



**SLOVENSKI STANDARD**  
**SIST ETS 300 177 E1:2003**  
**01-december-2003**

---

**Terminalska oprema (TE) – Videotex – Fotografska skladnja**

Terminal Equipment (TE); Videotex Photographic syntax

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**Ta slovenski standard je istoveten z: ETS 300 177 Edition 1**

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>

**ICS:**

33.160.99	Druga avdio, video in avdiovizuelna oprema	Other audio, video and audiovisual equipment
35.180	Terminalska in druga periferna oprema IT	IT Terminal and other peripheral equipment

**SIST ETS 300 177 E1:2003**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST ETS 300 177 E1:2003

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>



**E**UROPEAN  
**T**ELECOMMUNICATION  
**S**TANDARD

**ETS 300 177**

September 1992

Source: ETSI TC-TE

Reference: DE/TE-01006

ICS: 33.020, 33.040.40

**Key words:** Videotex, Photographic Syntax

**iTeh STANDARD PREVIEW**  
**Terminal Equipment (TE);**  
**(standards.iteh.ai)**  
**Videotex**

**Photographic Syntax**  
SIST ETS 300 177 E1:2003  
<https://standards.iteh.ai/catalog/standards/sist-ets-300-177-e1-2003>  
4768d2239725/sist-ets-300-177-e1-2003

**ETSI**

European Telecommunications Standards Institute

**ETSI Secretariat**

**Postal address:** F-06921 Sophia Antipolis CEDEX - FRANCE

**Office address:** 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

**X.400:** c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

**Copyright Notification:** No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1992. All rights reserved.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>

## Contents

Foreword .....	9
1 Scope .....	11
2 Normative references .....	11
3 Definitions, symbols and abbreviations .....	12
3.1 Definitions.....	12
3.2 Symbols and abbreviations .....	14
4 Overview .....	15
5 ISO/IEC 9281, Part 1 syntax and switching structure .....	16
5.1 Overall switching of coding environment .....	16
5.2 Switching into the photographic mode .....	18
5.3 ISO/IEC 9281, Part 1 syntax structure.....	18
5.3.1 General use of the Length Indicator (LI).....	19
5.3.2 Use of the Picture Identifier (PI) code .....	19
6 Coding of the Picture Data Entity (PDE).....	20
6.1 Introduction.....	20
6.2 PDE data content identification mechanism .....	20
7 Photographic header .....	22
7.1 Introduction.....	22
7.2 Header structure.....	22
7.3 Header functionalities.....	25
7.3.1 Parameter Status Attribute <PSA> .....	25
7.3.1.1 Reset To Default <RTD>.....	25
7.3.2 Picture Display Attributes <PDA> .....	25
7.3.2.1 Full Screen Display <FSD>.....	27
7.3.2.2 Source Aspect Ratio <ASR> .....	27
7.3.2.3 Photo-area LOcAtion <LOC> .....	27
7.3.2.4 Photo-Area Size <PAS>.....	27
7.3.2.5 Picture PLacement <PPL> .....	28
7.3.2.6 Clear Photo-Area <CPA>.....	30
7.3.3 Source Picture Attributes <SPA>.....	30
7.3.3.1 Source Picture Comments <PCT> .....	30
7.3.3.2 Source Picture Dimensions <PDS> .....	31
7.3.3.3 Source Pixel Density <PID> .....	32
7.3.3.4 Source SWEEP Direction <SWD> .....	33
7.3.3.5 DC Images <DCI>.....	33
7.3.4 Source Signal Attributes <SSA> .....	33
7.3.4.1 Source Component Description <SCD>.....	33
7.3.4.2 Source Component Data Precision <CDP>.....	34
7.3.4.3 Source Component Order <CMO>.....	34
7.3.4.4 Source Level Assignment <LAS> .....	34
7.3.5 Source Coding Algorithm Attributes <SCA> .....	35
7.3.5.1 JPEG Coding Mode <JPG> .....	35
7.3.5.2 Encoding Table Management <ETM>.....	37
7.3.5.3 Application Marker codes Assignment <AMA> .....	38
7.3.6 Transmission Channel Attributes <TCA> .....	38
7.3.6.1 Translation Mode Encoding <TME> .....	38

