over and above those embodied in the TASs themselves or in the Actuaries' Code or Actuarial Profession Standards (APSS).

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<sup>1</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/framework-for-frc-actuarial-standards>

<sup>2</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/tas-100-principles-for-technical-actuarial-work>

<sup>3</sup> Defined as "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" (the *Framework*, paragraph 5.5)

<sup>4</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/tas-200-insurance>

<sup>5</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/tas-300-pensions>

<sup>6</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/tas-400-funeral-plan-trusts>

<sup>7</sup> <https://www.frc.org.uk/document-library/actuarial-policy/2016/glossary-of-defined-terms-used-in-frc-technical-ac>

- 1.6. This guidance does not constitute legal advice. While care has been taken to ensure that it is accurate, up to date and useful, the IFoA will not accept any legal liability in relation to its contents.
- 1.7. While the guidance may be referred to and considered in the course of disciplinary proceedings it will not necessarily provide a defence to allegations of misconduct.
- 1.8. The defined terms used in TAS 100 apply to this guidance.

## **2. Background**

- 2.1 The content of TAS 100 derives largely from the 'Generic' TASs (that will be withdrawn when the new framework comes into force) and includes principles and provisions on the following areas:
  - i. Judgement
  - ii. Data
  - iii. Assumptions
  - iv. Models
  - v. Communications
  - vi. Documentation
- 2.2. TAS 100 sets high-level principles and supporting provisions for members to comply with in their work.
- 2.3. TAS 100 will apply to any member of the IFoA carrying out 'technical actuarial work' (explained further below) within the FRC's UK Geographic Scope. Its application is wider than the areas of actuarial work to which the original Generic TASs applied.
- 2.4. This means that members who were not required to comply under the old regime will, in some circumstances, be required to comply with TAS 100.

## **3. The Reliability Objective**

- 3.1. The *Framework* and the TASs have been written to support an overarching 'Reliability Objective'. It provides as follows:

*"Users for whom actuarial information is created should be able to place a high degree of reliance on that information's relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the information."*
- 3.2. The *Framework* explains that in applying judgement to the application of the TASs, it is important to be guided by the Reliability Objective and the spirit and reasoning behind the TASs.

- 3.3. In assessing how to apply the TASs, members are also reminded of their obligations under the Actuaries' Code, in particular section 2.4 of the Code which provides that:

*“Members will take care that the advice or services they deliver are appropriate to the instructions and needs of the client, including the legal and other rules which may govern the matter, having due regard to others, such as policyholders of an insurer, members of a pension scheme or any analogous persons whose interests are affected by the work of the member”.*

#### 4. Definition of technical actuarial work

- 4.1. As explained, the scope of TAS 100 extends to all 'technical actuarial work' within UK Geographic Scope. For the purpose of TAS 100 the definition of technical actuarial work is:

“work performed for a **user**:

- (1) where the use of principles and/or techniques of actuarial science is central to the work and which involves the exercise of judgement; or
- (2) which the **user** may reasonably regard as **technical actuarial work** by virtue of the manner of its presentation.”

- 4.2. In most cases it will be clear whether or not a piece of work is technical actuarial work. However, for certain types of work it may be unclear whether TAS 100 applies, for example where a member is carrying out an exercise that involves a mixture of actuarial and non-actuarial or administrative skills. Members may therefore have to exercise judgement to determine whether a piece of work falls within the scope of TAS 100. The information provided in this guidance should be read in that context.
- 4.3. The definition of 'technical actuarial work' includes some key concepts which members must consider to determine whether work falls within the scope of TAS 100. These key concepts are explained in more detail throughout this guidance.

#### Definition of 'user'

- 4.4. In order for work to fall within the definition of 'technical actuarial work' it must be performed for a 'user'. Users are defined in the Glossary as “those people whose decisions a communication is intended (at the time it is provided) to assist.”
- 4.5. The nature of actuarial work is such that in many cases the use of and reliance on actuarial information is not confined to those requesting or commissioning its preparation. The users of actuarial work may therefore potentially extend to a wide range of groups. For example, use of a Scheme Actuary's work might extend to include trustees, the scheme sponsor, and scheme members. Those to whom communications are addressed (including clients and employers), regulators and third parties for whose benefit communications are provided (such as investors and policyholders) are all examples of possible users. However, it is only those whom the communication is *intended* to assist who are 'users' for TAS purposes, so policyholders, scheme members and regulators (for example) would not be 'users' if the communication was not intended to assist their decisions when it was provided.

- 4.6. Members are obliged under section 2.1 of the Actuaries' Code to "consider who their advice and/or services are being provided to (their clients)". In the context of TAS 100, they will also need to determine if there is anyone else whose decision a piece of work is specifically intended to assist. This will be particularly important in situations where the instruction to the member has been delegated, meaning those instructing the member will not necessarily be the ones making the decision(s) that the member's work is intended to assist. To comply with TAS 100, the purpose and the user(s) of the work must be identified prior to the work or assignment being carried out and cannot be determined retrospectively.
- 4.7. TAS 100 will not normally apply in situations where there is no direct user, for example where a member is involved in preparing articles or training materials for magazines, newsletters or books (provided that the work is of general application and is not recommending or promoting a course of action).

