



# Core Receiver Requirements for the Digital Switchover Help Scheme

## CONSULTATION DOCUMENT September 2008

Responses should be sent by **Monday 13<sup>th</sup> October 2008** to:

**Vicky Tickle**      [victoria.tickle@culture.gsi.gov.uk](mailto:victoria.tickle@culture.gsi.gov.uk)

Department for Culture, Media and Sport, 2-4 Cockspur Street, London SW1Y 5DH

For queries of a technical nature, please contact:

**Nick Tanton**      [nick.tanton@bbc.co.uk](mailto:nick.tanton@bbc.co.uk)

BBC, The Media Centre, Media Village 201 Wood Lane, London W12 7TQ

## **Core Receiver Requirements for the Digital Switchover Help Scheme**

### **Executive Summary**

The Digital Switchover Help Scheme (the Help Scheme) assists people aged 75 years and over, people in receipt of certain benefits and individuals who are registered blind or partially sighted, to convert to digital TV services.

Assistance consists of providing necessary equipment to convert one TV set and the relevant help to install and use such equipment, including where necessary provision of appropriate set-top aerials or aerial upgrades.

Any equipment offered under the Help Scheme must in general be suitable for an older or disabled person to use.

The DCMS and DTI (now BERR), with advice from the BBC, worked with the Consumer Expert Group to develop Core Receiver Requirements (CRR) for the equipment provided to those eligible for help under the Help Scheme. In 2006 the Government conducted a consultation on the draft CRR, and the current version was published in December 2006.

### **CRR: Proposed Update**

The development of set-top-box equipment for Copeland and more recently preparations for switchover in Borders has highlighted the need to make some adjustments to the CRR. These specifically relate to:

- platform neutrality;
- the energy use of equipment offered under the Help Scheme; and
- requirements for remote control handsets.

The Consumer Expert Group and the Supply Chain Group have raised concerns about energy use and the fact the CRR do not apply equally to all platforms. The DCMS, with the BBC, have carefully considered all the issues and have decided to consult on a revised set of CRR.

If a decision is made to change the CRR, it is considered desirable to do so in time to influence the equipment on offer for the switchover in HTV Wales (which will begin to switchover in August 2009). For this reason, the aim is to agree any revised CRR by the end of October 2008. Interested parties have six weeks to make representations - the consultation will run from 1 September to 13<sup>th</sup> October 2008.

This document sets out the key proposals (section one) on which we would welcome views, the full CRR document with proposed revisions (section two), a detailed list of the changes (section three) and a comment sheet for responses (section four).

## SECTION ONE

### Key Proposals

#### 1. Platform neutrality

- The recent selection of a satellite set top box as the Most Cost Effective Option (MCEO) for Border has highlighted the desirability of having CRR which are platform neutral and which manufacturers must meet in full if their equipment is to be included as the MCEO for the Help Scheme.
- Our general approach is to focus on the desired results rather than specifying a particular delivery system, with the aim of producing a single set of CRR to be met by providers on all platforms. Amendments to the Help Scheme Agreement would be necessary to facilitate this.
- The specific changes are set out in the table attached to this document.

#### 2. Energy Efficiency

- We propose that the CRR stipulate a maximum figure for energy use with which equipment provided as the MCEO under the Scheme would have to comply. This would be set in line with the figure for “complex” set top boxes in the basic configuration set out in the EU’s voluntary *Code of Conduct on Energy Efficiency of Digital TV Service Systems* (please see table below).  
([http://re.jrc.ec.europa.eu/energyefficiency/html/standby\\_initiative\\_digital%20tv%20services.htm](http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative_digital%20tv%20services.htm))

##### B.2.3 For complex STBs in the basic configuration<sup>1</sup>

Mode	from 1-1-2009 to 31-12-2009			
	Cable	Terrestrial	Satellite	DSL
Standby passive (if specified)	3.0W	3.0W	3.0W	3.0W
Standby active	6.0W	5.0W	7.0W	5.0W

- The *Code of Conduct* currently allows higher energy use where the complex box has specified additional features. These additional features are not requirements of the CRR however, and we consider it is reasonable that these allowances should be disregarded when determining the energy standard to be met by the MCEO under the Help Scheme.

<sup>1</sup> European Commission, *Code of Conduct on Energy Efficiency of Digital TV Service Systems Version 7*, 15 January 2008, p10.  
<http://re.jrc.ec.europa.eu/energyefficiency/pdf/CoC%20Digital%20TV-version%207.pdf>

- This would allow boxes which comply with all the other requirements of the current CRR to meet the standard, but is likely to rule out boxes which have other additional features, such as hard drives or modems, from being the MCEO. It would not prevent those boxes being offered as upgrades or alternative assistance, and there would be scope for any emerging technology to be accommodated within the CRR in the future should that be considered desirable.
- We are aware of ongoing work to introduce mandatory EU standards on the energy efficiency of complex set top boxes. The aspiration is that these new standards will come into effect from 2011 onwards.

### **3. Single button access to audio-description**

- We propose to include a new essential requirement for equipment to have one button access to audio-description services. This has been identified as a particular issue of concern with the satellite platform where the uninitiated and those uncomfortable with technology may struggle to navigate menus for switching audio-description on and off.

