INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION STANDARDIZATION SECTOR

STUDY PERIOD 2013-2016

COM 15 – LS 043 – E

English only

Original: English

Question(s):	3/15	1-12 July 2013

LIAISON STATEMENT

Source:	ITU-T Study Group 15
Title:	Liaison Statement on the SG15 OTNT Standardization Work Plan

LIAISON STATEMENT

For action to:	-
For comment to:	ITU-T TSAG, SG12, SG13, ATIS, TIA, IEC, IETF (ccamp, pce and mpls WGs), IEEE (802.1, 802.3 WGs), OIF, MEF
For information to:	-
Approval:	ITU-T SG15 meeting (12 July 2013)
Deadline:	7 March 2014

Contact:	Yoshinori Koike NTT Japan	Tel: +81 422596723 Email: koike.yoshinori@lab.ntt.co.jp

Thank you for your previous review and comments for "Optical Transport Networks & Technologies Standardization Work Plan". Attached is the updated version from this SG15 meeting (Geneva, 1-12 July 2013). This version reflects recent development of related standards and your valuable input. We appreciate your review of this latest version and comments.

Attachment: OTNT Standardization Work Plan, Issue 17 (TD107R2(PLEN))

ANNEX B

Question(s):	**Q14/15**	**Meeting, date:**	**Geneva, 1 – 12 July 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Telecommunication Management Documentation Plan**		

LIAISON STATEMENT

For action to:	
For comment to:	
For information to:	**ITU-T SG2 Question 5**
Approval:	**ITU-T SG15 Plenary Meeting**
Deadline:	**None**

Contact:	Hing-Kam LAM Alcatel-Lucent USA	Tel: +1 732-331-3476 Fax: Email: Kam.Lam@alcatel-lucent.com

Please don't change the structure of this table, just insert the necessary information.

Q14/15 thanks Question 5 of SG2 for the liaison statement TD13/G (COM 2 – LS 11 - E) on the Telecommunication Management and OAM Project Plan. To assist SG2 in updating the Telecommunication Management Documentation Plan, we attached for your information the status of the management-related Recommendations that Q14/15 are responsible for.

Attachment:

– TD90/WP3: Status of Management-related SG15 Recommendations

Annex C

Question(s):	**Q10**	**Meeting, date:**	**1 - 12 July 2013, Geneva**
Study Group:	**SG15**	**Working Party:**	**WP3**
Source:	**ITU-T SG15**		
Title:	**Response to Liaison MEF-LS-57 on PDUs, Opcodes and TLVs for SAT PDU and Latching Loopback**		

LIAISON STATEMENT

For action to:	**Metro Ethernet Forum**
For comment to:	**-**
For information to:	**-**
Approval:	**ITU-T SG15**
Deadline:	**16 September 2013**

Contact:	Huub van Helvoort Rapporteur Q10/15	Tel: +31 6 49248936 Email: huub.van.helvoort@huawei.com

[TSB: URGENT: must be received by MEF by 19 July 2013]

Mr Chen, Mr Bencheck and Mr Ranganathan,

ITU-T SG15 thanks MEF for their liaison (MEF-LS-57) regarding the use of PDUs (including 1SL), Opcodes, and TLVs for SAT PDU and Latching Loopback. The liaison raised a number of points that are addressed below.

Allocation of Opcodes

Following previous liaisons, it was proposed by ITU-T SG15 that Opcodes should be allocated in G.8013/Y.1731, and we are pleased that MEF accepts this proposal. At the recent SG15 meeting, contributions were received regarding such allocations, and the following outcomes were agreed:

- Opcodes are allocated for use in the MEF Latching Loopback and SAT Control protocols, as follows:
  - 56: Latching Loopback Reply (LLR)
  - 57: Latching Loopback Message (LLM)
  - 58: Service Activation Testing Control Reply (SCR)
  - 59: Service Activation Testing Control Message (SCM)
- A new revision of G.8013/Y.1731 has been consented, which allocates these Opcode values. However, details are not included in this revision, as it is not possible to refer to the specific MEF documents until they have been approved in MEF and document numbers have been allocated.
  Note: The consented text has been sent in a separate liaison. According to the ITU-T

process, the consented revision will now enter a Last Call period prior to final approval and publication.

