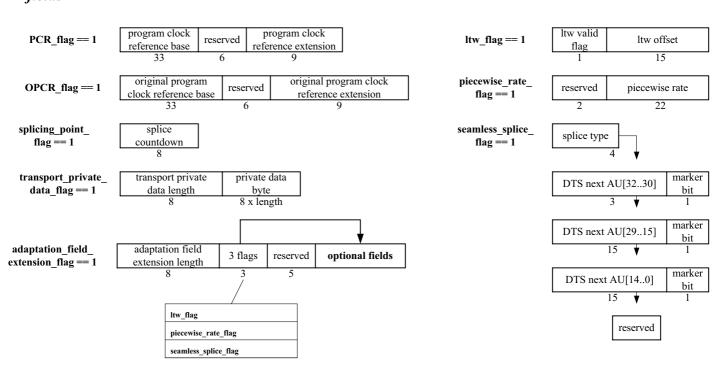
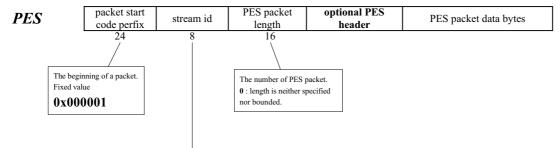
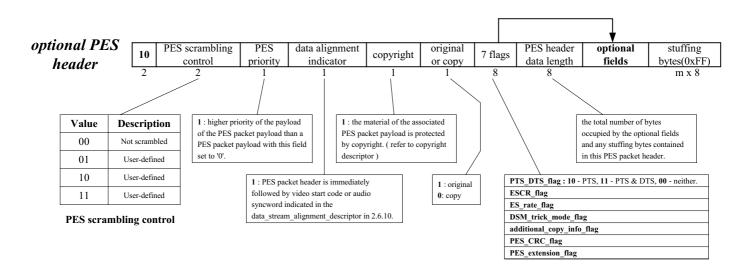


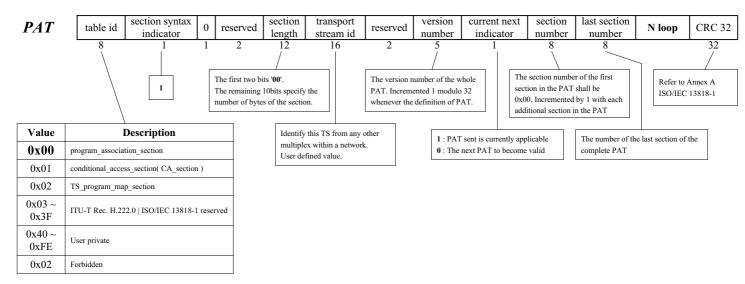
optional fields



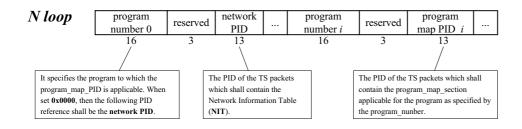


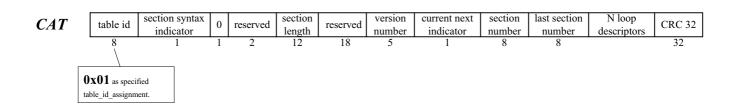
stream_id	Note	Stream coding	Comments
1011 1100	1	program_stream_map	
1011 1101	2	private_stream_1	
1011 1110		padding_stream	
1011 1111	3	private_stream_2	The notation x means that the value '0' or '1' are both permitted and results in the same stream
110x xxxx		ISO/IEC 13818-3 or ISO/IEC 11172-3 audio stream number xxxx	type. The stream number is given by the values taken by the x's.
1110 xxxx		ITU-T Rec. H.262.0 ISO/IEC 13818-2 or ISO/IEC 11172-2 video stream number xxxx	NOTES
1111 0000	3	ECM_stream	PES packets of type program stream map have unique syntax specfied in 2.5.4.1.
1111 0001	3	EMM_stream	
1111 0010	5	ITU-T Rec. H.222.0 ISO/IEC 13818-1 Annex B or ISO/IEC 13818-6 DSMCC stream	 PES packets of type private_stream_1 and ISO/IEC_13552_stream follow the same PES packet syntax as those for ITU-T Rec. H.262 ISO/IEC 13818-2 video and ISO/IEC 13818-3 audio streams.
1111 0011	2	ISO/IEC_13522_stream	PES packets of type private_stream_2, ECM_stream and EMM_stream are similar to private stream 1 except no syntax is specified after PES_packet_length field.
1111 0100	6	ITU-T Rec. H.222.1 type A	PES packets of type program stream directory have a unique syntax specified in 2.5.5.
1111 0101	6	ITU-T Rec. H.222.1 type B	
1111 0110	6	ITU-T Rec. H.222.1 type C	5. PES packets of type DSM-CC_stream have a unique syntax specified in ISO/IEC 13818-6.
1111 0111	6	ITU-T Rec. H.222.1 type D	6. This stream_id is associated with stream_type 0x09 in Table 2-29.
1111 1000	6	ITU-T Rec. H.222.1 type E	7. This stream id is only used in PES packets, which carry data from a Program Stream or an ISO/
1111 1001	7	ancillary_stream	IEC 11172-1 System Stream, in a Transport Stream(refer ro 2.4.3.7).
1111 1010 1111 1110		Reserved data stream	
1111 1111	4	program_stream_directory	

