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ITU-T

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OF ITU

G.994.1

Amendment 1

(02/2004)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Access networks

Handshake procedures for digital subscriber line
(DSL) transceivers

Amendment 1

ITU-T Recommendation G.994.1 (2003) – Amendment 1

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For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

Amendment 1

Summary

This amendment addresses the following issues:

- Specification of the signalling family and carrier frequencies to support the IEEE EFM VDSL specification.
- Parameters to support IEEE EFM.
- Specification of the carrier set and parameters to support G.992.3 Annex M.
- Specification of the carrier sets for G.992.1 Annexes H & I, G.992.3 Annex M, G.992.4 Annex I, and G.992.5 Annexes A, B, I, J & M.
- Parameters to support ITU-T Rec. G.991.2.
- Parameters to support G.992.3 Annex L – merged with Annex A.
- A parameter to support T1 enhanced SHDSL.
- Parameters to support G.992.3 Annex J extended upstream PSDs.
- Parameters to support upstream mask selection in G.992.5 Annexes J and M.
- Text to clarify the meaning of "capabilities".
- Specification of an alternative carrier set for use where regulatory requirements prevent the use of A43.

Source

Amendment 1 to ITU-T Recommendation G.994.1 (2003) was approved on 22 February 2004 by ITU-T Study Group 15 (2001-2004) under the ITU-T Recommendation A.8 procedure.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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ITU-T Recommendation G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

Amendment 1

1) Tables 1 and 2

Revise Tables 1 and 2 in 6.1.1 (4.3125 kHz signalling family) as follows:

Table 1/G.994.1 – Carrier sets for the 4.3125 kHz signalling family

Carrier set designation	Upstream carrier sets		Downstream carrier sets		Transmission mode
	Frequency indices (N)	Maximum power level/carrier (dBm)	Frequency indices (N)	Maximum power level/carrier (dBm)	
A43	9 17 25	–1.65	40 56 64	–3.65	Duplex only
B43	37 45 53	–1.65	72 88 96	–3.65	Duplex only
C43	7 9	–1.65	12 14 64	–3.65	Duplex only
J43	9 17 25	–1.65	72 88 96	–3.65	Duplex only
<u>V43</u>	<u>37 53</u>	<u>–1.65</u>	<u>64 88</u>	<u>–3.65</u>	<u>dDuplex only</u>
<u>A43c</u> (Note)	<u>9 17 25</u>	<u>–1.65</u>	<u>257 293 337</u>	<u>–3.65</u>	<u>dDuplex only</u>
NOTE – In some jurisdictions, it may be necessary to limit the maximum power level, for example –23.65 dBm/carrier where the PSD is limited to –60 dBm/Hz.					

Table 2/G.994.1 – Mandatory carrier sets

xDSL Recommendation(s)	Carrier set designation
G.992.1 – Annex A, G.992.2 – Annexes A/B, G.992.3 – Annexes A/I/L, G.992.4 – Annexes A/B/I <u>G.992.5 – Annexes A/I</u>	A43
<u>G.992.5 – Annexes A/I (Note)</u>	<u>A43c</u>
G.992.1 – Annex B, G.992.3 – Annex B <u>G.992.5 – Annex B</u>	B43
G.992.1 – Annexes C/H/I, G.992.2 – Annex C, G.992.1 – Annex H	C43
G.992.3 – Annexes J/M, <u>G.992.5 – Annexes J/M</u>	J43
NOTE – To be used where spectrum management forbids use of tone-set A43, typically where G.992.5 is deployed from a cabinet.	

2) Tables 11.x.x

Revise existing and add new Tables 11.x.x as follows:

Table 11.0.1/G.994.1 – Standard information field – SPar(1) coding – Octet 2

Bits								SPar(1)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	G.991.2 – Annexes A/F
x	x	x	x	x	x	1	x	G.991.2 – Annex B
x	x	x	x	x	1	x	x	Committee T1* MCM VDSL (Note 1)
x	x	x	x	1	x	x	x	Committee T1 SCM VDSL (Note 2)
x	x	x	1	x	x	x	x	ETSI MCM VDSL (Note 3)
x	x	1	x	x	x	x	x	ETSI SCM VDSL (Note 3)
x	1	x	x	x	x	x	x	Reserved for allocation by the ITU-T Committee T1 enhanced SHDSL
x	0	0	0	0	0	0	0	No parameters in this octet

NOTE 1 – Use of this bit is defined in "Draft Trial-Use Standard For Telecommunication – Interface Between Networks and Customer Installation – Very High Bit-rate Digital Subscriber Line (VDSL) Metallic Interface – Part 3: Technical Specification for Multi-Carrier Modulation (MCM) Transceivers".

NOTE 2 – Use of this bit is defined in "Draft Trial-Use Standard For Telecommunication – Interface Between Networks and Customer Installation – Very High Bit-rate Digital Subscriber Line (VDSL) Metallic Interface – Part 2: Technical Specification for Single-Carrier Modulation (SCM) Transceivers".

NOTE 3 – Use of this bit is defined in ETSI TS 101270-2.

Table 11.0.2/G.994.1 – Standard information field – SPar(1) coding – Octet 3

Bits								SPar(1)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	G.992.3 – Annexes A/L
x	x	x	x	x	x	1	x	G.992.3 – Annex B
x	x	x	x	x	1	x	x	G.992.3 – Annex I
x	x	x	x	1	x	x	x	G.992.3 – Annex J
x	x	x	1	x	x	x	x	G.992.4 – Annex A
x	x	1	x	x	x	x	x	G.992.4 – Annex I
x	1	x	x	x	x	x	x	Reserved for allocation by the ITU-T
x	0	0	0	0	0	0	0	No parameters in this octet

* T1 standards are maintained since November 2003 by ATIS.

Table 11.0.3/G.994.1 – Standard information field – SPar(1) coding – Octet 4

Bits								SPar(1)s – Octet 4
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	G.992.5 – Annex A
x	x	x	x	x	x	1	x	G.992.5 – Annex B
x	x	x	x	x	1	x	x	G.992.5 – Annex I
x	x	x	x	1	x	x	x	<u>G.992.3 – Annex M</u> Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	<u>G.992.5 Annex J</u> Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	<u>IEEE 802.3ah 2BASE-TL</u> Reserved for allocation by the ITU-T
x	1	x	x	x	x	x	x	<u>IEEE 802.3ah 10PASS-TS</u> Reserved for allocation by the ITU-T
x	0	0	0	0	0	0	0	No parameters in this octet

Table 11.0.4/G.994.1 – Standard information field – SPar(1) coding – Octet 5

Bits								SPar(1)s – Octet 5
8	7	6	5	4	3	2	1	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>G.992.5 – Annex M</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.15/G.994.1 – Standard information field – G.991.2 Annex A – NPar(2) coding– Octet 1

Bits								G.991.2 Annex A NPar(2)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Training mode (Note) (see also Table 11.14)
x	x	x	x	x	x	1	x	PMMS mode (Note) (see also Table 11.14)
x	x	x	x	x	1	x	x	Regenerator silent period (Note)
x	x	x	x	1	x	x	x	4-Wire
x	x	x	1	x	x	x	x	SRU
x	x	1	x	x	x	x	x	Diagnostic mode
x	x	0	0	0	0	0	0	No parameters in this octet

NOTE – Only one of these bits shall be set at any given time.

