



Question(s): 10/15

STUDY GROUP 15 – CONTRIBUTION 943

Source: NTT

Title: Analyses and proposals for promoting early consent of G.tpoam

Abstract: G. tpoam is scheduled to be consent as one of the second-phase recommendations in the MPLS-TP standard in ITU-T. This contribution proposes to add the solution draft for a per-interface model and the information on channel-type allocations in the dependency table between internet-drafts and recommendations to promote discussion and consent of G.tpoam.

1. Introduction

G.tpoam is scheduled to be consent as one of the second-phase recommendations in the MPLS-TP standard in ITU-T. At the Stockholm interim meeting, the following action points were agreed upon [1] based on the discussion on working document (WD)28 [2].

Action point 1: develop a table that maps requirements → functions → protocols/solutions. The results of this work are reflected in WD36 [3].

Action point 2: the allocation of ACH types to functions or protocols shall be clarified.

Substantial work for G.tpoam began as a result of this discussion; however, there are still missing contents that need to be considered for early consent of G.tpoam.

This contribution proposes additional contents for consideration to promote discussion and to agree upon G.tpoam as soon as possible.

2. Discussion

2.1 Solution for per-interface model

In the MPLS-TP OAM framework draft, a per-interface model for OAM maintenance points is supported. For the next phase, the solution for the per-interface model should be specified. The most important technical issue is how to transmit OAM packets to egress MIP/MEP by maintaining fate sharing with the transport-plane path.

Contact:	Yoshinori Koike NTT Japan	Tel: +81 422 59 6723 Fax: +81 422 59 3493 E-mail: koike.yoshinori@lab.ntt.co.jp
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Contact:	Makoto Murakami NTT Japan	Tel: +81.422 59 6709 Fax: +81.422 59 3493 E-mail: murakami.makoto@lab.ntt.co.jp
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This transfer method for the per-interface model is indispensable for consenting to G.tpoam, therefore there should be discussion. According to the current draft in IETF, the only draft that describes the methodology is the following.

(Title) Handling MPLS-TP OAM Packets Targeted at Internal MIPs: draft-farrel-mpls-tp-mip-mep-map-01.txt

(URL) <http://tools.ietf.org/html/draft-farrel-mpls-tp-mip-mep-map-01>

This draft should be clearly included in IETF drafts vs. Recommendations, which is liaised between ITU-T and IETF as a required draft for consent of G.tpoam. All other related solutions should be compared and analyzed as soon as possible.

2.2 Handling of solution drafts and channel-type allocations

The categorization of the solution drafts were discussed and arranged at the Stockholm meeting in April 2010. As a result, the relationship between OAM functions and working group drafts were clarified [3]. Moreover, it was agreed that the allocation of ACH types to functions or protocols shall be clarified. However, the information on possible assignments of channel types are not clear yet. For better understanding of current related individual drafts and channel-type assignment, we propose to develop the following table or add a column for the information of channel-type allocation.

OAM	In dep list	Remarks	Required number of channel types
1 OAM Analysis draft-ietf-mpls-tp-oam-analysis	Yes	Analysis	No need
2 Packet Loss and Delay Measurement draft-frost-mpls-tp-loss-delay-00 draft-zhl-mpls-tp-sd-02	Yes		2 (1) LM (2) DM
3 LSP-Ping and BFD encapsulation over ACH draft-nitinb-mpls-tp-lsp-ping-bfd-procedures-02	Yes	Related to Nos. 4 and 6	2 (1) LSP ping (2) BFD-CC
4 LSP-Ping extensions for MPLS-TP draft-nitinb-mpls-tp-lsp-ping-extensions-01	Yes	Related to No.3	1 (1) LSP Ping
5 MPLS Fault Management OAM draft-sfv-mpls-tp-fault-01, draft-dai-mpls-tp-lock-instruct-00	Yes	Should be separated into 2 I-Ds	1(2?) (1) Fault manage (Lock Instruct?)
6 Proactive CV, CC, and RDI draft-asm-mpls-tp-bfd-cc-cv-02	Yes	Related to No.3	2 (1) BFD-CC (2) BFD-CC/CV
7 Client Failure Indication draft-he-mpls-tp-csf-01 becomes draft-he-pwe3-mpls-tp-csf	Yes		1 (1)CSF
8 Bidirectional Notify Message draft-liu-mpls-tp-bnm-01	Yes		1 (1) BNM
9 Diagnostic tool-test for MPLS transport profile draft-flh-mpls-tp-oam-diagnostic-test-00	Yes	BER will be supported	1 (1)TST
10 Operating MPLS Transport Profile LSP in Loopback Mode draft-boutros-mpls-tp-loopback-03.txt	No	Newly added in dependency table in April 2010	1 (1) loopback
11 Handling MPLS-TP OAM Packets Targeted at Internal MIPs draft-farrel-mpls-tp-mip-mep-map-01.txt	No	Proposed to be added in the dependency table as a document necessary for	No need