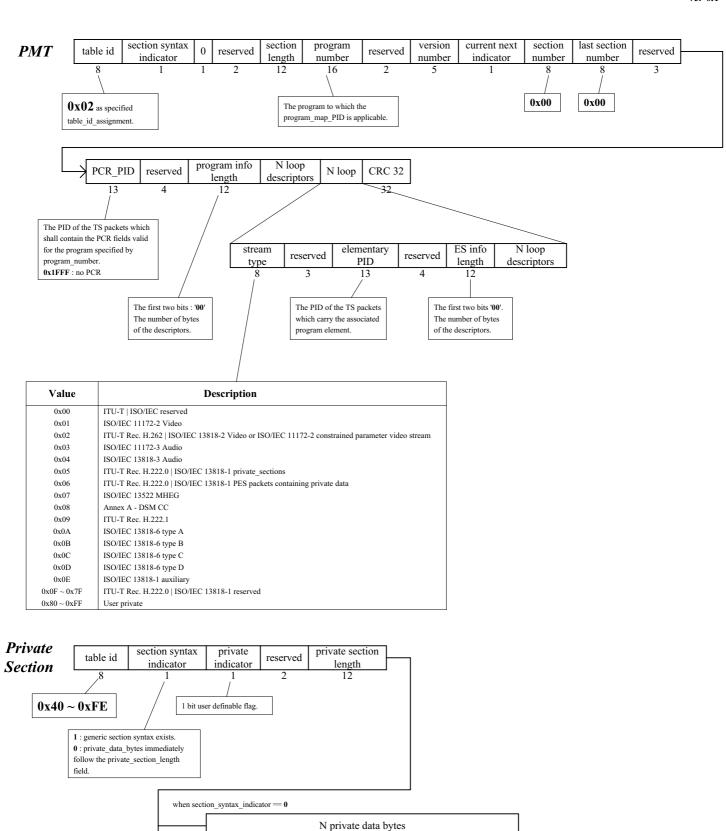




table_id_assignment values







when section_syntax_indicator = 1 table id

extension

16

version

number

5

reserved

2

current next

indicator

section

number

8

last section

number

8

N private

data

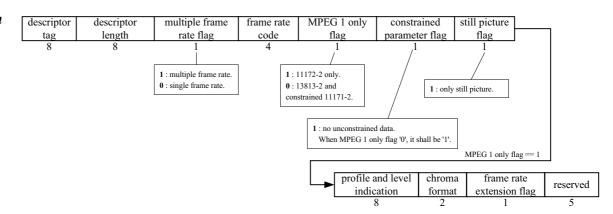
CRC 32

32

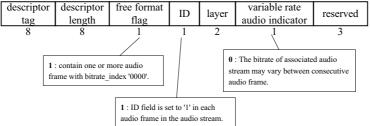
descriptor	Identification	descriptor	Identification
tag	Identification	tag	Identification
0x00	Reserved	0x0B	system_clock_descriptor
0x01	Reserved	0x0C	multiplex_buffer_utilization_descriptor
0x02	video_stream_descriptor	0x0D	copyright_descriptor
0x03	audio_stream_descriptor	0x0E	maximum_bitrate descriptor
0x04	hierachy_descriptor	0x0F	private_data_indicator_descriptor
0x05	registration_descriptor	0x10	smoothing_buffer_descriptor
0x06	data_stream_alignment_descriptor	0x11	STD_descriptor
0x07	target_background_grid_descriptor	0x12	IBP_descriptor
0x08	video_window_descriptor	0x13 ~ 0x3F	ITU-T Rec. H.222.0 ISO/IEC 13818-1 Reserved
0x09	CA_descriptor	$0x40 \sim 0xFF$	User Private
0x0A	ISO_639_language_descriptor		

Descriptors

Video stream descriptor



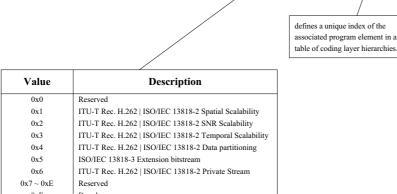
Audio stream descriptor



hierarchy

reserved





descriptor

length

descriptor

Hierarchy type field values

٦	aiii.						
		1	hierarchy layer		hierarchy embedded		hierarchy
	reser	rvea	index	reserved	layer index	reserved	channel
	2	2	6	2	6	2	6
			/		/		/
			/		/		/
			/	dofinos t	he hierarchy table index		
				defines to	ne merarchy table mucx	indecates the	intended channel

of the program element that needs

to be accessed before decoding of

the elementary stream associated

with this hierarchy descriptor.

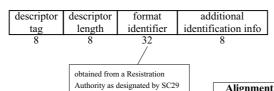
indecates the intended channel

program element in an ordered set

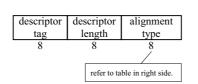
number for the associated

of transmission channels.