8	Coding rules.....	39
8.1	Purpose.....	39
8.2	General rules for coding the header.....	39
8.3	Photographic header code assignment.....	46
8.3.1	Attribute codes.....	46
8.3.2	Parameter codes.....	46
8.3.2.1	Parameter Status Attribute.....	46
8.3.2.2	Picture display attributes.....	46
8.3.2.3	Source picture attributes.....	46
8.3.2.4	Source signal attributes.....	46
8.3.2.5	Source coding algorithm attributes.....	46
8.3.2.6	Transmission channel attributes.....	46
8.3.3	Sub-parameter codes.....	46
8.4	Encoding of photographic header parameters.....	47
8.4.1	Parameter Status Attribute: <PSA>.....	47
8.4.1.1	Reset To Default <RTD>.....	47
8.4.2	Picture Display Attributes <PDA>.....	47
8.4.2.1	Full Screen Display <FSD>.....	47
8.4.2.2	Source ASpect Ratio <ASR>.....	47
8.4.2.3	Photo-area LOCation <LOC>.....	47
8.4.2.4	Photo-Area Size <PAS>.....	47
8.4.2.5	Picture PLacement <PPL>.....	47
8.4.2.6	Clear Photo-Area <CPA>.....	48
8.4.3	Source Picture Attributes <SPA>.....	48
8.4.3.1	Source Picture Comments <PCT>.....	48
8.4.3.2	Source Picture Dimensions <PDS>.....	48
8.4.3.3	Source PxlEl Density <PID>.....	48
8.4.3.4	Source SWEEP Direction <SWD>.....	49
8.4.3.5	DC Images <DCI>.....	49
8.4.4	Source Signal Attributes <SSA>.....	49
8.4.4.1	Source Component Description <SCD>.....	49
8.4.4.2	Source Component Data Precision <CDP>.....	49
8.4.4.3	Source Component Order <CMO>.....	49
8.4.4.4	Source Level ASSignment <LAS>.....	49
8.4.5	Source Coding Algorithm Attributes <SAC>.....	50
8.4.5.1	JPEG Coding Mode <JPG>.....	50
8.4.5.2	Encoding Table Management <ETM>.....	50
8.4.5.3	Application Marker codes Assignment <AMA>.....	50
8.4.6	Transmission Channel Attributes <TCA>.....	51
8.4.6.1	Translation Mode Encoding <TME>.....	51
9	Photographic data.....	51
9.1	Introduction.....	51
9.2	Translation modes.....	51
10	Defaults.....	51
10.1	Default values for photographic header attributes.....	52
10.1.1	Default parameter status attribute.....	52
10.1.2	Default picture display attributes.....	52
10.1.3	Default source picture attributes.....	52
10.1.4	Default source signal attributes.....	53
10.1.5	Default source coding algorithm attributes.....	53
10.1.6	Default transmission channel attributes.....	54
10.2	Default tables.....	54
10.2.1	Default quantisation tables.....	54
10.2.1.1	Default quantisation tables for CIF images.....	54
10.2.1.2	Default quantisation tables for 2:1:1 images.....	55
10.2.1.3	Default quantisation tables for 4:2:2 images.....	55
10.2.2	Default Huffman tables.....	56
10.2.2.1	Default Huffman table for luminance DC differences.....	56

	10.2.2.2	Default Huffman table for chrominance DC differences .....	56
	10.2.2.3	Default Huffman table for luminance AC coefficients .....	57
	10.2.2.4	Default Huffman table for chrominance AC coefficients .....	59
11	Photographic profiles .....		61
11.1	Compatible photographic profiles (P1 to P5) .....		62
	11.1.1	Profile P1 .....	62
	11.1.2	Profile P2 .....	64
	11.1.3	Profile P3 .....	64
	11.1.4	Profile P4 .....	64
	11.1.5	Profile P5 .....	65
11.2	Private choice of photographic profile (Ppriv) .....		65
Annex A (informative): Photovideotex tutorial .....			66
A.1	Introduction .....		66
A.2	The present state of photovideotex .....		66
A.3	Image representation .....		67
A.4	The JPEG compression technique .....		68
	A.4.1	Lossy and lossless compression .....	68
	A.4.2	Modes of encoding .....	69
	A.4.3	The DCT-based coding .....	70
		A.4.3.1 The discrete cosine transform .....	71
		A.4.3.2 Quantisation .....	72
		A.4.3.3 Huffman coding [A8] .....	73
		A.4.3.3.1 PCM encoding of the DC coefficients .....	74
		A.4.3.3.2 Zigzag Ordering of AC Coefficients .....	74
	A.4.4	Lossless coding .....	74
	A.4.5	Source images and data interleaving .....	75
	A.4.6	Data organisation and signalling parameters .....	75
A.5	The baseline system .....		75
A.6	The extended system .....		76
	A.6.1	Coding model for successive approximation .....	76
	A.6.2	Coding model for spectral selection .....	76
	A.6.3	Hierarchical encoding .....	76
A.7	Summary .....		77
A.8	Bibliography .....		77
Annex B (informative): Implementation guidelines on display rendering .....			78
B.1	Introduction .....		78
B.2	Rendering of resolution .....		78
	B.2.1	Resolution independence .....	78
	B.2.2	Display rendering guidelines for Data Syntax II profiles .....	80
		B.2.2.1 Pixel alignment .....	80
		B.2.2.1.1 CCIR Recommendation 601, Part 1 4:2:2 resolution .....	80
		B.2.2.1.2 CCIR Recommendation 601, Part 1 2:1:1 resolution .....	80
		B.2.2.1.3 CIF format .....	80
		B.2.2.1.4 QCIF format .....	81
	B.2.2.2	Adjustment of horizontal resolution .....	81
		B.2.2.2.1 "Adding" pixels .....	81
		B.2.2.2.2 "Removing" pixels .....	82

