
Question(s): 14/15 **Meeting, date:** Geneva, 31 May – 11 June 2010
Study Group: 15 **Working Party:** 3 **Intended type of document (R-C- TD):** WD22
Source: Rapporteur, Q14/15
Title: Resolution of the IETF review comments on draft G.7712

Contact: Hing-Kam Lam Tel: +1 908 582 0672
 Alcatel-Lucent Fax: +1 908 582 1124
 USA Email: Kam.Lam@alcatel-lucent.com

This document contains the resolution of the IETF review comments provided in TD364/WP3 on draft G.7712.

A column is added to the table in TD364/WP3 to capture the resolutions of Q14/15 on the IETF comments.

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
STANDARDIZATION SECTOR**

STUDY PERIOD 2009-2012

**STUDY GROUP 15
TD 364 (WP 3/15)**

English only

Original: English

Question(s): 9, 10, 12, 14/15 Geneva, 31 May - 11 June 2010

TEMPORARY DOCUMENT

Ref: [SG 15 incoming LS from IETF MPLS -E](#)

Source: IETF MPLS WG
Title: Response to LS174 - Draft revised Recommendation G.7712 for consent

LIAISON STATEMENT

For action to: SG 15
For comment to: -
For information to: -
Approval: IETF MPLS WG
Deadline: 11 June 2010

Contact: Loa Andersson Email: loa.andersson@ericsson.com
 Ericsson
 George Swallow Email: swallow@cisco.com
 Cisco

IETF review comments on “Draft revised Recommendation G.7712 for consent”

Attention: This is not a publication made available to the public, but an **internal ITU-T Document** intended only for use by the Member States of ITU, by ITU-T Sector Members and Associates, and their respective staff and collaborators in their ITU related work. It shall not be made available to, and used by, any other persons or entities without the prior written consent of ITU-T.

We understand that this document is only open for revision in the context of MPLS-TP. There are a number of changes directly related to MPLS-TP that are easily within this scope. There are also a number of sections of this document that are not directly related to MPLS-TP according to the name of their sections), but **are** related to how the MPLS-TP DCN will be constructed - these sections are therefore in scope for review and update.

The comments organized in the order they appear in the document. In the “type” field it is sometimes indicated whether the comment is technical or editorial.

We have further grouped comments according to those relevant to MPLS-TP, and other observations on the document that are out of scope for this review but which the ITU-T may want to address to improve the overall quality of the document.

	Page/section/para	Comment	Proposed new text	Type	Resolution
1.	Page I / Summary / para 1	<p>The text says: “This Recommendation defines the architecture requirements for a data communication network (DCN) which may support distributed management communications related to the telecommunication management network (TMN), distributed control plane communications (e.g., signaling and routing) related to the automatically switched optical network (ASON), and other distributed communications (e.g., order wire or voice communications, software download).”</p> <p>The comments are: “This appears to say that this document defines: - the architecture for a DCN which may support distributed communications related to the TMN - distributed control plane communications related to ASON - other distributed communications</p> <p>The second of these should be explicitly extended to include the control plane for MPLS-TP since ASON is specifically defined here as optical.”</p>	Please include distributed control plane communications related to MPLS.	T	<p>Agree, will draft base on the suggestion.</p> <p>Update has been done.</p>

