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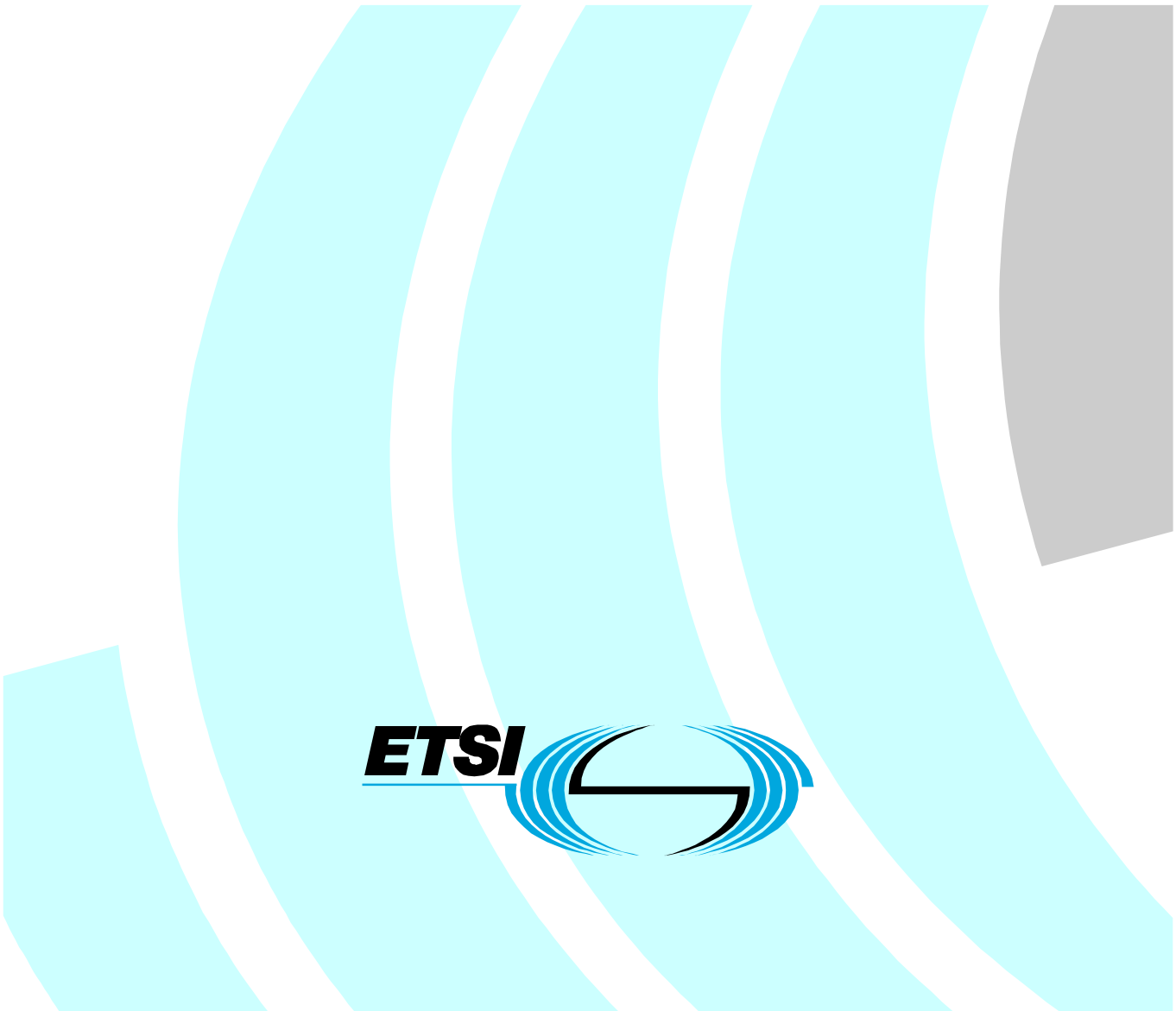
Technical Specification

Services and Protocols for Advanced Networks (SPAN); Codepoints for V5 and derived protocols



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

Introduction

The narrowband V5.x interface signalling protocol standards were the original documents which defined a set of message and information element codepoints. Subsequently other standards have re-used and extended the set. The present document contains a consolidated list of the superset of message and information element codepoints. Its purpose is to maintain the current styles and make allocating new unique codepoints easier. It was for this reason that the work was initiated by the ETSI Technical Working Group SPAN.

