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Video – Tid- och styrkod

Time and control code

Som svensk standard gäller europastandarden EN 60461:2011. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60461:2011.

Nationellt förord

Europastandarden EN 60461:2011

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60461, Fourth edition, 2010 - Time and control code**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60461, utgåva 1, 2001, gäller ej fr o m 2014-01-02.

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English version

Time and control code
(IEC 60461:2010)

Code temporel et de pilotage
(CEI 60461:2010)

Zeit- und Steuercode
(IEC 60461:2010)

This European Standard was approved by CENELEC on 2011-01-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

The text of document 100/1515/CDV, future edition 4 of IEC 60461 prepared by Technical Area 6, Professional electronics storage media, data structures and equipment, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60461 on 2011-01-02.

This European Standard supersedes EN 60461:2001.

EN 60461:2011 includes the following significant change with regard to EN 60461:2001: The time code for progressive television systems with a frame rate greater than 30 frames per second is added.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) | 2011-10-02 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-01-02 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60461:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61169-8:2007 NOTE Harmonized as EN 61169-8:2007 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO/IEC 646	1991	Information technology - ISO 7-bit coded character set for information interchange	-	-
ISO/IEC 2022	1994	Information technology - Character code structure and extension techniques	-	-
ITU-R BT.1700	2005	Characteristics of composite video signals for conventional analogue television systems	-	-
SMPTE 170M	2004	Television - Composite Analog Video Signal - NTSC for Studio Applications	-	-
SMPTE 258M	1993	Television - Transfer of Edit Decision Lists	-	-
SMPTE 262M	1995	Television, Audio and Film - Binary Groups of Time and Control Codes - Storage and Transmission of Data	-	-
SMPTE 309M	1999	Television - Transmission of Date and Time Zone Information in Binary Groups of Time and Control Code	-	-

CONTENTS

INTRODUCTION.....	8
1 Scope.....	9
2 Normative references.....	9
3 Terms, definitions and reserved	9
3.1 Terms and definitions	9
3.2 Reserved.....	11
4 Time representation in 30 frames per second and 60 frames per second systems	11
4.1 Definitions of real time and NTSC time.....	11
4.1.1 Definition of real time.....	11
4.1.2 Definition of NTSC time	11
4.2 Time address of a frame.....	11
4.2.1 Definition of time address of a frame.....	11
4.2.2 Non-drop frame – Uncompensated mode	12
4.2.3 Drop frame – NTSC time compensated mode.....	12
4.3 Colour frame identification in NTSC analogue composite television systems.....	12
5 Time representation in 25 frames per second and 50 frames per second systems	12
5.1 Definition of real time.....	12
5.2 Time address of a frame.....	12
5.3 Colour frame identification in PAL analogue composite television systems	13
5.3.1 Colour frame identification	13
5.3.2 Logical relationship	13
5.3.3 Arithmetic relationship	13
6 Time representation in 24-frame systems.....	13
6.1 Definitions of real time and NTSC time.....	13
6.1.1 Definition of real time.....	13
6.1.2 Definition of NTSC time	14
6.2 Time address of a frame.....	14
7 Structure of the time address and control bits.....	14
7.1 Numeric code	14
7.2 Time address	14
7.3 Flag bits	14
7.3.1 Definition of flag bits	14
7.3.2 Drop frame flag (NTSC composite television system only)	14
7.3.3 Colour frame flag (NTSC and PAL composite television systems only).....	14
7.3.4 Binary group flags.....	15
7.3.5 Modulation method specific flag	15
7.4 Use of the binary groups	15
7.4.1 Binary group flag assignments	15
7.4.2 Character set not specified and unspecified clock time (BGF2=0, BGF1=0, BGF0=0)	15
7.4.3 Eight-bit character set and unspecified clock time (BGF2=0, BGF1=0, BGF0=1).....	15
7.4.4 Date/time zone and unspecified clock time (BGF2=1, BGF1=0, BGF0=0).....	16
7.4.5 Page/line multiplex system and unspecified clock time (BGF2=1, BGF1=0, BGF0=1)	16

7.4.6	Clock time specified and unspecified character set (BGF2=0, BGF1=1, BGF0=0).....	16
7.4.7	Unassigned binary group usage and unassigned clock time (BGF2=0, BGF1=1, BGF0=1)	16
7.4.8	Date/time zone and clock time (BGF2=1, BGF1=1, BGF0=0)	16
7.4.9	Specified clock time and page/line multiplex system (BGF2=1, BGF1=1, BGF0=1)	16
7.5	Clock time reference – Binary group flag combinations.....	16
8	Linear time code application.....	17
8.1	Code word format	17
8.2	Code word data content	17
8.2.1	LTC code word content	17
8.2.2	Time address.....	17
8.2.3	Flag bits	17
8.2.4	Binary groups	18
8.2.5	Synchronization word	18
8.2.6	Biphase mark polarity correction	19
8.3	Modulation method	19
8.4	Bit rate	20
8.5	Timing of the code word relative to a television signal	20
8.6	Linear time code interface electrical and mechanical characteristics.....	21
8.6.1	Measurements	21
8.6.2	Rise/fall time.....	21
8.6.3	Amplitude distortion	21
8.6.4	Timing of the transitions.....	21
8.6.5	Interface connector	21
8.6.6	Output impedance.....	21
8.6.7	Output amplitude	21
9	Vertical interval application – Analogue television systems	26
9.1	Code word format	26
9.2	Code word data content	26
9.2.1	VITC code word content.....	26
9.2.2	Time address.....	29
9.2.3	Flag bits	29
9.2.4	Binary groups	29
9.2.5	Field mark flag.....	30
9.2.6	Synchronization bits.....	30
9.2.7	Cyclic redundancy check code	30
9.3	Modulation method	31
9.4	Bit timing	31
9.5	Timing of the code word relative to the television signal	32
9.5.1	525/59,94 television system	32
9.5.2	625/50 television system	32
9.6	Location of the address code signal in the vertical interval	32
9.6.1	Location of the VITC code.....	32
9.6.2	525/59,94 television system	32
9.6.3	625/50 television system.....	32
9.6.4	Component television system.....	32
9.7	Redundancy	32