### **4. D-Book Detail**

- Most of the detail particular to DTT is available elsewhere e.g. in the Digital TV Group (DTG) published document *UK Digital TV Receiver Recommendations* and so renders the replication of that detail in the CRR as unnecessary. We therefore propose to remove this section from the CRR.

**We would particularly welcome views on the following questions:**

- a) Do you agree with the concept of having a single set of CRR applicable to all equipment on all platforms? If not, please state why not.**
- b) Do you agree with the proposed changes to the energy efficiency requirement? If not, please state why not.**
- c) Do you agree with the changes proposed for a one button access to audio-description? If not, please state why not.**

## SECTION TWO

### Core Receiver Requirements for the Digital Switchover Help Scheme: proposed update

The Core Receiver Requirements (the CRR) described in this document are designed to apply to receiving equipment provided to those vulnerable people (the elderly and those with disabilities) who are eligible for assistance from the Digital Switchover Help Scheme.

Many of these requirements have been identified by the Consumer Experts Group and described in their report entitled “Digital TV Equipment: Vulnerable Consumer Requirements” presented to the Government and Digital UK in March 2006.

([www.digitaltelevision.gov.uk/publications/pub\\_dtvconsumer\\_mar06.html](http://www.digitaltelevision.gov.uk/publications/pub_dtvconsumer_mar06.html))

These requirements are intended to complement others technical ones which may be required by individual delivery platforms; for example DTT receiving equipment which is compliant with the CRR will also need to be compliant with the UK D-book ([www.dtg.org.uk/testing/conformance.html](http://www.dtg.org.uk/testing/conformance.html)).

***For the purpose of this document ‘shall’ is a requirement and ‘should’ is a desirable.***

The working premises are that a receiver meeting these requirements

- **shall** set a high standard of “ease of use” whilst meeting the usability needs of the widest possible range of users and user-capabilities ;
- **shall** be capable at least of receiving all free-to-air standard-definition MPEG2-coded TV services including access-service components (subtitles and audio description), digital text and interactive elements and all free-to-air radio services ;
- **shall** be capable of adjusting to correctly signalled changes to service line-up as and when these occur ;
- for DTT, **shall** be capable of adjusting to the inevitable shift in channels and frequencies which will take place during digital switchover ;
- **shall** (if a set-top box or DTR) be capable of interoperability with most televisions available on the market &
- **shall** meet UK Government Procurement Requirements for Sustainable Products.- (see [www.mtprog.com](http://www.mtprog.com) for current and future indicative requirements).

Such a receiver might be a set-top box, a DTR or an iDTV and could incorporate other functionalities<sup>2</sup> not directly covered by the requirements defined in this CRR.

---

<sup>2</sup> E.g. DTR, MPEG4 and/or HD decoding, diversity reception, internet access, decoding of encrypted services, multi-device remotes etc.

Central to any practicable design **shall** be the principle that the receiver will be used by people with a wide range of capabilities. A significant proportion of these will be used to very simple interfaces with their existing analogue TV equipment and some will be unaccustomed to complex menu-driven user interfaces (UIs). The guiding principles of these requirements are therefore that the UI **shall** be simple to understand, **shall** provide explicit user feedback for actions initiated by the user, **shall**, where feasible, hide invisible behaviour (e.g. autoscan, software downloads etc.) and, above all, **shall** leave the user in no doubt as to where they are in any necessary navigation and how to return to the root or default decoding condition.

Note that this is a document defining the **requirements** of suitable receiving equipment– it is **not** a functional specification, nor does it specifically address issues such as packaging or user instructions.

The Help Scheme will rule on compliance of the specifications, taking all reasonable steps to fulfil that obligation and its decision is final.

## A General Requirements

- A 1 Receivers **shall** be capable of simultaneously displaying subtitles and relevant user-interface data (menus, feedback icons – e.g. mute etc.) where these don't compete for screen space **or** of temporarily suspending subtitle display during such a user-initiated dialogue and restoring them as appropriate.
- A 2 Receivers **shall** be capable of decoding and presenting subtitles in the form appropriate for the platform.
- A 3 Receivers **shall** be capable of decoding and presenting audio description in the form appropriate for the platform.
- A 4 Full EPG content information **shall** be presented to the user in appropriate form including appropriate indications of the availability of subtitles and AD.
- A 5 The receiver **shall** identify and respond to changes to the service line-up without undue disturbance to the viewer.
- A 6 A receiver **shall** automatically identify changes in the receivable multiplexes (including new frequencies) from substantive changes to the data signalled in the Service Information within the received bit-stream (i.e. in the NIT and/or SDT) or other platform management data, **shall** update the relevant cached information and, where appropriate, **shall** execute a rescan or its equivalent in a suitable user-friendly manner. It is highly desirable that the strategy taken for any rescan or its equivalent be made as transparent as possible (optimally wholly invisible) to the user<sup>3</sup>. For DTT, set-top boxes **shall** respond appropriately to triggered auto-retuning whatever other autonomous strategy is also implemented.
- A 7 A receiver **shall** correctly manage multiple instances of a service so that the optimum instance of that service is presented to the viewer on the assumption that broadcasters have correctly identified their services. Where possible this **should** be capable of being performed automatically although optional manual override may be desirable.
- A 8 A receiver **shall** manage in a stable, robust and user-friendly manner its response to modulation schemes, services and/or new data structures within the delivered stream for which it was not specified or designed. (For example a DTT receiver intended to receive DVB-T signals only **shall** not “fall-over” or “lock-up” when presented with a DVB-T2 signal. Similarly DVB-S receivers should not “fall over” in the presence of a DVB-S2 signal.)
- A 9 The receiver **shall** provide the user with a means of selecting,

