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Specifikacija za izboljšani Teletext

Enhanced Teletext specification

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Enhanced Teletext specification

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Joint Technical Committee (JTC) of the European Broadcasting Union (EBU), Comité Européen de Normalisation ELECtrotechnique (CENELEC) and the European Telecommunications Standards Institute (ETSI).

NOTE: The EBU/ETSI JTC was established in 1990 to co-ordinate the drafting of ETSs in the specific field of broadcasting and related fields. Since 1995 the JTC became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers.

The EBU is a professional association of broadcasting organizations whose work includes the co-ordination of its Members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has Active Members in about 60 countries in the European Broadcasting Area; its headquarters is in Geneva *.

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1 Scope

This European Telecommunication Standard (ETS) defines the application of CCIR Teletext System B to CCIR 625 Line 50 field Television Systems B, D, G, H, I, K and L. The System is optimised for broadcast media using cable, terrestrial and satellite transmission and the associated service and product environment. Reliable reception of data is ensured, since there is a good match between the service area defined for vision and sound reception and that provided for Teletext data broadcasting.

The data is organized in a manner optimum for broadcast media by using the rigid timing framework of the television signal. When multiplexed with a video waveform, this permits a fixed relationship to be provided between the data bytes on a television signal data line and locations in the decoder memory. Using this relationship, error identification and correction are available, matched to the statistical occurrence of bit errors. Critical control data and addressing information are protected by Hamming coding. Basic data is protected by using parity checks.

Teletext data packets are normally grouped together to form "pages" of information, although some have a "stand-alone" function. The range of presentation and application features are arranged to be downward compatible. This permits initial services to be defined and existing services to be upgraded, without rendering obsolete equipment already in the field.

Four presentation Levels are defined:

- Level 1:**
 - Alphamosaic characters
 - spacing attributes
 - fixed colour palette
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- Level 1.5:**
 - Extends the character repertoire
- Level 2.5:**
 - Extends the language repertoire
 - increases the colour palette with re-definable colours
 - introduces non-spacing attributes
 - allows a number of simple re-definable characters
 - provides side panels for additional text or graphics
- Level 3.5:**
 - Extends the number of re-definable characters and their complexity
 - introduces different font styles and proportional spacing

Levels 2.5 and 3.5 are intended to replace Levels 2 and 3 respectively as defined in earlier specifications. The new Levels offer more display features and can be transmitted more efficiently. Level 1.5 has evolved in the field due to the language requirements in certain countries and is documented here for the first time.

The facility to invoke the presentation of characters of any writing system or language, or a mixture of such systems is included. This ETS includes the coding for Arabic, Cyrillic, Greek, Hebrew and Latin alphabets. Where appropriate the character repertoires and coding structures of the ISO are used.

In addition to the basic text and graphics display presentation, a wide range of other applications can be supported. Protocols for user-friendly navigation techniques also exist. These topics are covered in the reference documents and the other documents listed in annex Q.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 231: "Television Systems; Specification of the domestic video Programme Delivery Control system (PDC)".
- [2] ETS 300 708: "Data transmission within Teletext".
- [3] ETS 300 707: "Electronic Programme Guide (EPG); Protocol for a TV-Guide using electronic data transmission".
- [4] ISO 6937/2 (1983) + Addendum 1 (1989): "Information processing - Coded character sets for text communication - Part 2: Latin alphabet and non-alphabet graphic characters".
- [5] ETR 287: "Code of Practice for Enhanced Teletext".
- [6] TR 101 231: "Register of Country and Network Identification codes for Teletext based systems".
- [7] prTR 101 233: "Television systems; Code of Practice for allocation of services in the Vertical Blanking Interval (VBI)."

iTeh STANDARD PREVIEW 3 Definitions, symbols and abbreviations (standards.iteh.ai)

3.1 Definitions

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 For the purposes of this ETS, the following definitions apply:
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Active position: The active position is defined by row and column co-ordinates and is a reference to a screen location within the normal page area. It is used to position enhancement data when overwriting a basic Level 1 Teletext page.

Bit numbering within bytes: The bits of Teletext data bytes are numbered 1 to 8 (LSB to MSB).

Designation code: A data byte used as a packet address extender. It is used to differentiate between instances of the packet X/Y/n. The designation code is the byte after the magazine and packet address and is 8/4 Hamming coded.

Magazine number 8: A packet with a magazine value of 0 is referred to as belonging to magazine 8.

Packet: A sequence of data bits transmitted as a single entity on one TV line. The packet includes elements to establish synchronization within a decoder plus address and information data bits.

Page address: A page address is shown as page number plus sub-code - **M Pt Pu: S4 S3 S2 S1**

Page Format - CA: A method of data broadcasting defined in ETS 300 708 [2] clause 5 where the data is transmitted within Teletext pages. Conditional access and scrambling techniques may be used at the transport layer.

Page Format - Clear: A method of data broadcasting defined in ETS 300 708 [2] clause 4 where the data is transmitted within Teletext pages but without the possibility of applying conditional access and scrambling techniques at the transport layer.

Page number: A page number is shown as **M Pt Pu**, where

M = magazine	(range 1 - 8)
Pt = page number tens	(range 0 - F)
Pu = page number units	(range 0 - F)

Prefix: The sequence of clock run-in, framing code and packet address bytes at the start of every Teletext packet.

Sub-code: A page sub-code is shown as **S4 S3 S2 S1**, where

S1 = LSB digit	(range 0 - F)
S2 = LSB+1 digit	(range 0 - 7)
S3 = LSB+2 digit	(range 0 - F)
S4 = MSB digit	(range 0 - 3)

Time filling headers: Page header packets with the page number FF which are inserted into the transmission for the sole reason of maintaining a real-time clock display.

Transmission bit order: The bits of a Teletext data byte are transmitted least significant bit first.

3.2 Symbols

For the purposes of this ETS, the following symbols apply:

Character code r/c	The character in row r, column c of a given character set.
Cn	Control bit n.
Dn	Data bit n.
f_H	Nominal TV line frequency.
Packet M/yy	Magazine related packet, packet number = yy, from any magazine M and with any designation code value.
Packet M/yy/nn	Magazine related packet, packet number = yy, from any magazine M and with a designation code value of nn.
Packet X/yy	Page related packet, packet number = yy, forming part of a Teletext page and thus having the same magazine address value, X, as the page header packet of that page. If applicable, the precise designation code value is not relevant.
Packet X/yy/nn	Page related packet, packet number = yy and designation code value = nn, forming part of a Teletext page and thus having the same magazine address value, X, as the page header packet of that page.
Pn	Protection bit n.
Y = nn	Packet number = nn.
\oplus	Logical exclusive-OR function.
O	Feature not available.
\odot	Feature available.

3.3 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

ACI	Automatic Channel Installation
AIT	Additional Information Table
BCD	Binary Coded Decimal
BTT	Basic TOP Table
CA	Conditional Access
CCIR	International Radio Consultative Committee
CLUT	Colour Look-up Table
CRC	Cyclic Redundancy Check
CVBS	Composite Video and Blanking Signal
DCLUT	Colour Look-up Table for Dynamically Re-definable Character Sets
DRCS	Dynamically Re-definable Character Set
EACEM	European Association of Consumer Electronic Manufacturers
EBU	European Broadcasting Union