FRC

Board for Actuarial Standards

Exposure Draft: Data

May 2009

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ANALYSIS OF RESPONSES

AND

INVITATION TO COMMENT

1 INTRODUCTION

CONSULTATION AND RESPONSES

1.1 The Board for Actuarial Standards (BAS) is responsible for setting technical actuarial standards in the UK: it is an operating body of the Financial Reporting Council (the FRC)[1]. In September 2008, it published a consultation paper on its Generic Technical Actuarial Standard (Generic TAS)[2] on *Data* (TAS D).

1.2 The consultation period ended on 15 December 2008. A total of 23 public responses[3] were received (see Appendix B). A number of meetings with practitioners and other stakeholders were held and the proposals were discussed with the FRC's Actuarial Stakeholder Interests Working Group. We thank all those who contributed.

SUMMARY

1.3 In drafting the proposed text of TAS D we have taken account of the comments we received in response to the consultation paper, as well as other comments that have been made to us in meetings. We have also considered the responses to other consultations, especially those on *Reporting Actuarial Information* and *Modelling*. As a result, some changes have been made to the principles proposed in the consultation paper. The proposed text is consistent with the exposure drafts of TAS R (on *Reporting Actuarial Information*) and TAS M (on *Modelling*).

1.4 There was general agreement with the direction of the consultation paper and the principles proposed in it.

1.5 A number of comments indicated some uncertainty about how judgement, materiality and proportionality would work in the context of TAS D (and indeed of other BAS standards).

1.6 It was also suggested that the BAS should issue guidance on what would constitute compliance with some of the proposed requirements. The BAS believes that it is in the nature of principles-based standards that they require judgement to be exercised by those complying with them, and we believe that actuaries and others who seek to comply with our standards are responsible professionals who are capable of exercising judgement.

1.7 Some respondents noted that actuaries are often in a position to be able to influence the quality of data by identifying potential problems and areas for improvement, even when the data is entirely fit for the immediate purpose for which it is being used. They suggested that in such cases TAS D should require the relevant matters to be reported. The BAS believes that such a requirement would not be technical in nature. It has therefore referred these

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[1] The Financial Reporting Council is the UK's independent regulator responsible for promoting confidence in governance and corporate reporting.

[2] Generic TASs apply to all work specified in the Schedule to the BAS's *Scope & Authority of Technical Standards*. Specific TASs are limited to a specific, defined context.

[3] The responses are available at http://www.frc.org.uk/bas/publications/pub1782.html.

comments to the Actuarial Profession, which is responsible for professional and ethical standards.

1.8 A significant theme that emerged from the responses was a concern that the proposed requirements for documentation would be too onerous. Some of this concern may have reflected a belief that documentation should be disclosed to the user (see paragraphs 2.20 to 2.21).

1.9 Overall the principles in the proposed text of TAS D are substantially those discussed in the consultation paper.

1.10 Section 2 summarises the comments that we received in answer to the specific questions that were posed in the consultation paper and describes how we have responded to them. Section 3 summarises the other comments we received, and describes further proposals. Section 4 contains our invitation to comment on the exposure draft of TAS D. The second part of this document contains the proposed text.

EXPECTED EFFECTS AND IMPACT ASSESSMENT

1.11 The BAS believes that many practitioners currently comply with most or all of the proposed requirements of TAS D, which makes mandatory what may be viewed as good practice. By setting out principles for dealing with data, TAS D will encourage more thorough consideration to be given to the needs of users during the data process.

1.12 One area in which TAS D may produce changes is the extent to which data issues are documented. We believe that good documentation provides benefits to those using the data and ultimately to the user of the consequent actuarial information.

1.13 Overall, we believe that TAS D will contribute to the promotion of the reliability and usefulness of actuarial methods, one of the drivers of actuarial quality that were identified in the FRC's *Actuarial Quality Framework*. It will do so by encouraging checks on the reliability and usefulness of data, and the documentation of data.

1.14 We recognise that the introduction of TAS D is likely to result in increased costs as the documentation of data is upgraded and checks are developed in order to comply with the standard. However, the use of poorly documented and unchecked data is a significant threat to the production of reliable actuarial information and to actuarial quality. The greatest costs are likely to be incurred in documenting and checking data that is poorly understood, and which therefore presents the greatest risks. We believe that the costs will be more than offset by substantial benefits in the short, medium and long terms.