Data stream alignment descriptor



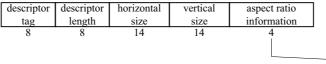
Alignment type	Description		
0x00	Reserved		
0x01	Slice, or video access unit		
0x02	Video access unit		
0x03	GOP, or SEQ		
0x04	SEQ		
$0x05 \sim 0xFF$	Reserved		

Video stream alignment values

Alignment type	Description	
0x00	Reserved	
0x01	Sync word	
$0x02 \sim 0xFF \\$	Reserved	

Audio stream alignment values

Target background grid descriptor

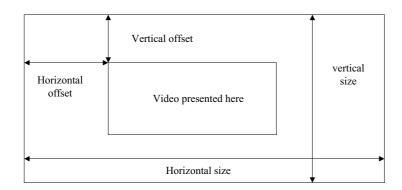


value	DAR
0000	Forbidden
0001	-
0010	3/4
0011	9/16
0100	1/2.21
0101	Reserved
1111	Reserved

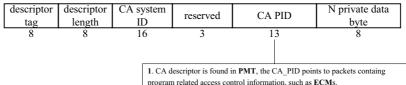
Video window descriptor

descriptor	descriptor	horizontal	vertical	window priority
tag	length	offset	offset	willdow priority
8	8	14	14	4

Aspect ratio information



Conditional access descriptor



program related access control information, such as ECMs.

2. CA descriptor is found in CAT, the CA_PID points to packets containg

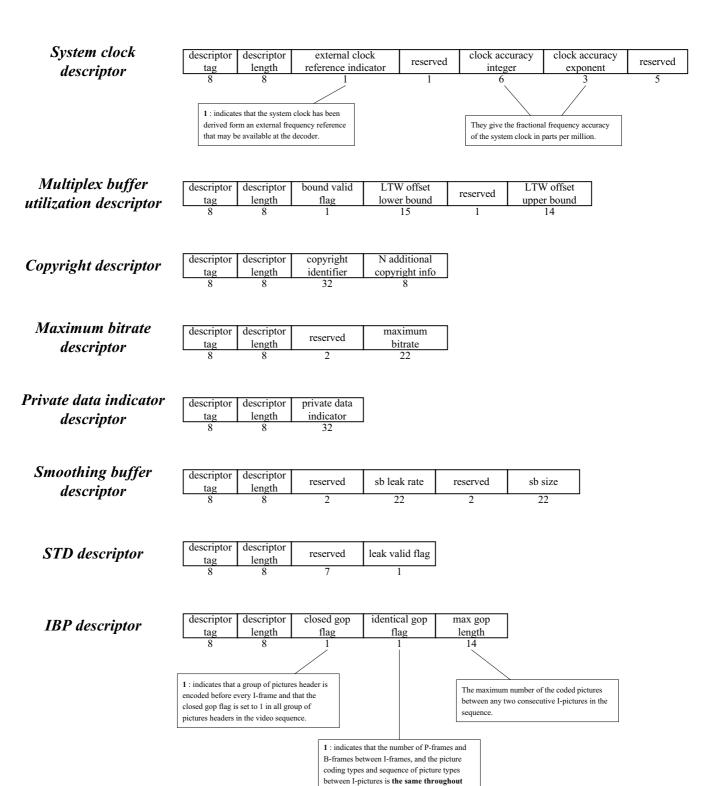
CA descriptor is found in CAT, the CA_PID points to packets containg systemwide and/or access control management information, such as EMMs

ISO 639 language descriptor



Value	Description		
0x00	Undefined		
0x01	Clean effects: program element has no language.		
0x02	Hearing impaired : prepared for the hearing impaired		
0x03	Visual impaired commentary: prepared for the visually impaired viewer.		
$0x04 \sim 0xFF$	Reserved		

Audio type values



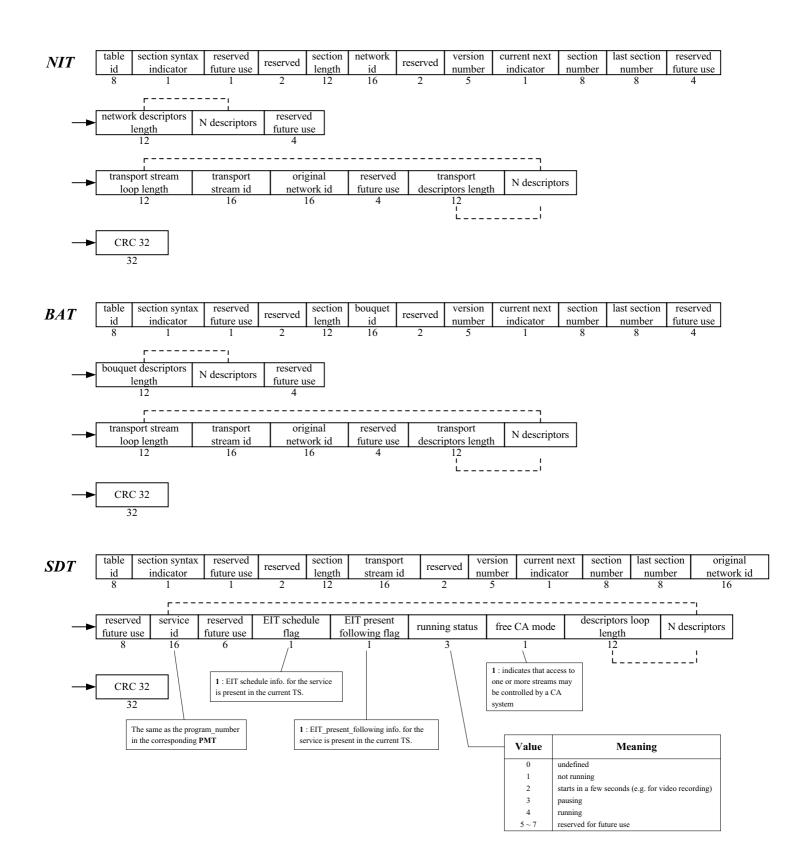
the sequence.