---

<sup>3</sup> eg. when the receiver is in “standby” or at a suitable time (early morning) which can be redefined by the user.

reordering and/or filtering favourites.

- A 10 The receiver remote control protocol and codes **shall** be made available to designers of alternative remotes (e.g. for those with manual dexterity challenges) or of alternative specialist assistive technologies (e.g. voice activated command input).
- A 11 Receivers **shall** be capable of decoding radio services.
- A 12 In the interest of energy efficiency and avoiding screen burn, receivers **should** adopt suitable strategies to blank or to reduce the amplitude of static on-screen displays (inc. placeholders for radio services) after a suitable time delay.
- A 13 The primary A/V baseband output of a set-top-box receiver **shall** be via a SCART connector with both composite and RGB and support for widescreen switching on pin 8. For DTT equipment this signal **shall** also be available as a uhf-modulated PAL signal tuneable to uhf channels 21 through 68 and added to the UHF input signals looped through to the rf output.
- A 14 The secondary A/V baseband output of a receiver **shall** be via a SCART connector with composite and optional RGB output. Programmed recording **should** be facilitated by the use of pin 8. [For iDTVs SCART input/output connectors **shall** be fully connected.]
- A 15 For DTT receivers, RF loop-through **shall** work both when the receiver is ON and when it is any STANDBY mode. The loop-through **should** have minimum rf signal attenuation.
- A 16 Receivers **shall** be compliant with the standards and requirements for interoperability applicable to the relevant platform and with the signal delivery method(s) for that platform.
- A 17 Remote control terminology, labelling and button definitions **shall** be in accordance with those described in the document entitled UK Digital TV Receiver Recommendations published by the DTG. ([www.dtg.org.uk/testing/conformance.html](http://www.dtg.org.uk/testing/conformance.html))
- A18 Receivers **shall** conform to energy efficiency standards set out in the *EU Code of Conduct on Energy Efficiency of Digital TV Service Systems, Version 7*, for “complex” set top boxes in the basic configuration. The maximum power consumption levels shall not include additional power allowance for additional components. ([http://re.jrc.ec.europa.eu/energyefficiency/html/standby\\_initiative\\_digital%20tv%20services.htm](http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative_digital%20tv%20services.htm))

## **B Usability Requirements**

### **User Interface – On-screen display**

- B 1 The User Interface (UI) **shall** be designed using principles derived from good web design practice especially when working down menus (e.g. use of clear and unambiguous menu terminology, highlighting current position in the menu etc.). Any selected menu option **shall** be highlighted clearly.
- B 2 There **shall** be a direct and consistent correspondence between relevant on-screen prompts and button labels on the remote control.
- B 3 Items in pop-up menus **shall** be numbered and directly selectable using numeric keys.
- B 4 The UI **shall** use a san-serif font designed for readability and use on television & at sizes suitable for normal viewing distances [Tiresias is recommended with 24 line minimum for body text, 18 min. for upper-case]. Mixed case letters **should** be used; if not possible then lower-case **should** be favoured over upper-case. Italic, underlined, oblique or condensed fonts **shall** be avoided.
- B 5 Text and relevant symbols/icons **shall** be displayed with good contrast. Colours **should** be limited to an absolute maximum of 85% saturation. Pure red & white and combinations of red and green **shall** be avoided.
- B 6 Arabic numerals only **shall** be used (1, 2, 3, 4, 5...)
- B 7 Symbols **shall** accord with appropriate recognised standards.
- B 8 Arrows **should** accord with the ISO7001 specification.
- B 9 Generous inter-linear spacing **should** be provided. Words **should** have a clear space around them esp. adjacent to symbols. Flashing and scrolling text **shall** be avoided.
- B 10 Left-aligned text **should** be used rather than centred or right-aligned. Justified paragraphs **should** be avoided.

### **User Interface - Navigation**

- B 11 The UI **shall** leave the user in no doubt as to where he/she is in any necessary navigation and how to return to the root or default decoding condition.
- B 12 In general there **should** be only one way of achieving a particular user goal. (Exceptions would be selecting a service by numeric or P+/P- keys or from an epg. page.)

- B 13 The UI **shall** provide a direct means of returning to the previous menu screen using a common, clear, unambiguous and consistent action and terminology such as use of a “back” button.

