International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.997.1

Amendment 4

(02/2015)

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

Digital sections and digital line system – Metallic access networks

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Physical layer management for digital subscriber line transceivers

Amendment 4

Recommendation ITU-T G.997.1 (2012) – Amendment 4

International Telecommunication Union

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

Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers

Amendment 4

Summary

Amendment 4 to Recommendation ITU-T G.997.1 (2012) includes the following additions:

– counter of uncorrected DTUs

– correct name of the PSD mask 997E17 M2x-NUS0 to 997E17 M2x-A.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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5.4	ITU-T G.997.1 (2009) Amd. 3	2011-06-22	15	11.1002/1000/11130
5.5	ITU-T G.997.1 (2009) Cor. 2	2011-10-29	15	11.1002/1000/11397
5.6	ITU-T G.997.1 (2009) Amd. 4	2011-12-16	15	11.1002/1000/11398
5.7	ITU-T G.997.1 (2009) Amd. 5	2012-02-13	15	11.1002/1000/11504
6.0	ITU-T G.997.1	2012-06-13	15	11.1002/1000/11645
6.1	ITU-T G.997.1 (2012) Amd. 1	2012-12-07	15	11.1002/1000/11798
6.2	ITU-T G.997.1 (2012) Amd. 2	2013-04-22	15	11.1002/1000/11893
6.3	ITU-T G.997.1 (2012) Amd. 3	2013-08-29	15	11.1002/1000/11996
6.4	ITU-T G.997.1 (2012) Amd. 4	2015-02-13	15	11.1002/1000/12374

* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

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.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers
Amendment 4

1) Add channel performance monitoring counters for uncorrected DTUs

Add clause 7.2.2.1.3.

7.2.2.1.3 Uncorrected DTU – Channel (RTXUC-C)

This parameter is a count of rtx-uc anomalies (the number of uncorrected DTUs) occurring in the bearer channel during the accumulation period.

Add clause 7.2.2.2.3.

7.2.2.2.3 Uncorrected DTU – Channel far-end (RTXUC-CFE)

This parameter is a count of far-end rtx-uc anomalies (the number of uncorrected DTUs) occurring in the bearer channel during the accumulation period.

Modify Tables 7-24 and 7-25 as follows:

Table 7-24 – Channel performance monitoring parameters

Category/Element	Defined in clause:	Q-Interface	U-C Interface	U-R Interface	T-/S-Interface
Near-end (xTU-C) performance monitoring counters (current and previous 15-minute interval)					
CV-C counter 15 minutes	7.2.2.1.1	R (M)	R (O)		
FEC-C counter 15 minutes	7.2.2.1.2	R (M)	R (O)		
RTXUC-C counter 15 minutes	7.2.2.1.3	R(M)	R(O)		
Near-end (xTU-C) performance monitoring counters (current and previous 24-hour interval)					
CV-C counter 24 hours	7.2.2.1.1	R (M)	R (O)		
FEC-C counter 24 hours	7.2.2.1.2	R (M)	R (O)		
RTXUC-C counter 24 hours	7.2.2.1.3	R(M)	R(O)		
Far-end (xTU-R) performance monitoring counters (current and previous 15-minute interval)					
CV-CFE counter 15 minutes	7.2.2.2.1	R (M)		R (O)	
FEC-CFE counter 15 minutes	7.2.2.2.2	R (M)		R (O)	
RTXUC-CFE counter 15 minutes	7.2.2.2.3	R (M)		R (O)	
Far-end (xTU-R) performance monitoring counters (current and previous 24-hour interval)					
CV-CFE counter 24 hours	7.2.2.2.1	R (M)		R (O)	
FEC-CFE counter 24 hours	7.2.2.2.2	R (M)		R (O)	
RTXUC-CFE counter 24 hours	7.2.2.2.3	R (M)		R (O)	

Table 7-25 – Support of channel performance monitoring parameters per Recommendation