1.15 Overall, we believe that the benefits to users of TAS D will outweigh any extra costs.

1.16 We would be interested in the views of respondents on any costs that are likely to be incurred as a result of the introduction of TAS D. Respondents should consider the costs in the context of ensuring that actuarial information that is based on data meets the needs of users.

RESPONSES TO THIS EXPOSURE DRAFT

1.17 Details of how to respond to this paper are set out in Section 4. Comments should reach the BAS by **28 August 2009**.

2 RESPONSES TO CONSULTATION QUESTIONS

INTRODUCTION

2.1 In this section we summarise the comments that we received in answer to the specific questions that were posed in the consultation paper, and our reactions to them. In brief, we are proposing that:

- the purpose of TAS D is amended to align it more clearly with the Reliability Objective (see paragraphs 2.4 to 2.6);
- there will no longer be any overriding principles in TAS D – all principles will have equal status (paragraphs 2.7 to 2.8);
- TAS D will contain requirements for documentation (paragraphs 2.20 to 2.21);
- the proposal that a list of data requirements be produced is changed to a requirement to make an assessment of the data requirements (which need not apply to all repeat exercises) (paragraphs 2.24 to 2.26);
- the consultation paper's proposed iteration principle – if data is inaccurate or incomplete and satisfactory adjustments cannot be found, as many steps of the data process as are appropriate should be repeated – will not be in TAS D (paragraph 2.30);
- TAS D will not include any explicit requirements concerning data quality measures (paragraph 2.31);
- TAS D will not specify methods for the measurement of data uncertainties (paragraph 2.34); and
- the requirements for reporting issues relating to data contained in the consultation paper will be covered by TAS R and specific TASs (paragraphs 2.35 to 2.36).

2.2 Comments on the consultation paper that were not addressed to the specific questions that were asked are discussed in section 3.

2.3 The remainder of this section discusses comments that were made on specific parts of the consultation paper, and the responses to the questions that were posed. It covers the issues in the order that they were discussed in the consultation paper.

PURPOSE AND SCOPE

1	Do respondents agree with the proposed purpose and scope of the generic data standard as set out in section 2?

2.4 Most respondents agreed with the proposed purpose and scope, although two respondents thought that data maintenance should be included in the scope.

2.5 We have, however, amended the proposed purpose of TAS D to align it more clearly with our Reliability Objective – that the users for whom a piece of actuarial information was created should be able to place a high degree of reliance on the information's relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the information.

2.6 The revised purpose is in paragraph A.1.2 of the proposed text.

OVERRIDING PRINCIPLES

2 The BAS sets out a number of overriding principles in section 3.

a) Do respondents agree that it is appropriate for the TAS to include the proposed overriding principles, the associated definitions and the principle that they should be applied with reasoned and justifiable judgement?

b) Do respondents have any views on whether any issues specific to processing data arise in respect of the interests of beneficiaries, or of public interest, and on how such issues might affect the proposed overriding consideration for users' needs?

c) Do respondents believe that it would be desirable for BAS standards to require documentation for the reasoning supporting judgements on how to apply the principles?

2.7 There was general agreement with the proposed overriding principles which covered user needs, scope, materiality and proportionality. However, in the period since the publication of the consultation paper the BAS has given further consideration to the structure of its standards and has concluded that all text should be of equal status without having overriding principles.

2.8 The principle that "an overriding consideration in processing data should be the needs of the users of actuarial information" is now covered in the revised purpose. The materiality principle is subsumed into the overriding materiality requirement imposed by the *Scope & Authority*. The principles on scope and proportionality are covered in paragraph B.1.3 of the proposed text.

2.9 There was no consensus on whether any issues specific to processing data arise in respect of the interests of beneficiaries although some respondents felt it was incumbent on the actuary to advise users of the implications for beneficiaries of any data issues. However, it was generally felt that this was not a technical matter and therefore should not be addressed by the BAS. The proposed text does not, therefore, include any principles on this issue.

Materiality

2.10 Many respondents agreed with the definition proposed in paragraph 3.10 of the consultation paper. However, a number of respondents, including some who were happy with the definition, expressed concerns about how difficult it would be to apply the definition in practice, and the extent of judgement required in order to do so.