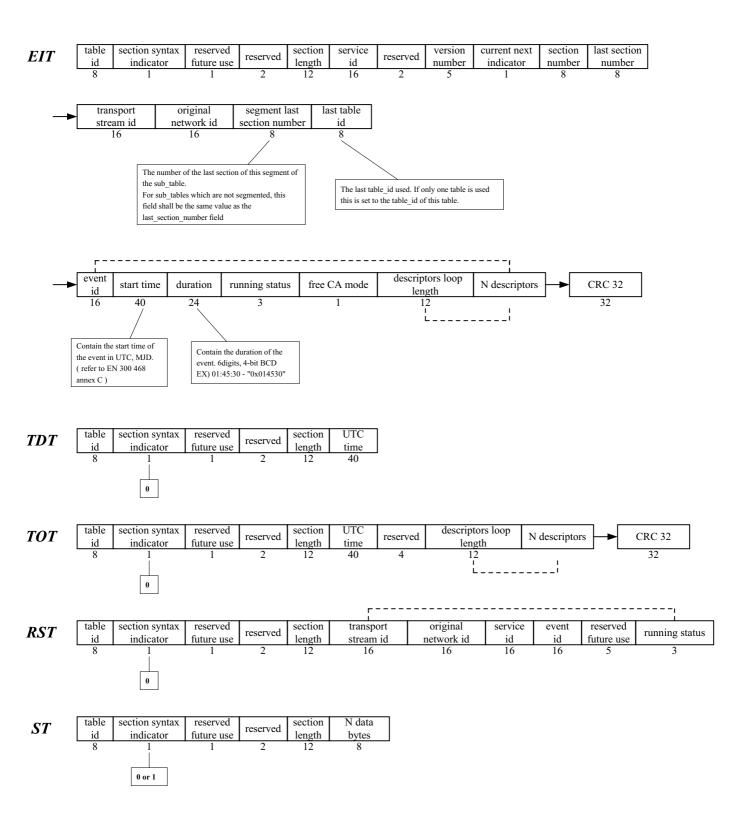
Table	PID value
PAT	0x0000
CAT	0x0001
TSDT	0x0002
reserved	0x0003 ~ 0x000F
NIT, ST	0x0010
SDT, BAT, ST	0x0011
EIT, ST	0x0012
RST, ST	0x0013
TDT, TOT, ST	0x0014
network synchronization	0x0015
reserved for future use	0x0016 ~ 0x001D
DIT	0x001E
SIT	0x001F

PID	Table	PID	Table
value	1 able	value	Table
0x00	program_association_section	0x4E	event_information_section - actual_transport_stream, present/following
0x01	conditional_access_section	0x4F	event_information_section - other_transport_stream, present/following
0x02	program_map_section	$0x50 \sim 0x5F$	event_information_section - actual_transport_stream, schedule
0x03	transport_stream_description_section	0x60 ~ 0x6F	event_information_section - other_transport_stream, schedule
$0x04 \sim 0x3F$	reserved	0x70	time_date_section
0x40	network_information_section - actual_network	0x71	stuffing_section
0x41	network_information_section - other_network	0x72	running_status_section
0x42	service_description_section - actual_transport_stream	0x73	time_offset_section
0x43 ~ 0x45	reserved for future use	$0x74 \sim 0x7D$	reserved for future use
0x46	service_description_section - other_transport_stream	0x7E	discontinuity_information_section
$0x47 \sim 0x49$	reserved for future use	0x7F	selection_information_section
0x4A	bouquet_association_section	$0x80 \sim 0xFE$	user defined
$0x4B \sim 0x4D$	reserved for future use	0xFF	reserved