### User Interface - Feedback

- B 14 The UI **shall** provide explicit and distinguishable user feedback for actions initiated by the user (e.g. to acknowledge a highlighted choice, a key stroke, an activated command etc.). This **should** be both visual and audible although audible feedback may be capable of being disabled via the UI. [See also section B2.3]
- B 15 The UI **shall** provide appropriate explicit on-screen information re. system status.
- B 16 The receiver **should** provide a mechanism to support speech output of text displayed on screen (viz. on-screen text related to menu selection and receiver status message – e.g. “no signal”- and the enunciation of channel names, programme names, presence of subtitles/AD and now/next event names). NB: the receiver is not expected to interpret Dtext pages or eTV applications verbally.

### User Interface - favourites and user preferences

- B 17 The receiver **shall** provide the user with a means of selecting, reordering and/or filtering the presentation of services in the service list (i.e. a “favourites” list). Newly “discovered” services **shall** not impact existing favourites without user intervention.
- B 18 The UI **should** also provide the means of tailoring functionality & user interface to suit the user and of storing and retrieving individual user preferences.

### User Interface - invisible behaviour

- B 19 The UI **shall** hide invisible receiver behaviour (e.g. autoscans, software downloads etc.) where appropriate.
- B 20 The receiver **should** detect when software has become unstable and auto-recover without interrupting the presentation of vision and sound for the most-recently-selected service.
- B 21 Where feasible, software upgrades **shall** not cause loss of all relevant existing user settings (e.g. volume, subtitles enabled, favourites list etc.).

### User Interface - other requirements

- B 22 The UI **shall** provide the means of selecting and deselecting the

display of subtitles and, ***independently***, of selecting and deselecting the presentation of audio description.

- B 23 On-screen receiver set-up procedures ***shall*** use easy-to-understand terms.

## **Remote control**

### **Remote control - keys**

- B 24 Keys ***shall*** be large and well separated (e.g. at least 50% of button width).
- B 25 Adjacent keys ***shall*** be tactilely distinguishable (e.g. be raised or have raised edges).
- B 26 There ***shall*** be a raised marking on the figure 5 key of the numeric pad.
- B 27 Keys ***shall*** be logically grouped by function and those functional groups ***should*** be separated by more than the distance between keys within each group. Different functions ***should*** also be distinguished by distinct shapes or texture (see ES 201 384).

### **Remote control - labelling**

- B 28 The remote control ***shall*** have clear visual markings.
- B 29 All legends ***shall*** be clear, legible (in a san serif font and as large as possible) and contrast with the keys and/or background
- B 30 All labelling ***shall*** be durable and long-lasting (e.g. moulded into casing).
- B 31 The labelling ***shall*** be intuitive & standardised with a clear meaning for each legend.

### **Remote control - feedback**

- B 32 The receiver ***shall*** provide visual and audible feedback of pressing a remote key (e.g. click and led flash on pressing). Note that this ***shall*** be a response of the receiver and not of the remote control.

### **Remote control – physical**

- B 33 The remote ***shall*** be capable of single handed operation by either hand.
- B 34 The remote ***shall*** be easy to grip and be coated in a non-slippery, textured material.

- B 35 The directional properties of the communications link from the remote control to the receiver **shall** be as wide angle as possible.
- B 36 The remote **shall** be stable if placed on a flat surface.

### Remote control – general

- B 37 Means **shall** be provided to allow various styles and complexity of remote controller to be supplied as options (e.g. minimalist, large-button etc.)
- B 38 Basic remote control functions **should** also be available from the receiver front panel (e.g. power on/off, channel up/down, volume up/down).
- B 39 Means **shall** be provided to dedicate a key to select/deselect subtitles and & to indicate the status of this setting.
- B 40 Means **shall** be provided to dedicate a key to select/deselect audio description and to indicate the status of this setting including a distinctive audible indication that the AD has been enabled.
- B 41 The remote **shall** have no redundant keys.
- B 42 Access to the remote's battery compartment **should** be straightforward but proofed against small children.

### Subtitles and Audio Description

- B 43 If the user elects to see subtitles when available, this choice **shall** be maintained across channel changes without further user intervention.
- B 44 If the user elects to listen to audio description when available, this choice **shall** be maintained across channel changes without further user intervention.
- B 45 If audio description has been enabled in the user interface, any secondary output (e.g. SCART for video recording) **shall** convey the appropriate mix of programme sound and audio description.

### Hardware

#### Audio output

- B 46 The receiver **shall** provide an easily-accessible audio output at a signal level suitable for driving wireless headphones or inductive loop equipment. This output **shall** be such that it can be easily made available on a suitable receptacle (e.g. phono or using a SCART-to-phono adaptor) to feed a domestic hi-fi for those blind & partially-sighted who will use it without a video display. It **shall** be possible to

direct either the AD mix or programme sound to this output.

### **Power switch**

- B 47 The receiver **should** provide a power switch in an easily-accessible position with which the receiver can be put into its lowest power consumption (e.g. a standby) mode.

### **Connections**

- B 48 A fully-connected SCART lead at least 1m in length **shall** be provided. This **shall** comply with the appropriate standards and include means to ensure that it remains securely in place at all times.
- B 49 External connections **shall** be easily accessible and clearly marked (e.g. with colour coding) to match the appropriate connectors with each supplied lead.