2.11 Paragraph 23 of the *Scope & Authority* defines materiality in the context of departures from TASs, but does not define it in the context of other matters. There are a number of aspects relating to data which might be material (or immaterial) and so it is important that the term is defined consistently for all the contexts in which it might be used. We believe that the definition in Part

B of the proposed text extends the definition to cover the relevant aspects, while remaining consistent with the definition in the *Scope & Authority*.

2.12 Some concern has been expressed that it will be possible to argue that no documentation is material according to the proposed definition, as documentation (which need not be disclosed to users) cannot influence the decisions that users take. We believe that this argument fails to allow for the fact that documentation assists the preparation of information that is reported to users.

2.13 Some concerns have been expressed to the BAS about the use of the phrase "could influence the decisions …", on the grounds that it extends the concept of materiality too broadly. It has been suggested that a better definition would use "is likely to influence …" or "could reasonably influence …". We believe that "is likely to influence" would be much too narrow a definition, as its most obvious meaning would cover only those matters that were more likely than not to influence the decision. The use of the word "reasonably" would also present problems of interpretation.

2.14 The BAS's definition of materiality is consistent with that in international accounting standards:

> Omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions of users taken on the basis of the financial statements.[4]

2.15 The BAS is therefore not currently proposing to change the definition of materiality in the *Scope & Authority*, which underwent consultation in 2008.

2.16 The definition of materiality in the proposed text is consistent with the definition in the *Scope & Authority*, which applies only to departures from the standard. The other definitions in Part B of the proposed text are the same as definitions used in the *Scope & Authority* or in other TASs.

Proportionality

2.17 We have received many comments on our proposed principle on proportionality, in response both to the data consultation paper and to other consultations.

2.18 The BAS believes that it is extremely important that actuaries (and others complying with its standards) do not act disproportionately, and in particular that they do not use BAS standards as an excuse for doing so. It believes that the best way of ensuring this is to explain that BAS standards should not be interpreted disproportionately.

2.19 This point is addressed in paragraph B.1.4 of the proposed text. In due course we expect that this will be covered in the *Scope & Authority* (as it applies equally to all our TASs) but we are expecting not to amend the *Scope & Authority* until we are closer to completing work on the initial set of TASs.

Documentation

2.20 While the respondents agreed that it would be desirable for TASs to require documentation for the reasoning that supports judgements on how to apply

[4] IAS 1.

the principles, there appeared to be some confusion between what should be documented internally and what should be reported to the user. To clarify this, wording has been included in the definition of documentation (in Part B of the proposed text) to clarify that documentation is not necessarily provided to users.

2.21 A few respondents were concerned that the proposed documentation requirements would be either too onerous or disproportionate for some pieces of work. Some also believed that the requirements could inundate the user with too much information. It is clear that those who expressed the latter concern had not understood that documentation does not have to be disclosed to the user – that we distinguish between documentation and reporting. The revised definition of documentation (in Part B of the proposed text) makes the distinction clear. The proposed principles concerning documentation are in section C.4 of the proposed text.

STEPS IN PROCESSING DATA

3	Principles relating to the data process are set out in section 4. a) Do respondents have any views on the proposed principles relating to the data process? b) Do respondents agree that overall data quality measures are unsuitable for inclusion in BAS standards, at least for the foreseeable future?

2.22 The general view was that the proposed principles relating to the data process were sensible.

2.23 Two respondents expressed concerns that the principles would not work in certain circumstances, such as pensions due diligence and general insurance work. The issue in pensions due diligence is that it may not be possible to obtain complete data and time constraints may limit the work that can be done on checking and adjusting the data. We consider that compliance with TAS D will be possible but that judgements will need to be made about the data which is used: these will need to be documented while any limitations should be communicated to the user. In general insurance work there may be considerable data issues but compliance with TAS D will still be possible – again judgements will need to be made and documented.

Data requirements

2.24 Some respondents thought that it would not always be practical to produce a list of data requirements at the start of an exercise (paragraph 4.5 of the consultation paper). In the light of these comments, the requirement to produce a list of data requirements has been changed to a requirement to make an assessment of the data requirements.

2.25 Several respondents felt that the principle that data requirements and sources should be reviewed every time actuarial information is required would be too burdensome. It was pointed out that data is often used for repeat exercises such as monthly updates. Text is now contained in the draft TAS to clarify that the requirement need not apply to all repeat exercises.