- The text that would be needed to describe the detail in G.8013/Y.1731 has been captured in the corresponding Living List. It is our intention to publish a future amendment to G.8013/Y.1731 incorporating this text, and including reference to the specific MEF Technical Specifications for Latching Loopback and SAT PDU, once the MEF documents have been approved and document numbers allocated.

Allocation of TLV Types

SG15 would like to thank MEF for bringing this issue to our attention. We agree with the proposal to take the same approach for TLV Types as has been agreed for Opcodes. To this end, the same outcomes were agreed as described for Opcodes above:

- The following TLV Types are allocated:
  - 37: Latching Loopback TLV
  - 38: Service Activation Testing Control TLV
- These are allocated in the consented revision of G.8013/Y.1731 as above.
- As before, the more detailed text refering to the MEF specifications has been captured in the Living List and will be included in the same amendment described above, once the MEF documents are completed.

Loss Measurement PDU

SG15 acknowledges that MEF has selected the 1SL PDU as the loss measurement PDU for Service Activation Testing. We confirm that we see no issues with this use of 1SL in a MEF-specific way.

Next Meeting

SG15, and Q10/15 particularly, would like to thank MEF for the constructive approach taken on these issues and looks forward to continuing to work jointly with MEF. Please keep us informed of the progress of the Latching Loopback and SAT PDU specifications. Our forthcoming meetings are:

- Q10 Interim Meeting, 23-27 September 2013
- SG15 Plenary Meeting, 24 March – 4 April 2014

Annex D

Question(s):	**Q10**	**Meeting, date:**	**1-12 July 2013, Geneva**
Study Group:	**SG15**	**Working Party:**	**WP3**
Source:	**ITU-T SG15**		
Title:	**Liaison on initiating approval of G.8011.x series**		

LIAISON STATEMENT

For action to:	**Metro Ethernet Forum**
For comment to:	**-**
For information to:	**-**
Approval:	**ITU-T SG15**
Deadline:	**February 2014**

Contact:	Huub van Helvoort Rapporteur Q10/15	Tel: +31 6 49248936 Email: huub.van.helvoort@huawei.com

[TSB: URGENT: must be received by MEF by 19 July 2013]

Mr Chen, Mr Bencheck and Mr Ranganathan,

The experts of ITU-T SG15 Question 10 would like to inform you that the following recommendations have been consented at the July 2013 Plenary:

- Recommendation ITU-T G.8011/Y.1307 (2013) Corrigenda, *Ethernet service characteristics*
- Recommendation ITU-T G.8011.1/Y.1307.1 (2013), *Ethernet private line service*.
- Recommendation ITU-T G.8011.2/Y.1307.2 (2013): *Ethernet virtual private line service*
- Recommendation ITU-T G.8011.3/Y.1307.3 (2013): *Ethernet virtual private LAN service*
- Recommendation ITU-T G.8011.4/Y.1307.4 (2013): *Ethernet virtual private tree service*
- Recommendation ITU-T G.8011.5/Y.1307.5 (2013): *Ethernet private LAN service*

It is the intention of Q10 to consider updating and possibly consolidating these Recommendations at the next plenary meeting, March 2014 depending on your approval of MEF 10.3 and MEF 6.2. As a result, we look forward to updates on your progress and approval of these specifications.

_____

TSB : Please attach TD19R1/PLEN, TD20R1/PLEN, TD21R1/PLEN, TD22R1/PLEN, TD23R1/PLEN and TD24R1/PLEN

Annex E

Question(s):	**11**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**LSOR on OTN TCM White Paper (response to TD41/3, OIF - LS 10 –E)**		

LIAISON STATEMENT

For action to:	
For comment to:	
For information to:	**OIF**
Approval:	**ITU-T SG15**
Deadline:	

Contact:	Mark Loyd Jones Xtera Communications, Inc. USA	Tel: +1 214 436 3241 Fax: Email: mark.jones@xtera.com
Contact:		Tel: Fax: Email:

Please don't change the structure of this table, just insert the necessary information.

Thank you for taking Q9 and Q11/15 comments (in COM15-LS032) into account as you finalized the OIF-OTN-TCM-01.0. We were surprised to see it posted on the OIF website with the Implementation Agreements rather than in the location specifically labelled for White Papers. Based on informal communications with Jonathan Sadler, we learned that it is the OIF policy to post white papers like this one with Implementation Agreements. Q11/15 is concerned that doing so raises the perceived value of the content to be equivalent to Implementation Agreements. We hope that readers do not misunderstand from the location of the document and the title including "Guidelines," that this document is not intended to be prescriptive but descriptive.