	Page/section/para	Comment	Proposed new text	Type	Resolution
2.	Page i/ summary/3rd	The text says: "ASON requires a communication network, which is referred to as the signalling communication network (SCN) to transport signalling and routing messages between ASON components (e.g., CC components and RC components)."	Proposed new text: "ASON and MPLS-TP require communication networks, which are referred to as signalling communication networks (SCNs) to transport signalling and routing messages between functional components (e.g., CC components and RC components)."	?	Agree, will draft base on the suggestion. Update has been done.
3.	Page 1/sect 1/general	A general comment: We would like to clarify that this document does not consider a DCN that uses neither IP nor OSI. This is not a request for a document change, and it is not a blocking question on approval of this document. But it is a clarification that would be useful to our understanding of the ITU-T's requirements.		T	Will add text to clarify that protocols other than OSI and IP are outside the current scope of the document. Update has been done.
4.	Section 2 / general	Why has G.7712 a normative dependence to G.8110.1? G.8110.1 is only referenced in editor notes and very informative contexts.	Move G.8110.1 to the bibliography.		Move G.8110.1 to bibliography. Update has been done.
5.	Page 4 /section 2	The version of [IETF tp-nm-frwk] will be published as an RFC is version 12.			Will be replaced with the RFC number. [IETF tp-nm-frwk] has been put in the bibliography Update has been done.
6.	Page 6 / Section 3.2.4	The text says: "For example, an IP routing interworking function may form a gateway between an integrated IS-IS routed DCN and an OSPF routed DCN." Comment is: "References should be inserted."	Please insert a reference.		Suggestion for reference is welcome! No suggestion has been provided yet.

Comment [DB1]: Current version is

	Page/section/para	Comment	Proposed new text	Type	Resolution
7.	Section 4	<p>It would help to disambiguate IS-IS from IntISIS if references were cited in this section.</p> <p>The use of "integrated IS-IS" and "IntISIS" should be resolved throughout the document.</p>			<p>Editorial, leave it to the editor to clean up.</p> <p>Update has been done.</p>
8.	Page 7 / section 4	<p>LSP in the acronym list is expanded as "Link State Protocol Data Unit", while the document at least at the majority of the places uses LSP as in "Label Switched Path".</p>	<p>Add "LSP - Label Switched Path" to the acronym list.</p>		<p>Editorial, leave it to the editor to clean up.</p> <p>Use LS-PDU for Link State Protocol Data Unit.</p> <p>Update has been done.</p>
9.	Section 6.1.1 etc	<p>There is a problem with text that calls out specific equipment types or technologies without using "for example" and without being extended to be a full list. For example, in this section we have the text:</p> <p>"Multiple addressable SDH or OTN NEs may appear at a given site."</p> <p>The problem with this text (in general) is that the list of technologies implies that anything not in the list is deliberately excluded. For example (again) I do not believe it is the intention of this text to say that "Multiple addressable MPLS-TP NEs may not appear at a given site."</p> <p>Please replace this specific example with: "Multiple addressable NEs may appear at a given site."</p> <p>Please look for all similar issues within the document and fix them</p>			<p>Editorial. Add "e.g." or add more examples.</p> <p>Update has been done.</p>
10.	Section 6.1.4	<p>The requirements in section seem to be incomplete. You need to add requirements for native MPLS (i.e. MPLS-TP) interfaces with forward references to the relevant subsections of 7.1</p>			<p>Will expand the list in 6.1 as suggested.</p> <p>The forward reference to 7.1.3 includes the new subsections for MPLS-TP</p>

	Page/section/para	Comment	Proposed new text	Type	Resolution
11.	Section 6.2	<p>This Section is about the application to ASON. Shouldn't this actually be extended to apply to "ASON and MPLS-TP"?</p> <p>This is consistent with the assertion that MPLS-TP control plane will follow the ASON architecture.</p> <p>Maybe the point is that 6.1 is "TMN", so 6.2 should be "control plane".</p> <p>Text at various points would need to be updated, but no substantial technical changes are required.</p>			<p>Agree, will draft base on the suggestion</p> <p>Update has been done.</p>
12.	Section 6.2.2	<p>"In this example, the UNI, NNI, and CCI logical interfaces are carried via the SCN network"</p> <p>This sentence doesn't parse! An interface cannot be carried via a network. Note also that the N in "SCN" stands for "network".</p>			<p>Editorial, will produce text.</p> <p>Update has been done.</p>
13.	Section 6.2.3 (Subject to the question about Section 6.2)	<p>This section is limited to security of inter-domain DCN communications. This is important, but security of the DCN within the network is also important. It is particularly sensitive in PTNs since it is far easier to inject traffic into the DCN from the data plane.</p> <p>Thus, in support of MPLS-TP, this section needs to be enhanced to discuss more general DCN security. Most of this could probably be done by reference to IETF work.</p>			<p>Will add reference to the MPLS/GMPLS security framework, which is already in RFC editor queue. RFC number will be provided.</p>
14.	Section 6.2.4	<p>This section does not make sufficient distinction between a routing protocol being run in the SCN for the exchange of topology and topology status information about the data plane, and a routing protocol being run in the SCN for the exchange of information about the DCN topology and topology status.</p> <p>This distinction is very significant for the interpretation of the DCN specification.</p>			<p>Editorial, will add text to clarify.</p> <p>Update has been done.</p>
15.	Section 6.2.4	<p>The acronym "LSP" is not used consistently with the terminology section.</p>	<p>Add "LSP – Label Switched path" to the acronym list.</p>		<p>Modify as before.</p> <p>Update has been done.</p>