#### Work falling under the first part of the definition of 'technical actuarial work'

- 4.8. The first part of the definition of 'technical actuarial work' is "work performed for a user where the use of principles and/or techniques of actuarial science is central to the work and which involves the exercise of judgment".
- 4.9. The term 'actuarial science' is not defined in TAS 100 but may include such matters as financial modelling, projections of contingent events, consideration of the time value of money, probabilities, demographic tables, analysis of risk and statistical techniques. These examples are non-exhaustive and accordingly members will need to exercise professional judgement in deciding whether a particular piece of work involves the use of principles and/or techniques of actuarial science.
- 4.10. Where a member determines that the work does involve the use of principles and/or techniques of actuarial science, they will then need to assess whether the use of those principles and or/techniques is "central" to the work. Where they are not needed to perform the work, or are an incidental component of the work, they cannot be deemed to be "central".
- 4.11. Factors which members should consider when assessing whether the use of actuarial principles and/or techniques is "central" to the work include the amount of actuarial work involved, whether actuarial involvement is necessary and what proportion of the whole work is dependent upon the use of actuarial principles and/or techniques.
- 4.12. In order to satisfy the second limb of the first part of the definition of 'technical actuarial work', the work must involve the exercise of judgement. For the purposes of TAS 100, 'judgement' is intended to be interpreted widely, recognising that it is a key aspect of actuarial work. Examples of activities which require the exercise of judgement include scrutinising data, choosing assumptions, constructing and using models and communicating information to users.
- 4.13. Taken at its simplest, 'judgement' is involved in work requiring anything more than straightforward arithmetic calculations where no decisions are required on data, assumptions or methodology. If judgement is not involved, such as for purely administrative work, and the work is not presented as actuarial (meaning it would fall under the second part of the definition of 'technical actuarial work'), then the work will not fall within the scope of TAS 100.

- 4.14. Examples of work which might fall within the scope of TAS 100 and work which might not are provided in Appendix 1 of this guidance.

#### Work falling under the second part of the definition of 'technical actuarial work'

- 4.15. The second part of the definition of 'technical actuarial work' is "work performed for a user which the user may reasonably regard as technical actuarial work by virtue of the manner of its presentation". This means that in some situations a piece of work might still be deemed to be 'technical actuarial work', even where it does not involve the use of principles and/or techniques of actuarial science.
- 4.16. Work may be presented as technical actuarial work not only if it is explicitly labelled as such but also if there is an implication that it is technical actuarial work. Where work is presented in this way it will fall within the scope of TAS 100, even where its content is more ambiguous and does not necessarily feature actuarial principles or judgement. An example might be work with "actuarial report" in the title of the document provided to the user.
- 4.17. The use of the term "reasonably regard" enables members to assess what the user might consider to be technical actuarial work by the manner of its presentation. In doing so the member should bear in mind the nature of the instruction and the context in which the work is being carried out. Where a member determines that the user is unlikely to regard the work as technical actuarial work then they should be prepared to justify their reasoning in reaching that conclusion and may find it helpful, where appropriate, to make clear to the user that they do not regard the work as technical actuarial work.
- 4.18. Where work is presented as a response to a request for actuarial work, or as reflecting generally accepted actuarial practice, or as having been performed by an actuary or an actuarial firm acting in an actuarial capacity, a user will normally be entitled to regard that work as technical actuarial work.

## **5. Application of TAS 100**

### Materiality

- 5.1. TAS 100 uses the term 'material' in relation to a number of its substantive requirements. It also uses the term 'material' in relation to the provisions on compliance which deal with permitted departures from the communications requirements (discussed further below).
- 5.2. The word 'material' is defined in the *Glossary of defined terms used in FRC technical actuarial standards* as follows:

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

- 5.3. When determining if something is ‘material’ for the purposes of TAS 100, members should be mindful that the question of whether a matter is material is one which might change over time as the needs and circumstances of the user change; for example, where the scope of the assignment is extended or the nature of the work becomes more complex.

#### Departures from the communications provisions

- 5.4. TAS 100 permits departures from the provisions concerning communications to users “*if they are unlikely to have a material effect on the decisions of users*”. This means that in some circumstances, members might decide that they do not need to comply with some of the communications provisions, because the actuarial information relevant to those provisions is unlikely to influence the decision(s) of the user for whom the actuarial information is being produced.
- 5.5. The decision as to whether a communication is likely to have a “material effect” on a user’s decision must be made by the member, exercising judgement in a reasoned and justifiable manner. Where a decision is taken to depart from the communication requirements of TAS 100 on the basis of materiality, members must be able to explain and justify the approach they have taken, when reasonably called upon to do so. This may be in response to a request from a user or a regulator. In respect of larger pieces of work, members are encouraged to document the reasons for their overall approach.
- 5.6. As explained above, the question of whether a matter is material may change over time. Members should therefore ensure that, where they have decided to depart from the provisions of TAS 100 concerning communications, this decision is kept under review to ensure that it remains appropriate throughout the period that the work is carried out.
- 5.7. Departures from TAS 100 provisions are permitted only for communications. Departures from TAS 100 are not permitted under any of the other principles, for example for provisions concerning matters such as choice of assumptions and documentation. This differs from the original TASs where departures were permitted for all principles.
- 5.8. Members familiar with the original TAS regime will be aware that in some circumstances, departures from some or all of a TAS for work not reserved to actuaries or required by a legal obligation, was permitted on the instruction of the person commissioning the work. The aim of the new framework of TASs is to ensure that all technical actuarial work complies with minimum technical actuarial standards. Accordingly opt-outs with the agreement of or on instruction from a client or user are not permitted under TAS 100.

#### Proportionality

- 5.9. TAS 100 has been drafted to facilitate proportionate compliance, to take into account the scope and significance of a member’s assignment, the nature of the decision of the user and the benefit which users will get from a member’s work. Each of the principles and provisions in TAS 100 must be followed where they are relevant to the work. However, TAS 100 does not require work to be performed in order to comply with the standard if or where such work would be disproportionate to the needs of users.



5.10. TAS 100 provides:

*“Nothing in TAS 100 should be interpreted as requiring work to be performed that is not proportionate to the nature, scale and complexity of the decision or assignment to which the work relates and the benefit that users would be expected to obtain from the work”.*

5.11. This means that any work undertaken to achieve compliance with the provisions of TAS 100 should not outweigh the benefits to the user of the technical actuarial work.