2.26 Paragraphs C.5.1 to C.5.2 of the proposed text address these points.

Validation

2.27 Several respondents commented that data received has often been checked or audited by another party. The BAS recognises that this is the case, but notes that such checks or audits may have been carried out for another purpose. Actuaries and others who seek to comply with BAS standards should form their own opinion on the reliability or otherwise of the data they use – that opinion may, of course, take account of any checks performed by others. The checks that should be carried out in order to comply with TAS D are a matter for judgement.

2.28 Paragraphs C.5.5 to C.5.8 of the proposed text address these points.

Compensating for incomplete or inaccurate data

2.29 Paragraphs 4.18 and 4.30 of the consultation paper proposed principles for supplementing data and adjusting data when the data is incomplete or inaccurate. Respondents generally supported the proposed principles, which are in paragraphs C.5.9 to C.5.13 of the proposed text.

Iteration

2.30 Paragraph 4.32 of the consultation paper proposed a principle on iteration – if data is inaccurate or incomplete and satisfactory adjustments cannot be found, as many steps of the data process as are appropriate should be repeated. Although respondents generally agreed that iteration often takes place, they did not feel that the proposed principle was necessary. We agree that the other requirements in TAS D will ensure that iteration takes place if it is needed in order to ensure data quality. The proposed text therefore includes no principle concerning iteration.

Data quality measures

2.31 Almost no respondents felt that data quality measures are currently suitable for inclusion in BAS standards. The proposed text includes no principle concerning data quality measures.

ESTIMATES AND MEASURES OF UNCERTAINTY

4 Section 5 discusses matters concerned with estimates and uncertainty.

a) Do respondents have any views on the proposed principle relating to margins in respect of data inadequacy?

b) Do respondents have any views on suitable methods of expressing any uncertainties about the accuracy or completeness of the data and, in particular, on whether they should be expressed in a similar way to which other sources of risk are expressed?

Margins

2.32 Most respondents agreed with the principle that margins should not be incorporated for inaccurate or incomplete data unless specifically required by the user, regulation or specific actuarial standard. One respondent felt that it should be possible to use margins with appropriate disclosure, and another commented that it is nearly impossible to judge whether there are margins in some areas of work.

2.33 The principle relating to margins is in paragraph C.5.14 of the proposed text.

Measures of uncertainty

2.34 Respondents generally thought that uncertainties should be commented on but that the BAS should not specify methods for measuring uncertainties. TAS R will require material uncertainties in data to be reported to the user, and we are therefore proposing not to include any requirements on this in TAS D.

REPORTING

5	Do respondents have any views on the proposed principle relating to reporting set out in section 6?

2.35 The consultation paper included a list of items which it was proposed should be reported to users. Some respondents suggested that the list was too detailed for inclusion in a Generic TAS.

2.36 TAS R contains principles on reporting data, and there may also be principles relating to reporting data in the Specific TASs. We are therefore proposing not to include a principle on reporting in TAS D.

3 PROPOSALS

INTRODUCTION

3.1 In addition to the comments in answer to the specific questions posed in our consultation paper, we received a number of more general comments. Some of the comments which we have received on other consultations or in other contexts are also relevant to the development of TAS D.

3.2 As a result, we are proposing:

- to include definitions of data and users (see paragraphs 3.3 to 3.4); and
- to include in TAS D (rather than in TAS M as originally proposed in the modelling consultation paper) requirements for the documentation of what items of data are (paragraph 3.8).

DEFINITIONS OF DATA AND USERS

3.3 A number of respondents suggested that TAS D should include definitions of data and users. Part B of the proposed text now includes definitions for both.

3.4 We are proposing that data should cover a wide range of items including information about individuals such as date of birth, definitions of benefits in pension schemes and financial and economic information.

THE ROLE OF ACTUARIES

3.5 Some respondents noted that actuaries are often in a position in which they may be able to influence the quality of data by identifying issues and areas for improvement. In some cases it may become evident that there are data inconsistencies or other shortcomings which may not be material for the work being performed but which may indicate a systemic problem or may have material consequences for work performed by others. Some respondents suggested that the TAS should require the disclosure of such problems.

3.6 We have some sympathy with this suggestion, but the BAS's standards only cover technical matters. A requirement for such disclosures would, we believe, be professional in nature rather than technical. The BAS has referred these comments to the Actuarial Profession, which is responsible for professional and ethical standards.