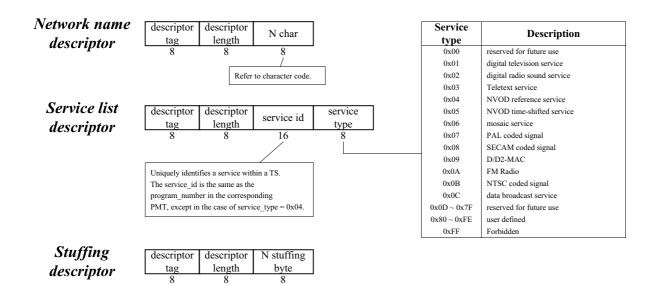
PID allocation for SI

Allocation of table id values

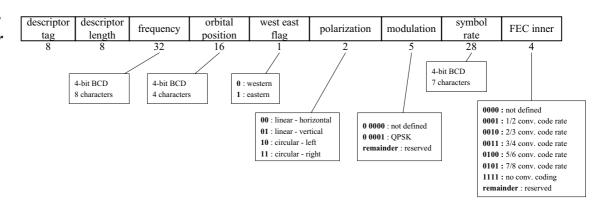


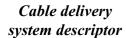


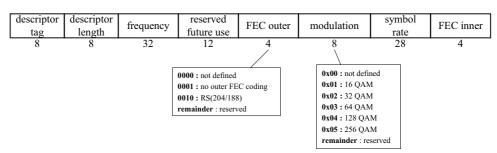
Tag value	Descriptor	Location	Tag value	Descriptor	Location
0x40	network_name_descriptor	twork_name_descriptor NIT 0x55		parental_rating_descriptor	EIT
0x41	service_list_descriptor	NIT, BAT	0x56	teletext_descriptor	PMT
0x42	stuffing_descriptor	NIT, BAT, SDT, EIT	0x57	telephone_descriptor	SDT, EIT
0x43	satellite_delivery_system_descriptor	NIT	0x58	local_time_offset_descriptor	TOT
0x44	cable_delivery_system_descriptor	NIT	0x59	subtitling_descriptor	PMT
0x45	reserved for future use	-	0x5A	terrestrial_delivery_system_descriptor	NIT
0x46	reserved for future use	-	0x5B	multilingual_network_name_descriptor	NIT
0x47	bouquet_name_descriptor	BAT, SDT	0x5C	multilingual_bouquet_name_descriptor	BAT
0x48	service_descriptor	SDT	0x5D	multilingual_service_name_descriptor	SDT
0x49	country_availability_descriptor	BAT, SDT	0x5E	multilingual_component_descriptor	EIT
0x4A	linkage_descriptor	NIT, BAT, SDT, EIT	0x5F	private_data_specifier_descriptor	NIT,BAT,SDT,EIT,PMT
0x4B	NVOD_reference_descriptor	SDT	0x60	service_move_descriptor	PMT
0x4C	time_shifted_service_descriptor	SDT	0x61	short_smoothing_buffer_descriptor	EIT
0x4D	short_event_descriptor	EIT	0x62	frequency_list_descriptor	NIT
0x4E	extended_event_descriptor	EIT	0x63	partial_transport_stream_descriptor	-
0x4F	time_shifted_event_descriptor	EIT	0x64	data_broadcast_descriptor	SDT, EIT
0x50	component_descriptor	EIT	0x65	CA_system_descriptor	PMT
0x51	mosaic_descriptor	SDT, PMT	0x66	data_broadcast_id_descriptor	PMT
0x52	stream_identifier_descriptor	PMT	$0x67 \sim 0x7F$	reserved for future use	=
0x53	CA_identifier_descriptor	BAT, SDT, EIT	$0x80 \sim 0xFE$	user defined	-
0x54	content_descriptor	EIT	0xFF	Forbidden	-