1 Scope

The present document specifies the codepoints for messages and information elements used in V5 based standards. It is the ETSI master list and as such its purpose is to avoid duplication and aid in the correct allocation of new codepoints.

The present document is initially applicable to V5.1 [1], V5.2 [2], NMDS [3] and the ATM Forum LES using AAL2 [4].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI EN 300 324-1 (V1.2.3): "V interfaces at the digital Local Exchange (LE); V5.1 interface for the support of Access Network (AN); Part 1: V5.1 interface specification".

[2] ETSI EN 300 347-1: "V interfaces at the digital Local Exchange (LE); V5.2 interface for the support of Access Network (AN); Part 1: V5.2 interface specification".

[3] ETSI EN 301 141: "Integrated Services Digital Network (ISDN); Narrowband Multi-service Delivery System (NMDS)".

[4] af-vmoa-0145 (2002): "Voice and Multimedia Over ATM - Loop Emulation Service Using AAL2".

[5] ETSI TS 100 347 (V1.1.1): "Services and Protocols for Advanced Networks (SPAN); V5.2 interface for the support of Access Network (AN); Release notes for V5.2".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaption Layer number 2
AN	Access Network
ATM	Asynchronous Transfer Mode
BCC	Bearer Channel Control
CID	Channel IDentifier
ISDN	Integrated Services Digital Network
LE	Local Exchange
LES	Loop Emulation Service
NMDS	Narrowband Multi-service Delivery System
NTN	Network Termination Node
PSTN	Public Switched Telephone Network
VMOA	Voice and Multimedia Over ATM

4 Message type codepoints

4.1 Guidance rules

New message type codepoints shall be allocated as the next available codepoint for the protocol to which the message relates. Where both a new protocol and a new message are required the new protocol shall be chosen to be unique and allow for enough messages to meet the immediate need and allow for some future expansion. In general, the protocol is defined by bits 7 to 5 (or 4) of the message name codepoint, and the message number is defined by bits 1 to 3 (or 4) of the message name codepoint. This approach allows for a maximum of either 8 or 16 messages per protocol which has hitherto been sufficient.

4.2 Currently defined codepoints

Table 4.1 shows the message types allocated to the V5 based interfaces and protocols. Currently those standards included are the ETSI V5.1 [1], V5.2 [2] and NMDS [3] interfaces.

Table 4.1: Message type codepoints used within the V5 based interfaces

Bits							
7	**6**	**5**	**4**	**3**	**2**	**1**	**Message types**
0	0	0	-	-	-	-	**PSTN protocol message types**
0	0	0	0	0	0	0	ESTABLISH
0	0	0	0	0	0	1	ESTABLISH ACKNOWLEDGE
0	0	0	0	0	1	0	SIGNAL
0	0	0	0	0	1	1	SIGNAL ACKNOWLEDGE
0	0	0	1	0	0	0	DISCONNECT
0	0	0	1	0	0	1	DISCONNECT COMPLETE
0	0	0	1	1	0	0	STATUS ENQUIRY
0	0	0	1	1	0	0	MAINTENANCE STATUS ENQUIRY (NMDS only)
0	0	0	1	1	0	1	STATUS
0	0	0	1	1	0	1	MAINTENANCE STATUS (NMDS only)
0	0	0	1	1	1	0	PROTOCOL PARAMETER
0	0	1	0	-	-	-	**Control protocol message types**
0	0	1	0	0	0	0	PORT CONTROL
0	0	1	0	0	0	1	PORT CONTROL ACKNOWLEDGE
0	0	1	0	0	1	0	COMMON CONTROL
0	0	1	0	0	1	1	COMMON CONTROL ACKNOWLEDGE
0	0	1	1	-	-	-	**Protection protocol message types**
0	0	1	1	0	0	0	SWITCH-OVER REQUEST
0	0	1	1	0	0	1	SWITCH-OVER COMMAND
0	0	1	1	0	1	0	OS SWITCH-OVER COMMAND
0	0	1	1	0	1	1	SWITCH-OVER ACKNOWLEDGE
0	0	1	1	1	0	0	SWITCH-OVER REJECT
0	0	1	1	1	0	1	PROTOCOL ERROR
0	0	1	1	1	1	0	RESET SN COMMAND
0	0	1	1	1	1	1	RESET SN ACKNOWLEDGE
0	1	0	-	-	-	-	**BCC protocol message types**
0	1	0	0	0	0	0	ALLOCATION
0	1	0	0	0	0	1	ALLOCATION COMPLETE
0	1	0	0	0	1	0	ALLOCATION REJECT
0	1	0	0	0	1	1	DE-ALLOCATION
0	1	0	0	1	0	0	DE-ALLOCATION COMPLETE
0	1	0	0	1	0	1	DE-ALLOCATION REJECT
0	1	0	0	1	1	0	AUDIT
0	1	0	0	1	1	1	AUDIT COMPLETE
0	1	0	1	0	0	0	AN FAULT
0	1	0	1	0	0	1	AN FAULT ACKNOWLEDGE
0	1	0	1	0	1	0	PROTOCOL ERROR
0	1	1	0	-	-	-	**Link control protocol message types**
0	1	1	0	0	0	0	LINK CONTROL
0	1	1	0	0	0	1	LINK CONTROL ACKNOWLEDGE
NOTE: All other values are reserved.							