TIME CONSTRAINTS

3.7 A number of respondents commented on the time constraints that may be present in certain areas of work which mean that actuarial information is required quickly. As a result it may not be possible to obtain complete data and carry out all the appropriate checks. In such cases judgements will be required, which should be recorded. In addition TAS R will require any uncertainty in data to be reported to the users. Such uncertainty includes limitations arising from time constraints.

DOCUMENTING DEFINITIONS OF ITEMS OF DATA

3.8 The BAS's consultation paper on *Modelling* proposed a requirement that the definitions of data items should be documented. Although some respondents to that consultation felt that the requirement would be too onerous, we believe that it is important that there is clarity about what data represents. There have been publicised cases of significant errors being caused by the incorrect use of data. We believe that TAS D is the appropriate place for this requirement, which is in paragraph C.5.3 of the proposed text.

SPECIFIC STANDARDS

3.9 There are data issues which are specific to particular fields of actuarial work – for example, there is often only limited data available in some areas of general insurance. Specific TASs may address these issues.

COMMENCEMENT OF TAS D

3.10 The BAS is proposing that TAS D should apply to data used in the preparation of aggregate reports completed on or after 1 April 2010. This is consistent with the proposal that TAS R will apply to aggregate reports completed on or after 1 April 2010.

3.11 In order to encourage early adoption, we are proposing that all aggregate reports completed on or after 1 November 2009 will be required to state whether the data used in their preparation complies with TAS D.

3.12 For some pieces of work there is a large gap between the effective date and the date of the report. For example, Scheme Funding exercises for defined benefit pension schemes generally have to be completed within 15 months of the effective date, and in many cases are not completed until near the end of that period. In such cases it is possible that TAS D will apply to exercises for which the work on models has already started. However, we believe that in many cases the work being carried out is already compliant with TAS D or would be compliant with little additional work.

3.13 We would be interested in respondents' views on the practicality of the proposed commencement date. If respondents are in favour of a later commencement date they should explain how the needs of users will be met.

4 INVITATION TO COMMENT

EXPOSURE DRAFT

4.1 The BAS invites the views of those stakeholders and other parties interested in actuarial information who wish to comment on the content of this document.

4.2 This consultation is not intended as an opportunity to revisit those issues that have already been exposed for comment in previous consultation documents. Respondents are therefore asked to focus on the policy decisions that were not articulated in the September 2008 consultation paper. In particular the BAS would welcome views on the following matters:

1 the proposed commencement date for TAS D (see paragraphs 3.10 to 3.13);

2 the effects that the introduction of TAS D is likely to have on actuarial information and our impact assessment (see paragraphs 1.11 to 1.16); and

3 the text of the exposure draft as a means of implementing the proposals presented in this document.

RESPONSES

4.3 For ease of handling, we prefer comments to be sent electronically to **basdata@frc.org.uk.**

Comments may also be sent in hard copy form to:

The Director
Board for Actuarial Standards
5th Floor, Aldwych House
71-91 Aldwych
London
WC2B 4HN

4.4 Comments should reach the BAS by **28 August 2009**.

4.5 All responses will be regarded as being on the public record unless confidentiality is expressly requested by the respondent. A standard confidentiality statement in an e-mail message will not be regarded as a request for non disclosure. We do not edit personal information (such as telephone numbers or email addresses) from submissions; therefore only information that you wish to publish should be submitted. If you are sending a confidential response by e-mail, please include the word "confidential" in the subject line of your e-mail.

4.6 We aim to publish non-confidential responses on our web site within ten working days of receipt. We will publish a summary of the consultation responses, either as a separate document or as part of, or alongside, any decision.

DRAFT OF

TECHNICAL ACTUARIAL STANDARD D:

DATA

DATA
(TAS D)

Status

This standard (TAS D) is a Generic Technical Actuarial Standard (Generic TAS), as defined in the *Scope & Authority of Technical Standards* (*Scope & Authority*) of the Board for Actuarial Standards (BAS).

This standard should be read in the context of the *Scope & Authority*.

The *Scope & Authority* sets out circumstances in which material departures from this standard are permitted or required and the disclosures which are required in respect of them.

Appendix I 'The development of TAS D' reviews considerations and arguments that were thought significant by the BAS in reaching the conclusions on the document. [*Note: Appendix I is not included in this exposure draft*.]

Scope

This standard, as a Generic TAS, applies to the work specified in the Schedule to the *Scope & Authority*. The scope of this standard will be affected by any amendments to the Schedule to the *Scope & Authority*.