	Page/section/ para	Comment	Proposed new text	Type	Resolution
16.	Section 7.1.2.3	<p>The organisation of this section and its subsections is quite confusing. The section appears to be simultaneously attempting to describe SCN topology options and encapsulation methods, but is (a) not clear in its intent to do this, and (b) not clear in distinguishing one of these topics from the other, and indicating their relationship, in the text.</p> <p>For example, the section begins by referencing four DCN topology options from draft-ietf-ccamp-mpls-tp-cp-framework, and then states that there are three topology options for SCN links, but does not say how these sets of options relate.</p> <p>It then goes on to discuss each of these three SCN link topology options in subsections, but the options actually correspond to the first, second, and fourth subsection; the third subsection is "MT/SCC A Adaptation Function" and appears to describe encapsulation over the MPLS-TP G-ACh.</p> <p>It is not clear which, if any, of the three stated options for SCN links corresponds to the use of the G-ACh SCC as defined in RFC 5718.</p>			<p>Will reorganized.</p> <p>Update has been done.</p>

	Page/section/ para	Comment	Proposed new text	Type	Resolution
17.	Section 7.1.2.3	<p>This contains the text:</p> <p>“ [IETF tp-cp-frwk] describes the possible options how the control plane (signaling) communication can be carried with respect to the associated user traffic:</p> <ul style="list-style-type: none">- in-band,- out-of-band, in-fiber,- out-of-fiber, aligned topology- out-of-fiber, independent topology <p>The DCN architecture as described in this Recommendation supports all options listed above.</p> <p>Moreover, three options are defined for signaling communication network (SCN) links as follows: “</p> <p>The comment is: The final sentence here implies (in the context of the first paragraph) that [IETF tp-cp-frwk] defines the three options that follow. I do not find this definition. Perhaps I missed it.</p> <p>If the definitions are present in the referenced document, then the explanatory sections (7.1.2.3.1, etc.) should not be present since they would represent duplicate definitions. They should be replaced with a reference.</p> <p>If the definitions are not present in [IETF tp-cp-framework] then this document should not make them because that would represent defining MPLS-TP function.</p> <p>Maybe the purpose of these sections is not clear and they simply need to be realigned.</p>			<p>Editorial. Will be updated.</p> <p>Update has been done.</p>