5.12. For members, this will mean exercising judgement about the level of detail required to ensure compliance with TAS 100. For major assignments this might result in a detailed approach being taken in respect of each of the provisions of TAS 100 while for smaller pieces of work, a less detailed approach might be taken with more high level information or explanations being provided.

5.13. In considering how to apply proportionality the following should normally be considered:

- i. The significance of the piece of work including any financial, reputational or other consequences for the user;
- ii. The complexity of the piece of work;
- iii. The expectations of the user;
- iv. The knowledge and expertise of the user; and
- v. The extent to which judgement is required.

5.14. The budget and time available for the work are also potentially relevant factors in applying proportionality. However, these would not normally on their own constitute a sufficient reason to do significantly less than would otherwise be necessary to comply with the requirements of TAS 100.

5.15. For some provisions concerning documentation or communications to users it is possible that a proportionate approach may result in very little documentation or communication depending on the nature of the assignment. In extreme circumstances, where the financial amounts under consideration are very small, “very little” may mean “none at all”.

#### Communicating the scope and purpose of the work

5.16. When determining the scope and purpose of the work, members should ensure that where material, communications to users include an explanation of any reasonably foreseeable circumstances under which the technical actuarial work would no longer be valid. This might involve providing the user with information concerning the possible changes in circumstances that might invalidate the results of the work to ensure that the user uses the actuarial information in an appropriate manner.

## **6. Retention of documents**

6.1. Many of the provisions of TAS 100 concern communications and documentation, and members may therefore wonder for how long such communications and documentation should be retained. A key consideration is that TAS 100 itself does not introduce new documentation retention requirements.

- 6.2. Although not specific to TAS 100, when considering how long a particular document should be retained, members should firstly consider whether they are under an obligation to comply with any legal or regulatory requirements and/or document retention policies imposed by their own organisation or employer. In the absence of any such requirements, members should use their judgement to determine how long the documentation should be retained, taking into account the nature of the work, including its significance, its value and when it might be needed by the user.

## **7. Compliance statements**

- 7.1. TAS 100 requires members to include a statement confirming compliance with the TAS in communications for 'reserved work', work in the scope of one of the Specific TASs and "technical actuarial work which is central to a significant decision by the user".
- 7.2. The overriding consideration in deciding whether a compliance statement is appropriate, on the grounds that the work is "central to a significant decision by the user", will be the particular needs and expectations of the user. The work may be "central to a significant decision" if it was instructed for the direct purpose of informing a decision of the user, or is otherwise likely to have significant implications for the user.
- 7.3. The purpose of a compliance statement is to inform a user that a particular piece of work has been carried out in accordance with TAS 100. Statements should therefore be short and clear and need not include details about the relevant provisions of TAS 100 which apply.
- 7.4. Members should note that the requirement for a compliance statement is not a 'provision' which may be set aside on grounds of materiality (the *Framework*, paragraph 5.10).

## **8. Multidisciplinary teams**

- 8.1. Actuarial work is wide ranging and diverse. Often, members will work in multidisciplinary teams alongside colleagues from different disciplines who are involved in the same work but are not necessarily subject to the same professional standards. These teams might sometimes be led by an actuary but in other cases might be led by other professionals or specialists, for example underwriters, accountants, investment managers etc. In many cases a piece of work being carried out by a member will be signed off by a non-actuary.
- 8.2. The TASs are intended to apply to 'technical actuarial work', regardless of who undertakes the work. IFoA members will be accountable for TAS compliance to the extent to which they are 'responsible' for the work that falls within the scope of TAS 100.
- 8.3. Members are reminded of the requirement at section 5.2 of the Actuaries' Code for them to "show clearly that they take responsibility for their professional findings" when communicating them. When more than one actuary is involved in a piece of actuarial work, it will normally be apparent which of them is or are 'responsible' for the end product (and therefore for TAS 100 compliance). However, matters may be more complicated where responsibility for work is shared between a member of the IFoA and one or more people from other disciplines.

- 8.4. Where a member is carrying out technical actuarial work in conjunction with others, and the member considers that they do not have authority to determine the final work product (and therefore ensure TAS compliance), then the member should regard the person who does have that authority as a 'user' and ensure that the input they have provided to that person complies appropriately with TAS 100.
- 8.5. Where a number of members or other professionals are contributing to a piece of work, members are encouraged (where appropriate) to discuss compliance with TAS 100 at an early stage in order to determine who is responsible for all or part of the work, agree who will have responsibility for ensuring compliance and what each individual will be expected to contribute to compliance by way of documentation and reporting.
- 8.6. The question of responsibility for compliance is discussed further at paragraphs 5.13-5.15 of the *Framework*.

## **9. The transition to TAS 100 and early adoption**

- 9.1. TAS 100 applies to 'technical actuarial work' which is completed on or after 1 July 2017.
- 9.2. In some cases, work that is started well before 1 July 2017 may need to comply with TAS 100. This might include longer-term 'discrete' items of work, as well as work that builds up in stages over a period of time. In the latter case, a judgement may need to be made about whether the earlier stages may be regarded as distinct pieces of work or whether they are an inherent part of the later-stage work completed on or after 1 July.
- 9.3. In making this judgement, members should bear in mind that the 'later stages' of the work will often draw on at least some of the earlier work undertaken, and that, especially from a communications perspective, TAS 100 in general looks at the total actuarial information provided in relation to a particular decision of the user and not to each individual communication. The requirements of TAS 100 on communications apply to the communications in aggregate for a piece of work and not to each individual communication. (Although the terms 'aggregate report' and 'component report' from the original TASs have not been adopted in the new TAS framework, the new definitions of 'communications' and 'component communication' have a similar effect in practice).
- 9.4. Where work done prior to July 2017 does form part of a body of work which is completed after TAS 100 comes into force, it will normally substantially satisfy the TAS requirements if good actuarial practice has been followed. Nevertheless, it will sometimes (for example, in relation to data, assumptions and models already used) not necessarily be straightforward to amend that earlier work to ensure that it is TAS-compliant. It is therefore important that members start to think about TAS 100 compliance sufficiently in advance of July 2017. Where the work was started before TAS 100 was published, members should consider what is proportionate when judging to what extent they should revisit the earlier work in light of the new TAS provisions.
- 9.5. For work that fell within the scope of the original TASs, the work done under those TASs prior to July 2017 is likely in the vast majority of cases to meet the requirements of TAS 100. Members should consider however whether any of the provisions of TAS 100 which were not in the original TASs should apply to that particular piece of work if it spans both the old and new TAS regime.

