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TELECOMMUNICATION STANDARDIZATION SECTOR

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Question(s):	10/15

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Ref. : TD 313 (WP 3/15)

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Source:	ITU-T Study Group 15
Title:	MPLS-TP OAM Framework draft review (ref # 029.02)

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LIAISON STATEMENT

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For action to:	**IETF MPLS WG**
For comment to:	
For information to:	
Approval:	Agreed to by Question 10/15 (by correspondence)
Deadline:	28 May 2010

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Thank you for your liaison statement (ref # 029.01) soliciting Last Call review comments by ITU-T of the MPLS-TP OAM Framework draft.
The experts of Q10/15 have reviewed draft-ietf-mpls-tp-oam-framework-06.txt by correspondence.

The following comments were received:

#	comment	proposal
1.	The draft states that a Path Segment Tunnel is established to monitor a portion of a LSP. However, this description is not complete. Discussion on the "identifiers" draft has indicated that the tunnel is a logical relationship between a pair of nodes, it is the LSP inside the tunnel that supports OAM. Therefore the monitoring is performed by the LSP not the PST.	This should be clarified in the draft.
2.	The relationship between the LSP (or PW) being monitored, the PST and LSP within the PST that is performing the monitoring is unclear	This relationship should be clarified
3.	A method should be provided so that the relationship between the PST (and its contained LSP) and the LSP being monitored is simple to navigate. For example in existing transport networks when a TCM segment is established the identifier for this TCM segment is in the context of the end to end connection being monitored. The identifiers draft defines the identifier for a tunnel based on the end points of the tunnel and the LSP is identified in the context of the tunnel, so the relationship to the path being monitored is not obvious from the identifier of the	Provide a method so that the relationship between the PST (and its contained LSP) and the LSP being monitored is simple to navigate. If this relationship cannot be provided within the OAM framework draft it may be necessary to modify the identifiers draft.

	PST. Note that if we are using the 1:1 case i.e. ITU-T TCM then we may have several PSTs between the same pair of nodes each monitoring a different LSP.	
4.	When a PST is established on an existing LSP how are the label values used on the LSP being monitored updated to ensure that this LSP continues to operate. Considering, for example, a tunnel between nodes A and E, with a corresponding LSP that transits (i.e. is label switched at) nodes B-C-D: i.e. the LSP is A --- B --- C --- D --- E After the original LSP has been configured we could establish a PST between B and D, i.e. we now have a tunnel between B and D and a LSP that transits node C: i.e. the LSP in the PST is B --- C --- D We still have a tunnel between A and E, however the corresponding LSP is no longer label switched at node C, the LSP is now: A --- B --- D --- E Therefore the label swap operation at node C is no longer performed.	**Question:** How is the configuration of nodes B and D modified so that the correct (or expected) label is delivered. How can this operation be performed without an interruption to the service, also how can the PST be removed without a service interruption.
5.	This draft lacks a description of how a misconnection between an LSP and a PW is detected. This should be added before approval. Editor reply: It would be via receipt of a CC or CV frame with an incorrect encapsulation (as described in 5.1.1.1) Looking at it, It may be useful to have the text go futher to indicate that misbranching entry criteria is receipt of incorrect encap. Further comment: Please also consider: - PW MEP receiving LSP OAM, - PW MIP receiving LSP OAM (TTL expiry), - service-LSP MEP receiving PW OAM - service-LSP MIP receiving PW OAM (TTL expiry) - PST-LSP MEP receiving PW OAM - PST-LSP MIP receiving PW OAM (TTL expiry). Editor reply: In theory all of these would end up as loss of connectivity defects, as the MEP and MIP should not be checking for invalid encapsulations (either presence or absence of the GAL in context).	Add description. In addition the editor suggested: When we coined the text, we were considering a legacy encap (e.g. IP) and a GAL as being supported for a given sub-layer implementation so that some intelligence could be applied to dealing with unexpected OAM packets... The text could be modified such that even seeing a GAL under a PW label was a misbranching defect. The absence of a GAL at an LSP being a bit trickier given aliasing scenarios that could be considered....
6.	General 1: In draft-ieft-mpls-tp-suvivability it is mentioned that recovery could use fault isolation based on MPLS-TP OAM, because fault isolation is out of scope of the survivability draft it should be added to the MPLS-TP OAM framework.	
7.	General 2: Several times in the same sentence it is mentioned "MEP and its peer MEP" Sometimes the MEP is the source MEP and the peer is the sink MEP on other occasions the MEP is the sink MEP and the peer MEP is the source MEP.	Add source and sink as appropriate for each mention of MEP.
8.	General 3: Sometimes for an OAM message it is mentioned that the MIP is transparent, on other occasions nothing is mentioned.	Add MIP treatment consistently for each OAM message.
9.	Section 2.2: MIP: A MEG intermediate point (MIP) terminates and processes OAM messages.	Change text: MIP: A MEG intermediate point (MIP) terminates and processes OAM messages sent to this particular MIP.
10.	Section 2.2: In addition to Signal Fail, add Signal Degrade	Add text: Signal Degrade: A condition declared by a MEP when the data forwarding capability associated with a transport path has deteriorated (based on PM).
11.	Section 2.2: Tandem Connection:	Add text: TCs can be nested but cannot overlap.
12.	Section 3.3 MEPs	