	Page/section/ para	Comment	Proposed new text	Type	Resolution
18.	7.1.2.3.1	<p>In this case the SCN native packets (e.g., IP or OSINL packets) are directly encapsulated into the server layer. The server adaptation function recognizes SCN packets as non-MPLS frames ...</p> <p>When a shared trail SCN link is used, MPLS-TP cannot run in parallel with an IP (or other network layer network) user data plane over the same non-MPLS server layer trail.</p> <p>This is not true. There are many ways that user and SCN packets can be distinguished, including the use of distinct network layer protocol types, or other information within a common network layer protocol such as addressing.</p>			<p>It needs to be clarified that if the server layer code point for IP is used for the SCN IP flow other IP flows using the same code point cannot be distinguished without looking at other fields of the PDU – section will be updated</p> <p>Update has been done.</p>
19.	7.1.2.3 / 7.1.2.4	<p>It is not clear why these sections are structured so differently and have such different content, given the similarity of SCN and MCN topology options and encapsulation methods.</p>			<p>Will be aligned as part of the re-organization of 7.1.2.3.</p> <p>Update has been done.</p>
20.	Sections 7.1.2.3.1 and pursuant	<p>These sections contain Editor notes such as: [Editor's Note (G.8110.1 editor) - The paragraph above needs to be discussed/reviewed with Q14/15 and aligned with draft-ietf-mpls-tp-gach-dcn-00.txt]</p> <p>It appears that there are some text changes that are proposed but have not yet been made. This makes it hard to do the "final" review, and leads the reviewer to worry that there will be text changes of substance that require further review.</p>			<p>Editor notes will be removed and remaining issues will be resolved at this meeting – an editing session may be organized if necessary.</p> <p>Update has been done.</p>
21.	Section 7.1.2.3.1	<p>draft-ietf-mpls-tp-gach-dcn-00.txt has become RFC5718</p>	Change the reference		<p>Editor's notes will be removed and RFC5718 is referenced</p> <p>Update has been done.</p>

	Page/section/para	Comment	Proposed new text	Type	Resolution
22.	Section 7.1.2.3.1:	<p>The SCN native packet processing section can be clarified with text from RFC 5718. The point they are trying to make is that non-MPLS packets in the SCN are recognized and treated differently. Here is what RFC 5718 says...</p> <p>"Note that there is no requirement for MPLS-TP devices to support IP or OSI forwarding in the fast (forwarding) path. Thus, if a message is received on the MCC or SCC and is not targeted to an address of the receiving MPLS-TP node, the packet might not be forwarded in the fast path."</p> <p>The paragraph continues, but text to that effect and a reference is what is needed.</p> <p>The following statement... "When a shared trail SCN link is used, MPLS-TP cannot run in parallel with an IP (or other network layer network) user data plane over the same non-MPLS server layer trail."</p> <p>Seems to be a tautology... If there are incompatible protocols, then the server layer trail can not be shared. I might be missing a nuance here...</p> <p>I also think a reference to the data-plane draft might be handy in this section, to point out what can and can't be sent over the MPLS-TP data-plane.</p>			<p>Same as above: It needs to be clarified that if the server layer code point for IP is used for the SCN IP flow other IP flows using the same code point cannot be distinguished without looking at other fields of the PDU – section will be updated</p> <p>Update has been done.</p>
23.	7.1.2.3.1/7.1.2.3.2	<p>Note that these examples, in which the SCN native packets (e.g., IP or OSINL packets) are directly encapsulated into the MPLS-TP server layer trail implicitly rely on Network Layer Adaptation as defined in Section 3.4.5 of draft-ietf-mpls-tp-framework. This reference should be made explicit.</p>			<p>Add draft-ietf-mpls-tp-framework to the bibliography and add reference to 3.4.5.</p> <p>Reference to RFC3032 added.</p> <p>Update has been done.</p>
24.	Section 7.1.2.3.3.1:	<p>Change --> The diamonds in Figure X-Y.1 represent traffic shaping and conditioning functions that may be needed to prevent the SCC forwarding points to exceed their committed bandwidth in congestion situations.</p> <p>To --> ...SCC forwarding point from exceeding...</p>			<p>Editorial – will be changed as suggested</p> <p>Update has been done.</p>