**Table 11.15.1/G.994.1 – Standard information field – G.991.2 Annex A –
NPar(2) coding – Octet 2**

		<u>Bits</u>						<u>G.991.2 Annex A NPar(2)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	Warm-start enable
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	No parameters in this octet

**Table 11.16.0.1/G.994.1 – Standard information field – G.991.2 Annex A –
SPar(2) coding – Octet 2**

		<u>Bits</u>						<u>G.991.2 Annex A SPar(2)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
x	x	x	x	x	x	x	1	Upstream framing parameters
x	x	x	x	x	x	1	x	Dual-Mode TPS-TC parameters
x	x	x	x	x	1	x	x	Multiple-Pair Operation parametersReserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	Downstream extended training rates – 16-TCPAM symmetric (Annex F)Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Downstream extended training rates – 32-TCPAM symmetric (Annex F)Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Upstream extended training rates – 16-TCPAM symmetric (Annex F)Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

**Table 11.16.0.2/G.994.1 – Standard information field – G.991.2 Annex A –
SPar(2) coding – Octet 3**

		<u>Bits</u>						<u>G.991.2 Annex A SPar(2)s – Octet 3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	Upstream extended training rates – 32-TCPAM symmetric (Annex F)
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	Downstream extended PMMS rates (Annex F)
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	Upstream extended PMMS rates (Annex F)
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	No parameters in this octet

**Table 11.16.3.8/G.994.1 – Standard information field – G.991.2 Annex A
Downstream PMMS parameters – NPar(3) coding – Octet 9**

		Bits						G.991.2 Annex A downstream PMMS NPar(3)s – Octet 9
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	1	Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.16.3.9/G.994.1 – Standard information field – G.991.2 Annex A
Downstream PMMS parameters – NPar(3) coding – Octet 10**

		Bits						<u>G.991.2 Annex A downstream PMMS NPar(3)s – Octet 10</u>
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	0	Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.16.3.11/G.994.1 – Standard information field – G.991.2 Annex A
Downstream PMMS parameters – NPar(3) coding – Octet 12**

		Bits						G.991.2 Annex A downstream PMMS NPar(3)s – Octet 12
8	7	6	5	4	3	2	1	
x	x	0	0	0	x	x	x	Downstream PMMS scrambler polynomial Index (i2, i1, i0)
x	x	1	1	1	1	1	1	<u>Reserved for allocation by the ITU-T</u>

**Table 11.16.3.12/G.994.1 – Standard information field – G.991.2 Annex A
Downstream PMMS parameters – NPar(3) coding – Octet 13**

		Bits						G.991.2 Annex A downstream PMMS NPar(3)s – Octet 13
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Worst-case PMMS target margin (dB) (bits 5-1 $\times$ 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Worst-case PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.16.3.13/G.994.1 – Standard information field – G.991.2 Annex A
Downstream PMMS parameters – NPar(3) coding – Octet 14**

		Bits						G.991.2 Annex A downstream PMMS NPar(3)s – Octet 14
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Current-condition PMMS target margin (dB) (bits 5-1 $\times$ 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Current-condition PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.16.4.8/G.994.1 – Standard information field – G.991.2 Annex A
Upstream PMMS parameters – NPar(3) coding – Octet 9**

		Bits						G.991.2 Annex A upstream PMMS NPar(3)s – Octet 9
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	1	Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.16.4.9/G.994.1 – Standard information field – G.991.2 Annex A
Upstream PMMS parameters – NPar(3) coding – Octet 10**

		Bits						G.991.2 Annex A upstream PMMS NPar(3)s – Octet 10
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	0	Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.16.4.11/G.994.1 – Standard information field – G.991.2 Annex A
Upstream PMMS parameters – NPar(3) coding – Octet 12**

		Bits						G.991.2 Annex A upstream PMMS NPar(3)s – Octet 12
8	7	6	5	4	3	2	1	
x	x	0	0	0	x	x	x	Upstream PMMS scrambler polynomial Index (i2, i1, i0)
*	*	1	1	1	1	1	1	Reserved for allocation by the ITU-T

**Table 11.16.4.12/G.994.1 – Standard information field – G.991.2 Annex A
Upstream PMMS parameters – NPar(3) coding – Octet 13**

		Bits						G.991.2 Annex A upstream PMMS NPar(3)s – Octet 13
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Worst-case PMMS target margin (dB) (bits 5-1 $\times$ 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Worst-case PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.16.4.13/G.994.1 – Standard information field – G.991.2 Annex A
Upstream PMMS parameters – NPar(3) coding – Octet 14**

		Bits						G.991.2 Annex A upstream PMMS NPar(3)s – Octet 14
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Current-condition PMMS target margin (dB) (bits 5-1 $\times$ 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Current-condition PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.16.5.2/G.994.1 – Standard information field – G.991.2 Annex A
TPS-TC parameters – NPar(3) coding – Octet 3**

		Bits						G.991.2 Annex A TPS-TC parameter NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x				x	x	x	Number of ISDN BRA (0 to 6)
<u>x</u>	<u>x</u>	x	x	x				Z-bits used for ISDN BRA Signalling (0 to 7)

**Table 11.16.5.3/G.994.1 – Standard information field – G.991.2 Annex A
TPS-TC parameters – NPar(3) coding – Octet 4**

		Bits						<u>G.991.2 Annex A TPS-TC parameter NPar(3)s – Octet 4</u>
8	7	6	5	4	3	2	1	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>PTM</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>STM with DSC</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>LAPV5 Enveloped POTS or ISDN</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

**Table 11.16.8/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 1**

		Bits						G.991.2 Annex A Dual Mode TPS-TC parameter Npar(3)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	x	TPS-TC _a data rate – $n \times 64$ kbit/s (1 to 36)
x	x	1	1	1	1	1	1	<u>TPS-TC_a data rate unspecified</u> Unspecified by terminal

**Table 11.16.8.1/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 2**

		Bits						G.991.2 Annex A Dual Mode TPS-TC parameter Npar(3)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	0	0	0	x	x	x	TPS-TC _a sub-data rate – $i \times 8$ kbit/s (0 to 7)
x	x	1	1	1	1	1	1	<u>TPS-TC_a sub-data rate unspecified by terminal</u> (values of bits 6-1 from 8 to 62 reserved for allocation by the ITU-T) Unspecified by terminal

