BUILDING A COMPLIANCE AUDIT FOR BS7988 "CODE OF PRACTICE FOR THE USE OF INFORMATION TECHNOLOGY (IT) FOR THE DELIVERY OF ASSESSMENTS"

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Abstract

The BS7988 standard is now formally published, and is broadly in line with the provisional specification presented by John Kleeman, David Keech and Stephen Wright to this conference last year.

Compliance with the standard requires quality assurance across a wide range of areas - hardware, software, network, data storage and human issues are all covered. It requires consideration of security, reliability and accessibility. In this session we will work collectively to build a provisional framework for a QA system to cover those areas of the Standard that fall within the remit of conference delegates, principally those relating to software development.

The output of the session will be a draft of a quality audit that can be published as part of the conference proceedings. While clearly this will be very much a first-stage document, we hope that it will provide pointers for further work in this area.
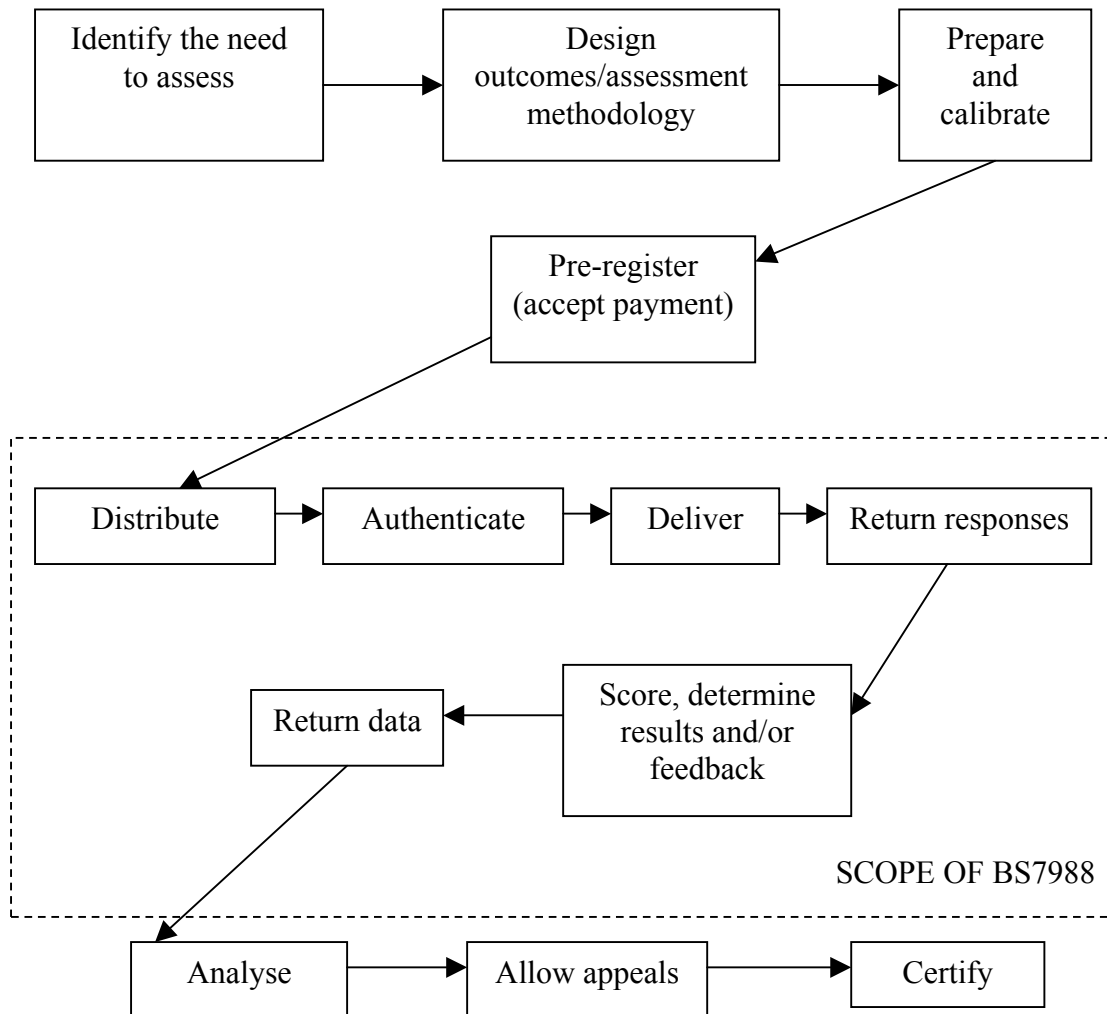
Aims of the Standard

