

**A PRACTICAL LOOK AT
DELIVERING ASSESSMENTS TO
BS 7988 RECOMMENDATIONS**

John Kleeman and Che Osborne

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John Kleeman
Che Osborne

Questionmark
Hill House
Highgate Hill
London
N19 5NA

john.kleeman@qmark.co.uk

Introduction

BS 7988 is the new British Standard Code of practice for the use of information technology (IT) for the delivery of assessments. It was developed by a panel of experts in the field of computerised assessment. They included representatives from government, business, education and exam boards.

The BS 7988 standard itself is being covered in another session at the conference. This paper addresses how Questionmark Perception users can use Perception to be compliant with the standard.

You can get a copy of the document from the British Standards Institution (www.bsi-global.com). It introduces guidelines and requirements for any organisation that uses computers to create assessments. It also explains how organisations can establish a good code of practice for delivering them.

To comply with the new standard, organizations running exams need to have effective methods to verify online candidates who may be at remote locations. The publication also gives guidelines on providing practice tests for candidates, taking mandatory breaks from the screen, and preventing screen-snooping, cribbing work, sending emails, and accessing websites.

This paper will explain how authors and administrators can use Questionmark Perception in the correct way to enable them to follow the various technical recommendations in the standard. It explains that compliance with the standard is not simply a matter of installing the software. Rather, recommendations on using the software must be followed, both on procedural and technical issues. In fact Questionmark has contributed a key part in developing the standard. Managing director John Kleeman also stood as the BSI committee chairman.

Section by Section

In all there are 17 sections to the standard. Nine of these sections are not directly influenced by the application of the software. Indeed, the first four (covering scope, normative references, terms and definitions and general guiding principles) are just general and informative. The fifth section discusses the interface between assessment content and IT delivery. This covers how assessment “sponsors” and assessment “distributors” interact. But in this instance these are procedural issues, which are not directly connected with the software.

Note that the comments made in this document all apply to Perception V3 released in November 2001. There are some areas where Perception V2 does not have the features that will allow you to be compliant with BS 7988.

Section 6 - IT Delivery of Assessments - General

Section 6 is the longest of the sections and covers a variety of IT demands in delivery of assessments. These include:

- Interoperability
- Hardware, software and communications issues
- Time limits in assessments
- Security features
- Assessment verification

Questionmark Perception will enable you to meet all these requirements. Even so, you will still need to follow the procedures and make the checks recommended in the standard.

The standard mandates that participants should be able to take a break when an assessment lasts longer than 1.5 hours. If your assessment does not have a time limit, or if the software does not enforce the time limit, then you can allow participants to take a break without any software implications. If the time limit is controlled by Perception, then there are alternatives. You may decide to divide the assessment into two or more sub-assessments, each of which is taken and timed separately, with a break between. Alternatively, you can divide the assessment into multiple blocks and have an untimed block in the middle, when the participant takes a break. While the untimed block is being displayed, Perception does not count down the time limit.

Section 6.4 recommends that you ‘lock down’ the participant PC – preventing the test participant existing the test to check on other information. This can easily be done by using Perception Secure Browser.

This section also mandates that if Internet congestion or software slowness impacts the time limit for an assessment, then there must be a procedure for recording this. In this case, Perception will record “out of time” submissions and flag these in reports. Users may also want to have a procedure where invigilators can report such issues as input to your appeals process.

Section 7 - Software for IT Delivery of Assessments - Navigation and Usability Issues

Section 7 states that the software should provide:

- Adequate navigation facilities,
- Information and help for candidates
- Take into account usability requirements
- Incorporate fail-safe features
- Link to assistive technology

Navigation and usability are obviously important issues within assessment delivery. You will enable be able to meet the demands of the standard using Perception. This can be achieved via the Perception template settings that are appropriate for your use. Use of question-by-question delivery will take you closer to the spirit of the standard, but use of ordinary templates may be acceptable if you need this.

Issues to review in your templates will include:

- How much confirmation your participants need to make to move from one block to another
- What duration warning is given prior to the time limit expiring
- Whether to enable or set help buttons.

Perception Secure Browser may also be used to disable inapplicable keys, and you may want to consider using the accessibility templates that are available on the Perception support site.

Section 8 - Instant Automated Scoring, Result Determination and Feedback

This section covers:

- Rules for how scoring and pass/fail work and are communicated
- How feedback is communicated.

Perception offers a tremendous amount of flexibility in the ways you can score, create assessment outcomes and make feedback work within Perception. These tools more than enable users to meet the requirements of the standards.