Category/Element	ITU-T G.992.1	ITU-T G.992.2	ITU-T G.992.3	ITU-T G.992.4	ITU-T G.992.5	ITU-T G.993.2	ITU-T G.998.4
Near-end performance monitoring counters (current and previous 15-minute interval)							
CV-C counter 15 minutes	Y	Y	Y	Y	Y	Y	
FEC-C counter 15 minutes	Y	Y	Y	Y	Y	Y	
RTXUC-C counter 15 minutes							Y
Near-end performance monitoring counters (current and previous 24-hour interval)							
CV-C counter 24 hours	Y	Y	Y	Y	Y	Y	
FEC-C counter 24 hours	Y	Y	Y	Y	Y	Y	
RTXUC-C counter 24 hours							Y
Far-end performance monitoring counters (current and previous 15-minute interval)							
CV-CFE counter 15 minutes	Y	Y	Y	Y	Y	Y	
FEC-CFE counter 15 minutes	Y	Y	Y	Y	Y	Y	
RTXUC-CFE counter 15 minutes							Y
Far-end performance monitoring counters (current and previous 24-hour interval)							
CV-CFE counter 24 hours	Y	Y	Y	Y	Y	Y	
FEC-CFE counter 24 hours	Y	Y	Y	Y	Y	Y	
RTXUC-CFE counters 24 hours							Y

2) Correct name of the PSD mask 997E17-M2x-NUS0 to 997E17-M2x-A

Modify clause 7.3.1.2.15 as follows:

7.3.1.2.15 VDSL2 PSD mask class selection (CLASSMASK)

In order to reduce the number of configuration possibilities, the limit power spectral density masks (limit PSD masks) are grouped in the following PSD mask classes:

– Class 998 Annex A of [ITU-T G.993.2]: D-32, D-48, D-64, D-128.

– Class 997-M1c Annex B of [ITU-T G.993.2]: 997-M1c-A-7.

– Class 997-M1x Annex B of [ITU-T G.993.2]: 997-M1x-M.

– Class 997-M2x Annex B of [ITU-T G.993.2]: 997E17-M2x-~~NUS0~~A, 997E30-M2x-NUS0.

– Class 998-M2x Annex B of [ITU-T G.993.2]: 998-M2x-A, 998-M2x-M, 998-M2x-B, 998-M2x-NUS0, 998E17-M2x-NUS0, 998E17-M2x-NUS0-M, 998E30-M2x-NUS0, 998E30-M2x-NUS0-M, 998E17-M2x-A.

– Class 998ADE-M2x Annex B of [ITU-T G.993.2]: 998-M2x-A, 998-M2x-M, 998-M2x-B, 998-M2x-NUS0, 998ADE17-M2x-A, 998ADE17-M2x-B, 998ADE17-M2x-M, 998ADE17-M2x-NUS0-M, 998ADE30-M2x-NUS0-A, 998ADE30-M2x-NUS0-M, HPEADE1230, HPEADE1730.

– Class 998-B Annex C: POTS-138b, POTS-276b (clause C.2.1.1 of [ITU-T G.993.2]), TCM-ISDN (clause C.2.1.2 of [ITU-T G.993.2]).

– Class 998-CO Annex C of [ITU-T G.993.2]: POTS-138co, POTS-276co (clause C.2.1.1 of [ITU-T G.993.2]).

– Class HPE-M1 Annex B of [ITU-T G.993.2]: HPE17-M1-NUS0, HPE30-M1-NUS0, HPE1230-M1-NUS0, HPE1730-M1-NUS0.

Each class is designed such that the PSD levels of each limit PSD mask of a specific class are equal in their respective passband above 552 kHz.

(...)

Modify Table 7-7 as follows:

Table 7-7 – Definition of bits of LIMITMASK for each CLASSMASK

Bit number	Profile class	PSD mask classes								
		Annex A	Annex B						Annex C	
		998 Annex A	998-M2x Annex B	998ADE-M2x Annex B	997-M1x Annex B	997-M1c Annex B	997-M2x Annex B	HPE-M1 Annex B	998-B Annex C	998-CO Annex C
Octet 1										
...	...	...	...	...	...	...	...	...	...	...
Octet 5										
1	17	D-32	E17-M2x-NUS0	ADE17-M2x-A			E17-M2x-~~NUS0~~A	17-M1-NUS0	POTS-138b	
2	17	D-48	E17-M2x-NUS0-M	ADE17-M2x-B					TCM-ISDN	
3	17		E17-M2x-A	ADE17-M2x-NUS0-M					POTS_276b	
4	17			ADE17-M2x-M						
5	17									
6	17									
7	17									
8	17									
Octet 6										
...	...	...	...	...	...	...	...	...	...	...
NOTE – All unassigned bits are reserved by ITU.										

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