INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION STANDARDIZATION SECTOR

STUDY PERIOD 2017-2020

TD 43 (PLEN/15)

STUDY GROUP 15

Original: English

Question(s): 10/15 Geneva, 19-30 June 2017

TD

Source: Editor G.8113.2

Title: Draft G.8113.2 Amendment 1 (for consent)

Purpose: Other

Contact: Tom Huber
Coriant
Germany

Tel: +1 630 798 6625
Email: tom.huber@coriant.com

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T G.8113.2/Y.1372.2	2012-11-20	15	11.1002/1000/11402
1.1	ITU-T G.8113.2/Y.1372.2 (2012) Amd.1	2013-08-29	15	11.1002/1000/12021
2.0	ITU-T G.8113.2/Y.1372.2	2015-08-13	15	11.1002/1000/12546
2.1	ITU-T G.8113.2/Y/1372.2 (2015) Amd 1	2017	15	

Recommendation ITU-T G.8113.2/Y.1372.2 (08/2015) Amendment 1

Operations, administration and maintenance mechanisms for MPLS-TP networks using the tools defined for MPLS

Amendment 1

Summary

Amendment 1 to Recommendation ITU-T G.8113.2/Y.1372.2 (08/2015) adds material related to client signal fail handling.

1 Scope

This amendment contains modified text to be added Recommendation ITU-T G.8113.2 to describe client signal fail handling.

---

* 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.

2 References

3 Text modification for ITU-T G.8113.2

3.1 Modifications to clause 2

Add new references as shown:

[IETF RFC 4446] IETF RFC 4446, *IANA Allocations for Pseudowire Edge to Edge Emulation (PWE3).*

[IETF RFC 6478] IETF RFC 6478*, Pseudowire Status for Static Pseudowires.*

3.2 Modifications to table 7-1

Update the 'Proactive FM OAM functions' row of table 7.1 as shown:

Table 7-1 – OAM functions

Fault management (FM) OAM functions			
Proactive FM OAM functions	OAM functions	Protocol definitions	IETF RFCs
	Continuity check (CC)	Bidirectional forwarding detection (BFD) extensions	[IETF RFC 6428]
	Connectivity verification (CV)	Bidirectional forwarding detection (BFD) extensions	[IETF RFC 6428]
	Remote defect indication (RDI)	Flag in CC/CV message	[IETF RFC 6428]
	Alarm indication signal (AIS)	AIS message	[IETF RFC 6427]
	Link down indication (LDI)	Flag in AIS message	[IETF RFC 6427]
	Lock report (LKR)	LKR message	[IETF RFC 6427]
	Client Signal Fail (CSF)	PW OAM Status messages	[IETF RFC 6478]

3.3 Modifications to clause 7.2.1.1.5

Replace 'For further study.' with the following text:

The CSF OAM function is supported for PW clients by the use of PW OAM Status Messages as specified in [IETF RFC 6478]. The PW status values relevant to the CSF function are local attachment circuit and local PSN-facing PW faults as defined in [IETF RFC 4446].

3.4 Modifications to clause 8.9

Replace 'For further study.' with the following text:

The PW OAM Status Message format is defined in section 5.1 of [IETF RFC 6478].

3.5 Modifications to clause 9.9

Replace 'For further study.' with the following text:

The CSF procedures are based upon the static PW status signalling mechanism as specified in [IETF RFC 6478].

3.6 Modifications to Appendix I

Modify the first paragraph of clause I.1 as shown:

I.1 Maintenance entity group (MEG) nesting example

Figure I.1 provides an example scenario~~, using the default MEG level,~~ of nested MEGs for customer, provider and operator roles. In the figure, triangles represent MEPs, circles represent MIPs, and diamonds represent traffic conditioning points (TrCPs).

3.7 Modifications to Appendix II

Modify the text of Appendix II as shown:

Appendix II

Requirements traceability

(This appendix does not form an integral part of this Recommendation.)

Table II.1 is provided to assist readers in evaluating the suitability of this Recommendation for their application environment.

Table II.1 provides a quick reference to show which MPLS-TP OAM functional requirements are addressed in this Recommendation. It is expected that the table will be updated as necessary whenever this Recommendation is revised or amended.

The requirements listed in Table II.1 are drawn from [IETF RFC 5654] and [IETF RFC 5860], which were developed jointly by ITU-T and IETF.

Table II.1 – Requirements traceability

Source document	Source section	Requirement number	Level of support	Solution clause(s)	Notes
[IETF RFC 5654]	2.1	1	Full	All	Note 1
[IETF RFC 5654]	2.1	2	Full	All	Note 1
[IETF RFC 5654]	2.1	3	Full	All	Note 1
[IETF RFC 5654]	2.1	4	Partial	8	Note 2
[IETF RFC 5654]	2.1	5	Full	All	
[IETF RFC 5654]	2.1	6	Partial	All	Note 9
[IETF RFC 5654]	2.1	7	Full	All	
[IETF RFC 5654]	2.1	8	For further study (FFS)		