Annex F

Question(s):	**12/15, 14/15**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Work plan on SDN based on TSAG direction**		

LIAISON STATEMENT

For action to:	**SG13**
For comment to:	
For information to:	**TSAG**
Approval:	**ITU-T SG15**
Deadline:	**2013-10-01**

Contact:	Stephen Shew Rapporteur Q12/15	Tel:+1 613-670-3211 Fax: Email: sshew@ciena.com
Contact:	Hing-Kam Lam Rapporteur Q14/15	Tel: +1 732-331-3476 Fax: Email: Kam.Lam@alcatel-lucent.com

Please don't change the structure of this table, just insert the necessary information.

Following the adoption of Resolution 77 at WTSA-12, the receipt of the SG13 liaison on "Plans for implementation of Resolution 77 and recommendations to TSAG" (Ref. : COM 13 – LS 10 – E), and the TSAG meeting in June 2013, SG15 is aware of the allocation of SDN work within ITU-T, and the more detailed plans of SG13.

In addressing the transport aspects of SDN, SG15 shares the same views as expressed in the SG13 liaison on the need to collaborate within ITU-T and with external SDOs on SDN topics, as well as taking time to understand the scope of what ITU-T (SG15 specifically) should undertake on SDN.

As contributions on SDN to Q12/15 and Q14/15 were discussed, some general areas to study did emerge. Note that no Recommendations have been initiated as we want to be very clear on what the scope of "transport aspects of SDN" means and not duplicate work in other bodies. The general areas are:

1. Compare existing transport network, management, and control plane architectures, with SDN architecture, to identify any distinguishing characteristics. Existing transport network management and control exhibit many of the characteristics of SDN.
2. Identify requirements from use cases for transport SDN.
3. Identify commonality and gaps between existing NMS/EMS/ASON control and management (e.g. G.8080, G.7718) and SDN oriented control and management of transport networks.
4. Apply recursive transport architecture (e.g., G.800, G.8080, G.7710) to SDN functions. SG15 has used recursive architecture for many years and it is applied to data plane, control plane, and management plane modelling.

SG15 would appreciate receiving updates on SG13's work on SDN as it develops. We also request any details SG13 may have on what information SDN applications may require when transport resources are in scope of an SDN controller.

Annex G

Question(s):	**6/15, 12/15, 14/15**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**2, 3**	
Source:	**ITU-T SG15**		
Title:	**Transport aspects of SDN**		

LIAISON STATEMENT

For action to:	**Open Networking Foundation**
For comment to:	
For information to:	
Approval:	**ITU-T SG15**
Deadline:	**2013-10-01**

Contact:	Stephen Shew Rapporteur Q12/15	Tel:+1 613-670-3211 Email: sshew@ciena.com
Contact:	Hing-Kam Lam Rapporteur Q14/15	Tel: +1 732-331-3476 Email: Kam.Lam@alcatel-lucent.com
Contact:	Peter Stassar Rapporteur Q6/15	Tel: +31-20-4300832 Email: peter.stassar@huawei.com
Contact:	Pete Anslow Associate Rapporteur Q6/15	Tel: +44 2070 125535 Email: panslow@ciena.com

Please don't change the structure of this table, just insert the necessary information.

Thank you for your recent liaison informing us of the ONF Optical Transport Working Group and its charter. We would like to collaborate with the Optical Transport Working Group in a complementary manner on aspects of SDN for transport networks.

Within ITU-T, SG15 has recently been allocated work on "transport aspects of SDN". We are taking time to understand the scope of what ITU-T (and SG15 specifically) should undertake in connection with SDN. In our discussions on SDN, some general areas to study did emerge. Note that currently no Recommendations have been initiated as we want to be very clear on what the scope of "transport aspects of SDN" means so as to not duplicate work in other bodies. The general areas identified are:

1. Compare existing transport network, management, and control plane architectures with SDN architecture to identify any distinguishing characteristics. (Existing transport network management and control exhibit many of the characteristics of SDN.)
2. Identify commonality and gaps between existing NMS/EMS/ASON control and management (e.g., G.8080, G.7718) and SDN oriented control and management of transport networks.
3. Apply recursive transport architecture (e.g., G.800, G.8080, G.7710) to SDN functions. SG15 has used recursive architecture for many years and it is applied to data plane, control plane, and management plane modelling.