**Table 11.16.8.2/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 3**

		Bits						G.991.2 Annex A Dual Mode TPS-TC parameter Npar(3)s – Octet 3	
8	7	6	5	4	3	2	1		
x	x	x	x	x	x	x	1	Type 1 – TPS-TC _b : Clear Channel	
x	x	x	x	x	x	1	x	Type 1 – TPS-TC _b : Clear Channel Byte-Oriented	
x	x	x	x	x	1	x	x	Type 1 – TPS-TC _b : Unaligned DS1	
x	x	x	x	1	x	x	x	Type 1 – TPS-TC _b : Aligned DS1/Fractional DS1	
x	x	x	1	x	x	x	x	Type 1 – TPS-TC _b : ATM	
x	x	1	x	x	x	x	x	Type 1 – TPS-TC _b : PTM	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet	

**Table 11.16.8.4/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 5**

		Bits						G.991.2 Annex A Dual Mode TPS-TC parameter Npar(3)s – Octet 5	
8	7	6	5	4	3	2	1		
x	x	x	x	x	x	x	1	Type 2 – TPS-TC _a : Unaligned DS1	
x	x	x	x	x	x	1	x	Type 2 – TPS-TC _a : Aligned DS1/Fractional DS1	
x	x	x	x	x	1	x	x	Type 2 – TPS-TC _b : ATM	Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	Type 2 – TPS-TC _b : PTM	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T	
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T	
x	x	0	0	0	0	0	0	No parameters in this octet	

**Table 11.16.8.6/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 7**

		Bits						G.991.2 Annex A Dual Mode TPS-TC parameter Npar(3)s – Octet 7	
8	7	6	5	4	3	2	1		
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	Type 1 – TPS-TC _a : ISDN BRA	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	Type 1 – TPS-TC _a : STM with DSC	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	Type 1 – TPS-TC _a : LAPV5 Enveloped POTS or ISDN	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T	
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T	
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Reserved for allocation by the ITU-T	
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	No parameters in this octet	

Table 11.16.8.7/G.994.1 – Standard information field – G.991.2 Annex A
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 8

<u>Bits</u>		<u>G.991.2 Annex A Dual Mode TPS-TC parameter</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	<u>x</u>
							DRR Support:
							<u>01 DRR not supported</u>
							<u>10 DRR supported, STU-C DRR master</u>
							<u>11 DRR supported, STU-R DRR master</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		Lead Time (in SHDSL frames)
							<u>count = bits 6-2 (supported values = 1 to 15)</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	DRR Support and Lead Time unspecified by terminal

Table 11.16.9/G.994.1 – Standard information field – G.991.2 Annex A
Multiple-Pair Operation parameters – NPar(3) coding – Octet 1

<u>Bits</u>		<u>G.991.2 Annex A Multiple-Pair Operation parameters</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	<u>x</u>
							M-pair count (count = bits 2-1 + 1)
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		Reserved for allocation by the ITU-T

Table 11.16.10/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 1

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate –</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	Downstream base data rate – Minimum 1 (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>					<u>x</u>	Downstream base data rate – Maximum 1 (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>				<u>x</u>		Downstream base data rate – Step 1 (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			Reserved for allocation by ITU-T

Table 11.16.10.1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 2

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate –</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Downstream base data rate – Minimum 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.10.2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 3

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate – Maximum 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.10.3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 4

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate – Step 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

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Table 11.16.10.i₁*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet i₁*4-3

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet i₁*4-3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>						<u>x</u>
Downstream base data rate extension – Minimum j ₁ (bit 7), 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>					<u>x</u>	
Downstream base data rate extension – Maximum j ₁ (bit 7), 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>				<u>x</u>		
Downstream base data rate extension – Step j ₁ (bit 7), 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
Reserved for allocation by ITU-T							

Table 11.16.10.i₁*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet i₁*4-2

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet i₁*4-2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Minimum j ₁ (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.10.j₁*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet j₁*4-1

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet j₁*4-1</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Maximum j ₁ (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.10.j₁*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet j₁*4

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet j₁*4</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Step j ₁ (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.11/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 1

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 1</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>						<u>x</u>
Downstream base data rate – Minimum 1 (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>					<u>x</u>	
Downstream base data rate – Maximum 1 (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>				<u>x</u>		
Downstream base data rate – Step 1 (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
Reserved for allocation by ITU-T							

Table 11.16.11.1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 2

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 2</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate – Minimum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.11.2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 3

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate –</u> <u>32-TCPAM symmetric NPar(3)s – Octet 3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate – Maximum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.11.3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 4

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate –</u> <u>32-TCPAM symmetric NPar(3)s – Octet 4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate – Step 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

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Table 11.16.11.j₂*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₂*4-3

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate –</u> <u>32-TCPAM symmetric NPar(3)s – Octet j₂*4-3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>						<u>x</u>
Downstream base data rate extension – Minimum j ₂ (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>					<u>x</u>	
Downstream base data rate extension – Maximum j ₂ (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>				<u>x</u>		
Downstream base data rate extension – Step j ₂ (bit 7), 32-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
Reserved for allocation by ITU-T							

Table 11.16.11.j₂*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₂*4-2

<u>Bits</u>							<u>G.991.2 Annex F downstream extended training rate –</u> <u>32-TCPAM symmetric NPar(3)s – Octet j₂*4-2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Minimum j ₂ (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.11.j₂*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₂*4-1

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₂*4-1</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Maximum j ₂ (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.11.j₂*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₂*4

<u>Bits</u>		<u>G.991.2 Annex F downstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₂*4</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Downstream base data rate extension – Step j ₂ (bits 6-1), 32-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.12/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 1

<u>Bits</u>		<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 1</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>						<u>x</u>
Upstream base data rate – Minimum 1 (bit 7) , 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>					<u>x</u>	
Upstream base data rate – Maximum 1 (bit 7), 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>				<u>x</u>		
Upstream base data rate – Step 1 (bit 7), 16-TCPAM symmetric PSD							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
Reserved for allocation by ITU-T							

Table 11.16.12.1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 2

<u>Bits</u>		<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 2</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Upstream base data rate – Minimum 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)							
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.12.2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 3

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate – Maximum 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.12.3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet 4

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet 4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate – Step 1 (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

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Table 11.16.12.j₃*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet j₃*4-3

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet j₃*4-3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate extension – Minimum j ₃ (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate extension – Maximum j ₃ (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>				<u>x</u>		Upstream base data rate extension – Step j ₃ (bit 7), 16-TCPAM symmetric PSD
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			Reserved for allocation by ITU-T