### **SECTION THREE**

#### **CRR Detailed Proposal**

The proposed adjustments are as follows (new text is in bold):

	Text referenced		Proposed changes	Notes
	Existing CRR	CRR 2		
1.	Introductory text	Introductory text	<p>Delete entire introduction and replace with:</p> <p><b>'The Core Receiver Requirements described in this document (the CRR) are designed to apply to receiving equipment provided to those vulnerable people (the elderly and those with disabilities) who are eligible for assistance from the Digital Switchover Help Scheme.</b></p> <p><b>'Many of these requirements have been identified by the Consumer Experts Group and described in their report entitled "Digital TV Equipment: Vulnerable Consumer Requirements" presented to the Government and Digital UK in March 2006.</b></p> <p><b>'These requirements are intended to complement other technical ones which may be required by individual delivery platforms; for example DTT receiving equipment which is compliant with the CRR will also need to be compliant with the UK D-book.'</b></p>	<p>New introduction sets out context of the CRR within the Help Scheme and explains the source for key provisions.</p> <p>Text emphasises that there is potential for other functionality to be included in the set-top-box at some point in the future should that be thought desirable.</p>
2.	Annex A, introductory paragraph	Introductory text	Delete the first line: 'This requirements document is for the provision of receiving equipment for the Digital Switchover Help Scheme.'	Unnecessary following new introduction

3.	Requirements in first section of Annex A	Requirements in opening section	Replace all instances of the word ' <b>should</b> ' with ' <b>shall</b> '	Raises all criteria deemed desirable to essential criteria.
4.	List of requirements in first section of Annex A	Requirements in opening section	Delete the criteria reading:  <b>'shall</b> be capable of being operated by alternative remote controls which have been designed for people with dexterity problems.'	
5.	Third criteria in the first section of Annex A	Second criteria in the requirements in opening section	Add references to subtitles, audio description and radio services, so it reads:  <b>'should</b> be capable at least of receiving all free-to-air standard-definition <b>MPEG2-coded TV</b> services including access-service components ( <b>subtitles and audio description</b> ), digital text, interactive elements, <b>and all free-to-air radio services;</b> '	
6.	First section of Annex A	Third criteria in opening section requirements	Insert a new criteria, reading:  <b>'shall be capable of adjusting to correctly signalled changes to service line-up as and when these occur;'</b>	
7.	Interoperability criteria in Annex A	Fifth criteria in opening section requirements	Insert reference to specific platforms as follows:  <b>'shall (if a set-top box or DTR)</b> be capable of interoperability with most televisions available on the market'	To make platform neutral
8.	First section of Annex A, paragraph beginning: 'Such a receiver might be either a set-	Text following bullets in the opening section	Delete the word 'either' and insert a reference to further platforms, text to read:  'Such a receiver might be a set-top box, <b>a DTR</b> or an iDTV and could, of course, also incorporate other functionalities not directly covered by the requirements defined here.'	To make platform neutral

	top box or an iDTV...'			
9.	First section of Annex A	Text following bullets in the opening section	<p>Delete the following three paragraphs:</p> <p>'The requirement is in two sections, each of <b>equal</b> importance. Core functional requirements identified in section A are derived from, or consistent with, those recorded in the UK D-book v4 chapter 22 with some adaptations in context of the digital switchover and platform neutrality.</p> <p>'Requirement specifically related to usability are identified in section B. These are requirements which have been identified by the Consumer Experts Group and described in their report entitled "Digital TV Equipment: Vulnerable Consumer Requirements" presented to the Government and Digital UK in March 2006.</p> <p>'Taken together these will form the basis of the Core Requirements for receiving equipment for the vulnerable (elderly and those with disabilities) – the Assistance Scheme.'</p>	Deletion due to publication of the D-book (setting out the detailed technical standards for Digital Terrestrial Television in the UK) by the Digital TV Group (DTG).
10.	First section of Annex A, paragraph commencing: 'Central to...'	Opening section paragraph commencing: 'Central to...'	<p>Make the following changes:</p> <ul style="list-style-type: none"> <li>- change all occurrences of the word '<b>should</b>' to '<b>shall</b></li> <li>- replace the word '<b>abilities</b>' for '<b>capabilities</b></li> <li>- delete the first part of the sentence commencing: 'A small set of guiding principles should include that the UI...' and replace with: '<b>The guiding principles of these requirements are therefore that the User Interface (UI)...</b></li> </ul> <p>Text to read:</p> <p>'Central to any practicable design <b>shall</b> be the principle that the receiver will be used by people with a wide range of <b>capabilities</b>. A significant proportion</p>	Raises all desirable criteria to essential criteria