5 Information element identifier codepoints

5.1 Guidance rules

New information element identifier codepoints shall be allocated as the next available codepoint in the sequence associated with the protocol to which the message (or messages) which are to carry the information element belong. On occasion this may require starting a new block of information element identifier codepoints to avoid the situation of a codepoint being used for more than one protocol but with a different meaning and information element contents in each case. Every effort shall be made to maintain uniqueness and when allocating new blocks to allow for future expansion.

5.2 Currently defined codepoints

Table 5.1 shows the information element identifiers allocated to the V5 based interfaces and protocols. Currently those standards included are the ETSI V5.1 [1], V5.2 [2] and [5], NMDS [3] and LES using AAL2 [4] interfaces.

Table 5.1: Information element identifiers allocated to the V5 based interfaces

Bits								Protocol	Information element	(Sub)clause Reference
8	7	6	5	4	3	2	1			
0	-	-	-	-	-	-	-		**VARIABLE LENGTH INFORMATION ELEMENTS**	
0	0	0	0	0	0	0	0	PSTN	Sequence-number	14 [2] (13.4.7.1 [1])
0	0	0	0	0	0	0	1	PSTN	Cadenced-ringing	14 [2] (13.4.7.2 [1])
0	0	0	0	0	0	1	0	PSTN	Pulsed-signal	14 [2] (13.4.7.3 [1])
0	0	0	0	0	0	1	1	PSTN	Steady-signal	14 [2] (13.4.7.4 [1])
0	0	0	0	0	1	0	0	PSTN	Digit-signal	14 [2] (13.4.7.5 [1])
0	0	0	1	0	0	0	0	PSTN	Recognition-time	14 [2] (13.4.7.6 [1])
0	0	0	1	0	0	0	1	PSTN	Enable-autonomous-acknowledge	14 [2] (13.4.7.7 [1])
0	0	0	1	0	0	1	0	PSTN	Disable-autonomous-acknowledge	14 [2] (13.4.7.8 [1])
0	0	0	1	0	0	1	1	PSTN	Cause	14 [2] (13.4.7.9 [1])
0	0	0	1	0	1	0	0	PSTN	Resource-unavailable	14 [2] (13.4.7.10 [1])
0	0	0	1	1	1	1	0	PSTN (NMDS)	PSTN-GW Status Response	7.3.1.1.2 [3]
0	0	0	1	1	1	1	1	PSTN (NMDS)	ISDN UNI Status Response	7.3.1.2.2 [3]
0	0	1	0	0	0	1	0	PSTN	Enable-metering	14 [2] (13.4.7.11 [1])
0	0	1	0	0	0	1	1	PSTN	Metering-report	14 [2] (13.4.7.12 [1])
0	0	1	0	0	1	0	0	PSTN	Attenuation	14 [2] (13.4.7.13 [1])
0	0	1	0	0	0	0	0	Control	Control function element	15.4 [2] (14.4.2.5.4 [1])
0	0	1	0	0	0	0	1	Control	Control function identification	15.4 [2] (14.4.2.5.5 [1])
0	0	1	0	0	0	1	0	Control	Variant	15.4 [2] (14.4.2.5.6 [1])
0	0	1	0	0	0	1	1	Control	Interface-ID	15.4 [2] (14.4.2.5.7 [1])
0	0	1	1	0	0	0	0	Link control	Link control function	16.3.2.2 [2]
0	1	0	0	0	0	0	0	BCC	User port identification	17.4.2.1 [2]
0	1	0	0	0	0	0	1	BCC	ISDN port channel identification	17.4.2.2 [2]
0	1	0	0	0	0	1	0	BCC	V5 time slot identification	17.4.2.3 [2]
0	1	0	0	0	0	1	1	BCC	Multi-slot map	17.4.2.4 [2]
0	1	0	0	0	1	0	0	BCC	Reject cause	17.4.2.5 [2]
0	1	0	0	0	1	0	1	BCC	Protocol error cause	17.4.2.6 [2]
0	1	0	0	0	1	1	0	BCC	Connection incomplete	17.4.2.7 [2]
0	1	0	0	0	1	1	1	BCC (LES)	Information Transfer Capability	5.3.1.1.1 [4] (3.3.4 [5])
0	1	0	0	1	0	0	0	BCC (LES)	CID Assignment	5.3.1.1.1 [4]
0	1	0	1	0	0	0	0	Protection	Sequence number	18.5.2 [2]
0	1	0	1	0	0	0	1	Protection	Physical C-channel identification	18.5.3 [2]
0	1	0	1	0	0	1	0	Protection	Rejection cause	18.5.4 [2]
0	1	0	1	0	0	1	1	Protection	Protocol error cause	18.5.5 [2]
1	-	-	-	-	-	-	-		**SINGLE OCTET INFORMATION ELEMENTS**	
1	0	0	0	X	X	X	X	PSTN	Line information	14 [2] (13.4.6.2 [1])
1	0	0	1	X	X	X	X	PSTN	State	14 [2] (13.4.6.3 [1])
1	0	1	0	X	X	X	X	PSTN	Autonomous signalling sequence	14 [2] (13.4.6.4 [1])
1	0	1	1	X	X	X	X	PSTN	Sequence response	14 [2] (13.4.6.5 [1])
1	1	0	0	0	0	0	0	PSTN	Pulse-notification	14 [2] (13.4.6.1 [1])
1	1	0	1	0	0	0	0	PSTN (NMDS)	PSTN–GW Status Request	7.3.1.1.1 [3]
1	1	0	1	0	0	0	1	PSTN (NMDS)	ISDN UNI Status Request	7.3.1.2.1 [3]
1	1	1	0	X	X	X	X	Control	Performance grading	15.4 [2] (14.4.2.5.2 [1])
1	1	1	1	X	X	X	X	Control	Rejection cause	15.4 [2] (14.4.2.5.1 [1])