9.8	Vertical interval time code waveform characteristics	33
9.8.1	Waveform characteristics	33
9.8.2	Logic level	33
9.8.3	Rise/fall time	33
9.8.4	Amplitude distortion	33
10	Relationship between LTC and VITC	33
10.1	Time address data	33
10.2	Binary group data	33
10.2.1	General	33
10.2.2	Transferring vertical interval binary group data to linear binary group data	34
10.2.3	Transferring linear binary group data to vertical interval binary group data	34
10.3	VITC and LTC code word comparison	34
11	Progressive systems with frame rates greater than 30 frames per second	36
11.1	Time address of a frame pair in 50 and 60 frames per second progressive systems	36
11.2	Implementation guidelines	36
	Annex A (informative) Explanatory notes	37
	Annex B (informative) Converting time codes when converting video from 24 fps television systems	39
	Bibliography	42
	Figure 1 – Linear time code source output waveform	20
	Figure 2 – 29,97/30 frame linear time code example	22
	Figure 3 – 25 frame linear time code example	23
	Figure 4 – 24 frame linear time code example	24
	Figure 5 – Linear time code relationship to 59,94 frame progressive video example	25
	Figure 6 – 525/59,94 vertical interval time code address bit assignment and timing	27
	Figure 7 – 625/50 vertical interval time code address bit assignment and timing	28
	Figure 8 – Vertical interval time code waveform	31
	Figure 9 – Example of frame labeling for 50 and 60 frames per second progressive systems	36
	Figure B.1 – Example of conversion of 23,98 fps video to 525/59,94/I	40
	Figure B.2 – Example of conversion of 24 fps high definition video to 625/50/I	41
	Table 1 – Binary group flag assignments	15
	Table 2 – LTC time address bit positions	17
	Table 3 – LTC flag bit positions	18
	Table 4 – LTC binary group bit positions	18
	Table 5 – LTC synchronization word bit positions and values	19
	Table 6 – VITC time address bit positions	29
	Table 7 – VITC flag bit positions	29
	Table 8 – VITC binary group bit positions	30
	Table 9 – CRC bit positions	31
	Table 10 – VITC logic level ranges	33

Table 11 – Summation of VITC and LTC codeword bit definitions	35
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INTRODUCTION

IEC 60461 was originally developed for analogue television recording systems and thus dealt only with interlaced television systems operating with frame rates up to 30 frames per second. It is, however, flexible enough in design to be used in digital television systems, both standard definition and high definition. The support for progressive video systems with frame rates above 30 frames per second is described in this International Standard.

Clauses 4, 5, and 6 specify the manner in which time is represented in frame-based systems. Clause 7 specifies the structure of the time address and control bits of the code, and sets guidelines for storage of user data in the code. Clause 8 specifies the modulation method and interface characteristics of a linear time code (LTC) source. Clause 9 specifies the modulation method for inserting the code into the vertical interval of a television signal. Clause 10 summarises the relationship between the two forms of time and control code. Clause 11 summarises time code implementations for video formats with frame rates greater than 30 fps.

TIME AND CONTROL CODE

1 Scope

This International Standard specifies a digital time and control code for use in television, film, and accompanying audio systems operating at nominal rate of 60, 59,94, 50, 30, 29,97, 25, 24 and 23,98 frames per second. This International Standard specifies a time address, binary groups, and flag bit structure. In addition, the standard specifies a binary group flag assignment, a linear time code transport, and a vertical interval time code transport.

This International Standard defines primary data transport structures for linear time code (LTC) and vertical interval time code (VITC). This standard specifies the LTC modulation and timing for all video formats. This standard also defines the VITC modulation and location for 525/59,94 and 625/50 analogue composite and component systems only.

NOTE The digital representation of analogue VITC (D-VITC) is specified in SMPTE 266M and is defined for 525/59,94 and 625/50 digital component systems only. High definition formats, such as those documented in SMPTE 274M and SMPTE 296M, should use ancillary time code (ATC) as specified in SMPTE 12M-2 (formerly SMPTE RP 188) for transport of time code in the digital video data stream. For future implementations of time code for digital standard definition formats, the use of ATC rather than D-VITC is encouraged.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 646:1991, *Information processing – ISO 7-bit coded character set for information interchange*

ISO/IEC 2022:1994, *Information technology – Character code structure and extension techniques*

ITU-R BT.1700-1(2005), *Annex 2, Characteristics of composite video signals for conventional analogue television systems*

SMPTE 170M:2004, *Television – Composite Analog Video Signal – NTSC for Studio Applications*

SMPTE 258M:1993, *Television – Transfer of Edit Decision Lists*

SMPTE 262M:1995, *Television, Audio and Film – Binary Groups of Time and Control Codes – Storage and Transmission of Data*

SMPTE 309M:1999, *Television – Transmission of Date and Time Zone Information in Binary Groups of Time and Control Code*