9.6. The FRC has prepared a [transition statement](#)<sup>8</sup> which sets out specific transitional arrangements in place for Scheme Funding exercises with an effective date on or before 1 October 2016. For these, where the technical actuarial work is completed on or after 1 July 2017, compliance with the Generic TASs (TAS D, TAS M and TAS R) and the Pensions TAS is permitted instead of compliance with TAS 100 and TAS 300. In such cases the compliance statement should state that compliance is with the Generic TASs (TAS D, TAS M and TAS R) and the Pensions TAS.

9.7. The transition statement also confirms that early adoption of the revised TASs is permitted for technical actuarial work completed on or after 1 April 2017 and before 1 July 2017. Where a member chooses to apply the revised TASs to a piece of work prior to TAS 100 coming into force, compliance with the original TASs is not required. Where a compliance statement is provided to a user it should state that the work complies with the revised TASs.

## 10. Further questions and information

10.1. The content of this guidance will be kept under review and for that reason we would be pleased to receive any comments you may wish to offer on it. Any comments should be directed to:

**Regulation Team (Ref: TAS 100)**  
**The Institute and Faculty of Actuaries**  
**Level 2, Exchange Crescent**  
**7 Conference Square**  
**Edinburgh**  
**EH3 8RA**

*or*

[regulation@actuaries.org.uk](mailto:regulation@actuaries.org.uk)

10.2. If members have any specific questions about this guidance then they can contact the IFoA's Professional Support Service (PSS), which is a free guidance service that can assist with any professional or technical actuarial matters. Queries can be submitted through the IFoA's website using the PSS form<sup>9</sup>.

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<sup>8</sup> <https://www.frc.org.uk/actuaries/actuarial-policy/technical-actuarial-standards/technical-actuarial-standards-2017>

<sup>9</sup> <https://www.actuaries.org.uk/upholding-standards/professional-support-service/submit-query-professional-support-service>

## **Appendix 1: Examples of work in and out of scope of TAS 100**

The following list provides some non-exhaustive examples of work out of scope of TAS 100:

- Arithmetic calculations where no judgement is needed such as pension scheme transfer value calculations which use predetermined actuarial factors and follow instructions. The production of the underlying factors would however be technical actuarial work as actuarial techniques are used and judgement is needed when setting the assumptions.
- Members undertaking other roles, for example:
  - Member acting as a pension scheme trustee. Here the member's routine work in their capacity as trustee will not normally fall within the scope of TAS 100. While the work underlying the actuarial information used by the trustee might be technical actuarial work the use of the actuarial information for trustee decisions will not normally be treated as technical actuarial work as the use of principles and/or techniques of actuarial science is not a central requirement of the work.
  - Member acting as a non-executive director of an insurance company. In this scenario, the member might use actuarial information provided to them to assist them in making decisions. While the work underlying the actuarial information would be classed as technical actuarial work, the use of the actuarial information for director/board decisions will not be technical actuarial work as the use of principles and/or techniques of actuarial science is not a central requirement to make the decision.
  - Member acting as the Chief Risk Officer (CRO) of an insurance company. A member's work in their capacity as CRO will not normally be treated as technical actuarial work as the techniques and principles of actuarial science are not central to the work they are likely to be carrying out. There may however be some work carried out by the CRO which could be deemed to be technical actuarial work and members will be required to exercise judgement in determining whether any of their activities meet the relevant definition.
- Internal review (for example peer review) of work carried out which is performed as part of the exercise. The internal review on its own will not be technical actuarial work as it is not a discrete exercise but part of the exercise as a whole, the final product of which, as technical actuarial work, is in scope of TAS 100. Review work performed as a separate exercise will under normal circumstances fall within the scope of TAS 100.

The following list provides some non-exhaustive examples of work within the scope of TAS 100:

- Determining the methods or assumptions to be followed for a specific piece of work. This might include using bespoke calculations which might be simple but need actuarial expertise.
- Complex calculations using actuarial factors which use actuarial techniques and which require judgement on matters such as setting assumptions. These might be performed using a spreadsheet or bespoke systems. It is likely that for this type of work some judgement will be needed even when the assumptions are prescribed, for example in dealing with incomplete data.

- Asset/liability modelling work which uses techniques of actuarial science to project and value asset and/or liability cash flows, which might be carried out by members and other investment professionals.
- The development of software for actuarial work in-house or by specialist software houses e.g. systems for Solvency II internal models, for pricing general insurance products, and for pension scheme valuations. The development of these models requires actuarial expertise, actuarial principles are central to the work and judgement will be required throughout the development of the model. While this work is technical actuarial work, components of the overall exercise, for example programming, might not be technical actuarial work.
- Modelling of financial models such as those used in pricing longevity swaps, catastrophe bonds, or other insurance or pension risk hedging instruments which use actuarial techniques and judgement at various points. The majority of modelling work in investment banks is not generally in the scope of the original TASs. However, some of this modelling work may now be in the scope of TAS 100.
- Review work which is performed as an exercise separate from an original piece of work, for example, a second actuarial opinion or part of the audit of an insurer's or a pension scheme's sponsor's financial statements. This type of work is likely to be presented as actuarial to the user: the receiver of the second opinion or the auditor providing the audit opinion on the financial statements. It is also expected that the member would have performed some independent validation of the work being reviewed which would use the principles and/or techniques of actuarial science.