	Page/section/ para	Comment	Proposed new text	Type	Resolution
25.	Section 7.1.2.3.2	This option involves, in the terminology of draft-ietf-mpls-tp-framework Sections 3.4.2/3.4.3, mapping user plane and SCN traffic to different client flows at the UNI. This discussion and terminology in this section should be aligned with these sections of the mpls-tp-framework.			No consensus to make any changes Update has been done.
26.	section 7.1.2.4.1	There are two 7.1.2.4.1 sections the first one should be removed			Will be fixed – duplication of text Update has been done.
27.	Section 7.1.2.4.1:	Similar comment as in 7.1.2.3.3.1: ...MCC forwarding point from exceeding...			Accepted Update has been done.
28.	Section 7.1.2.5.1	User traffic MPLS-TP LSPs (shown for the sake of completeness): This not appear to be shown in the figure.			Figure to be updated Update has been done.
29.	Sections 7.1.2.6 and 7.1.2.7	What does it mean that these sections remain for further study? Why is this document not being completed? How can this function be used without the termination functions? Isn't this function an important component that cannot be punted for future work?			7.1.2.7 (EoT) remains FFS. 7.1.2.6: text will be added.
30.	Section 7.1.3.2 Table x-y	There is a bug in the table. You can't use the same PID for IP and OSI Network Layer. OSI Network Layer should be x23 This table is probably useful, but the numbers defined here are not normative.			Copy and paste error – will be resolved Update has been done.

	Page/section/para	Comment	Proposed new text	Type	Resolution
31.	Section 7.1.6	<p>Text says: “The network layer PDU forwarding function forwards network layer packets.</p> <p><snip></p> <p>The preferred addressing format is IPv6. The IP routing protocol should be able to deal with IPv6 and IPv4 addressing.”</p> <p>The comment is: “The statement about the routing protocol is out of context. This section describes forwarding of PDUs, not routing protocol mechanisms. Indeed, I can't determine whether the routing protocol is mandatory in the DCN of an MPLS-TP network.</p> <p>The statement about the preferred addressing format for network layer PDUs seems very strange. The preferred format will surely depend on the DCN configuration and capabilities. Is this a statement that the preferred technology for DCNs is IPv6?”</p>			Out of scope of this revision. Discussion deferred until next revision.
32.	Section 7.1.10	<p>The text says: “A DCF supporting IP routing shall support integrated IS-IS (see clause 7.1.10.1 for integrated IS-IS requirements) and may also support OSPF as per [IETF RFC 2328] and [IETF RFC 2740] as well as other IP routing protocols”</p> <p>The comment is: “This appears to say that when a piece of MPLS-TP equipment supports IP-based MPLS-TP DCN and supports the use of a routing protocol in the DCN (as opposed to static or default routing) it must support integrated IS-IS. That is saying two things: - it must support IS-IS regardless of whether it supports OSPF - it must include CLNS support in the IS-IS implementation</p> <p>These requirements have not been discussed with the IETF and go beyond the requirements and frameworks documented as part of the cooperation project. New MPLS-TP requirements should be brought forward using the agreed process.”</p>			Out of scope of this revision. Discussion deferred until next revision.

	Page/section/ para	Comment	Proposed new text	Type	Resolution
33.	Section 7.1.10.1 and Annex A	<p>If Section 7.1.10 makes three-way handshake a requirement for MPLS-TP, this document needs to be updated to reference IETF RFCs for this function and not provide its own definition. The same applies for the description of protocol behavior in the subsequent subsection which should actually simply be a normative reference to the IETF RFCs.</p> <p>Annex A says "The three-way handshaking procedure is based upon and designed to be compatible with, the IETF IS-IS Working Group's Three-way Handshaking function ([b-IETF RFC 3373])."</p> <p>It is clearly important that any routing protocol used in the DCN of MPLS-TP should be compatible with standard IETF routing protocols. In this context "is based upon" is a very worry phrase. This Annex should be replaced with a simple reference to the relevant RFCs.</p> <p>Please note that RFC 3373 has been obsoleted by the standards track RFC 5303 and any IS-IS implementation of 3-way handshake in an MPLS-TP DCN would be expected to be conformant with RFC 5303.</p>			<p>Out of scope of this revision.</p> <p>Discussion deferred until next revision.</p> <p>– another comment also suggest to replace the 3-way handshake description with a reference – further discussion needed.</p>