During our plenary meeting which received your liaison, Q6 received a liaison from the IETF CCAMP which requests guidance from Q6 on matters which we think may also be of interest to ONF OTWG. Accordingly, we are copying our liaison response to IETF to the ONF as well.

SG15 would appreciate receiving updates on the Optical Transport Working Group work on SDN as it progresses.

Annex H

Question(s):	**13/15**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Request for IEEE 1588 domain number**		

LIAISON STATEMENT

For action to:	**IEEE P1588 Working Group**
For comment to:	
For information to:	
Approval:	ITU-T SG15
Deadline:	**October 1st, 2013**

Contact:	Jean-Loup Ferrant Calnex solutions UK	Tel: +33 6 2825 8468 Fax: Email: jean-loup.ferrant@calnexsol.com
Contact:	Stefano Ruffini Ericsson Sweden	Tel: +39 050 549 2316 Fax: Email: stefano.ruffini@ericsson.com

Please don't change the structure of this table, just insert the necessary information.

ITU-T Q13/15 has decided to use IEEE 1588 V2 for the transport of timing over telecom packet networks.

ITU-T has approved G.8265.1 in 2010, a first profile for the transport of frequency over telecom packet networks based on IEEE 1588.

ITU-T Q13/15 intends to finalize a second profile during its plenary meeting in July2013 for the transport of phase and time and will start the study of a new profile on the transport of time that will fit the expectation of the main US operators.

In order to prevent problems between different profiles in large networks, Q13/15 would like to know if the IEEE 1588 standard committee could allocate one domain number to ITU from the reserved numbers with a value between 128 and 255, e.g. 128.

ITU-T Q13/15 thanks the IEEE 1588 standard committee for considering this request.

Annex I

Question(s):	**10/15, 12/15**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15 Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Liaison statement to IETF PWE3 and MPLS WGs on clarifying Point to Multi Point (P2MP) combinations**		

LIAISON STATEMENT

For action to:	**IETF PWE3 WG, MPLS WG**
For comment to:	
For information to:	
Approval:	**ITU-T SG15**
Deadline:	**2013-12-01**

Contact:	Stephen Shew Rapporteur Q12/15	Tel: +1 613 670-3211 Email: sshew@ciena.com
Contact:	Huub van Helvoort Rapporteur Q10/15	Tel: +31 36 531 5076 Email: huub.van.helvoort@huawei.com

During the recent July 1-12 meeting of SG15, Q12 discussed the IETF work on Point to MultiPoint (P2MP) Pseudowires (PWs) and Label Switched Paths (LSPs) for use with MPLS-TP. It was noted that there are many different possible combinations of PWs and LSPs that could be configured and deployed for P2MP depending on the application at hand. Some of the combinations are more applicable than others and that some may not be applicable at all.

Looking at the available IETF documentation on P2MP PW and LSPs, draft-ietf-pwe3-p2mp-pw-requirements was helpful in starting to understand the valid combinations. Below in Appendix 1 is an initial analysis of some possible scenarios for your consideration taken from one of the contributions to Q12 during the last meeting.

We would greatly appreciate your guidance and clarification on those scenarios that are valid and their potential application. If this information is already available, or under development, we would very much appreciate any information on the work's status and progression.

Appendix 1 (of Annex I)
Initial P2MP Relationship Analysis

Discussion on applicability of MPLS-TP P2MP

P2MP relationship between PW and LSP layers

When MPLS-TP P2MP is considered, there are some patterns of applicability in the context of layers. Three models are shown in Fig.2. These models could be implementation issues. In terms of interoperability, however, fewer models, or at least policies for layer models are desirable for operators.

In model 1, the channel layer is SS-PW, but in the path layer, packets are multi-casted. As a result, the termination point of SS-PW in the channel layer would be P2MP, but there is no forwarding engine in the channel layer itself. In model 2 and model 3, P2MP MS-PW is supported in the channel layer. Implementation becomes more complex, so these models should be avoided as much as possible.

Model 3 might be applicable to the case shown in Fig. 3. An L2-VPN that has a total of four virtual switch instances (VSIs) is assumed in this network. MS-PW P2MP may be used because P2P LSP is applied between two NEs for robust management of the link.