Table 11.16.12.j₃*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet j₃*4-2

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet j₃*4-2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Minimum j ₃ (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.12.i₃*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet i₃*4-1**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet i₃*4-1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Maximum i ₃ (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.12.i₃*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 16-TCPAM symmetric – NPar(3) coding – Octet i₃*4**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 16-TCPAM symmetric NPar(3)s – Octet i₃*4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Step i ₃ (bits 6-1), 16-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.13/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 1**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate – Minimum 1 (bit 7) , 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate – Maximum 1 (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>				<u>x</u>		Upstream base data rate – Step 1 (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			Reserved for allocation by ITU-T

**Table 11.16.13.1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 2**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate – Minimum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.13.2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 3

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate – Maximum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.13.3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet 4

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet 4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate – Step 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

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Table 11.16.13.j₄*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₄*4-3

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₄*4-3</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate extension – Minimum j ₄ (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>					<u>x</u>	Upstream base data rate extension – Maximum j ₄ (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>				<u>x</u>		Upstream base data rate extension – Step j ₄ (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			Reserved for allocation by ITU-T

Table 11.16.13.j₄*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₄*4-2

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₄*4-2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Minimum j ₄ (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.13.j₄*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₄*4-1**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₄*4-1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Maximum j ₄ (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.13.j₄*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream extended training rates – 32-TCPAM symmetric – NPar(3) coding – Octet j₄*4**

<u>Bits</u>							<u>G.991.2 Annex F upstream extended training rate – 32-TCPAM symmetric NPar(3)s – Octet j₄*4</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Step j ₄ (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.14/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet 1**

<u>Bits</u>							<u>G.991.2 Annex F downstream extended PMMS rate NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>					<u>x</u>	Downstream base data rate – Minimum 1 (bit 7) , 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>					<u>x</u>	Downstream base data rate – Maximum 1 (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>				<u>x</u>		Downstream base data rate – Step 1 (bit 7), 32-TCPAM symmetric PSD
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			Reserved for use by ITU-T

**Table 11.16.14.1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet 2**

<u>Bits</u>							<u>G.991.2 Annex F downstream extended PMMS rate NPar(3)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Downstream base data rate – Minimum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

Table 11.16.14.2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet 3

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Downstream base data rate – Maximum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.14.3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet 4

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Downstream base data rate – Step 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

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Table 11.16.14.j₅*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet j₅*4-3

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	
<u>Downstream base data rate extension – Minimum j₅ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>					<u>x</u>	
<u>Downstream base data rate extension – Maximum j₅ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>				<u>x</u>		
<u>Downstream base data rate extension – Step j₅ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
<u>Reserved for allocation by ITU-T</u>							

Table 11.16.14.j₅*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet j₅*4-2

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Downstream base data rate extension – Minimum j₅ (bits 6-1) 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.14.j₅*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet j₅*4-1

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Downstream base data rate extension – Maximum j₅ (bits 6-1) 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.14.j₅*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Downstream Extended PMMS rates – NPar(3) coding – Octet j₅*4

<u>Bits</u>		<u>G.991.2 Annex F downstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Downstream base data rate extension – Step j₅ (bits 6-1) 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.15/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet 1

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	<u>Upstream base data rate – Minimum 1 (bit 7), 32-TCPAM symmetric PSD</u>
<u>x</u>	<u>x</u>					<u>x</u>	<u>Upstream base data rate – Maximum 1 (bit 7), 32-TCPAM symmetric PSD</u>
<u>x</u>	<u>x</u>				<u>x</u>		<u>Upstream base data rate – Step 1 (bit 7), 32-TCPAM symmetric PSD</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			<u>Reserved for use by ITU-T</u>

Table 11.16.15.1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet 2

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Upstream base data rate – Minimum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)</u>
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.15.2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet 3

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Upstream base data rate – Maximum 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

Table 11.16.15.3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet 4

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Upstream base data rate – Step 1 (bits 6-1), 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

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Table 11.16.15.j₆*4-4/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet j₆*4-3

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>					<u>x</u>	
<u>Upstream base data rate extension – Minimum j₆ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>					<u>x</u>	
<u>Upstream base data rate extension – Maximum j₆ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>				<u>x</u>		
<u>Upstream base data rate extension – Step j₆ (bit 7) 32-TCPAM symmetric PSD</u>							
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			
<u>Reserved for allocation by ITU-T</u>							

Table 11.16.15.j₆*4-3/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet j₆*4-2

<u>Bits</u>		<u>G.991.2 Annex F upstream extended PMMS</u>					
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Upstream base data rate extension – Minimum j₆ (bits 6-1) 32-TCPAM symmetric PSD (Note)</u>							
<u>NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.</u>							

**Table 11.16.15.j₆*4-2/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet j₆*4-1**

Bits							G.991.2 Annex F upstream extended PMMS rate NPar(3)s – Octet j₆*4-1
8	7	6	5	4	3	2	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Maximum j ₆ (bits 6-1) 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.16.15.j₆*4-1/G.994.1 – Standard information field – G.991.2 Annex F
Upstream Extended PMMS rates – NPar(3) coding – Octet j₆*4**

Bits							G.991.2 Annex F upstream extended PMMS rate NPar(3)s – Octet j₆*4
8	7	6	5	4	3	2	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Upstream base data rate extension – Step j ₆ (bits 6-1) 32-TCPAM symmetric PSD (Note)
NOTE – The rates are determined by combining (bit 7) and the 6 bits in this octet to create a 7-bit number.							

**Table 11.17/G.994.1 – Standard information field – G.991.2 Annex B -
NPar(2) coding – Octet 1**

Bits							G.991.2 Annex B NPar(2)s – Octet 1
8	7	6	5	4	3	2	
x	x	x	x	x	x	1	Training mode (Note) (see also Table 11.16)
x	x	x	x	x	x	1	PMMS mode (Note) (see also Table 11.16)
x	x	x	x	x	1	x	Regenerator silent period (Note)
x	x	x	x	1	x	x	4-Wire
x	x	x	1	x	x	x	SRU
x	x	1	x	x	x	x	Diagnostic Mode
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	No parameters in this octet
NOTE – Only one of these bits shall be set at any given time.							