NOTE 1: All other values are reserved.
NOTE 2: References within parentheses are references to relevant sub-clause in a cross referenced document.

6 Information element codepoints reserved to bodies other than ETSI

6.1 Introduction

The scope of this clause is to identify and to specify the information elements defined in V5.1 [1] and V5.2 [2] for which codepoints have been reserved to bodies other than ETSI (such as the ATM Forum).

6.2 Control function element information element

The coding of the Control function element information element field (octet 3) defined in table 9 of EN 300 347-1 [2] is modified as shown in table 6.1.

Table 6.1: Coding of Control function element

Bits (octet 3)							Control Function element
7	6	5	4	3	2	1	
0	0	0	0	0	0	1	FE101 (activate access)
0	0	0	0	0	1	0	FE102 (activation initiated by user)
0	0	0	0	0	1	1	FE103 (DS activated)
0	0	0	0	1	0	0	FE104 (access activated)
0	0	0	0	1	0	1	FE105 (deactivate access)
0	0	0	0	1	1	0	FE106 (access deactivated)
0	0	1	0	0	0	1	FE201/202 (unblock)
0	0	1	0	0	1	1	FE203/204 (block)
0	0	1	0	1	0	1	FE205 (block request)
0	0	1	0	1	1	0	FE206 (performance grading)
0	0	1	0	1	1	1	FE207 (D-channel block)
0	0	1	1	0	0	0	FE 208 (D-channel unblock)
0	0	1	1	0	0	1	FE 209 (TE out of service)
0	0	1	1	0	1	0	FE 210 (failure inside network)
1	0	0	0	0	0	0	Reserved to the ATM Forum
1	0	0	0	0	0	1	Reserved to the ATM Forum
1	0	0	0	0	1	0	Reserved to the ATM Forum
1	0	0	0	0	1	1	Reserved to the ATM Forum
1	0	0	0	1	0	0	Reserved to the ATM Forum
1	0	0	0	1	0	1	Reserved to the ATM Forum
1	0	0	0	1	1	0	Reserved to the ATM Forum
1	0	0	0	1	1	1	Reserved to the ATM Forum
NOTE: All other values are reserved							

History

Document history		
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