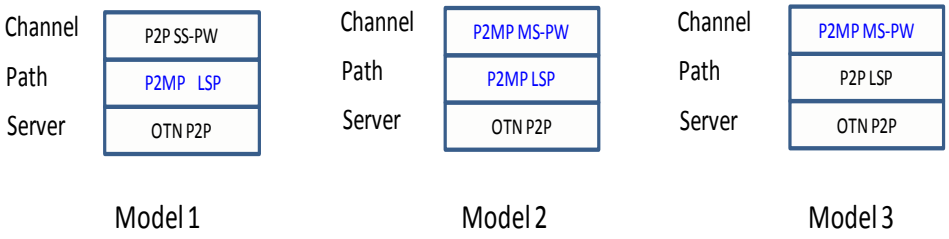

Fig.2 Possible models of layer structure in channel, path and server

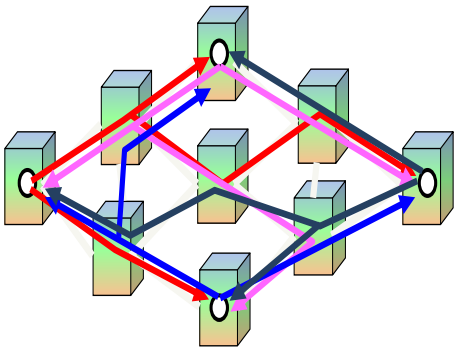

Fig.3: L2 VPN network model using P2MP LSP

We would like to solicit comments on the necessity or applicability of MS-PW P2MP and possibility of layered structures of MS-PW P2MP and LSP P2MP.

Annex J

Question(s):	**Q10/15**	**Meeting, date:**	**1-12 July 2013, Geneva**
Study Group:	**SG15**	**Working Party:**	**WP3**
Source:	**ITU-T SG15**		
Title:	**Liaison regarding Service OAM (CFM) "At Risk" notifications**		

LIAISON STATEMENT

For action to:	**Metro Ethernet Forum**
For comment to:	**-**
For information to:	**-**
Approval:	**ITU-T SG15**
Deadline:	**September 16, 2013**

Contact: Huub van Helvoort
Rapporteur Q10/15
Tel: +31 6 49248936
Email: huub.van.helvoort@huawei.com

Mr Chen, Mr Bencheck, and Mr Ranganathan,

At the recent SG15 meeting, Q10/15 has begun studying Service OAM (CFM) "At Risk" notification. Initially, we are studying the need for a mechanism that allows a MEP to inform its peer MEPs that CCMs (and other types of OAM frames) will be intentionally interrupted for some period of time, without affecting the flow of data traffic. This would allow a peer MEP, for example, to suppress Loss of Continuity or other alarms – the exact details are for further study in Q10/15 once the utility of the feature has been established. Further details on potential use cases are provided below.

SG15 has noted that many other OAM protocols include a feature similar to this, and is also aware that there are a number of proprietary mechanisms for doing this in CFM. We are therefore studying whether to develop a standard solution. We would welcome any comments you have relating to the utility of such a feature.

Use Cases

Two potential use cases have been identified thus far:

- When CCM generation is performed at a MEP in a different hardware entity within a device to that responsible for forwarding service data frames, it may be possible that the CCM generation can be interrupted independently from the flow of data traffic. One example of this is where a dedicated NPU is used for frame forwarding, but CCM generation is performed in software on a general-purpose CPU. Possible triggers for interruption could be for in-service upgrade, or manual recovery from earlier failures. The 'At Risk' signal can be sent in advance of the interruption in CCMs, and hence prevent spurious reporting of loss of continuity at the peer MEPs.
- The CCM protocol described in IEEE 802.1Q and in ITU-T G.8013/Y.1731 includes a number of checks that configuration of MEPs within a MEG (MA) is consistent – for

example, that the MEG level (MD level), MEG ID (MAID) and CCM Interval in received CCM frames are the same as those configured at the receiving MEP. Changing these parameters without causing spurious alarms therefore requires that the configuration is updated at all MEPs simultaneously. This is especially challenging when a short CCM interval is used.
This problem can be addressed by disabling CCMs at all MEPs prior to the change in configuration, and re-enabling CCMs afterwards. Before disabling CCMs, the At Risk signal can be used to prevent peer MEPs at which CCMs have not yet been disabled from detecting a spurious loss of connectivity. Thus, while the configuration change still requires co-ordination at all the MEPs, this can be done on the scale of minutes rather than milliseconds.