## **Appendix 2: General illustrative examples**

The following are some general illustrative examples of how TAS 100 might be applied in certain situations, together with possible approaches that members might follow to ensure compliance with TAS 100.

These scenarios are only examples and may not necessarily be appropriate in all similar situations. Members are expected to use their judgement when deciding whether to follow these approaches.

### **Scenario 1: Definition of Technical Actuarial Work**

*A newly qualified actuary is tasked with determining benefit values for a substantial number of individual beneficiaries. Examples of this situation could be transfer values from a pension scheme or surrender values of life assurance policies. This determination is a discrete piece of work which does not form part of a larger valuation exercise. The methodology to be followed has been determined beforehand (with appropriately-presented actuarial advice) and the actuary has comprehensive pro-formas and instructions to follow.*

*The actuary wonders if the work he has been asked to do is 'technical actuarial work' for the purpose of TAS 100.*

The actuary is aware that in general, the greater the complexity of a calculation the greater the likelihood that an element of judgement will be involved in the work, rendering it 'technical actuarial work'. In his experience however, there might also be some judgement involved in carrying out even a relatively simple calculation, and conversely the carrying out of a very complex calculation might in some limited cases be entirely mechanistic and judgement-free.

On reflection, the actuary decides that in relation to the benefit value calculations he has been asked to carry out:

- 1) He is simply a number cruncher and is not using principles and techniques of actuarial science – the work is capable of being done by any numerate person;
- 2) He is not being asked to make any judgements in relation to the piece of work; and
- 3) The work will not be presented as 'technical actuarial work' and the user is likely to regard the work as an administrative rather than actuarial exercise.

The actuary concludes that the work that he has been tasked with is not 'technical actuarial work' and therefore does not fall within the scope of TAS 100.

## Scenario 2: Materiality and Proportionality

1. *The actuary to a pension scheme has previously recommended to the trustees the basis for individual benefit valuations for a range of beneficiaries and the use of this basis is well established. However, situations occasionally arise in which an individual's circumstances are not fully covered by this established basis, and the actuary is asked to advise what basis should apply in one of these cases.*
2. *A With-Profits Actuary is recommending revised final bonus rates to the Board. The firm has numerous funds, and each fund has multiple bonus series, many of which have different underlying asset mixes. Each bonus series contains multiple bonus rates for different policy terms and types. Consequently the actuary is recommending changes to many thousands of different bonus rates. Whilst many of these bonus rate changes will not be financially material to the firm, they could be material to individual policyholders. However, there are no sharp changes in approach and no exceptional changes in particular bonus rates.*

In both examples, the advice is 'technical actuarial work' falling within TAS 100, and in both cases the associated decision of the users (the trustees and Board respectively) could have a non-negligible effect on the individual beneficiaries or policyholders affected. It is therefore unlikely to be reasonable for the actuary to conclude that his or her advice could not influence the trustees or Board as to the basis or bonus rates to apply. Consequently, there is very limited scope to depart from TAS provisions on the grounds that they are "unlikely to have a material effect on the decision".

However, if the benefit or policy values in question are small the advice might be 'immaterial' (in a wider financial sense) to the user. In this case the principle of 'proportionality' would appropriately be applied to keep the extent of the advice within the level of benefit that the user might expect to derive from that work. In particular, for 'communications' in relation to a 'trivial' pension scheme benefit or to those bonus rates to which the Board would not give individual consideration because their financial significance for the company is negligible, a 'proportionate' approach under TAS 100 may result in nothing at all being communicated (in relation to that particular pension scheme benefit and those particular bonus rates) under several of the TAS provisions.

## Scenario 3: Compliance statements

*An actuary working in a life insurance company has been asked by email urgently to provide the finance director with confirmation that there have been no material changes to lapse experience in the first 2 months of the year. The finance director requires this information ahead of presenting the financial results for the previous financial year to the market. The actuary wonders if she needs to include a compliance statement in her email to the finance director.*

Reviewing TAS 100, the actuary notes that members of the IFoA are required to include a statement confirming compliance in communications for 'reserved work', work in the scope of one of the specific TASs and "technical actuarial work which is central to a significant decision by the user".

Although she has no direct control over how the information might be used by the finance director, she thinks that it is likely to be central to decisions he will have to make in relation to the financial results and could potentially influence communications to the market about the company. The actuary therefore decides to include a statement within her email to the finance director confirming compliance with TAS 100.



A month later, several weeks after the results have been announced, the finance director emails the actuary seeking confirmation that lapse rates are still in line with expectations. The actuary confirms that they are. She decides that although, again, the work does fall within the scope of TAS 100, on this occasion it isn't necessary to add a compliance statement to her response as the information she is providing is unlikely to be central to a significant decision by the finance director (given that financial results for the previous year have already been presented and there is no change to the information she previously provided), and any future decisions are expected to include further specific input from the actuarial team.

#### **Scenario 4: Multidisciplinary teams**

*An actuary works in a consulting firm which is advising a UK insurance client on a potential acquisition. The actuary does not lead the overall project but is providing a view on both the technical provisions and the capital requirements of the target.*

*The actuary will be responsible for providing commentary that will go into the overall report but responsibility for the final work product (including signing) falls to one of her non-actuary colleagues. She wonders to what extent she is responsible for compliance with TAS 100.*

It is clear to the actuary that the work she is involved in is very likely to be within the definition of 'technical actuarial work' and she will need to comply with TAS 100.