			of these will be used to very simple interfaces with their existing analogue TV equipment and some will be unaccustomed to complex menu-driven user interfaces. <b>The guiding principles of these requirements are therefore that the <i>User Interface (UI)</i> shall</b> be simple to understand, <b>shall</b> provide explicit user feedback for actions initiated by the user, <b>shall</b> , where feasible, hide invisible behaviour (e.g. autoscans, software downloads etc.) and, above all, <b>shall</b> leave the user in no doubt as to where they are in any necessary navigation and how to return to the root or default decoding condition.'	
11.	Final paragraph of the first section	Final paragraph of opening section	Delete the words ' <i>at this stage</i> '. Text to read:  'Note that this is a document defining <b>requirements</b> of the receiving equipment – it is <b>not</b> a functional specification, nor does it specifically address issues such as packaging or user instructions.'	Updating text to clarify the purpose of this document
12.	Note 1, first section of Annex A	Note 1, opening section	Replace ' <b>PDR</b> ' with ' <b>DTR</b> '. Text to read:  'e.g. <b>DTR</b> , diversity reception, internet access, decoding of encrypted services, multi-device remotes, etc.'	
13.	Title of Section A of Annex A	Title of Section A	Delete title reading: 'Requirement derived from UK D-book v4.0 section 22' and replace with:  <b>'General Requirements'</b>	Deletion due to publication of the D-book (setting out the detailed technical standards for Digital Terrestrial Television in the UK) by the Digital TV Group (DTG).
14.	First sentences in Section A of Annex A	Section A	Delete first two sentences, reading:  'The core receiver requirements of this section are derived from, or are	Deletion due to publication of the D-book (setting out the

			consistent with, section 22 (Receiver Requirements) of the UK D-book v4.0 with minor modifications. To avoid any doubt, the requirements in this section should be read with the following clarifications.'	detailed technical standards for Digital Terrestrial Television in the UK) by the Digital TV Group (DTG).
15.	First bullet of Section A	A1	Replace ' <b>should</b> ' with ' <b>shall</b> '. Text to read:  'Receivers <b>shall</b> be capable of simultaneously displaying subtitles and relevant user-interface data (menus, feedback icons – e.g. mute etc.) where these don't compete for screen space <b>or</b> of temporarily suspending subtitle display during such a user-initiated dialogue and restoring the as appropriate.'	Raises desirable criteria to essential criteria.
16.	Second bullet of Section A	A2 and A3	Delete the bullet, reading:  'AD decoding and support <b>shall</b> be mandatory (items 1 & 1.4)'  Replace with two separate criteria, reading:  <b>'Receivers shall be capable of decoding and presenting subtitles in the form appropriate for the platform.'</b>  <b>Receivers shall be capable of decoding and presenting audio description in the form appropriate for the platform.'</b>	Takes account of multi-user environment while providing easy enabling/disabling of the audio description service. It does not however, specify at this point how the relevant service is to be selected.
17.	Third bullet of Section A	A4	Delete text reading: 'inc. availability of subtitles and AD (item 3)' and replace with: ' <b>including appropriate indications of the availability of subtitles and audio description</b> '.  Full text to read:  'Full EPG content information <b>shall</b> be presented to the user in an appropriate	

			form <b>'including appropriate indications of the availability of subtitles and audio description'</b> .	
18.	Fourth bullet of Section A	A5	Delete: '(items 3 & 3.3)	Update formatting
19.	Fifth bullet of Section A	A6	<p>Make the following changes:</p> <ul style="list-style-type: none"> <li>- delete the first <b>'DTT'</b>;</li> <li>- insert <b>'or other platform management data'</b> following the brackets (i.e. In the NIT and/or SDT);</li> <li>- insert <b>'or its equivalent'</b> following 'execute a rescan' and following 'taken for any rescan';</li> <li>- delete '(item 3.1);</li> <li>- delete 'can be made transparent' and replace with <b>'be made as transparent as possible'</b>;</li> <li>- delete the final sentence, and replace with <b>'For DTT, receivers should respond appropriately to triggered auto-retuning whatever other autonomous strategy is also implemented.'</b></li> </ul> <p>Text to read:</p> <p>'A receiver <b><i>shall</i></b> automatically identify changes in the receivable multiplexes (including new frequencies) from substantive changes to the data signalled in the Service Information within the received bit-stream (i.e. In the NIT and/or SDT) <b>or other platform management data</b>, update the relevant cached information and, where appropriate, execute a rescan or its equivalent in a suitable user-friendly manner. It is highly desirable that the strategy taken for any rescan <b>or its equivalent be made as transparent as possible</b> (optimally wholly invisible) to the user. <b>For DTT, receivers should respond appropriate to triggered auto-retuning whatever other autonomous strategy is also implemented.'</b></p>	To make platform neutral

20.	Sixth bullet of Section A	A7	Delete: 'DTT' and '(item 3.2.1)' and the whole of the final sentence from 'This requirement...' to 'any region.'	To make platform neutral
21.	Following the sixth bullet of Section A	A8	Insert a new requirement reading:  'A receiver shall manage in a stable, robust and user-friendly manner its response to modulation schemes, services and new data structures within the delivered stream for which it was not specified or designed. (For example a DTT receiver intended to receive DVB-T signals only shall not "fall-over" or "lock-up" when presented with a DVB-T2 signal. Similarly DVB-S receivers should not "fall over" in the presence of a DVB-S2 signal.)	To make platform neutral
22.	Seventh bullet of Section A	A9	Delete (item 3.4.1.1)	Update formatting
23.	Eighth bullet of Section A		Delete bullet reading:  'The receiver <b>should</b> optionally provide a suitable contemporary and cost-effective form of data I/O (item 4.4). This could be used to support supplementary assistive equipment (e.g. Voice synthesis of menu commands).'	
24.	Tenth bullet of Section A		Delete bullet reading:  'In this section of the requirements the numeric part of each item reference maps directly to item numbers in section 22 of the D-book.'	Deletion due to publication of the D-book (setting out the detailed technical standards for Digital Terrestrial Television in the UK) by the Digital TV Group (DTG).