			G.tpoam consent	
DCN				
12	DCN RFC5718	Yes	Already allocated by IANA	2 (1)MCC 0x0001 (2)SCC 0x0002
Protection				
13	Linear Protection draft-ietf-mpls-tp-linear-protection	Yes		1 (1) PSC
14	Ring Protection draft-ietf-mpls-tp-ring-protection	Yes		1 (1) APS
Individual				
15	MPLS-TP OAM based on Y.1731 draft-bhh-mpls-tp-oam-y1731-04.txt	No	Updated on March 8, 2010	1 (1) Y.1731
16	Linear Protection Switching in MPLS-TP draft-zulr-mpls-tp-linear-protection-switching-00.txt	No	Made on March 23, 2010	1 (1) linear prot

Table 1: Dependency between MPLS-TP related solution internet-drafts and required number of channel types

3. Proposal

The following are our proposals.

- To add draft-farrel-mpls-tp-mip-mep-map-01.txt, which specifies the solution for per-interface model because this solution is essential for the consent of G.tpoam.
- To include information on channel-type allocation in the table, which is liaised between ITU-T and IETF.

4. References

- [1] NTT, ITU-T Q9,10,12,14/15 interim meeting in Stockholm, WD28 “Proposal of discussion points and actions for MPLS-TP OAM standardization”, April 2010.
- [2] Rapporteur, ITU-T Q9,10,12,14/15 interim meeting in Stockholm WD03r2 “Report of the Stockholm experts meeting 12-16 April 2010”, April 2010
- [3] Editors, ITU-T Q9,10,12,14/15 interim meeting in Stockholm WD36 “Tables of mapping OAM requirements to functions for G.mplstpoam”

Appendix1: Quoted from WD03r2 in Stockholm meeting
IETF drafts vs. Recommendations

1	Terminology Drafts	Recommendations for Consent		
		6/2010	2/2011	12/2011
1.1	MPLS-TP Terminology draft-ietf-mpls-tp-rosetta-stone	G.8101* (Note 1)	G.8101am1*	G.8101am2*
1.2	OAM Acronyms draft-ietf-opsawg-mpls-tp-oam-def	G.8101*	G.8101am1*	G.8101am2*
2	Requirements Drafts			
2.1	MPLS-TP requirements RFC 5654	G.8110.1		
2.2	MPLS-TP Network Management Requirements draft-ietf-mpls-tp-nm-req		G. 8151,	
2.3	MPLS-TP OAM Requirements draft-ietf-mpls-tp-oam-requirements	G.8110.1		
3	Framework Drafts	6/2010	2/2011	12/2011
3.1	MPLS-TP Framework draft-ietf-mpls-tp-framework	G.8110.1		
3.2	MPLS-TP P2MP Framework draft-fbb-mpls-tp-p2mp-framework	Note 2)	G.8110.1Am1,	
3.3	MPLS-TP Network Management Framework draft-ietf-mpls-tp-nm-framework	G. 8110. 1* G. 7712		
3.4	MPLS-TP OAM Framework draft-ietf-mpls-tp-oam-framework	G.8110.1	G.tpoam	
3.5	MPLS-TP Survivability Framework draft-ietf-mpls-tp-survive-fwk	G.8110.1		G.8131, G.8132
3.6	MPLS-TP Pseudowire Survivability Framework draft-xxxx-pwe3-mpls-tp-survive-fwk		G.8110.1am1	G.8131, G.8132
3.7	MPLS-TP Control Plane framework draft-ietf-mpls-tp-control-plane- framework	G.8110.1*	G.8080am*	
3.8	MPLS Transport Profile Data Plane Architecture draft-ietf-mpls-tp-data-plane	G.8110.1		
4	GACH Drafts	6/2010	2/2011	12/2011
4.1	Generic Associated Channel - GAL/GACH RFC 5586	G.8110.1		
4.2	DCN RFC5718	G.7712	G.tpoam	
4.3	ACH-TLV draft-ietf-mpls-tp-ach-tlv,		G.8112, G.tpoam	