B.3	The concept of normalised colour space.....	82
Annex C (informative):	Solutions for common compatible photovideotex databases serving different resolution terminals .....	83
C.1	Introduction.....	83
C.2	Hierarchical mode.....	83
C.2.1	Coding.....	83
C.2.2	Decoding.....	85
C.2.3	Example for a "resolution pyramid" for hierarchical build-up.....	85
C.2.3.1	Advantages of the suggested technique .....	86
C.2.3.1.1	Independence of transmission, decompression and display .....	86
C.2.3.1.2	Independence of image resolution from the terminal resolution. ....	86
C.2.3.1.3	Storage gain in the database host through the pyramidal database.....	86
C.2.3.2	Disadvantages .....	86
C.3	Special spectral selection.....	87
C.3.1	Coding.....	87
C.3.2	Decoding.....	88
Annex D (informative):	Coding examples.....	90
D.1	Introduction.....	90
D.1.1	Example 1 .....	90
D.1.2	Example 2 .....	92
D.1.3	Example 3 .....	94
D.2	Image positioning examples.....	96
D.2.1	Example 1: 640 X 480 picture inside DDA .....	96
D.2.2	Example 2: 720 X 576 picture full screen.....	96
D.2.3	Example 3: 720 X 346 picture covering upper 60% of full screen.....	97
D.3	Example for Source Picture Comments (PCT) .....	98
D.3.1	An application scenario .....	98
D.3.2	Sample logical record of a Source picture: .....	98
Annex E (informative):	ETSI/CCITT Cross-reference list.....	100
Annex F (normative):	Encoding parameters values for the 2:1:1 derived from CCIR Recommendation 601, Part 1.....	101
F.1	Introduction.....	101
F.2	Encoding parameters for 2:1:1 .....	101
F.2.1	Main body of CCIR Recommendation 601, Part 1 .....	101
F.2.2	Annex I of the CCIR Recommendation 601, Part 1.....	101
F.2.3	Annex II of the CCIR Recommendation 601, Part 1.....	101
F.2.3.1	Relationship of active line to analogue synchronisation reference.....	101
F.2.3.2	Definition of the digital signals $Y$ , $C_R$ , $C_B$ , from the primary (analogue) signals $E'_R$ , $E'_G$ and $E'_B$ .....	101
F.2.4	Annex III of the CCIR Recommendation 601.....	102
Annex G (normative):	Translation modes.....	106
G.1	Mode 0 (No translation, full transparency) .....	106



G.2	Mode 2 (3-in-4 coding) .....	106
G.3	Mode 4 (Shift scheme - 7 bits) .....	106
Annex H (informative): Huffman tables for the "special spectral selection" .....		108
H.1	Introduction.....	108
H.2	Spectral bands.....	108
H.3	Luminance DC differences .....	108
H.3.1	List of codelengths .....	108
H.3.2	List of values .....	108
H.4	Chrominance DC differences.....	109
H.4.1	List of codelengths .....	109
H.4.2	List of values .....	109
H.5	Luminance AC coefficients .....	109
H.5.1	List of codelengths .....	109
H.5.2	List of values .....	109
H.6	Chrominance AC coefficients.....	112
H.6.1	List of codelengths .....	112
H.6.2	List of values .....	112
History .....		115

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>

Blank page

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>

## Foreword

This European Telecommunication Standard (ETS) has been prepared by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI) in order to specify a new common data syntax for transmitting photographic images to be used by Videotex terminal equipment.

This ETS is part of a series of ETSs which describe the Videotex presentation layer data syntax.