The requirement for compliance with TAS 100 applies where an IFoA Member is 'responsible' for a piece of technical actuarial work or for 'part of' a piece of such work. Therefore the actuary must ensure compliance with TAS 100 for the part(s) of the work for which she is responsible. She will first need to determine who the 'user' of her work is – this might be the end-client or the colleague who has overall responsibility for the project.

Regardless of who is determined to be the 'user', she will need to ensure that the work for which she is personally responsible complies with the judgement, data, assumptions, models and documentation requirements of the TAS. As for the communications requirements, there are likely to be three potential ways in which she can carry out her work in a way that complies with TAS 100 and the actuary will normally want to discuss this with the overall signatory to determine the most appropriate approach:

- 1) She can work with her colleague to make the overall report compliant with the communication requirements of TAS 100;
- 2) She can draft specific sections of the overall report, ensuring that those sections are compliant with the communications requirements of TAS 100. This option might require a compliance statement to be included in the overall report explaining which sections have been prepared by the actuary and comply with TAS 100; or
- 3) She can provide her commentary in a separate document, again ensuring that this information complies with the communications requirements of TAS 100. Her colleague can then determine how to incorporate the relevant information into the overall report, although the actuary should also use her professional judgement to determine to what extent she should make specific recommendations in this regard to her colleague.

Although option 1) might be considered the ideal approach, in practice the actuary may well not be in a position to ensure this for a large piece of work into which she is just one of several different people providing input. Option 2) may therefore be a more practicable one, with the actuary's (TAS-compliant) part of the report being specifically identified – following this approach (or one close to it) would normally be appropriate if the actuary is to regard the end-client as her user. However, if the actuary is unable sufficiently to influence what is ultimately delivered to the client, she is likely to conclude that she should regard the colleague who has overall responsibility for the final report as being the 'user' of her work, and consequently to follow option 3).

Where the actuary does not have control over the final wording of the relevant part(s) of the report, she may have to take additional steps to comply with the Actuaries' Code, especially paragraph 5.3. The manner in which the actuary draws attention to any concerns she has with the way the actuarial information is being presented will depend on the specific circumstances, including whether she has any personal access to the end-user.

## **Appendix 3: Practice specific illustrative examples**

The following are some illustrative examples of how TAS 100 might be applied in certain practice specific scenarios.

As with the general examples in Appendix 2, these scenarios may not necessarily be appropriate in all similar situations. Members are expected to use their judgement when deciding whether to follow these approaches.

### **Life examples**

#### **Scenario 5: ORSA**

*An actuary is supporting the Chief Risk Officer (a non-actuary) of an insurer in the production of a risk management process (the ORSA). The ORSA process involves some work which is technical actuarial work, including projections of solvency and profits, and some work which is not technical actuarial work. The actuary has, therefore, responsibility for some of the underlying inputs that inform parts of the process, but does not have complete visibility over the application of the actuarial inputs to the day to day management of the risks.*

*Projections of the insurer's solvency position show an improvement in the overall capital coverage over time. The actuary is aware that the actuarial projections suffer from computer system limitations which prevent the development of granular projections, and is concerned that the company is likely in practice to seek to take on additional risk as a result of the increased levels of available capital.*

Actuaries performing technical actuarial work as part of a multidisciplinary team should ensure they are aware of who the user is. In this case, the user may be the Chief Risk Officer but it is also likely to be the Board which is making a decision based on the actuarial information being provided. TAS 100 provides that communications shall include the scope and purpose of the technical actuarial work. Any communications provided to the Chief Risk Officer may therefore require additional explanation to make the scope and purpose clear.

In this scenario, the actuary will also need to understand how the output from his technical actuarial work is being reported to the Board. He therefore discusses with the Chief Risk Officer the extent to which he has authority over the communication of the actuarial information, such as sign off of the final report.

The actuary should also be mindful of his obligations under the Actuaries' Code, in particular the requirement to take such steps as are sufficient and available to him to ensure that any communication with which he is associated is accurate and not misleading, and contains sufficient information to enable its subject matter to be put in proper context.<sup>10</sup>

In this scenario, the actuary is aware of specific limitations with the underlying model. He may therefore wish to ensure that the risks arising from more approximate projections are clearly communicated to the user in light of the potential conclusions that the user might draw or decisions that the user may make based on the favourable future development indicated by the projections.

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<sup>10</sup> Section 5.3 of the Actuaries' Code.

Finally, TAS 100 also requires that communications state when assumptions have been set by a user or a third party. This might reasonably be expected to include assumptions in respect of future management actions, for example the taking of additional risk as in this scenario. It is not necessary for the actuary supporting the ORSA to determine definitively whether the actuarial projections represent the most likely outcome. However, where these assumptions are material to the actuarial information presented, there is a requirement to state the nature and extent of that uncertainty.

### **Scenario 6: Communication in product development**

*An actuary working for a life insurance company finds himself working on a time pressured product development project. In order to brief the project sponsor on the progress of the project, the actuary's team leader asks him in passing whether his latest premium structure will be workable.*

*Following work on the proposed premium structure, the actuary is asked to provide projected profit profiles for a sample group of policies as well as optimistic and pessimistic scenarios illustrating variability and risk.*

If the conversation is inconsequential and unlikely to be relied upon by the team leader to convey information about the premium structure, then there is no need to do anything further. However, if the conversation includes important information on whether or not the premium structure will be workable, this constitutes material information provided orally, and should be confirmed in permanent form. In this case, the actuary does this by following up the conversation with written confirmation of the proposed premium structure and the rationale for the chosen approach. Separate written confirmation would not be required where all of the TAS 100 communication requirements had already been complied with, for example through information recorded in meeting minutes, which can then be separately referred to.