25.	Twelfth bullet of Section A	A12	Delete 'In the context of' and replace with ' <b>In the interest of</b> '	
26.	Following the twelfth bullet of Section A	A13, A14, A15, A16 and A17	<p>Insert the following new requirements:</p> <p><b><i>'The primary A/V baseband output of a set-top box receiver shall be via a SCART connector with both composite and RGB and support for widescreen switching on pin 8. For DTT equipment this signal shall also be available as a PAL uhf signal tuneable to uhf channels 21 through 68 and added to the UHF input signals looped through to the rf output.</i></b></p> <p><b><i>The secondary A/V baseband output of a receiver shall be via a SCART connector with composite and optional RGB output. Programmed recording should be facilitated by the use of pin 8. [For iDTVs SCART input/output connectors should be fully connected.]</i></b></p> <p><b><i>For DTT receivers RF loop-through shall work both when the receiver is ON and when it is in any STANDBY mode. The loop-through should have minimal rf signal attenuation.</i></b></p> <p><b><i>Receivers shall be compliant with the standards and requirements for interoperability applicable to the relevant platform and signal delivery method(s) for that platform.</i></b></p> <p><b><i>Remote control terminology, labelling and button definitions shall be in accordance with those described in the document entitled UK Digital TV Receiver Recommendations published by the DTG.'</i></b></p>	<p>Equivalent to old requirement A4.3.1</p> <p>Equivalent to old requirements A4.3.2 and A4.3.3</p> <p>Equivalent to UK Digital TV Receiver Recommendations item 4.5.1.1</p> <p>Equivalent to old requirement A9.3 generalised to all platforms</p> <p>Equivalent to old requirement A5.2</p>
27.	Following the final bullet of Section A	A18	<p>Insert the following new requirement:</p> <p><b><i>'Receivers shall conform to energy efficiency standards set out in the EU Code of Conduct on Energy Efficiency of Digital TV Service Systems,</i></b></p>	<b>New criteria for energy efficiency</b>

			<b>Version 7 for “complex” set top boxes in the basic configuration. The maximum power consumption levels shall not include additional allowance for additional components.</b>	
28.	End of Section A		Delete the rest of Section A from: ‘[Implementing many of these requirements...’ to the end of ‘Table A-9, Compliance’.	
29.	Annex A, Section B, first bullet of B.1.1	B1	Replace the two occurrences of the word ‘ <b>should</b> ’ with ‘ <b>shall</b> ’. Text to read:  ‘The UI <b>shall</b> be designed using principles derived from good web design practice especially when working down menus, e.g. use of clear and unambiguous menu terminology, highlighting current position in the menu etc. Any selected menu options <b>shall</b> be highlighted clearly.’	Raises desirable criteria to essential criteria.
30.	Fourth bullet of B.1.1	B4	Replace the final occurrence of the word ‘ <b>should</b> ’ with ‘ <b>shall</b> ’. Text to read:  ‘The UI <b>shall</b> use a san-serif font designed for readability and use on television & at sizes suitable for normal viewing distances [Tiresias is recommended with 24 line minimum for the body text, 18 min. for upper case]. Mixed case letters <b>should</b> be used; if not possible then lower-case <b>should</b> be favoured over upper-case. Italic, underlined, oblique or condensed fonts <b>shall</b> be avoided.’	Raises desirable criteria to essential criteria.
31.	Fifth bullet of B.1.1	B5	Following the word ‘Text’ insert: ‘ <b>and relevant symbols/icons</b> ’. Text to read:  ‘Text <b>and relevant symbols/icons shall</b> be displayed with good contrast.’	
32.	Seventh bullet of B.1.1	B7	Delete from ‘internally recognised...’ and replace with: ‘ <b>appropriate recognised standards</b> ’. Text to read:  ‘Symbols <b>should</b> accord with <b>appropriate recognised standards.</b> ’	Delete specific reference to CENELEC because many of the standards are deprecated by the