	Page/section/ para	Comment	Proposed new text	Type	Resolution
34.	Section 7.1.15	<p>It is inappropriate to describe the function of MPLS signaling in the normative part of this document. There are several reasons:</p> <ul style="list-style-type: none"> - It is not possible to give a full and accurate representation of the protocol - It is not clear that the correct base reference is RFC 3209 rather than RFC 3473 - The operation of the protocol spec (even at the high level described) is not a normative part of a DCN spec. It should not be included in this document. <p>This whole section is actually out of scope and should be deleted, and the references that are no longer needed should be removed.</p> <p>Or is this section and the subsequent sections trying to describe the mechanisms that might be used to set up LSPs within the DCN? If so, this should be made very clear and the material in this section and the subsequent sections should be handled entirely by reference. Additionally, if this is the case, I would expect the other potential underlying technologies to get similar attention.</p> <p>Is the "MPLS" referred to within the DCN MPLS of MPLS-TP?</p>			<p>Out of scope of this revision.</p> <p>Discussion deferred until next revision.</p> <p>A note has been added to Section 7.1.13 to clarify that Sections 7.1.13 through 7.1.19 are describing aspects of using native MPLS as ECC (SCC or MCC). Additional clarification may be provided in a future revision of this Recommendation.</p>
35.	Section 7.1.16	<p>What is this section doing here? Is the MPLS forwarding behavior in scope for the DCN specification? Surely it is an underlying technology and so out of scope.</p>			Discussion deferred until next revision.
36.	Section 7.1.17	<p>The MPLS path computation function can also compute paths for bidirectional LSPs.</p> <p>But why is this section present? Surely the underlying DCN technology is out of scope.</p>			Discussion deferred until next revision.
37.	Section 7.1.19	<p>Why is it appropriate to describe how to provide MPLS protection within the infrastructure of a DCN? For example, there is no description of how to provide OTN protection if the DCN is built on OTN</p>			Discussion deferred until next revision.
38.	Section 7.1.19.2	<p>The addition of a PDU sequence number under the MPLS shim header in a DCN PDU carried over an MPLS LSP is non-standard and not interoperable with standard MPLS. This cannot be supported as part of the DCN for MPLS-TP.</p>			Discussion deferred until next revision.

	Page/section/para	Comment	Proposed new text	Type	Resolution
39.	Section 7.2	<p>This very small section seems entirely out of place. It is probably very incomplete, and some of the content is questionable.</p> <p>For example, how is it a requirement that "The LSP size shall be configurable"? Assuming that this is the Link State PDU, this is only relevant if IS-IS or IntISIS is in use. Therefore it is not a requirement of the DCN.</p> <p>For example, "Area ID provisioning per interface, including ECC channels and LAN, is required for OSPF" is true, but there are plenty of other aspects of the protocol that also need to be configured if it is to work.</p> <p>A far better way to approach the requirements would be...</p> <p>"It must be possible to configure the routing and signaling protocols for flexible operation in the DCN and such that an appropriate MTU can be selected."</p>			<p>Out of scope of this revision.</p> <p>Discussion deferred until next revision.</p>
40.	Section 7.3	<p>Considerations for securing DCN protocols for an MPLS-TP network can be found in draft-ietf-mpls-mpls-and-gmpls-security-framework.</p> <p>==Out of scope comments that the ITU-T may also want to review==</p> <p>The Summary section appears to include some acronyms that are not expanded (NEF, OSF, RC, CC)</p>			<p>This section can be removed because it is redundant with sections 6.1.3 plus 6.2.3. However the removal will be done in next revision.</p>
41.	general	<p>There seems to be a mix of usage "OSI Network Layer" and "CLNP" Compare with consistent use of "IP"</p>			<p>To be checked and updated in next revision.</p>
42.	general	<p>Overall: fix references especially in the case of draft -> RFC</p>			<p>References updated</p> <p>Update has been done.</p>
43.					