The projected profit profiles are likely to be very technical and the presentation dependent on the assumptions underlying the central, optimistic, and pessimistic variations. The actuary considers the level of understanding and technical knowledge of users when providing the information to ensure that the way that results are presented is suited to the intended audience.

TAS 100 provides that communications must indicate the nature and extent of any material uncertainty in the actuarial information they contain, state the nature and significance of each material risk or uncertainty faced by the entity in relation to the technical actuarial work and explain the approach taken to the risk. In this case the scenario results need to be carefully presented so that the optimistic and pessimistic variations are interpreted correctly. The actuary presents the results with a clear narrative explaining the key risk variables used to determine base as well as optimistic / pessimistic scenario projections and how the inputs for the scenarios were selected. The scenarios were selected so that they clearly indicate material areas of uncertainty in the profit projections.

The actuary explained the limitations of the modelling approach, including any product features that might not have been accurately modelled in the scenario projections, as well as any residual risks that are not included in the analysis.

## **Investment examples**

### **Scenario 7: Research presentations**

*An actuary working for an investment management company is presenting at a pensions conference. The audience includes a wide range of participants from the pensions industry including actuaries, consultants, scheme managers and trustees. The actuary's presentation includes the results of modelling the assets and liabilities of a typical pension scheme under a variety of different investment strategies; illustrating the impact of these strategies on returns, risk and scheme funding levels on a number of different bases.*

The actuary decides that because this work is not being presented to any specific user and is not intended to prompt any specific action or be relied upon by the audience to make any decisions, it doesn't fall within the definition of technical actuarial work and need not comply with TAS 100. She makes clear the generic nature of the work in the presentation and includes appropriate caveats and disclaimers.

A week later the actuary attends the Trustee Meeting of ABC Pension Scheme. At the end of the meeting she mentions the research that she has recently carried out and shares a copy of a "glossy" pre-printed paper that summarises the key points from her presentation at the conference. As the paper is clearly generic in nature and not specific to the scheme, nor intended to provoke any action by the scheme, she continues to conclude that the work is outside the scope of TAS 100.

Having read the paper, the Chair of the Trustee Board asks the actuary to do a presentation on the topic to the Board at its next meeting. Whilst the actuary does no new modelling for the scheme presentation she realises that the Trustees know she is an actuary and are likely to consider a variety of potential actions as a result of the information that she will be presenting. She also recognises that the modelling is likely to fall within the definition of technical actuarial work. She decides that the trustees might view the presentation as actuarial work and therefore concludes that she should ensure the work complies with TAS 100.

### **Scenario 8: Investment management**

*An actuary works for an investment management company within a team of mainly non-actuaries that manages investments for a range of clients. The work carried out by his team involves research into equities, bonds and collective investment funds, as well as input to specific trading decisions. For certain investments he develops spreadsheet models to assist in the assessment of value to determine how attractive the asset will be. He uses the firm's models to calculate portfolio risk to ensure that portfolios remain within defined risk budgets. He also participates in discussions on the relative attractiveness of different asset classes, including assessing prospective return expectations and developing various investment scenarios to be used as input to stress tests. Generally, his work is not client facing but involves him providing internal written and verbal contributions to support his firm's investment management process.*

The actuary decides that where his work focusses primarily on the research of specific investments to support asset management decisions, the principles and/or techniques of actuarial science are not central to his work and his colleagues (the users of his work) would not regard his work as technical actuarial work. In work involving the calculation of portfolio risk and investment scenarios he is normally following the firm's existing procedures and methodologies and is not using actuarial

techniques or applying any judgement (beyond the initial assessment that he undertakes to satisfy himself that the underlying models are suitable and appropriate and can be relied upon for the particular piece of work that he is carrying out). In these cases he concludes that this work is not within the scope of TAS 100 but he recognises that if he were to exercise any additional judgement or become involved in developing the methodology then the work would be within the scope of TAS 100. He recognises that as there is considerable variety in the types of work he is involved in he will need to regularly consider whether each piece of work is within scope of TAS 100.

### **Scenario 9: Client relationship role**

*An actuary works in a client relationship role for an investment consultant. She is part of a team of actuaries and non-actuaries that supports a range of clients. In her role as a client relationship manager she attends each quarterly trustee meeting and presents a quarterly investment report. The quarterly report pulls together material produced elsewhere in the consultancy. It contains investment market updates, including a house view on the attractiveness of various markets, a report on fund performance, including how the fund is performing against a liability proxy, monitoring against various ALM investment triggers and an assessment of each fund manager used by the client. The actuary isn't responsible for the production of the underlying information in the report, although she will review it before it is issued to the client.*

The actuary considers whether her work falls within the scope of TAS 100. She is careful to identify which elements of the reports are generic and which could be a major influence on the client's decision whether to remain invested in existing funds or to make changes. She also considers the extent to which the work uses principles and/or techniques of actuarial science and requires judgement.

The investment report typically consists of management information that has been prepared following standard methods and procedures and does not involve the exercise of judgement. The report doesn't include recommendations for changes in investment strategy although the management information may trigger requests for further work or more in-depth investigation of options. The report also includes house views on markets, funds and investment managers. These views are prepared by a specialist team in her firm. They include significant judgement but these judgements are not actuarial in nature, being driven by economists and other investment professionals and not involving actuarial calculations. The actuary considers whether there is anything in the manner of the presentation of the report that might suggest that it is technical actuarial work and she concludes that there is nothing that would lead users to this conclusion.

The actuary is mindful that there may be occasions when the work she delivers to clients will be technical actuarial work, or may be regarded as such by virtue of the manner of its presentation, and that on these occasions she will need to ensure the work complies with TAS 100. If for example, she were providing recommendations for investment de-risking triggers to the client or advising on the methodologies for approximate asset/liability roll forwards between valuations, this could be technical actuarial work and might require compliance with TAS 100. She also understands that regardless of whether the work is technical actuarial work or not, she needs to consider how she complies with section 5.2 of the Actuaries' Code, which requires her to show clearly that she takes responsibility for professional findings when communicating them.