**Table 11.17.1/G.994.1 – Standard information field – G.991.2 Annex B -
NPar(2) coding – Octet 2**

Bits							G.991.2 Annex B NPar(2)s – Octet 2
8	7	6	5	4	3	2	
x	x	x	x	x	x	1	Warm-start enable (Note)
x	x	x	x	x	x	1	Reserved for allocation by the ITU-T
x	x	x	x	x	1	x	Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	No parameters in this octet
NOTE – Reserved for ETSI TM6							

Table 11.18.0.1/G.994.1 – Standard information field – G.991.2 Annex B – SPar(2) coding – Octet 2

Bits								G.991.2 Annex B SPar(2)s – Octet 2
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Upstream framing parameters
x	x	x	x	x	x	1	x	Dual-Mode TPS-TC Parameters
x	x	x	x	x	1	x	x	<u>Multiple-Pair Operation parameters</u> Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

Table 11.18.3.8/G.994.1 – Standard information field – G.991.2 Annex B Downstream PMMS parameters – NPar(3) coding – Octet 9

Bits								G.991.2 Annex B downstream PMMS NPar(3)s – Octet 9
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	1	
								Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

Table 11.18.3.9/G.994.1 – Standard information field – G.991.2 Annex B Downstream PMMS parameters – NPar(3) coding – Octet 10

Bits								G.991.2 Annex B downstream PMMS NPar(3)s – Octet 10
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	0	
								Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

Table 11.18.3.11/G.994.1 – Standard information field – G.991.2 Annex B Downstream PMMS parameters – NPar(3) coding – Octet 12

Bits								G.991.2 Annex B downstream PMMS NPar(3)s – Octet 12
8	7	6	5	4	3	2	1	
x	x	0	0	0	x	x	x	Downstream PMMS scrambler polynomial Index (i2, i1, i0)
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T

Table 11.18.3.12/G.994.1 – Standard information field – G.991.2 Annex B Downstream PMMS parameters – NPar(3) coding – Octet 13

Bits								G.991.2 Annex B downstream PMMS NPar(3)s – Octet 13
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Worst-case PMMS target margin (dB) (bits 5-1 × 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Worst-case PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.18.3.13/G.994.1 – Standard information field – G.991.2 Annex B
Downstream PMMS parameters – NPar(3) coding – Octet 14**

Bits								G.991.2 Annex B downstream PMMS NPar(3)s – Octet 14
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Current-condition PMMS target margin (dB) (bits 5-1 × 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Current-condition PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.18.4.8/G.994.1 – Standard information field – G.991.2 Annex B
Upstream PMMS parameters – NPar(3) coding – Octet 9**

Bits								G.991.2 Annex B upstream PMMS NPar(3)s – Octet 9
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	1	
								Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.18.4.9/G.994.1 – Standard information field – G.991.2 Annex B
Upstream PMMS parameters – NPar(3) coding – Octet 10**

Bits								G.991.2 Annex B upstream PMMS NPar(3)s – Octet 10
8	7	6	5	4	3	2	1	
x	x	0	0	0	0	0	0	
								Fixed value during PMMS <u>(all other values reserved for allocation by the ITU-T)</u>

**Table 11.18.4.11/G.994.1 – Standard information field – G.991.2 Annex B
Upstream PMMS parameters – NPar(3) coding – Octet 12**

Bits								G.991.2 Annex B upstream PMMS NPar(3)s – Octet 12
8	7	6	5	4	3	2	1	
x	x	0	0	0	x	x	x	Upstream PMMS scrambler polynomial Index (i2, i1, i0)
x	x	1	1	1	1	1	1	Reserved for allocation by the ITU-T

**Table 11.18.4.12/G.994.1 – Standard information field – G.991.2 Annex B
Upstream PMMS parameters – NPar(3) coding – Octet 13**

Bits								G.991.2 Annex B upstream PMMS NPar(3)s – Octet 13
8	7	6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Worst-case PMMS target margin (dB) (bits 5-1 × 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Worst-case PMMS target margin unspecified by terminal (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T)</u> No parameters in this octet

**Table 11.18.4.13/G.994.1 – Standard information field – G.991.2 Annex B
Upstream PMMS parameters – NPar(3) coding – Octet 14**

8		Bits						G.991.2 Annex B upstream PMMS NPar(3)s – Octet 14
7		6	5	4	3	2	1	
x	x	1	x	x	x	x	x	Current-condition PMMS target margin (dB) (bits 5-1 $\times$ 1.0 dB – 10 dB)
x	x	0	0	0	0	0	0	<u>Current-condition PMMS target margin unspecified by terminal</u> (values of bits 6-1 from 1 to 31 reserved for allocation by the ITU-T) No parameters in this octet

**Table 11.18.5.2/G.994.1 – Standard information field – G.991.2 Annex B
TPS-TC parameters – NPar(3) coding – Octet 3**

8		Bits						G.991.2 Annex B TPS-TC parameter NPar(3)s – Octet 3
7		6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Synchronous ISDN-BRA
x	x	x	x	x	x	1	x	PTM- (Note 1)
x	x	x	x	x	1	x	x	STM with DSC- (Note)
x	x	x	x	1	x	x	x	LAPV5 Enveloped POTS or ISDN- (Note)
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet
NOTE – Reserved for ETSI TM6								

**Table 11.18.8/G.994.1 – Standard information field – G.991.2 Annex B
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 1**

8		Bits						G.991.2 Annex B Dual Mode TPS-TC parameter Npar(3)s – Octet 1
7		6	5	4	3	2	1	
x	x	x	x	x	x	x	x	TPS-TC _a data rate – $n \times 64$ kbit/s (1 to 36)
x	x	1	1	1	1	1	1	<u>TPS-TC_a data rate unspecified</u> Unspecified by terminal

**Table 11.18.8.1/G.994.1 – Standard information field – G.991.2 Annex B
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 2**

8		Bits						G.991.2 Annex B Dual Mode TPS-TC parameter Npar(3)s – Octet 2
7		6	5	4	3	2	1	
x	x	0	0	0	x	x	x	TPS-TC _a sub-data rate – $i \times 8$ kbit/s (0 to 7)
x	x	1	1	1	1	1	1	<u>TPS-TC_a sub-data rate unspecified by terminal</u> (values of bits 6-1 from 8 to 62 reserved for allocation by the ITU-T) Unspecified by terminal

**Table 11.18.8.4/G.994.1 – Standard information field – G.991.2 Annex B
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 5**

		Bits						G.991.2 Annex B Dual Mode TPS-TC parameter NPar(3)s – Octet 5
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Type 2 – TPS-TC _a : Unaligned D2048U
x	x	x	x	x	x	1	x	Type 2 – TPS-TC _a : Unaligned D2048S
x	x	x	x	x	1	x	x	Type 2 – TPS-TC _a : Aligned D2048S/Fractional D2048S
x	x	x	x	1	x	x	x	Type 2 – TPS-TC _a : Synchronous ISDN BRA
x	x	x	1	x	x	x	x	Type 2 – TPS-TC _b : ATM-(Note)
x	x	1	x	x	x	x	x	Type 2 – TPS-TC _b : PTM-(Note)
x	x	0	0	0	0	0	0	No parameters in this octet
NOTE – Reserved for ETSI TM6								

**Table 11.18.8.6/G.994.1 – Standard information field – G.991.2 Annex B
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 7**