BS7988, "A code of practice for the use of information technology (IT) for the delivery of assessments" was released by the British Standards Institution (BSI) earlier this year. It was developed by a panel of experts involved in CAA in the further education, higher education, schools and commercial training sectors together with representatives from industry who wished to see a standardisation of the procedures involved in testing using computers. The standard aims to provide a means of:

- ensuring that assessments are delivered and scored fairly
- ensuring that assessments are carried our securely and that submissions are authentic

- delivering IT-based assessments without compromising their validity
- establishing consistency in the assessment process, which is of benefit to assessment centres dealing with a number of assessment providers
- helping to ensure quality to purchasers of assessment software

Scope of the Standard

The assessment lifecycle typically consists of the following processes:

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┌──────────────────┐     ┌──────────────────┐     ┌──────────────┐
│ Identify the need│ ──▶ │      Design      │ ──▶ │   Prepare    │
│    to assess     │     │outcomes/assessment│     │     and      │
│                  │     │   methodology    │     │  calibrate   │
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┆  ┌───────────┐   ┌───────────┐  ┌─────────┐ ┌──────────────┐ ┆
┆  │ Distribute│──▶│Authenticate│─▶│ Deliver │▶│Return responses│┆
┆  └───────────┘   └───────────┘  └─────────┘ └──────────────┘ ┆
┆                              ┌────────────────┐              ┆
┆       ┌─────────────┐        │Score, determine│              ┆
┆       │ Return data │ ◀───── │  results and/or │◀─────        ┆
┆       └─────────────┘        │    feedback    │              ┆
┆             │                └────────────────┘              ┆
┆             │                           SCOPE OF BS7988       ┆
└─ ─ ─ ─ ─ ─ ─│─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─┘
    ┌─────────▼──┐      ┌──────────────┐      ┌─────────┐
    │  Analyse   │ ───▶ │ Allow appeals│ ───▶ │ Certify │
    └────────────┘      └──────────────┘      └─────────┘
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BS7988 deals with the six processes from the distribution of the assessment to the return of the data; the others are out of scope. Processes which are common to both paper and IT-based systems are largely ignored; the Standard concentrates on those additional measures which should be taken when IT is involved.

A distinction is drawn between high-stakes and low-stakes assessments. This followed much discussion in the panel about what was meant by high-stakes and low stakes; the concept of medium-stakes assessment was considered but not included. In order to comply with the standard, there are different clauses and sub-clauses relevant to high-stakes and low-stakes assessments, high-stakes generally necessitating a higher level of reliability

and validity because the result is important to the candidate or an organisation.

The Three Primary Roles
BS7988 categorises three primary roles in the delivery of IT-based assessment:

- *assessment sponsors*, who are responsible for the assessment content and award the certificates
- *assessment distributors*, who deliver the assessments using IT and are responsible for the selection and operation of the delivery software, and
- *assessment centres*, where the assessment is taken.

These roles are combined in various ways in different organisations. A university may deal with them all, while they may be much more loosely coupled when an awarding body is involved. The Standard examines the responsibilities for each of these roles over each of the six processes.

Testing Compliance with BS7988
Testing compliance with a wide-ranging standard such as BS7988 is a non-trivial exercise. Any organisation wishing to claim compliance will need to know that it has covered aspects of technical and human systems, software, hardware and environment. Many of the key elements will not be under the organisation's direct control but will be in the hands of suppliers and contractors.

A compliance audit breaks down the requirement into manageable units, and defines procedures by which each of these units can be tested. A meta-procedure then lays out the frequency with which these procedures should be run, or the conditions that should trigger them along with the mechanism of the trigger.

In a large organisation such as an examinations board the audit manual will form a hefty document and require the oversight of a committee when running high stakes assessments at multiple sites. However, as the UK examining board Edexcel have demonstrated, the penalties for lapses in compliance can be severe.

Smaller organisations do not have the resources to carry out extensive compliance exercises but must demonstrate the same degree of compliance. The art of designing the audit is to identify the highest-risk areas for your own organisation, and to design clear, simple, enforceable procedures that minimise these risks.

References

British Standards Insitution (2002) *Code of practice for the use of information technology (IT) in the delivery of assessments*

Soliciting feedback for a British Standard Code of Practice for Using IT in Delivering Assessments. Kleeman, J., Keech, D., and Wright, S. (2001). Proceedings of the 5th International Computer Assisted Assessment Conference, 2-3 July 2001, Loughborough University