Specific TASs may include provisions that include or exclude particular categories of work from the scope of this standard or other Generic TASs.

Wider adoption is encouraged.

Commencement

This standard applies to data used in the preparation of aggregate reports completed on or after 1 April 2010.

All aggregate reports completed on or after 1 November 2009 must include a statement of whether TAS D has been complied with in respect of the data used in their preparation.

Earlier adoption is encouraged.

Relationship with other TASs and with Guidance Notes

This standard sets out principles to be adopted across the range of work to which it applies, as described above. Other Generic and Specific TASs may apply to work that is within the scope of this standard, setting out additional principles that should be adopted.

In the event of a conflict between this standard and a Guidance Note adopted by the BAS (as described in the *Scope & Authority*), this standard shall prevail.

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A PURPOSE OF TAS D

A.1 PURPOSE

A.1.1 The BAS's Reliability Objective is that the **users**[1] for whom a piece of actuarial information was created should be able to place a high degree of reliance on the information's relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the information.

A.1.2 The purpose of this standard is to assist the achievement of the Reliability Objective by ensuring that:

- **data** used in work within its scope is subject to sufficient scrutiny and checking so that **users** can rely on the resulting actuarial information; and
- any actions taken to mitigate inaccuracy or incompleteness of **data** increase the reliability of the resulting actuarial information.

[1] Terms appearing in **bold** in the text are explained in the Definitions set out in Part B.

B INTERPRETATION

B.1 INTERPRETATION OF THE TEXT

B.1.1 All text in this standard has equal status unless stated otherwise. Paragraphs setting out explicit principles are emphasised with boxes for convenience.

B.1.2 The **Scope & Authority** states that a failure to follow the principles in this standard need not be considered a departure if it does not have a **material** effect. The contents of this standard should be read in that context, even where the term **material** is not explicitly used or where the word "shall" is used.

B.1.3 Nothing in this standard should be interpreted as requiring work to be performed that is not proportionate to the scope of the decision or assignment to which it relates and the benefit that **users** would be expected to obtain from the work.

B.1.4 The form that is taken by any explanations, rationales, descriptions, indications or other analyses required by this standard will need to depend on the scope of the work being performed and the benefit to the **users**. Unless stated otherwise, analyses may be quantitative or qualitative.

B.1.5 This standard should be interpreted in the light of the purpose set out in Part A.

B.2 DEFINITIONS

B.2.1 Terms appearing in **bold** in the text are used with the meanings set out below.

aggregate report — For each decision taken by a **user** in connection with work within the scope of this standard, the set of all **component reports** received by the **user** containing information **material** to that decision. The **aggregate report** for a piece of work is the set of all **component reports** relating to that piece of work.

component report — Information which relates to work within the scope of this standard and which is given to a **user** in permanent form. A **component report** may be given to the **user** in hard copy or electronically. Examples of **component reports** include formal written **reports**, draft **reports**, emails and copies of presentations. Possible contents of **component reports** include tables, charts and other diagrammatic presentations as well as or instead of text. It is possible for a **component report** to form part of one or more **aggregate reports**.

data — A collection of facts or information usually collected from records or as the result of experience or observation. Examples include membership or policyholder data, claims data, asset and investment data, operating data (such as expenses), benefit definitions and policy terms and conditions.

documentation	Records and explanations of judgements and other matters. **Documentation** may be paper or electronic based. It is not necessarily provided to **users**. **Documentation** is **material** if it concerns a **material** matter.
Generic TAS	A Technical Actuarial Standard which applies to all work specified in the Schedule to the **Scope & Authority**.
material	A matter is **material** if, at the time the work is performed, it (or information resulting from it) could influence the decisions to be taken by **users**. A matter that is **immaterial** when considered in isolation may be **material** when considered in conjunction with others.
report	An **aggregate report** or a **component report**.
Scope & Authority	The BAS's *Scope & Authority of Technical Actuarial Standards*.
Specific TAS	A Technical Actuarial Standard that is not designated by the BAS as a **Generic TAS**.
users	Those people whose decisions a **report** is intended (at the time of writing) to assist. Examples of possible **users** include those to whom the **report** is addressed, regulators and third parties for whose benefit a **report** is written.