		Bits						G.991.2 Annex B Dual Mode TPS-TC parameter NPar(3)s – Octet 7
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Type 1 – TPS-TC _b : PTM-(Note)
x	x	x	x	x	x	1	x	Type 1 – TPS-TC _a : STM with DSC-(Note)
x	x	x	x	x	1	x	x	Type 1 – TPS-TC _a : LAPV5 Enveloped POTS or ISDN-(Note)
x	x	x	x	1	x	x	x	Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet
NOTE – Reserved for ETSI TM6								

**Table 11.18.8.7/G.994.1 – Standard information field – G.991.2 Annex B
Dual Mode TPS-TC parameters – NPar(3) coding – Octet 8**

		Bits						G.991.2 Annex B Dual Mode TPS-TC parameter NPar(3)s – Octet 8
8	7	6	5	4	3	2	1	
x	x					x	x	DRR Support-(Note): 01 DRR not supported 10 DRR supported, STU-C DRR master 11 DRR supported, STU-R DRR master
x	x	x	x	x	x			Lead Time (in frames)-(Note) count = bits 6-2 (supported values = 1 to 15)
x	x	0	0	0	0	0	0	<u>DRR Support and Lead Time unspecified by terminal</u> No parameters in this octet
NOTE – Reserved for ETSI TM6								

**Table 11.18.9/G.994.1 – Standard information field – G.991.2 Annex B
Multiple-Pair Operation parameters – NPar(3) coding – Octet 1**

<u>Bits</u>								<u>G.991.2 Annex B Multiple-Pair Operation parameters</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>NPar(3)s – Octet 1</u>
<u>x</u>	<u>x</u>					<u>x</u>	<u>x</u>	<u>M-pair count (count = bits 2-1 + 1)</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>			<u>Reserved for allocation by the ITU-T</u>

Table 11.30/G.994.1 – Standard information field – G.992.3 Annex A SPar(2) coding – Octet 1

Bits								G.992.3 Annex A SPar(2)s – Octet 1
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Spectrum bounds upstream
x	x	x	x	x	x	1	x	Spectrum shaping upstream
x	x	x	x	x	1	x	x	Spectrum bounds downstream
x	x	x	x	1	x	x	x	Spectrum shaping downstream
x	x	x	1	x	x	x	x	Transmit signal images above the Nyquist frequency
x	x	1	x	x	x	x	x	<u>Annex L Reach Extended PSD Masks</u> <u>Reserved for allocation by the ITU-T</u>
x	x	0	0	0	0	0	0	No parameters in this octet

**Table 11.30.6/G.994.1 – Standard information field – G.992.3 Annex L
Reach Extended PSD Masks NPar(3) coding – Octet 1**

<u>Bits</u>								<u>G.992.3 Annex L Reach Extended PSD Masks NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>Upstream Mask 1 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Upstream Mask 2 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

**Table 11.30.6.1/G.994.1 – Standard information field – G.992.3 Annex L
Reach Extended PSD Masks NPar(3) coding – Octet 2**

<u>Bits</u>								<u>G.992.3 Annex L Reach Extended PSD Masks</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>NPar(3)s – Octet 2</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>Downstream Non-Overlapped Mask supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Downstream Overlapped Mask supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.36/G.994.1 – Standard information field – G.992.3 Annex J SPar(2) coding – Octet 1

		<u>Bits</u>							
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>G.992.3 Annex J SPar(2)s – Octet 1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>Spectrum bounds upstream</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Spectrum shaping upstream</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Spectrum bounds downstream</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Spectrum shaping downstream</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Transmit signal images above the Nyquist frequency</u>	
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Submode PSD masks</u>	
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>	

Table 11.36.6/G.994.1/G.994.1 – Standard information field – G.992.3 Annex J Submode PSD Mask NPar(3) coding – Octet 1

		<u>Bits</u>							
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>G.992.3 Annex J NPar(3)s – Octet 1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>ADLU-32 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>ADLU-36 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>ADLU-40 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-44 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-48 supported</u>	
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-52 supported</u>	
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>	

Table 11.36.6.1/G.994.1 – Standard information field – G.992.3 Annex J Submode PSD mask NPar(3) coding – Octet 2

		<u>Bits</u>						<u>G.992.3 Annex J NPar(3)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>ADLU-56 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>ADLU-60 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>ADLU-64 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

The other SPar(2) and NPar(3) parameters for G.992.3 Annex J are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.3 Annex M. Other than these parameters, Tables 11.30.0.1 through 11.30.44.3/G.994.1 shall be used for G.992.3 Annex J. Transmission of SPar(2) and NPar(3) octets for G.992.3 Annex J shall follow transmission of Table 11.35/G.994.1, and precede transmission of Table 11.37/G.994.1. Effectively, Tables 11.30.0.1 through 11.30.44.3/G.994.1 become renumbered to Tables 11.36.0.1 through 11.36.44.3 for G.992.3 Annex J.

Table 11.49/G.994.1 – Standard information field – G.992.3 Annex M NPar(2) coding

<u>Bits</u>								<u>G.992.3 Annex M NPar(2)s</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
x	x	x	x	x	x	x	1	<u>NTR</u>
x	x	x	x	x	x	1	x	<u>Short initialization</u>
x	x	x	x	x	1	x	x	<u>Diagnostics mode</u>
x	x	x	x	1	x	x	x	<u>Reserved for allocation by the ITU-T</u>
x	x	x	1	x	x	x	x	<u>Reserved for allocation by the ITU-T</u>
x	x	1	x	x	x	x	x	<u>Reserved for allocation by the ITU-T</u>
x	x	0	0	0	0	0	0	<u>No parameters in this octet</u>

**Table 11.50/G.994.1 – Standard information field – G.992.3 Annex M SPar(2) coding –
Octet 1**

<u>Bits</u>								<u>G.992.3 Annex M SPar(2)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
x	x	x	x	x	x	x	1	<u>Spectrum bounds upstream</u>
x	x	x	x	x	x	1	x	<u>Spectrum shaping upstream</u>
x	x	x	x	x	1	x	x	<u>Spectrum bounds downstream</u>
x	x	x	x	1	x	x	x	<u>Spectrum shaping downstream</u>
x	x	x	1	x	x	x	x	<u>Transmit signal images above the Nyquist frequency</u>
x	x	1	x	x	x	x	x	<u>Submode PSD masks</u>
x	x	0	0	0	0	0	0	<u>No parameters in this octet</u>

**Table 11.50.6/G.994.1 – Standard information field – G.992.3 Annex M
NPar(3) Submode PSD Mask – Octet 1**

<u>Bits</u>								<u>G.992.3 Annex M NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
x	x	x	x	x	x	x	1	<u>EU-32 supported</u>
x	x	x	x	x	x	1	x	<u>EU-36 supported</u>
x	x	x	x	x	1	x	x	<u>EU-40 supported</u>
x	x	x	x	1	x	x	x	<u>EU-44 supported</u>
x	x	x	1	x	x	x	x	<u>EU-48 supported</u>
x	x	1	x	x	x	x	x	<u>EU-52 supported</u>
x	x	0	0	0	0	0	0	<u>No parameters in this octet</u>

