



SLOVENSKI STANDARD
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Automatic channel installation (ACI)

Automatic channel installation (ACI)

Automatische Kanalzuordnung (ACI)

Installation automatique des canaux (ACI)

Ta slovenski standard je istoveten z: EN 50203:1996

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ICS:

33.160.25 Televizijski sprejemniki Television receivers

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en

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Automatic channel installation (ACI)

Installation automatique des
canaux (ACI)

Automatische Kanalzuordnung (ACI)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 206, Broadcast receiving equipment.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50203 on 1996-07-02.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1997-06-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1997-06-01

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1. Introduction

This document specifies elements and describes characteristics for remote channel-installation of TV and VCR sets, by use of teletext.

Nowadays a lot of broadcasted programmes are available for consumers and in the future a considerable increase is to be expected. Hence, programming a TV or VCR is a tedious job. The specification described in this document makes the channel installation of a TV or VCR as simple as possible, if the consumer is connected to a cable network which supplies a so called 'Unique TXT Page' installed by the cable operator.

The 'Unique TXT Page' contains the machine readable preset contents of that cable network, and if the TV or the VCR of the consumer is equipped with a decoder in accordance with the below described algorithm, the channel installation of that TV or VCR will be executed fully automatically.

2. Unique TXT Page

The 'Unique TXT Page' is a page in a teletext transmission. It is called unique because of three characteristics:

- the page has a unique page number,
- the header of the teletext service contains two non visible 'Accelerator characters' and
- the data in the page is arranged in accordance with a specified protocol.

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Examples of the lay-out of a 'Unique TXT Page' are given in Appendices A, B and C.

2.1 Page number of the 'Unique TXT Page'

The page number of the 'Unique TXT Page' is chosen to be a hexadecimal (Hex) page number. The first 'Unique TXT Page' has by default the page number '1BE' and is always ASCII coded. The use of hexadecimal page numbers for Automatic Channel Installation (ACI) normally prevents uncontrolled access by users and it does not reduce the page capacity of the teletext service.

2.2 Accelerator characters

To allow fast determination of the possible availability of the 'Unique TXT Page' in the total number of delivered channels, 'Accelerator characters' are defined. The fast determination is performed by the use of two special identical individual characters in the header of each teletext page (row 0) of the selected channel with the 'Unique TXT Page'.

These two characters are called special because they are not visible for the user and their function is not relevant to the teletext system when used in a header.

The selected channel is not necessarily originated by the cable operator but can be delivered by a satellite or terrestrial broadcaster.

Dependent on the type of broadcaster, different 'Accelerator characters' are defined. A list of 'Accelerator character' codes to be used by the originator of the teletext service is given in table 1.

Originator Broadcaster-type	'Accelerator character' ASCII character (Hex)	TXT symbol
Cable	09	steady
Satellite	0C	normal height
Terrestrial	19	contiguous

Table 1 Accelerator characters

The broadcaster-type is defined as the broadcaster of origin. Conversion to another transport medium will not change the 'Accelerator characters' in the header of each page, but will be indicated by the 'network type character' in the system row (see sub-clause 3.2).

Example : If a broadcaster transmits a 'Unique TXT Page' which can be received terrestrially as well as via cable then 'contiguous' (19 Hex) shall be used.

The two 'Accelerator characters' within the header shall be identical and may be placed on any free position within column 8 up to and including 31.

Column 0 1 2 3
Row 0 UTSSSSCXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXttttttt <-- Header

U : Page units
T : Page tens
S : Sub-code
C : Control character

x: Area for teletext service name and 'Accelerator characters'
t: Time display

In case of a serial teletext transmission the 'Accelerator characters' shall be implemented in the header of each page. In case of a parallel teletext transmission the 'Accelerator characters' shall be implemented in all headers of magazine 1

In this document "\$" is used to represent 'steady' (09 Hex), see Appendix A, B and C. In reality the viewer will not see the 'Accelerator characters' in the teletext headers.

2.3 Protocol

The 'Unique TXT Page' contains data about for instance the cable network channel allocation. This data is arranged in accordance with the protocol version 'I' (49 Hex) described hereafter. Certain characters with a well defined meaning are used on specified fixed positions (see appendix D for the applied teletext character set).

The protocol starts the 'Unique TXT Page' with a 'system row' on row '1'. It opens with 'start characters' and closes with 'stop characters'. The data on row '1' after the 'start characters', contains data for interpretation of the 'Unique TXT Page'. Preset related data starts on row 2 and continues until the 'stop characters'.

2.3.1 Start characters

The 'Unique TXT Page' starts with a 'Conceal' character (18 Hex), followed by a '/' (2F Hex). These characters are positioned on row 1 respectively at column 0 and 1.