## **Scenario 10: Hedging implementation**

*An actuary works for an investment bank in a client facing role. He has been in discussion with a life company which is looking for advice on hedging strategies to manage risk and improve capital efficiency. The actuary engages with the client to understand their liabilities and their business priorities. He develops a model to produce a range of figures to illustrate the benefits for the insurer of a particular derivatives strategy by estimating the value of assets, liabilities and capital requirements in a range of scenarios.*

The actuary considers whether his work falls within the scope of TAS 100. Whilst the work is focussed on asset strategy, it involves detailed analysis of the interaction of assets and liabilities and the calculation of indicative solvency metrics. Although the work could be performed by a non-actuary, the technical nature of the work suggests that the use of principles and techniques of actuarial science are central to the work. Clients are aware that he is an actuary and take comfort from the skills and knowledge of insurance balance sheet management that this implies. The actuary concludes that his work is within the scope of TAS 100.

## **Scenario 11: Specialist asset sales**

*An actuary works for an asset manager as part of a sales team focussed on managing private credit assets for insurance companies. He makes a sales presentation with two non-actuarial colleagues who are senior private credit investment managers. The objective of the presentation is to demonstrate the credentials and track record of the investment management firm, with the aim of winning a specialist private credit mandate from the insurance company.*

*The actuary attends the meeting because of his understanding of insurance clients. Within the presentation deck he includes slides that reference standard formula stress parameters and other asset related regulations under Solvency II which are relevant to private credit assets, such as information on the Matching Adjustment. During the presentation he illustrates how the value of a typical portfolio of assets would change under the defined Solvency II stresses and provides examples of how the asset class has performed historically in times of market stress. Throughout the presentation, and in all associated communications, it is stressed that it is for the client to take actuarial and accounting advice when making decisions to invest and in determining the Solvency II capital treatment.*

The actuary considers whether his work falls within the scope of TAS 100. Whilst the figures presented are generic and not intended to be actuarial advice they do involve judgements and interpretations of complex legislation that may influence the decision of the client. The application of regulatory asset stresses in the context of insurance company capital calculations involves the use of actuarial techniques and is central to the work, and as such, falls within the definition of technical actuarial work. The fact that these slides are presented by an actuary may suggest to the prospective client that the information presented is technical actuarial work.

The actuary concludes that the work is within scope of TAS 100. The information presented within the slide deck is a small part of the overall presentation and is not central to a significant decision by the user and so the actuary concludes it is not necessary to include a TAS 100 compliance statement within the presentation.

## General Insurance examples

### Scenario 12: Pricing work for an underwriting unit

*An actuary works as part of an underwriting unit for a Lloyd's syndicate. As the pricing actuary for the unit he provides support to the underwriting team, which involves discussing individual pricing cases with his underwriter colleagues and providing his views on pricing orally (in conversations around a computer screen), through email exchanges with colleagues or in advice notes. While the actuary's input is highly valued, his underwriter colleagues have made it clear they are generally in a hurry, want a quick answer and will not read information produced by the actuary beyond the "answer". The actuary wonders what level of communication and documentation is required under TAS 100 for each pricing case that he is involved in.*

The pricing work may be covered by an existing approved pricing framework that satisfies the requirements of TAS 100. Where that is the case, the actuary would be expected to inform the user that the approved framework has been applied and communicate the way in which the framework has been applied in the specific case.

A more detailed communication may be required for pricing non-standard cases which are outside the approved pricing framework or where the pricing framework has been updated.

In either scenario, any written communication that is provided should be proportionate to the situation. In standard cases a brief email may be sufficient.

In all cases the actuary needs to consider the aggregation of a number of similar items or related pieces of work to ensure that when the pricing is considered in aggregate, the level of communication is appropriate.

The actuary should consider the level of detail required in any documentation relating to the piece of technical actuarial work to ensure that a technically competent person with no previous knowledge of the work looking at it at a later date is able to understand the matters involved and assess the judgements made. In many cases a well annotated spreadsheet may satisfy this requirement.

### Scenario 13: Incomplete data

*An underwriter walks over to an actuary's desk at 9am and asks for a price on a relatively large contract where an existing applicable technical rating model does not already exist.*

*The data is incomplete and there is no more data available. The actuary is told that a decision needs to be made by midday on whether to put a follow line down at the price set by the lead.*

*The actuary wonders how much communication and documentation is required to comply with TAS 100 in this situation and, given the time constraints, how much can be produced after the event.*

*She also wonders how she would go about ensuring compliance in a similar situation where there might be lots of data; more than can be analysed in the available time.*

The actuary communicates any information that is necessary for the underwriter to understand the recommendation, before the decision is made. This includes a description of the data used in the technical actuarial work, including the source of the data, the rationale for the selection of the data,



whether any checks and controls have been applied to the data, any material uncertainty in the data, and the approach taken to deal with that uncertainty. She informs the underwriter of any limitations of the advice she is providing resulting from the use of insufficient or unreliable data and provides an indication of their impact on her advice. The actuary also ensures that any material information provided verbally is subsequently confirmed in permanent form, for example in a follow-up confirmation email.

The actuary completes her documentation after the event so that it is proportionate and sufficient to ensure that she and her colleagues are able to understand the work that was carried out.

Actuaries are often faced with the challenge of having more data available than they are able to analyse within the time they have. In these cases, the actuary needs to satisfy themselves that an appropriate piece of work has been undertaken and the user is clearly aware of what has been done, the material assumptions used and the material judgements made including any uncertainties and/or limitations of the information or advice.