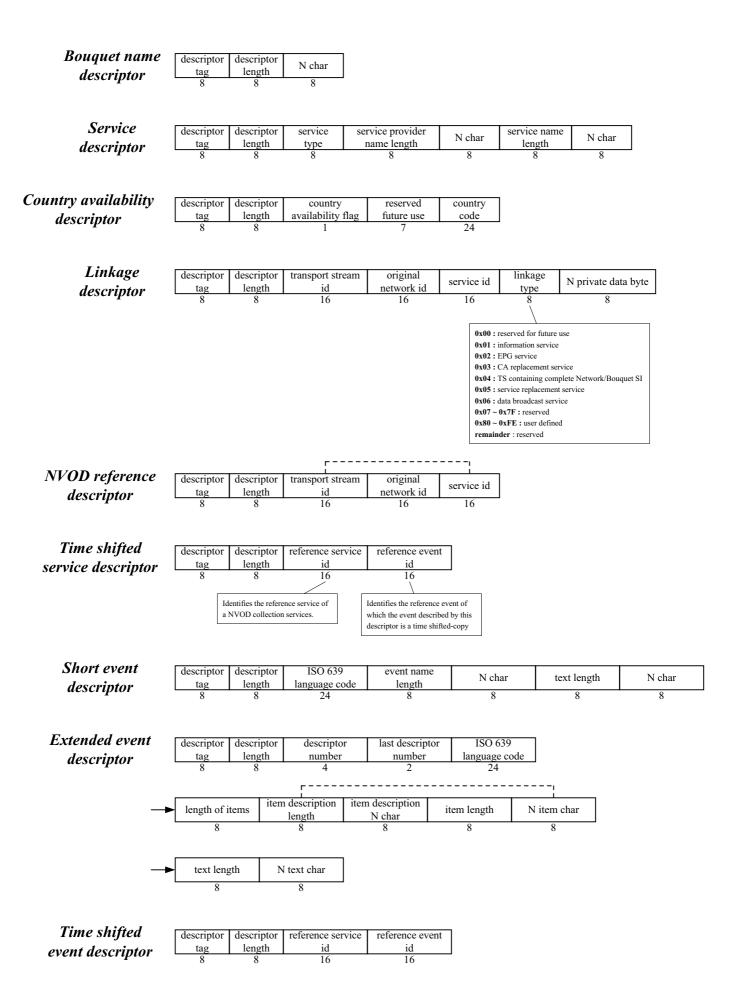


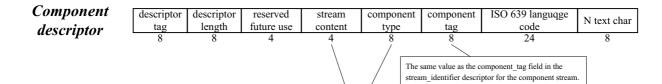
Satellite delivery system descriptor



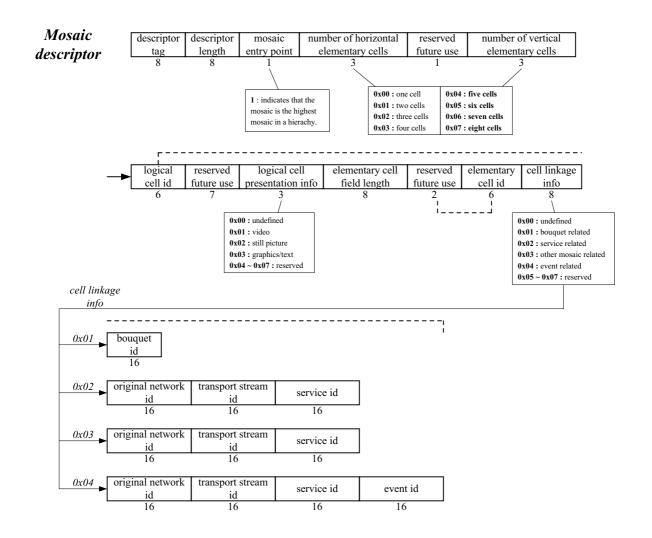


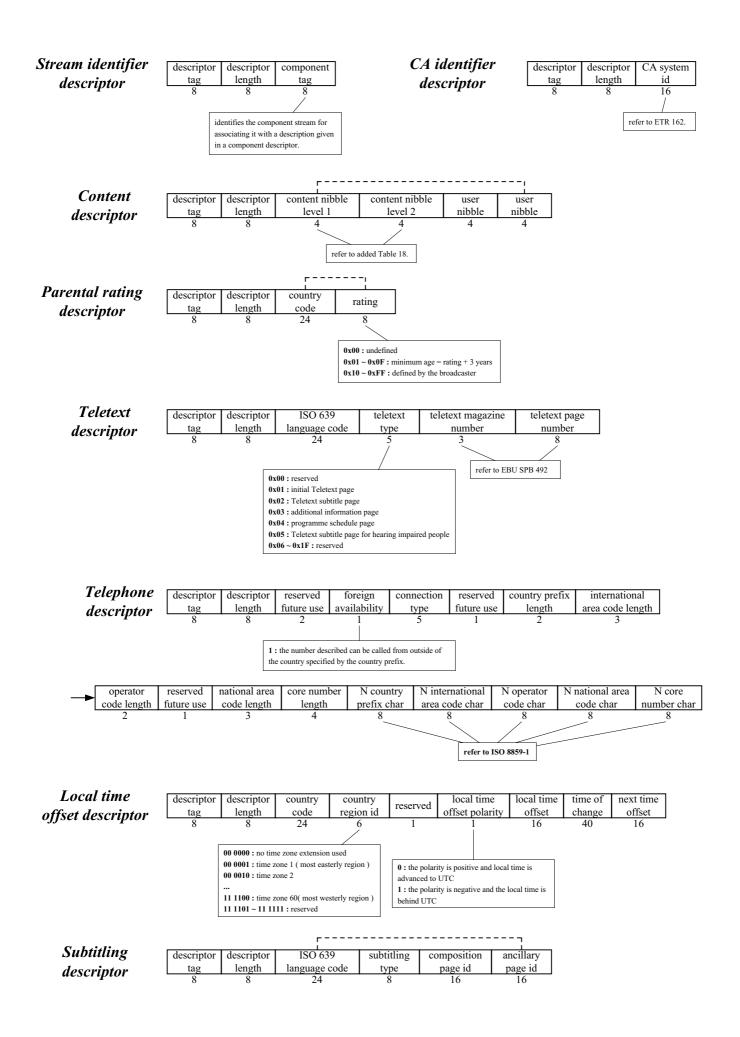


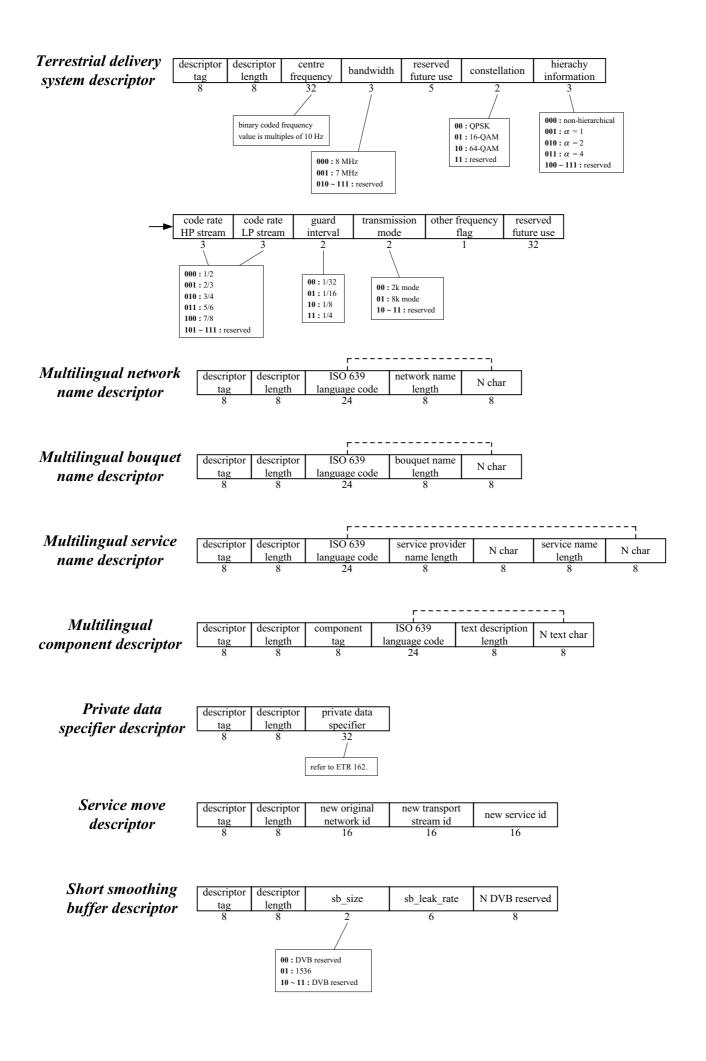


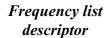


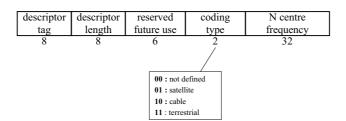
V					
Stream	Component	Description	Stream	Component	Description
content	type	Description	content	type	Description
0x00	$0x00 \sim 0xFF$	reserved for future use	0x02	0xFF	reserved for future use
0x01	0x00	reserved for future use	0x03	0x00	reserved for future use
0x01	0x01	video, 4:3 aspect ratio	0x03	0x01	EBU Teletext subtitles
0x01	0x02	video, 16:9 aspect ratio with pan vectors	0x03	0x02	associated EBU Teletext
0x01	0x03	video, 16:9 aspect ratio without pan vectors	0x03	$0x03 \sim 0x0F$	reserved for future use
0x01	0x04	video, > 16:9 aspect ratio	0x03	0x10	DVB subtitles(normal) with no monitor aspect ratio criticality
0x01	$0x05 \sim 0xFF$	reserved for future use	0x03	0x11	DVB subtitles(normal) for display on 4:3 aspect ratio monitor
0x02	0x00	reserved for future use	0x03	0x12	DVB subtitles(normal) for display on 16:9 aspect ratio monitor
0x02	0x01	audio, single mono channel	0x03	0x13	DVB subtitles(normal) for display on 2.21:1 aspect ratio monitor
0x02	0x02	audio dual mono channel	0x03	$0x14 \sim 0x1F$	reserved for future use