5	Core Documents	6/2010	2/2011	12/2011
5.1	MPLS-TP Identifiers draft-ietf-mpls-tp-identifiers	G.8110.1		
5.2	MPLS-TP Security draft-fang-mpls-tp-security-framework		G.8151*	
5.3	MPLS-TP Security draft-ietf-mpls-mpls-and-gmpls-security-framework		G.8151	
6	Control Plane Drafts	6/2010	2/2011	12/2011
6.1	OAM Configuration Framework draft-ietf-ccamp-oam-configuration-fwk)		G.tpoam*,G.8151	
6.2	Control Plane Configuration of MPLS-TP OAM draft-ietf-ccamp-rsvp-te-mpls-tp-oam-ext		G.tpoam*,, G.8121*, G.8151	
6.3	LDP Extensions for MPLS-TP PW OAM configuration draft-zhang-mpls-tp-pw-oam-config becomes draft-zhang-pwe3-mpls-tp-ldp-oam-config		G.8121*, G.8151	
7	OAM	6/2010	2/2011	12/2011
7.1	OAM Analysis draft-ietf-mpls-tp-oam-analysis		G.tpoam*,	
7.2	Packet Loss and Delay Measurement draft-frost-mpls-tp-loss-delay		G.tpoam	
7.3	LSP-Ping and BFD encapsulation over ACH draft-ietf-mpls-tp-lsp-ping-bfd-procedures		G.tpoam	
7.4	LSP-Ping extensions for MPLS-TP draft-nitinb-mpls-tp-lsp-ping-extensions		G.tpoam	
7.5	MPLS Fault Management OAM draft-ietf-mpls-tp-fault,		G.tpoam	
7.6	Proactive CV, CC, and RDI draft-asm-mpls-tp-bfd-cc-cv		G.tpoam	
7.7	Client Failure Indication draft-he-mpls-tp-csf		G.tpoam	
7.8	Bidirectional Notify Message draft-liu-mpls-tp-bnm is covered by draft-ietf-mpls-tp-fault,			
7.9	Diagnostic tool-test for MPLS transport profile draft-flh-mpls-tp-oam-diagnostic-test		G.tpoam	
7.10	Operating MPLS-TP LSP in loopback mode Draft-boutoros-mpls-tp-loopback		G.tpoam	
8	Linear Protection	6/2010	2/2011	12/2011
8.1	Linear Protection draft-ietf-mpls-tp-linear-protection			G.8131

9	Ring Protection	6/2010	2/2011	12/2011
9.1	Ring Protection draft-ietf-mpls-tp-ring-protection From: draft-liu-mpls-tp-ring-protection draft-umansky-mpls-tp-ring-protection- switching draft-weingarten-mpls-tp-ring- protection			G.8132,
9.2	Ring protection analysis draft-yang-mpls-tp-ring-protection-			G.8132*
10	Protection triggering	6/2010	2/2011	12/2011
10. 1	Signal degrade triggered draft-zhl-mpls-tp-sd			G.8131, G.8132,

Notes:

- 1) * *Informative reference*
 - 2) G.8110.1 and G.8112 will reference RFC5331 and RFC5332 for P2MP
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