C DATA

C.1 INTRODUCTION

C.1.1 This Part contains principles that support the purpose of this standard set out in Part A. It should be interpreted as described in Part B.

C.1.2 Work that is within the scope of this standard may also be within the scope of other BAS standards. In particular, other **Generic TASs**, including those on *Reporting Actuarial Information* and *Modelling*, apply to all such work.

C.1.3 Other principles concerning **data** may be contained in **Specific TASs**.

C.1.4 Section C.2 describes how this standard should be applied. Sections C.3 to C.5 contain principles that contribute to the achievement of the purpose set out in Part A.

C.2 APPLICATION

C.2.1 This standard shall apply in respect of all **data** used in preparing actuarial information which is presented in a **report.**

Judgement

C.2.2 Judgements concerning the application of this standard shall be exercised in a reasoned and justifiable manner.

C.2.3 Examples of matters on which judgement might be needed include the nature of **data** checks and the course of action to be taken when **data** is incomplete.

C.3 REPORTING

C.3.1 Principles for the matters that should be reported to **users** in respect of **data** are contained in the **Generic TAS** on *Reporting Actuarial Information.*

C.3.2 Principles for matters that should be reported to **users** in respect of **data** may also be contained in **Specific TASs**.

C.4 DOCUMENTATION

C.4.1 **Documentation** shall:

a) contain enough detail for a technically competent person with no previous knowledge to understand the matters involved and assess the judgements made;

b) include a statement of its purpose; and

c) be clear, unambiguous and complete for its purpose.

C.4.2 **Documentation** might take many forms, including separate physical or electronic documents or comments or headings in **data** files.

C.4.3 Principles regarding specific **documentation** requirements are contained in other sections of this standard.

C.5 DATA

Data requirements

C.5.1 **Data** requirements shall be assessed whenever actuarial information is required.

C.5.2 The assessment might take account of previous assessments made for similar exercises.

Data definitions

C.5.3 **Documentation** shall include the definitions of all items of **data**.

C.5.4 Examples of definitions include:

- unambiguous definitions of membership or policyholder data such as pensionable salary, age and status;
- unambiguous definitions of claims data such as accident or policy year and status; and
- clear definitions of the benefits for pension schemes.

Validation

C.5.5 A set of checks shall be constructed and performed in order to determine whether or not, taken overall, the **data** is sufficiently accurate, relevant and complete for the actuarial information that depends on it to meet the needs of the **user**.

C.5.6 **Documentation** shall include:

a) the objectives of the checks that have been performed; and

b) records of the outcomes of the checks.

C.5.7 Paragraph C.5.5 does not create an audit requirement. The extent of the checks to be carried out is a matter of judgement and will need to depend on the extent and nature of checks known to have been carried out by other parties.

C.5.8 Examples of possible checks include:

- a comparison with **data** used for a previous exercise;
- checking that **data** values lie within reasonable limits;
- checking that **data** is consistent with **data** from other sources; and
- spot checks.

Adjusting data

C.5.9 When **data** that is required is incomplete or **materially** inadequate, an assessment shall be made to determine whether the reliability of the **data** can be improved by adjusting or supplementing it.

C.5.10 **Documentation** shall include descriptions of the treatment of, or action taken for, incomplete or inaccurate **data**.

C.5.11 An example of a way in which **data** might be adjusted is the substitution of average values for invalid or missing entries.

C.5.12 **Data** might be supplemented using additional sources of **data**, proxies or sampling methods. Any additional sources of **data** will need to be checked for relevance.

C.5.13 The requirements concerning **data** in the **Generic TAS** on *Reporting Actuarial Information* apply to all **data**, including **data** arising from adjustments or derived from supplementary sources. The requirements cover the need for a description of the **data** used and a statement of its source, and a description of any uncertainty over the accuracy of the **data**.

Margins

C.5.14 Margins shall not be incorporated into assumptions to mitigate the effects of inaccurate or incomplete **data** unless specifically required by regulation or a **Specific TAS**.

C.5.15 If margins are incorporated into assumptions their effect will need to be separately identified.

C.5.16 Adjustments made to results in order to mitigate the effects of inaccurate or incomplete **data** will need to be separately identified.

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Watson Wyatt

Financial Reporting Council
5th Floor
Aldwych House
71-91 Aldwych
London WC2B 4HN
Tel: +44 (0)20 7492 2300
fax: +44 (0)20 7492 2301
Website: www.frc.org.uk