

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.997.1

Amendment 2

(04/2013)

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

Digital sections and digital line system – Access networks

Physical layer management for digital subscriber
line transceivers

Amendment 2

Recommendation ITU-T G.997.1 (2012) –
Amendment 2

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Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers

Amendment 2

Summary

Amendment 2 to Recommendation ITU-T G.997.1 (2012) covers the following functionalities:

- Addition of parameters to enable the vectoring modes.
- Addition of parameters for the data gathering functionality.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.997.1	1999-07-02	15
2.0	ITU-T G.997.1	2003-05-22	15
2.1	ITU-T G.997.1 (2003) Amd. 1	2003-12-14	15
2.2	ITU-T G.997.1 (2003) Amd. 2	2005-01-13	15
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4.1	ITU-T G.997.1 (2006) Cor. 1	2006-12-14	15
4.2	ITU-T G.997.1 (2006) Amd. 1	2006-12-14	15
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5.2	ITU-T G.997.1 (2009) Amd. 1	2010-06-11	15
5.3	ITU-T G.997.1 (2009) Amd. 2	2010-11-29	15
5.4	ITU-T G.997.1 (2009) Amd. 3	2011-06-22	15
5.5	ITU-T G.997.1 (2009) Cor. 2	2011-10-29	15
5.6	ITU-T G.997.1 (2009) Amd. 4	2011-12-16	15
5.7	ITU-T G.997.1 (2009) Amd. 5	2012-02-13	15
6.0	ITU-T G.997.1	2012-06-13	15
6.1	ITU-T G.997.1 (2012) Amd. 1	2012-12-07	15
6.2	ITU-T G.997.1 (2012) Amd. 2	2013-04-22	15

FOREWORD

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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.

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

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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/>.

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Recommendation ITU-T G.997.1

Physical layer management for digital subscriber line transceivers

Amendment 2

1) Updated reference

Update reference ITU-T G.993.2 in clause 2 as shown:

[ITU-T G.993.2] Recommendation ITU-T G.993.2 (2011~~06~~), *Very high speed digital subscriber line transceivers 2 (VDSL2)*.

2) Addition of parameters to enable the vectoring modes

2.1) Clause 7.3.1.13.9

Add clause 7.3.1.13.9

7.3.1.13.9 Vectoring mode enable (VECTORMODE_ENABLE)

This configuration parameter defines the vectoring initialization type to be allowed by the VTU-O on the line.

It is coded in a bit-map representation (0 if not allowed, 1 if allowed),
with the following definition:

- bit 0: initialization in ITU-T G.993.2 mode with neither Annex X nor Annex Y enabled
- bit 1: initialization in ITU-T G.993.2 Annex X
- bit 2: initialization in ITU-T G.993.2 Annex Y
- bit 3: initialization in ITU-T G.993.5
- bit 4 to 7: reserved by ITU-T

If ITU-T G.993.2 is enabled in the XTSE (octet 8), then at least one of the bits 0-3 shall be set to 1.

NOTE – If bit 0 is set to 0, the system is not allowed to operate in any ITU-T G.993.2 modes except those where Annex X, Annex Y or ITU-T G.993.5 are enabled.

2.2) Table 7-14

Modify Table 7-14 as follows:

Table 7-14 – Line configuration profile

Category/Element	Defined in:	Q-Interface	U-C Interface	U-R Interface	T-/S-Interface
...					
ITU-T G.993.5 specific (Vectoring)					
Vectoring frequency-band control upstream (VECTOR_BAND_CONTROL _{us})	7.3.1.13.1	R/W (M)			
Vectoring frequency-band control downstream (VECTOR_BAND_CONTROL _{ds})	7.3.1.13.2	R/W (M)			

Table 7-14 – Line configuration profile

Category/Element	Defined in:	Q-Interface	U-C Interface	U-R Interface	T-/S-Interface
FEXT cancellation line priorities upstream (FEXT_CANCEL_PRIORITY _{us})	7.3.1.13.3	R/W (O)			
FEXT cancellation line priorities downstream (FEXT_CANCEL_PRIORITY _{ds})	7.3.1.13.4	R/W (O)			
FEXT cancellation enabling/disabling upstream (FEXT_CANCEL_ENABLE _{us})	7.3.1.13.5	R/W (M)			
FEXT cancellation enabling/disabling downstream (FEXT_CANCEL_ENABLE _{ds})	7.3.1.13.6	R/W (M)			
XLINGREQ _{ds}	7.3.1.13.7	R/W(M)			
XLINGREQ _{us}	7.3.1.13.8	R/W(M)			
<u>VECTORMODE_ENABLE</u>	<u>7.3.1.13.9</u>	<u>R/W(O)</u>			
...					

2.3) Table 7-15

Modify Table 7-15 as follows:

Table 7-15 – Support of line configuration 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	ITU-T G.993.5
...								
ITU-T G.993.5 specific (Vectoring)								
VECTOR_BAND_ CONTROL _{us}								Y
VECTOR_BAND_ CONTROL _{ds}								Y
FEXT_CANCEL_ PRIORITY _{us}								Y
FEXT_CANCEL_ PRIORITY _{ds}								Y
FEXT_CANCEL_ ENABLE _{us}								Y
FEXT_CANCEL_ ENABLE _{ds}								Y
XLINGREQ _{ds}								Y
XLINGREQ _{us}								Y
<u>VECTORMODE_ENABLE</u>						<u>Y</u> (Note 3)		<u>Y</u>

Table 7-15 – Support of line configuration 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	ITU-T G.993.5
...								
NOTE 1 – In SNRM_MODE = 3 or 4 (Receiver referred virtual noise), this parameter is only defined for [ITU-T G.993.2].								
NOTE 2 – Those parameters apply only to ITU-T G.998.4 when used in conjunction with ITU-T G.993.2.								
<u>NOTE 3– This parameter applies only when Annex X or Annex Y is supported.</u>								

3) Add parameters for the data gathering functionality

3.1) Clause 7.3.6

Add clause 7.3.6

7.3.6 Data gathering configuration parameters

7.3.6.1 Logging depth event percentage per event – VTU-O (LOGGING_DEPTH_EVENT_PERCENTAGE_Oi)

This parameter is the percentage of the data gathering event buffer assigned to event type i at the VTU-O. The ID, i, of the event type is defined in Table 11-43 of [ITU-T G.993.2].