0x02	0x03	audio, stereo(2 channel)	0x03	0x20	DVB subtitles(for the hard of hearing) with no monitor aspect ratio critically
0x02	0x04	audio, multi-lingual, multi-channel	0x03	0x21	DVB subtitles(for the hard of hearing) for display on 4:3 aspect ratio monitor
0x02	0x05	audio, surround sound	0x03	0x22	DVB subtitles(for the hard of hearing) for display on 16:9 aspect ratio monitor
0x02	0x06 ~ 0xFF	reserved for future use	0x03	0x23	DVB subtitles(for the hard of hearing) for display on 2.21:1 aspect ratio monitor
0x02	0x40	audio description for the visually impaired	0x03	$0x24 \sim 0xFF$	reserved for future use
0x02	0x41	audio for the hard of hearing	$0x04 \sim 0x0B$	$0x00\sim0xFF$	reserved for future use
0x02	0x42 ~ 0xAF	reserved for future use	$0x0C \sim 0x0F$	$0x00\sim0xFF$	user defined
0x02	0xB0~ 0xFE	user defined			



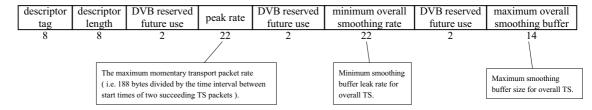












Data broadcast descriptor

descriptor	descriptor	data	component	selector	N selector	ISO 639	text	N text
tag	length	broadcast id	tag	length	byte	language code	length	char
8	8	16	8	8	8	24	8	8

Data broadcast id descriptor

descriptor	descriptor	data	
tag	length	broadcast id	
8	8	16	

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4 Register of Service Information (SI) codes

4.1 Network identification coding

The values given in table 1 are to be used to identify networks within the application area of ETS 300 468 [1], by insertion in the field network_id.