One of the most demanding mandates means you may be required to manually review the answers from open-ended text questions. But even this can be done in Perception using the Score Editor within Perception Enterprise Manager.

Section 9 - Preparation and Transmission of Assessment Content and Correct Responses

This section covers rules for ensuring that the assessment and responses are authentic. This includes:

- The preparation of assessment content and correct responses for use
- Transmission of assessment content and correct responses

If you are using Perception for Web, it should be straightforward to meet these requirements. You will need to make sure that your procedures for publishing and releasing assessments are rigorous to ensure that the correct assessment is made available. For high stakes content, you may want to consider use of encryption via SSL/HTTPS (fully supported by Perception). You may also want to consider use of Perception Secure Browser to prevent unauthorized copying and printing of questions.

If you are using Perception for Windows, you will want to set procedures for transmission of assessments and responses as suggested by the standard.

Section 10 - Software and Procedures for Recording and Transmission of Candidates' Details and Responses and for their Storage by Assessment Distributors

Section 10 covers a number of issues relating to participant demographic data and how results are stored. These include:

- Interoperability
- The recording responses and linking of responses to candidate identification
- The transmission of response files to the assessment distributor
- Storage of response files by assessment distributor

The Perception answer database is usually set up as a long-term repository for recording assessment information, and includes special fields that can be used to store participant demographic data. Unless you set otherwise when authoring, the full response data is permanently stored for each participant and each question. Section 10.2.2 says that. "To guard against loss of responses through technical failures, responses should be saved either locally or remotely at frequent intervals - every 10 minutes is a suggested maximum." Perception saves responses after every block. The Perception answer database is fully documented and open, and it's possible to export data to ASCII format for analysis by other programs.

If you are using Perception for Windows, you will need to consider the means for secure return of the results for analysis.

Section 11 - Provision of Instructions and Assessment - Specific Information for Assessment Centres

This section covers procedural issues about information that needs to be given to assessment centres, for example on what hardware and software they need, and what rules should be applied during assessments. It doesn't deal with software issues specifically and need not concern us here.

Section 12- Provision of Information and Practice Material for Candidates

This section covers information and practice material that needs to be given to candidates.

If information is given immediately before the assessment, you may wish to put the information within a block at the start of a Perception assessment. It's very common for users of Perception to create an assessment with an introductory informative section as the first block, followed by one or more blocks with genuine questions. You set that the first block is not timed, so that the time limit starts with the first real questions, after the information has been read.

The standard requires you to give practice assessments to students in advance of the real assessment so that they can familiarize themselves with the system. It's very easy to use Perception to create and deliver such practice assessments, either at the assessment centre or online over the Internet. In fact, delivering practice assessments is one of the most common uses of Perception worldwide.

Section 13 - Equipment and Facilities at Assessment Centre, Including Storage of Responses

Section 13 deals with the provision of:

- Advance assessment-specific information to candidates
- Practice material
- Information for candidates with disabilities
- Assessment security information to candidates

It primarily covers hardware and layout of assessment centres, but it has some recommendations that relate to software.

If you are using Perception for Web, you should make sure that participants cannot access assessments prior to their delivery time, either by scheduling or monitoring. If you are not using Perception Secure Browser, you may want to clear the cache (temporary files and history) of browsers to prevent data remaining on the PC being used after the assessment.

If you are using Perception for Windows for high stakes assessments, then you will need to ensure that content is not available prior to an assessment starting, and that results are removed completely after they have been safely transmitted.

Section 14 Staffing of Assessment Centre

Section 14 covers the staff required at an assessment centre. Specifically:

- Staff functions and numbers
- Staff training

Once again, these are mostly procedural issues not directly relevant to the software being used.

But you may find it useful to use the monitoring facility within Questionmark to allow invigilators to control assessments starting. It can also be useful to set in assessment templates that certain information appears in the Windows caption during an assessment to allow invigilators easily to see what is happening on each PC.

You may also want to consider using Questionmark Perception assessments as part of your training and compliance program for invigilators. The standard requires your invigilators and other training centre staff to have knowledge of the software and procedures and legal requirements. An assessment delivered with Perception could be a good way of confirming that they do.

Sections 15, 16 and 17 (Preparation for the assessment session, Conduct of assessment session and Procedures relating to emergencies, technical failures and irregularities primarily cover procedural issues and so once again are not influenced by the software solution.

For more general information on Questionmark Perception, and other issues concerning assessments, visit: www.questionmark.com