This ETS defines a data syntax to be used for conveying photographic data in a Videotex environment. The necessary tools are provided for the transfer of photographic data, typically from a Videotex Host to a Videotex terminal. This data syntax is equally applicable to either storage or communication applications and is independent of physical device or transmission media.

This ETS does not deal with the visible appearance of the displayed pictures, however all the necessary source image information is provided to make the proper physical adaptation at the receiving side. The specification of post-processing techniques is left to the implementors and is, therefore, outside the scope of this ETS.

More precisely, this ETS defines the syntax and semantics of image data and image attributes for photographic Videotex interchange purposes. In particular, it addresses the various aspects of image dimensionality such as spatial, amplitudinal, temporal and spectral content, it provides some basic tools for positioning photographic images within a defined area, it also addresses the structure and organisation of the data and uses standardised compression schemes. In particular, the ISO-Joint Photographic Experts Group (JPEG) compression algorithm [13], based on the Discrete Cosine Transform (DCT) is used. In this ETS the algorithms or compression techniques themselves are not described, references are provided.

The intention of this ETS is primarily to provide Videotex application developers with a sufficient set of photographic transfer tools which are independent of the equipment used to implement/provide them. This ETS is intended to support operations on and display of various classes of images from a wide variety of imaging applications. However, to ensure that compatibility can be achieved between various Videotex services supporting photographic mode, some realistic and specific characteristics are chosen and defined in the Clause on profiles (Clause 11). In the future, other selections might be made allowing the definition of new recommended profiles.

This ETS closely follows the concepts and coding techniques as described in ISO/IEC 9281, Part 1 [11] for the identification of pictorial information and for switching between picture environments and coding systems according to ISO 2022 [10].

Blank Page

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4768d2239725/sist-ets-300-177-e1-2003>

## 1 Scope

This ETS specifies the data syntax to be used by Videotex services for conveying photographic data.

In general, it applies to the interchange of photographic data via storage or transmission media.

The ETS is applicable to Videotex terminals connected to various types of telecommunication networks including; a Public Switched Telephone Network (PSTN), a Public Switched Packet Data Network (PSPDN) or an Integrated Services Digital Network (ISDN). For the ISDN case, these terminals will typically support "ISDN Syntax-based Videotex" (see ETS 300 079 [3]).

The syntax allows for some private extensions beyond the transmission of still pictures. For example, a provision has been made for the transmission of a "difference" image to allow a slow scan television type of application.

## 2 Normative references

This ETS incorporates by dated or 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 300 072: "Terminal Equipment (TE); Videotex presentation layer protocol, Videotex presentation layer data syntax".
- [2] ETS 300 076 (1992): "Terminal Equipment (TE); Videotex, Terminal Facility Identifier (TFI)".
- [3] ETS 300 079 (1991): "Integrated Services Digital Network (ISDN); Syntax-based Videotex, End to end protocols".
- [4] CCITT Recommendation F.300 (1988): "Videotex service".
- [5] CCITT Recommendation T.101 (1988): "International interworking for Videotex".
- [6] CCITT Recommendation H.261 (1988): "Common intermediate format".
- [7] CCITT Recommendation T.51 (1988): "Coded Character sets for Telematic services".
- [8] CCITT Recommendation T.61 (1988): "Character repertoire and coded character sets for the international teletex service".
- [9] CCIR Recommendation 601-1 (1986): "Encoding Parameters of Digital Television For Studios".
- [10] ISO 2022 (1986): "Information Processing - ISO 7-bit and 8-bit coded character sets - Code extension techniques".
- [11] ISO/IEC 9281-1 (1990): "Information technology - Picture coding methods- Part 1: Identification".
- [12] ISO/IEC 9281-2 (1990): "Information Technology - Picture coding methods - Part 2: Procedure for registration".
- [13] ISO/IEC DIS 10918/CCITT Recommendation T.81: "Digital compression and coding of continuous-tone images".

- [14] ISO 646 (1990): "Information processing - ISO 7-bit coded character set for information interchange".
- [15] ISO 6937-1 (1991): "Information processing - coded character sets for text communication: Part 1 General introduction".
- [16] ISO 2375 (1991): "Data Processing - Procedure for registration of escape sequences".

### 3 Definitions, symbols and abbreviations

#### 3.1 Definitions

For the purpose of this ETS the following definitions apply.

**Aspect ratio:** the ratio of the width to the height of a rectangular area, such as the defined display area.

**Attribute:** a particular property or quantity defined in this syntax and described by a number of parameters (e.g. the source picture specifications).