7.3.6.2 Logging depth event percentage per event – VTU-R (LOGGING_DEPTH_EVENT_PERCENTAGE_Ri)

This parameter is the percentage of the data gathering event buffer assigned to event type i at the VTU-R. The ID, i, of the event type is defined in Table 11-43 of [ITU-T G.993.2].

7.3.6.3 Logging depth for VTU-O reporting – VTU-R (LOGGING_DEPTH_REPORTING_O)

This parameter is the logging depth that is requested for reporting the VTU-O event trace buffer in the CO-MIB, in number of 6-byte data gathering records.

7.3.6.4 Logging depth for VTU-R reporting – VTU-R (LOGGING_DEPTH_REPORTING_R)

This parameter is the logging depth that is requested for reporting the VTU-R event trace buffer over the eoc channel, in number of 6-byte data gathering records.

7.3.6.5 Logging data report newer events first – VTU-R (LOGGING_REPORT_NEWER_FIRST)

If true, this parameter instructs the VTU-R to report newer events first, from the beginning of the event trace buffer. If false, this parameter instructs the VTU-R to report older events first, from the end of the event trace buffer.

3.2) Clause 7.5.3

Add clause 7.5.3

7.5.3 Data gathering line test, diagnostic and status parameters

7.5.3.1 Logging depth – VTU-O (LOGGING_DEPTH_O)

This parameter is the maximum depth of the entire data gathering event buffer at the VTU-O, in number of 6-byte data gathering records.

7.5.3.2 Logging depth – VTU-R (LOGGING_DEPTH_R)

This parameter is the maximum depth of the entire data gathering event buffer at the VTU-R, in number of 6-byte data gathering records.

7.5.3.3 Actual logging depth for reporting – VTU-O (ACT_logging_depth_reporting_O)

This parameter is actual logging depth that is used for reporting the VTU-O event trace buffer in the CO-MIB, in number of 6-byte data gathering records.

7.5.3.4 Actual logging depth for reporting – VTU-R (ACT_logging_depth_reporting_R)

This parameter is actual logging depth that is used for reporting the VTU-R event trace buffer over the eoc channel, in number of 6-byte data gathering records.

7.5.3.5 Event trace buffer – VTU-O (EVENT_TRACE_BUFFER_O)

This parameter is the event trace buffer containing the event records that originated at the VTU-O.

7.5.3.6 Event trace buffer – VTU-R (EVENT_TRACE_BUFFER_R)

This parameter is the event trace buffer containing the event records that originated at the VTU-R.

3.3) Tables 7-38, 7-39, 7-40 and 7-41

Add Tables 7-38, 7-39, 7-40 and 7-41 after Table 7-37:

Table 7-38 – Data gathering configuration profile

Category/Element	Defined in clause:	Q-Interface	U-C Interface	U-R Interface	T-/S-Interface
Data gathering					
LOGGING_DEPTH_EVENT_PERCENTAGE_Oi	7.3.6.1	R/W (O)			
LOGGING_DEPTH_EVENT_PERCENTAGE_Ri	7.3.6.2	R/W (O)		R/W (O)	
LOGGING_DEPTH_REPORTING_O	7.3.6.3	R/W (O)			
LOGGING_DEPTH_REPORTING_R	7.3.6.4	R/W (O)		R/W (O)	
LOGGING_REPORT_NEWER_FIRST	7.3.6.5	R/W (O)		R/W (O)	

Table 7-39 – Support of data gathering configuration 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	ITU-T G.993.5
Data gathering								
LOGGING_DEPTH_ EVENT_PERCENTAGE_ Oi						Y		
LOGGING_DEPTH_ EVENT_PERCENTAGE_ Ri						Y		
LOGGING_DEPTH_ REPORTING_O						Y		
LOGGING_DEPTH_ REPORTING_R						Y		
LOGGING_REPORT_ NEWER_FIRST						Y		

Table 7-40 – Data gathering reporting parameters

Category/Element	Defined in clause:	Q- Interface	U-C Interface	U-R Interface	T-/S- Interface	G- Interface
LOGGING_DEPTH_O	7.5.3.1	R (O)				
LOGGING_DEPTH_R	7.5.3.2	R (O)		R (O)		R (O)
ACT_logging_depth_reporting_ _O	7.5.3.3	R (O)				
ACT_logging_depth_reporting_ _R	7.5.3.4	R (O)				R (O)
EVENT_TRACE_BUFFER_O	7.5.3.5	R (O)				
EVENT_TRACE_BUFFER_R	7.5.3.6	R (O)		R (O)		R (O)

Table 7-41 – Support of data gathering reporting 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	ITU-T G.993.5
LOGGING_DEPTH_O						Y		
LOGGING_DEPTH_R						Y		
ACT_logging_depth_ reporting_O						Y		
ACT_logging_depth_ reporting_R						Y		
EVENT_TRACE_BUFF ER_O						Y		
EVENT_TRACE_BUFF ER_R						Y		

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