**Table 11.50.6.1/G.994.1 – Standard information field – G.992.3 Annex M
NPar(3) Submode PSD mask – Octet 2**

		<u>Bits</u>						<u>G.992.3 Annex M NPar(3)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>EU-56 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>EU-60 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>EU-64 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

The other SPar(2) and NPar(3) parameters for G.992.3 Annex M are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.3 Annex M. Other than these parameters, Tables 11.30.0.1 through 11.30.44.3/G.994.1 shall be used for G.992.3 Annex M. Transmission of SPar(2) and NPar(3) octets for G.992.3 Annex M shall follow transmission of Table 11.49/G.994.1, and precede transmission of Table 11.51/G.994.1. Effectively, Tables 11.30.0.1 through 11.30.44.3/G.994.1 become renumbered to Tables 11.50.0.1 through 11.50.44.3 for G.992.3 Annex M.

Table 11.51/G.994.1 – Standard information field – G.992.5 Annex J NPar(2) coding

		<u>Bits</u>						<u>G.992.5 Annex J NPar(2)s</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>NTR</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Short initialization</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Diagnostics mode</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.52/G.994.1 – Standard information field – G.992.5 Annex J SPar(2) coding – Octet 1

		<u>Bits</u>						<u>G.992.5 Annex J SPar(2)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>Spectrum bounds upstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Spectrum shaping upstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Spectrum bounds downstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Spectrum shaping downstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Transmit signal images above the Nyquist frequency</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Submode PSD masks</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.52.6/G.994.1 – Standard information field – G.992.5 Annex J
Submode PSD Mask NPar(3) coding – Octet 1

		<u>Bits</u>						<u>G.992.5 Annex J NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>ADLU-32 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>ADLU-36 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>ADLU-40 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-44 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-48 supported</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>ADLU-52 supported</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.52.6.1/G.994.1 – Standard information field – G.992.5 Annex J
Submode PSD mask NPar(3) coding – Octet 2

		<u>Bits</u>						<u>G.992.5 Annex J NPar(3)s – Octet 2</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>ADLU-56 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>ADLU-60 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>ADLU-64 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

The other SPar(2) and NPar(3) parameters for G.992.5 Annex J are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.5 Annex J. Other than these parameters, Tables 11.30.0.1 through 11.30.44.3/G.994.1 shall be used for G.992.5 Annex J. Transmission of SPar(2) and NPar(3) octets for G.992.5 Annex J shall follow transmission of Table 11.51/G.994.1, and precede transmission of Table 11.53/G.994.1. Effectively, Tables 11.30.0.1 through 11.30.44.3/G.994.1 become renumbered to Tables 11.52.0.1 through 11.52.44.3 for G.992.5 Annex J.

**Table 11.57/G.994.1 – Standard information field – G.992.5 Annex M
NPar(2) coding**

<u>Bits</u>								<u>G.992.5 Annex M NPar(2)s</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>NTR</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Short initialization</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Diagnostics mode</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

**Table 11.58/G.994.1 – Standard information field – G.992.5 Annex M
SPar(2) coding – Octet 1**

<u>Bits</u>								<u>G.992.5 Annex M SPar(2)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>Spectrum bounds upstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>Spectrum shaping upstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>Spectrum bounds downstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Spectrum shaping downstream</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Transmit signal images above the Nyquist frequency</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Submode PSD masks</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

**Table 11.58.6/G.994.1 – Standard information field – G.992.5 Annex M
NPar(3) Submode PSD Mask – Octet 1**

<u>Bits</u>								<u>G.992.5 Annex M NPar(3)s – Octet 1</u>
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>EU-32 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>EU-36 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>EU-40 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>EU-44 supported</u>
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>EU-48 supported</u>
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>EU-52 supported</u>
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>

Table 11.58.6.1/G.994.1 – Standard information field – G.992.5 Annex M
NPar(3) Submode PSD mask – Octet 2

<u>Bits</u>								<u>G.992.5 Annex M NPar(3)s – Octet 1</u>	
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>		
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>EU-56 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>EU-60 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>EU-64 supported</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>	
<u>x</u>	<u>x</u>	<u>1</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>Reserved for allocation by the ITU-T</u>	
<u>x</u>	<u>x</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>No parameters in this octet</u>	

The other SPar(2) and NPar(3) parameters for G.992.5 Annex M are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.5 Annex M. Other than these parameters, Tables 11.30.0.1 through 11.30.44.3/G.994.1 shall be used for G.992.5 Annex M. Transmission of SPar(2) and NPar(3) octets for G.992.5 Annex M shall follow transmission of Table 11.57/G.994.1. Effectively, Tables 11.30.0.1 through 11.30.44.3/G.994.1 become renumbered to Tables 11.58.0.1 through 11.58.44.3 for G.992.5 Annex M.

3) Table 11.35

Delete the text immediately following Table 11.35.

4) Table 11.47

Revise the text immediately following Table 11.47 as follows:

The SPar(2) and NPar(3) parameters for G.992.5 Annex I are identical to those of G.992.5-3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.5 Annex I. Therefore Other than these parameters, Tables 11.33-30 through 11.3330.44.3/G.994.1 shall be used for G.992.5 Annex I. Transmission of SPar(2) and NPar(3) octets for G.992.5 Annex I shall follow transmission of Table 11.47/G.994.1, and precede transmission of Table 11.49/G.994.1. Effectively, Tables 11.33-30 through 11.3330.44.3/G.994.1 become renumbered to Tables 11.48 through 11.48.44.3 for G.992.5 Annex I.

5) Clause 3, Definitions

Add the following definition to clause 3 and renumber all subsequent definitions:

3.1 capabilities: The "enabled" (= supported) set of functions, not necessarily the complete set of functions implemented in the unit.

6) New clause 13

Add new clause 13 as follows:

13 Management Information Base (MIB) elements

This clause specifies the physical layer management for HSTU systems. It specifies Network Management elements content for configuration management.

13.1 Configuration parameters

13.1.1 GHS A43 Toneset Maximum PSD level in downstream (GHS A43 MAXPSDds)

The parameter¹ GHS_A43_MAXPSDds is defined as the maximum transmit PSD level for each individual G.hs tone of the A43 toneset in the downstream direction. The PSD level (in dBm/Hz) is calculated as the tone power averaged over a 4.3125 kHz bandwidth. The mandatory range to be supported by the HSTU-C is from –71.5 to –40 dBm/Hz, with 0.5 dB steps. If the value is set to the value –99, then the HSTU-C shall not transmit this toneset.