**Baseline:** the basic sequential DCT-based encoding and decoding process specified in ISO/IEC DIS 10918 [13].

**Continuous tone image:** an image comprised of data which exhibits a first order continuity in the analogue domain and requires, when digitised, more than one bit to describe each sample contained in one or more of its components (monochrome (grey scale) or colour pictures) e.g., a monochrome image needs at least 6 bits/picture element (64 grey levels) to appear "continuous" to the eye.

**Data syntax I:** term used within CCITT for one of the recommended world-wide Videotex data syntaxes originating from the Japanese Character And Pattern Telephone Access Information Network (CAPTAIN) system.

[SIST ETS 300 177 E1:2003](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4f8622972682/sist-ets-300-177-e1-2003)

[https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-](https://standards.iteh.ai/catalog/standards/sist/c4d996e8-471e-4257-ad3e-4f8622972682/sist-ets-300-177-e1-2003)

**Data syntax II:** term used within CCITT for one of the recommended world-wide Videotex data syntaxes originating from the European CEPT Videotex syntax.

**Data syntax III:** term used within CCITT for one of the recommended world-wide Videotex data syntaxes originating from the North American Presentation Layer Protocol Syntax (NAPLPS).

**Defined Display Area (DDA), Physical (Physical Defined Display Area (DDA)):** a rectangular area of the full screen area where photographic data, text etc. shall be displayed.

**Defined Display Area (DDA), Logical (Logical DDA):** a unit square, the length of all sides being one unit, co-ordinates being defined as fractions of unity (unit screen concept). The origin is coincident with the bottom left corner of the physical DDA and one side is coincident with the longest side of the physical DDA.

**Defined Display Area, Source (Source DDA):** the virtual display space where the source image was encoded and which is to be mapped for display either to the full screen area or to the physical DDA.

**Discrete Cosine Transformation (DCT):** see ISO/IEC DIS 10918 [13].

**Full screen area:** the part of a display screen where photographic data can be displayed, it normally means a display with no borders.

**Forward DCT:** see ISO/IEC DIS 10918 [13].

**Inverse DCT:** see ISO/IEC DIS 10918 [13].

**Image attribute:** the various properties of a continuous tone image described by a number of parameters.

**Image data:** the data which represents a continuous tone image in digital form, it contains photographic header data and photographic data.

**JPEG compression algorithm:** a general term for referring to any one of the possible modes of encoding defined in ISO/IEC DIS 10918 [13].

**Normalised co-ordinate:** a co-ordinate specified in a device independent co-ordinate system, normalised to some range (usually to 1).

**Parameter:** a quantity which is described using one or more sub-parameters.

**Photographic data:** pixel based pictorial information usually in compressed digital form; the data includes any tables which are necessary to decode and decompress the data.

**Photographic data syntax:** the rules by which the photographic header data and the photographic data are formatted.

**Photographic header data:** coded data containing the values of the attributes and parameters used for describing the photographic image.

**Photographic image:** a continuous tone image, e.g. an image represented with 256 shades of grey.

**Photographic mode:** the mode of operation of a Videotex terminal while it is receiving photographic header data and photographic data.

**Photographic profile:** a collection of attributes with parameters set to a given value to represent a type of source image and define a mode of photographic image coding and photographic image transfer.

**Photo Videotex:** neologism used for Videotex photographic mode.

**Physical device:** any tangible piece of equipment (e.g., personal computer, display monitor, etc).

**Pixel, picture element:** it is the minimum displayable element of an image (see ISO/IEC DIS 10918 [13]).

**Pixel density:** expresses the number of pixels per physical unit (e.g. pixels/mm) in the horizontal and vertical directions.

**Post-processing technique:** image processing which is performed (e.g. for display) after the image has been decoded and decompressed.

**Spatial resolution:** definition of the size of the image, expressed in the number of pixels per horizontal line and the number of lines per image.

**Storage media:** a type of physical means to store data.

**Sub-parameter:** a quantity to which a value can be assigned.

NOTE: Example of the use of attribute, parameter and sub-parameter. Consider the ISDN, it has the following *attributes*, it is digital and supports data transmission with a speed of 64 kbit/s. For the ISDN the *parameter* network speed is assigned the value 64 kbit/s. Two *sub-parameters* can represent this quantity, "numerical speed" i.e., 64 and "unit of measure" i.e., kbit/s.

**Spectral content:** a physical quantity that measures the frequency content i.e., the amplitude and phase of each frequency contained in a given physical item. It generally refers to the fourier analysis. For the Discrete Cosine Transformation (DCT) it relates to the amplitude of each DCT basic function (Discrete Cosine) or sub-image. In simple terms, for the image, it gives an idea on the "level of detail" of the source image.