Table 1: Network_id

Network_id	Description	Network type	Operator
0x0000	Reserved	Reserved	Reserved
0x0001	Astra Satellite Network 19,2°E	Satellite	SES
0x0027	Hispasat 30°W	Satellite	Hispasat FSS
0x0028	Hispasat 30°W	Satellite	Hispasat DBS
0x0029	Hispasat 30°W	Satellite	Hispasat America
0x0035	Nethold Main Mux System	Local MPEG-2 Network	NetHold IMS
0x0040			HPT - Croatian Post and Telecommunications
0x0050			HRT - Croatian Radio and Television
0x0058	Thiacom 1 & 2 co- located 78.5°E	Satellite	Shinawatra Satellite
0x0069	Optus B3 156°E	Satellite	Optus Communications
0x0073	PanAmSat 4 68.5°E	Satellite	Pan American Satellite System
0x0085		Satellite	BetaTechnik
0x0090	National network	Terrestrial broadcast	TDF
0x00A0	National Cable Network	Cable	News Datacom
0x00A1	News Satellite Network	Satellite	News Datacom
0x00A2	News Satellite Network	Satellite	News Datacom
0x00A3	News Satellite Network	Satellite	News Datacom
0x00A4	News Satellite Network	Satellite	News Datacom
0x00A5	News Satellite Network	Satellite	News Datacom
0x00B4	Telesat 107.3°W	Satellite	Telesat Canada
0x00B5	Telesat 111.1°W	Satellite	Telesat Canada
0x013E	Eutelsat Satellite System 13°E	Satellite	European Telecommunications Satellite Organisation

4.2 Bouquet_id

The values given in table 2 are to be used to identify bouquets within the application area of ETS 300 468 [1], by insertion in the field bouquet_id.

Table 2: Bouquet_id

Bouquet_id	Bouquet name	Bouquet operator
0x0000	Reserved	Reserved
0x1000 - 0x101F	BSkyB n°	British Sky
	(n°=1-32)	Broadcasting
0x2000	Kaleidascope Multichoice	Filmnet
0x3622	Irdeto Bouquet of Download data Services	Irdeto
0x4000	HPT	HPT
0x4010	HRT	HRT
0x5000 - 0x501F	BetaTechnik n° (n°=1-32)	BetaTechnik
0x6000 - 0x60BF	NDC n° (n°=1-192)	News Datacom

4.3 CA_system_id

The values given in table 3 are to be used to identify CA systems within the application area of ETS 300 468 [1], by insertion in the field CA_system_id.

Table 3: CA_system_id

CA_system_id values	CA system specifier
0x0000	Reserved
0x0001 to 0x00FF	Standardized systems
0x0100 to 0x01FF	Canal Plus
0x0200 to 0x02FF	CCETT
0x0300 to 0x03FF	Deutsche Telecom
0x0400 to 0x04FF	Eurodec
0x0500 to 0x05FF	France Telecom
0x0600 to 0x06FF	Irdeto
0x0700 to 0x07FF	Jerrold/GI
0x0800 to 0x08FF	Matra Communication
0x0900 to 0x09FF	News Datacom
0x0A00 to 0x0AFF	Nokia
0x0B00 to 0x0BFF	Norwegian Telekom
0x0C00 to 0x0CFF	NTL
0x0D00 to 0x0DFF	Philips
0x0E00 to 0x0EFF	Scientific Atlanta
0x0F00 to 0x0FFF	Sony
0x1000 to 0x10FF	Tandberg Television
0x1100 to 0x11FF	Thomson
0x1200 to 0x12FF	TV/Com
0x1300 to 0x13FF	HPT - Croatian Post and Telecommunications
0x1400 to 0x14FF	HRT - Croatian Radio and Television
0x1500 to 0x15FF	IBM
0x1600 to 0x16FF	Nera
0x1700 to 0x17FF	BetaTechnik

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4.4 Country code values

The values given in table 4 are to be used to identify groups of countries or parts of countries within the application area of ETS 300 468 [1]. These are supplementary to ISO 3166.

Table 4: Country code values

Code	Grouping
900	Scandinavia
901	North America (Canada, Carribean, Mexico,
	United States of America)

4.5 Private data specifier values

The values given in table 5 are to be used to identify private SI by insertion in the field private_data_specifier.

Table 5: Private data specifier values

Private data specifier values	Organisation specifying private SI codes
0x00000000	Reserved
0x0000001	SES
0x00000002	BSkyB 1
0x0000003	BSkyB 2
0x0000004	BSkyB 3
0x000000BE	BetaTechnik
0x00006000	News Datacom
0x00006001	NDC 1
0x00006002	NDC 2
0x00006003	NDC 3
0x00006004	NDC 4
0x00006005	NDC 5
0x00006006	NDC 6
0x00362275	Irdeto
0x004E544C	NTL
0x00532D41	Scientific Atlanta
0x44414E59	News Datacom (IL) 1
0x46524549	News Datacom (IL) 1
0x53415053	Scientific Atlanta