				3 <sup>rd</sup> sector – e.g. subtitle icon
33.	Ninth bullet of B.1.1	B9	<p>Replace the final occurrence of the word '<b>should</b>' with '<b>shall</b>'. Text to read:</p> <p>'Generous inter-linear spacing <b>should</b> be provided. Words <b>should</b> have a clear space around them esp. adjacent to symbols. Flashing and scrolling text <b>shall</b> be avoided.'</p>	Raises desirable criteria to essential criteria.
34.	Second bullet of B.1.3		<p>Delete bullet reading:</p> <p>'The UI <b>shall</b> leave the user in no doubt as to where he or she is in any necessary navigation and how to return to the root or default decoding condition.'</p>	As it is a repetition of the first bullet of B.1.2
35.	First bullet of B.1.4	B17	<p>Replace the word '<b>should</b>' with '<b>shall</b>'. Text to read:</p> <p>'The receiver <b>shall</b> provide the user with a means of selecting, reordering and/or filtering the presentation of services in the service list (i.e. a "favourites" list). Newly "discovered" services <b>shall</b> not impact existing favourites without user intervention.'</p>	Raises desirable criteria to essential criteria.
36.	Third bullet of B.1.5	B21	<p>Replace the word '<b>should</b>' with '<b>shall</b>'. Text to read:</p> <p>'Where feasible, software upgrades <b>shall</b> not cause loss of all relevant existing user settings (e.g. volume, subtitles enabled, favourites list, etc.).'</p>	Raises desirable criteria to essential criteria.
37.	Second bullet of B.1.6	B23	<p>Replace the word '<b>should</b>' with '<b>shall</b>'. Text to read:</p> <p>'On-screen receiver set-up procedures <b>shall</b> use easy-to-understand terms.'</p>	Raises desirable criteria to essential criteria.
38.	First bullet of B.2.3	B32	<p>Replace the word '<b>should</b>' with '<b>shall</b>'. Text to read:</p>	Raises desirable criteria to essential

			'The receiver <b>shall</b> provide visual and audible feedback of pressing a remote key (e.g. click and led flash on pressing). Note that this <b>shall</b> be a response of the receiver not of the remote control.'	criteria.
39.	Fourth bullet of B.2.5	B41	Replace the word ' <b>should</b> ' with ' <b>shall</b> '. Text to read:  'The remote <b>shall</b> have no redundant keys.'	Raises desirable criteria to essential criteria.
40.	Following the third bullet of B.2.5	B40	Insert a new criteria reading:  <b>'Independent means shall be provided to dedicate a key to select/deselect audio description and to indicate the status of this setting including a distinctive audible indication that the AD has been enabled.'</b>	<b>New criteria.</b>
41.	Note following B.2.5		Delete note, reading:  'Note that, particularly for the Targeted Help Receiver, provision in the one package of both a basic and full-function remote offers a simple strategy for supporting the installer/carer/technology-aware user and those for whom DTV is new and who might (initially at least) need little more than the equivalent of their analogue services. The basic remote might have, for example, only 0..9 numeric, P+/P-, V+/V-, STs on/off, MUTE, and Power On/Standby keys.'	
42.	Following the first bullet of B.3.2	B45	Insert a new criteria reading:  <b>'If audio description has been enabled in the user interface, any secondary output (e.g. SCART for video recording) shall convey the appropriate mix of programme sound and audio description'</b>	
43.	First bullet of B.4.1	B46	Following the first sentence, insert: ' <b>This output shall be on a standard receptor (e.g. Phono) to feed a domestic hi-fi for those blind &amp; partially-</b>	

			<p><b>sighted who will use it without a video display.'</b></p> <p>Full bullet to read:</p> <p>'The receiver shall provide an easily accessible audio output at a signal level suitable for driving wireless headphones or inductive loop equipment. <b>This output shall be on a suitable receptacle (e.g. Phono or using a SCART-to-phono adaptor) to feed a domestic hi-fi for those blind &amp; partially-sighted who will use it without a video display.'</b> It <i>shall</i> be possible to direct either the AD mix or programme sound to this output.'</p>	
44.	Final bullet of B.4.3	B49	<p>Replace the word '<i>should</i>' with '<i>shall</i>'. Text to read:</p> <p>'External connections <i>shall</i> be easily accessible and clearly marked (eg. with colour coding) to match the appropriate connectors with each supplied lead.'</p>	Raises desirable criteria to essential criteria.
45.	Throughout	Throughout	Number all bullets for ease of referencing	

## SECTION FOUR

### Comment Sheet

You are invited to comment on any aspect of the consultation document. However, you might find it useful to refer to the questions below, which cover the main points on which we would particularly welcome views. Please be as specific and detailed as possible in your response.

#### Disclosure of responses

Please note that the Department will publish all responses in full, unless specifically requested not to do so. However, all information in responses, including personal information, may be subject to publication or disclosure under freedom of information legislation. If a correspondent requests confidentiality, this cannot be guaranteed and will only be possible if considered appropriate under the legislation.

Any such request should explain why confidentiality is necessary. Any automatic confidentiality disclaimer generated by your IT system will not be considered as such a request unless you specifically include a request, with an explanation, in the main text of your response.

a)	<b>Do you agree with the concept of having a single set of CRR applicable to all equipment on all platforms? If not, please state why not.</b>
b)	<b>Do you agree with the proposed changes to the energy efficiency standards? If not, please state why not.</b>
c)	<b>Do you agree with the changes proposed for a one button access to audio-description? If not, please state why not.</b>
d)	<b>Other Comments</b>

Comments are sought by 13<sup>th</sup> October 2008 and all responses should be sent to: [victoria.tickle@culture.gsi.gov.uk](mailto:victoria.tickle@culture.gsi.gov.uk)