Table II.1 – Requirements traceability

Source document	Source section	Requirement number	Level of support	Solution clause(s)	Notes
[IETF RFC 5654]	2.1	15	Partial	All	Note 10
[IETF RFC 5654]	2.1	17	FFS		
[IETF RFC 5654]	2.1	21	Partial		Note 11
[IETF RFC 5654]	2.1	22	Full	All	Note 1
[IETF RFC 5654]	2.1	23 B	Partial		Note 4
[IETF RFC 5654]	2.1	23 C	Full	All	
[IETF RFC 5654]	2.1	27	Full	All	
[IETF RFC 5654]	2.1	28	Full	All	
[IETF RFC 5654]	2.1	29	Full	7.2.1.1.1, 7.2.1.2.1, 8.1, 9.1	
[IETF RFC 5654]	2.3	36	FFS	8	
[IETF RFC 5654]	2.3	44	Partial	7.2.1.2.1, 7.2.2.1.1	Note 3
[IETF RFC 5654]	2.3	45	Partial	7.2.1.2.1, 7.2.2.1.1	Note 3
[IETF RFC 5654]	2.3	46	Full	7.1	
[IETF RFC 5654]	2.5	56 A	Partial	All	Note 11
[IETF RFC 5654]	2.5	58	Full	7.2.1.1, 7.2.1.1.2, 7.2.1.1.3, 8.1.1, 9.1.1, 8.3, 9.3	
[IETF RFC 5654]	2.5.3	75	~~Partial~~~~Full~~Partial	7.2.1.1.2, 7.2.1.1.3, 7.2.1.1.5	Note 4
[IETF RFC 5654]	2.5.4	88	FFS		Note 12
[IETF RFC 5654]	2.5.5	90 A	Partial	7.2.1.2.4	Note 5
[IETF RFC 5654]	2.5.5	90 B	FFS		
[IETF RFC 5860]	2		Partial	All	Notes 1, 11
[IETF RFC 5860]	2.1.1		Partial	All	Note 6
[IETF RFC 5860]	2.1.2		Full	All	
[IETF RFC 5860]	2.1.3		Full	7.1	
[IETF RFC 5860]	2.1.4		Partial	All	Note 6
[IETF RFC 5860]	2.1.5		Partial	All	Note 6
[IETF RFC 5860]	2.1.6		Partial	All	Note 7
[IETF RFC 5860]	2.2		Full	All	Note 8
[IETF RFC 5860]	2.2.1		Partial	7.2.1.1	Note 4

Table II.1 – Requirements traceability

Source document	Source section	Requirement number	Level of support	Solution clause(s)	Notes
[IETF RFC 5860]	2.2.2		Partial	7.2.1.1.1, 8.1.1, 9.1.1	Note 9
[IETF RFC 5860]	2.2.3		Partial	7.2.1.2.1, 8.1.2, 9.1.2	Note 9
[IETF RFC 5860]	2.2.4		Full	7.2.1.2.1, 8.1.2, 9.1.2	
[IETF RFC 5860]	2.2.5		FFS		
[IETF RFC 5860]	2.2.6		Partial	7.2.1.2.4, 8.4, 9.4	Note 9
[IETF RFC 5860]	2.2.7		FFS		
[IETF RFC 5860]	2.2.8		Partial	7.2.1.1.3, 8.3, 9.3	Note 9
[IETF RFC 5860]	2.2.9		Full	7.2.1.1.2, 8.1.1, 9.1.1	
[IETF RFC 5860]	2.2.10		~~FFS~~~~Full~~Partial	7.2.1.1.5, 9.9	Note 4
[IETF RFC 5860]	2.2.11		Partial	7.2.2.1, 7.2.2.1.1, 7.2.2.2.1, 8.6, 9.6	Note 9
[IETF RFC 5860]	2.2.12		Partial	7.2.2.1, 7.2.2.2.2, 8.7, 8.8, 9.7, 9.8	Note 9
[IETF RFC 5860]	3				Note 7
[IETF RFC 5860]	4		FFS		

NOTE 1 – RFCs that define MPLS-TP extensions constitute a subset of MPLS, are part of existing MPLS standards, and are inherently interoperable with MPLS.

NOTE 2 – Interworking between MPLS-TP OAM, as defined in this Recommendation, and OAM defined elsewhere is not explicitly defined in either this Recommendation, nor in any referenced RFC. Interfaces (internal and external) are thus not defined, but evidence suggests that at least some degree of interworking is possible.

NOTE 3 – Currently referenced RFCs support CV and packet LM. Packet corruption or reordering are not addressed in referenced RFCs and are for further study.

NOTE 4 – This version supports remote defect indication and alarm indication. Client signal fail is ~~for further study~~supported only for PWs.

NOTE 5 – This version supports lock instruct.

NOTE 6 – ICC (and Global ICC) format identifiers are for further study in this Recommendation.

NOTE 7 – Some requirements apply to implementation.

NOTE 8 – Experimental OAM function support is explicitly described in clause 7.2.3.3.

NOTE 9 – Point-to-multipoint support is for further study.

Table II.1 – Requirements traceability

Source document	Source section	Requirement number	Level of support	Solution clause(s)	Notes
NOTE 10 – Separation of management and data planes is supported in MPLS, hence it is also supported in MPLS-TP. Separation of control and data planes is supported for MPLS-TP LSPs, but not for MPLS-TP PWs. NOTE 11 – It is difficult to specify full support for requirements stating a need for "*similarity*". NOTE 12 – It is unclear how the requirement in section 2.5.4, paragraph 88 of [IETF RFC 5654], "the management plane MUST allow the current protection status of all transport paths to be determined" – applies to, or impacts on, OAM as defined in this Recommendation.					