The value of the Attenuation in G.994.1 Transmit Power per Carrier for carrier set A43 as conveyed in the NPar(2) in Table 9.17/G.994.1 shall comply with the following constraint:

$$\underline{-3.65 - \text{Attenuation} - 36.35 \leq \text{GHS_A43_MAXPSDds}}$$

13.1.2 GHS A43c Toneset Maximum PSD level in downstream (GHS A43c MAXPSDds)

The parameter¹ GHS_A43c_MAXPSDds is defined as the maximum transmit PSD level for each individual G.hs tone of the A43c toneset in the downstream direction. The PSD level (in dBm/Hz) is calculated as the tone power averaged over a 4.3125 kHz bandwidth. The mandatory range to be supported by the HSTU-C is from –71.5 to –40 dBm/Hz, with 0.5 dB steps. If the value is set to the value –99, then the HSTU-C shall not transmit this toneset.

The value of the Attenuation in G.994.1 Transmit Power per Carrier for carrier set A43c as conveyed in the NPar(2) in Table 9.17/G.994.1 shall comply with the following constraint:

$$\underline{-3.65 - \text{Attenuation} - 36.35 \leq \text{GHS_A43c_MAXPSDds}}$$

7) Table 11.31

Revise the text immediately following Table 11.31 as follows:

The SPar(2) and NPar(3) parameters for G.992.3 Annex B are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.3 Annex B. ThereforeOther than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.3 Annex B. Transmission of SPar(2) and NPar(3) octets for G.992.3 Annex B shall follow transmission of Table 11.31/G.994.1, and precede transmission of Table 11.33/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.32 through 11.32.44.3 for G.992.3 Annex B.

¹ It is expected that HSTU-Cs that are colocated will use the same parameter setting.

8) Table 11.33

Revise the text immediately following Table 11.33 as follows:

The SPar(2) and NPar(3) parameters for G.992.3 Annex I are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.3 Annex I. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.3 Annex I. Transmission of SPar(2) and NPar(3) octets for G.992.3 Annex I shall follow transmission of Table 11.33/G.994.1, and precede transmission of Table 11.35/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.34 through 11.34.44.3 for G.992.3 Annex I.

9) Table 11.35

Revise the text immediately following Table 11.35 as follows:

The SPar(2) and NPar(3) parameters for G.992.3 Annex J are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.3 Annex J. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.3 Annex J. Transmission of SPar(2) and NPar(3) octets for G.992.3 Annex J shall follow transmission of Table 11.35/G.994.1, and precede transmission of Table 11.37/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.36 through 11.36.44.3 for G.992.3 Annex J.

10) Table 11.37

Revise the text immediately following Table 11.37 as follows:

The SPar(2) and NPar(3) parameters for G.992.4 Annex A are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.4 Annex A. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.4 Annex A. Transmission of SPar(2) and NPar(3) octets for G.992.4 Annex A shall follow transmission of Table 11.37/G.994.1, and precede transmission of Table 11.39/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.38 through 11.38.44.3 for G.992.4 Annex A.

11) Table 11.39

Revise the text immediately following Table 11.39 as follows:

The SPar(2) and NPar(3) parameters for G.992.4 Annex I are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.4 Annex I. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.4 Annex I. Transmission of SPar(2) and NPar(3) octets for G.992.4 Annex I shall follow transmission of Table 11.39/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.40 through 11.40.44.3 for G.992.4 Annex I.

12) Table 11.43

Revise the text immediately following Table 11.43 as follows:

The SPar(2) and NPar(3) parameters for G.992.5 Annex A are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.5 Annex A. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.5 Annex A. Transmission of SPar(2) and NPar(3) octets for G.992.5 Annex A shall follow transmission of Table 11.43/G.994.1, and precede transmission of Table 11.45/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.44 through 11.44.44.3/G.994.1 for G.992.5 Annex A.

13) Table 11.45

Revise the text immediately following Table 11.45 as follows:

The SPar(2) and NPar(3) parameters for G.992.5 Annex B are identical to those of G.992.3 Annex A, except for the Annex L Reach Extended PSD Masks SPar(2) parameter in Table 11.30/G.994.1 and its underlying NPar(3) parameters in Tables 11.30.6 and 11.30.6.1/G.994.1, which are not valid for G.992.5 Annex B. ~~Therefore~~Other than these parameters, Tables 11.30 through 11.30.44.3/G.994.1 shall be used for G.992.5 Annex B. Transmission of SPar(2) and NPar(3) octets for G.992.5 Annex B shall follow transmission of Table 11.45/G.994.1, and precede transmission of Table ~~11.46~~11.47/G.994.1. Effectively, Tables 11.30 through 11.30.44.3/G.994.1 become renumbered to Tables 11.46 through 11.46.44.3 for G.992.5 Annex B.

14) Table 9.xx

Revise existing and add new Tables 9.x.x as follows:

Table 9.0.2/G.994.1 – Identification field – SPar(1) coding – Octet 3

Bits								SPar(1)s – Octet 3
8	7	6	5	4	3	2	1	
x	x	x	x	x	x	x	1	Relative power level/carrier for upstream carrier set A4 (Note)
x	x	x	x	x	x	1	x	Relative power level/carrier for downstream carrier set A4 (Note)
x	x	x	x	x	1	x	x	<u>Relative power level/carrier for upstream carrier set A43c (Note)</u> Reserved for allocation by the ITU-T
x	x	x	x	1	x	x	x	<u>Relative power level/carrier for downstream carrier set A43c (Note)</u> Reserved for allocation by the ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by the ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by the ITU-T
x	1	x	x	x	x	x	x	Reserved for allocation by the ITU-T
x	0	0	0	0	0	0	0	No parameters in this octet

NOTE – The relative power level/carrier reported in a CLR, CL, MP, or MS message indicates the level used during the current G.994.1 session, including the start-up and cleardown procedures. It does not imply any requirements on the transmit power in this or future sessions.

Table 9.33/G.994.1 – Identification field – Relative power level/carrier for upstream carrier set A43c – NPar(2) coding

<u>Bits</u>		<u>Relative power level/carrier for upstream carrier set A43c Npar(2)s</u>						
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Attenuation in G.994.1 Transmit Power per Carrier Relative to Maximum Power (bits 6-1 $\times$ 0.5 dB) for upstream carrier set A43c (Note).
NOTE – All carriers in the carrier set shall be transmitted at the same power level.								

Table 9.35/G.994.1 – Identification field – Relative power level/carrier for downstream carrier set A43c – NPar(2) coding

<u>Bits</u>		<u>Relative power level/carrier for downstream carrier set A43c Npar(2)s</u>						
<u>8</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	
<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	Attenuation in G.994.1 Transmit Power per Carrier Relative to Maximum Power (bits 6-1 $\times$ 0.5 dB) for downstream carrier set A43c (Note).
NOTE – All carriers in the carrier set shall be transmitted at the same power level.								

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