	Add text to describe what a sink MEP does with OAM messages that do *not* belong to its MEG; discard/pass? consequent actions? Also describe how a source MEP treats OAM messages received from the client layer.	
13.	Section 3.4 MIPs A MIP can generate OAM packets only in response to OAM packets that are sent on the MEG it belongs to.	Add text: The OAM messages generated by the MIP are sent in the direction of the source MEP and not forwarded to the sink MEP.
14.	Section 5 Proactive monitoring is frequently "in-service" monitoring.	Please clarify: Is it frequently used as "in-service" monitoring, or is it frequently referred to as "in-service" monitoring?
15.	Section 5.2 RDI is an indicator that is transmitted by a MEP to communicate to its peer MEPs ... Because RDI is sent from a sink MEP to a source MEP the above "MEPs" would imply mp-2-p.	Should this be "MEP"
16.	Section 5.2.1 Why is the possibility to support RDI as an OAM information element embedded in a CC message not considered?	Please clarify
17.	Section 5.3 When a server MEP asserts signal fail, the MPLS-TP client (sub-)layer adaptation function	Change into: When a server MEP asserts signal fail, the co-located MPLS-TP client (sub-)layer adaptation function
18.	Section 5.3 Clearing of AIS is missing	Add text to describe how clearing of the AIS is detected.
19.	Section 5.4 Clearing of LCK is missing	Add text to describe how clearing of the LCK is detected.
20.	section 5.7 Clearing of CFI is missing	Add text to describe how clearing of the CFI is detected.
21.	Section 6.1 The on-demand functionality may be used to check either an entire MEG (end-to-end) or between a MEP to a specific MIP.	Change into: The on-demand functionality may be used to check either an entire MEG (end-to-end) or the section between a source MEP and a specific MIP.
22.	Section 6.1 On demand CV should have the ability to carry padding such that a variety of MTU sizes can be originated to verify the MTU capacity of the transport path.	Change "capacity" into "transport capability"
23.	Section 6.3.1.1 A MIP is transparent to the OAM test packets sent for throught estimation	Change "throught" into "throughput"
24.	Section 6.3.2 during data plane loopback, what is sent by the MIP(A-Z) in the forward (A -> Z) direction? the same user data and OAM as returned (in the MIP -> A direction)? what happens to the user data and OAM (Z -> A) received by the co-located MIP(Z-A), is it completely discarded resp. disregarded. How will the sink MEP (at A) respond to CC message intended to be sent from source MEP (at A) to sink MEP (at Z) but which are returned by the loopback to sink MEP (at A)?	Please clarify. Add text to describe after the clarification has been discussed.

	The same question for other OAM messages sent at the same time.	
25.	Section 6.5 add note (same as in section5.6) to first bullet	Add text: Note that this requires synchronized precision time at either MEP by means outside the scope of this framework.
26.	Section 7.1 it is not clear whether a single LKI message is sent or more than one.	Use the same mechanism as used by AIS: Sent LKI messages as long as the locking is required. The end of the locking is detected by the absence of LKI messages.
27.	Section 7.1: Regarding LCK reception and its consequent action in the client layer: In the locked state all traffic is blocked and only LCK messages are inserted by the MEP co-located adaptation function into the client layer. Consequently dLOC is detected by the client sink MEP which will trigger the generation of AIS in the client layer. (as described in G.8021 or Y.1731, note that the essense is same)	This should be clarified in the draft. The description of the consequent action should be added.
28.	The current method for TCM is to push a new label at the source MEP and pop that label at the sink MEP, so all the (client) data has an additional label. The objective is to use TCM to verify the performance of the original section of the path.	Add the description of the procedure used to add/remove TCM assuring that the original section is monitored. A hitless activation/deactivation of TCM should be possible.

Please note that some of the comments are high level comments which need further discussion.

Considering the amount of comments and the required further discussions, the Q10/15 experts request to have the opportunity for a final review of this draft before it can be approved.

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