It is recognised that when all the MEPs of a MEG are within the same administrative domain, co-ordination at the management layer may be possible without needing an in-band signalling mechanism; however, when MEPs are in different administrative domains, for example when the MEG spans a UNI or ENNI, automated co-ordination between the different management systems may not be possible.

Furthermore, it is clear that during the At Risk period, any actual failures in the data traffic flow will not be detected. This is a trade-off by the operator of the likelihood of a failure during the At Risk period, against the disruption caused by spurious defects being detected when there is no interruption in the flow of data traffic.

We welcome your input on the above use cases, and on any additional use cases you may identify. Forthcoming meetings of Q10/15 are as follows:

- Rapporteurs meeting, 23 – 27 September, 2013
- SG15 Plenary Meeting, 24 March – 4 April, 2014

_____

Annex K

Question(s):	10/15	**Meeting, date:**	Geneva, 1 – 12 July 2013
Study Group:	15 **Working Party:**	3	
Source:	**ITU-T SG 15**		
Title:	**G.8013/Y.1731 Revision and G.8021/Y.1341Amendment 2**		

LIAISON STATEMENT

For action to:	-
For comment to:	-
For information to:	**IEEE 802.1, Metro Ethernet Forum, and ITU-T SG12 Question 17**
Approval:	**ITU-T SG15**
Deadline:	-

Contact:	Huub van Helvoort Huawei Technologies Ltd. PR China	Tel: +31 649248936 Email: hhelvoort@huawei.com

Please don't change the structure of this table, just insert the necessary information.

ITU-T SG15 Q10 is pleased to inform you that at our July 2013 plenary, the approval process was initiated for:

- G.8013/Y.1731 (Revision) – OAM functions and mechanisms for Ethernet based networks.
- G.8021/Y.1341 Amendment 2 – OAM functions and mechanisms for Ethernet based networks.

G.8013 revision and G.8021 Amendment 2 have been attached for your information.

_____

TSB: please attach TD25R1(PLEN), TD121(PLEN).

TSB: Transmission is urgent since IEEE is meeting next week

Annex L

Question(s):	**10**	**Meeting, date:**	**Geneva, 1-12 July 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Initiating approval process for MPLS-TP Recommendations**		

LIAISON STATEMENT

For action to:	**-**
For comment to:	**-**
For information to:	**IETF MPLS WG**
Approval:	**ITU-T SG15**
Deadline:	**-**

Contact:	Huub van Helvoort Huawei Technologies Co. Ltd P. R. China	Tel: +31 20 4300936 Email: Huub.van.Helvoort@huawei.com
Contact:	Hing-Kam Lam Rapporteur Q14/15	Tel: +1 732-331-3476 Email: Kam.Lam@alcatel-lucent.com

Please don't change the structure of this table, just insert the necessary information.

The experts of ITU-T SG15 Question 10 would like to inform you that the approval process has been initiated for the following Recommendations.

- G.8113.1 Amd. 1 Operations, administration and maintenance mechanism for MPLS-TP in packet transport network (PTN)
- G.8113.2 Amd. 1 Operations, administration and maintenance mechanisms for MPLS-TP networks using the tools defined for MPLS: Amendment 1
- G.8121 Characteristics of MPLS-TP equipment functional blocks
- G.8121.1 Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.1/Y.1372.1
- G.8121.2 Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.2/Y.1372.2
- G.8151 Amd 2 Management aspects of the MPLS-TP network element

_____

TSB : Please attach the relevant TDxxx-PLEN

Annex M

Question(s):	**9/15**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Reply to COM15-LS84r1-E (IETF LS-1256)**		

LIAISON STATEMENT

For action to:	**IETF MPLS WG**
For comment to:	
For information to:	
Approval:	**ITU-T SG15**
Deadline:	**September 23, 2013**

Contact:	Tom Huber Tellabs Oy Finland	Tel: +1.630.798.6625 Fax: Email: tom.huber@tellabs.com
Contact:		Tel: Fax: Email:

Please don't change the structure of this table, just insert the necessary information.

Thank you for your reply liaison (IETF MPLS – LS 84 - E) in response to our previous liaison (COM15-LS005-E) concerning linear protection switching for MPLS-TP. We appreciate the work that has been done to resolve the concerns identified in COM15-LS005-E.

WP3/15 would like to advise you that the following agreements were made.