In this document '?' is used to represent 'Conceal' (18 Hex).

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2.3.2 Stop characters (standards.iteh.ai)

The last six characters of the protocol of the 'Unique TXT page', are defined as the 'stop characters' represented by '!' (21 Hex). The position of these characters can be on any row except row 0 and 1. These 'stop characters' can be found on columns 8..13. The six 'stop characters' are preceded by three characters representing a possible 'extension or default page number'.

The unused positions preceding and following the 'stop characters' within the last row of the protocol shall be filled with 'unused characters' represented by '*' (2A Hex) with the exception of :

- the character on column 0 which shall contain the 'conceal' character (18 Hex) and
- the characters on columns 38 and 39 which shall contain the 'checkword characters' (see sub-clause 3.3.3) used for error protection.

2.3.3 Extension page

In case the cable network needs more room than is available on one page, an 'extension page' number shall be added. The 'extension page number' (not for Multi-package) is located directly before the six 'stop characters' at columns 5, 6 and 7.

If no extension page is available, then the 'extension page number' is represented by 'FFF'.

Within an extension page the described protocol shall be repeated for the remaining data.

Reserved pages according to the Teletext Specification (see EACEM TR No. 8) should not be used as ACI extension pages.

Examples: 1BE (ACI)
1F0 (TOP)
XFE (MOT)
XFF (Closing page header)
1F8 (IST2)
1F9 (IST1)
XFD (MIP)

3. System row

The data of row 1, following the 'start characters' contains information for the used system parameter-values and the page parameter-values. This concerns information necessary to determine how the page is coded, by whom it is supplied, in which language it is written and where more language dependent alternative page numbers can be found. The details of the system row are:

	0	1	2	3	
Column	0123456789012345678901234567890123456789				
Row 0					<-- Header
1	¿	/NVCILLRR	pppSSppp	TTpppXXpppYYppp	*****xx <-- System row

Start characters :

¿/ : Start of 'Unique TXT Page' protocol.

System characters:

N : Network-type symbol (see table 3)
V : Version symbol (see table 2)
C : Coding-type symbol (see table 4)

Page characters :

I : Function-ID symbol (see table 5)
LL : Default language code of the current 'Unique TXT Page' (see table 6)
RR,SS,TT,XX,YY : Other language codes supported by the service.
ppp : Page number belonging to another 'Unique TXT page' in another language than the default language code.
***** : Unused characters (for future use)
xx : Checkword characters (coding-type dependent)

3.1 Version symbol

To allow future extensions a version symbol is specified. On row 1, column 3, one character is used for the 'version symbol'. See table 2. This document describes the version characterized by symbol 'I'.

Version symbol	ASCII (Hex)	After Hamming Decoding	'Version symbol' Description
I	49	2	Only ASCII coded. Protocol for ACI and PDC (Program Delivery Control)
d	64	4	Reserved for future use. Decoders set up for version 'I' shall decode all these version symbols as version 'I'.
s	73	5	
8	38	6	
/	2F	7	Reserved for future use. Decoders set up for version 'I' shall <u>not</u> react on these version symbols.
P	50	8	
G	47	9	
!	21	12	
6	36	13	
j	6A	15	
All other characters			Not to be used.

Table 2 Version symbols
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3.2 Network-type symbol

Column 2 of row 1 contains the 'Network-type' symbol. Mostly 'network-type' symbol and 'broadcaster-type' symbol are identical. If not, for instance when a cable operator uses the 'Unique TXT Page' supplied by a terrestrial broadcaster, then the cable operator shall have re-coded the 'network-type' symbol from terrestrial to cable. This is only allowed if the re-coded signal is restricted to the cable system. ((The information about the current 'network-type' and its origin (represented by the 'accelerator character') may be used for selection purposes when several channels containing the 'Unique TXT Page' are available)). A list of 'network-type' symbols is given in table 3.

Network-type symbol	ASCII (Hex)	After Hamming Decoding	'Network-type' symbol description
'I'	49	2	Cable
'd'	64	4	Reserved for future use. Decoders set up for version 'I' shall react on 'd' as 'I'
's'	73	5	Satellite
'8'	38	6	Reserved for future use. Decoders set up for version 'I' shall react on '8' as 's'
'/'	2F	7	Terrestrial
'P'	50	8	Reserved for future use. Decoders set up for version 'I' shall react on 'P' as '/'
'G'	47	9	Reserved for future use. Decoders set up for version 'I' shall <u>not</u> react on these 'network-type' symbols
'!'	21	12	
'6'	36	13	
'j'	6A	15	
All other characters			Not to be used.

Table 3 'Network-type' symbols