- WP3/15 appreciates the cooperation between ITU-T and IETF on MPLS-TP standardization and hopes it will continue for the benefit of the global industry. Our expectation is that this collaboration will allow us to develop draft text, for a revision to Recommendation G.8131.
- WP3/15 recognizes the urgency to align the existing T-MPLS linear protection Recommendation G.8131 to MPLS-TP in a manner that fully satisfies the requirements expressed by the ITU-T. This will enable us to complete the set of MPLS-TP Recommendations required by the market.
- WP3/15 would like to initiate work on a revision to G.8131, that will include normative references to the IETF MPLS-TP RFCs, that will meet the requirements expressed by ITU-T. We request that the work to update the MPLS-TP linear protection RFCs to satisfy the requirements expressed by the ITU-T is completed in time to allow us to consent a revision to G.8131 in April 2014.

With respect to the manual switch-over for recovery LSP/span portion of point 9, our understanding is that your reply "that behaviour should be considered a bug" is referring to the content of RFC6378 and not to the behaviour we described in COM15-LS005-E. Please confirm that our understanding is correct.

We take note that a draft has been submitted to resolve this issue, and encourage our ITU-T participants to participate in discussions of this draft.

Annex N

Question(s):	**13/15**	**Meeting, date:**	**June 30-July 12, 2013**
Study Group:	**15 Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Reply to liaison "LSI on continuing work on Recommendations ITU-R TF.686-2 and ITU-R TF.460-6"**		

LIAISON STATEMENT

For action to:

For comment to:

For information to: **ITU-R SG 7**

Approval: **ITU-T SG15**

Deadline:

Contact:	Jean-Loup Ferrant Calnex Solutions UK	Tel: +33 6 2825 8468 Fax: Email: jean-loup.ferrant@calnexsol.com
Contact:	Stefano Ruffini Ericsson Sweden	Tel: +39 050 549 2316 Fax: Email: stefano.ruffini@ericsson.com
Contact:	Lee Cosart Symmetricom USA	Tel: Fax: Email: lcosart@symmetricom.com

Please don't change the structure of this table, just insert the necessary information.

Working party 7A can contact Jean-Loup Ferrant as a point of contact for coordination on G.810. Note that G.810 was approved in 1996, it might be difficult to modify it as this recommendation is referenced in many other recommendations.

Q13 informs WP 7A that there is a new recommendation G.8260: "Definitions and terminology for synchronization in packet networks" approved in 2010, and updated in 2012. Lee Cosart is the point of contact for coordination on this recommendation.

On the question of removing the leap seconds, the answer of Q13 addresses only its domain of responsibility, i.e. the transport of synchronization. Applications that need the time information are not part of the Q13 domain.

Q13 is involved in the use of UTC for the reception of time via GNSS receivers and the distribution of time, e.g. via IEEE Std 1588™-2008. These equipment have been designed to tolerate leap seconds, so Q13 has no particular position in redefining UTC as a continuous time-scale without leap seconds, as long as no other modification is made in the generation of UTC.

Q13 would like to be informed of the progress made on this subject by ITU-R.

Annex O

Question(s):	**13**	**Meeting, date:**	**Geneva june30- July12, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Reply to MEF liaison on LSI on time/phase synchronization aspects of MEF 22.2 Mobile Backhaul Implementation Agreement Phase 3**		

LIAISON STATEMENT

For action to:

For comment to:

For information to: **MEF**

Approval: **ITU-T SG15**

Deadline:

Contact:	Jean-Loup Ferrant Calnex Solutions Country	Tel: +33 6 2825 8468 Fax: Email: jean-loup.ferrant@calnexsol.com
Contact:	Stefano Ruffini Ericsson Sweden	Tel: +39 050 549 2316 Fax: Email: stefano.ruffini@ericsson.com

Please don't change the structure of this table, just insert the necessary information.

Q13 continues its work on the transport of frequency, time and phase to mobile applications.

Transport of frequency is defined in the ITU-T G.826x series and transport of phase and is defined in the ITU-T G.827x series.

Q13 has initiated the approval process on the following documents in July 2013-07-10:

-G.8260 Amd1 Definitions and terminology for synchronization in packet networks

-G.8261 revised Timing and Synchronization Aspects of Packet Networks

G.8263 Amd1 Timing characteristics of packet based equipment clocks (PEC) and packet based service clocks (PSC

G.8271 Amd1 Time and phase synchronization aspects of packet networks

G.8271.1 new Network requirements for the transport of phase and time

G.8272 Amd1 Timing characteristics of primary reference time clocks

G.8273 new Framework of phase and time clocks

G.8275 new Time and phase distribution through packet networks

Q13 has also started new work items related to the transport of phase and time through equipment unaware of IEEE Std 1588 ™ 2008.

G.8275.2	Time and phase distribution through packet networks for partial support
G.8271.2	Network requirements for the transport of phase and time for partial support

Q13 wishes to continue cooperating with MEF on the synchronization aspects and will inform MEF of the evolution of its work.

Note to TSB: attach the consented documents

Annex P

Question(s):	**13**	**Meeting, date:**	**Geneva june30- July12, 2013**
Study Group:	**15**	**Working Party:**	**3**
Source:	**ITU-T SG15**		
Title:	**Reply to MEF liaison TD40/3on new performance metric**		

LIAISON STATEMENT

For action to:

For comment to:

For information to: **MEF**

Approval: **ITU-T SG15**

Deadline:

Contact:	Jean-Loup Ferrant Calnex Solutions Country	Tel: +33 6 2825 8468 Fax: Email: jean-loup.ferrant@calnexsol.com
Contact:	Stefano Ruffini Ericsson Sweden	Tel: +39 050 549 2316 Fax: Email: stefano.ruffini@ericsson.com

Please don't change the structure of this table, just insert the necessary information.

Q13 continued its work on metrics and has initiated the approval process on a new appendix on G.8260 in July addressing the problem of reroute events and their impact on observed floor delay.

Q13 will continue to keep MEF updated of its progress on metrics.

Attach TD-PLEN-051_G8260-Amd1

Annex Q

Question(s):	**6, 11**	**Meeting, date:**	**Geneva, 1-12 July 2013**
Study Group:	**15** **Working Party:**	**2, 3**	
Source:	**ITU-T Study Group 15**		
Title:	**Reply to liaison from IEEE 802.3 400 Gb/s Ethernet Study Group**		

LIAISON STATEMENT

For action to:	
For comment to:	**IEEE 802.3 400 Gb/s Ethernet Study Group**
For information to:	
Approval:	**ITU-T SG15**
Deadline:	**11 October 2013**

Contact:	Mark Loyd Jones Xtera Communications, Inc. USA	Tel: +1 214 436 3241 Fax: Email: mark.jones@xtera.com
Contact:	Peter Stassar Huawei Technologies Co., Ltd. P. R. China	Tel: +31-20-4300832 Email: peter.stassar@huawei.com

Please don't change the structure of this table, just insert the necessary information.

ITU-T Study Group 15 would like to thank the 400 Gb/s Ethernet Study Group for the informal communication from your May 2013 meeting informing us of the start of this work.

As you may know, Study Group 15 is actively discussing the evolution of OTN beyond 100 Gb/s, and we would like to actively coordinate our respective activities.

We understand that technical proposals are not normally adopted during the Study Group phase of an IEEE 802.3 Working Group effort, however aspects of IEEE work in this new area that are of particular interest to Study Group 15 as we consider the relevant evolution of OTN include:

- The overall bit-rate for 400 Gb/s Ethernet including line coding
- The numbers, encoding and relationships of physical and logical lanes
- Any forward error correction (FEC) present on the interface
- Any assumptions or requirements on the error performance of the interface

No firm decisions have been taken regarding the evolution of OTN beyond 100G, but we will keep you informed as we make more progress in this work. We look forward to continuing the productive collaboration on this effort as we have had on previous projects.

_____

Annex R

Question(s):	**11, 12, 14**	**Meeting, date:**	**Geneva, 1-12 July, 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Additional Optical Link Management Capabilities**		

LIAISON STATEMENT

For action to:

For comment to:

For information to: **IETF CCAMP WG, BBF, OIF, ONF**

Approval: **ITU-T SG15**

Deadline:

Contact:	Mark Loyd Jones Xtera Communications, Inc. USA	Tel: +1 214 436 3241 Fax: Email: mark.jones@xtera.com
Contact:	Stephen Shew Rapporteur Q12/15	Tel:+1 613-670-3211 Fax: Email: sshew@ciena.com
Contact:	Hing-Kam Lam Rapporteur Q14/15	Tel: +1 732-331-3476 Fax: Email: Kam.Lam@alcatel-lucent.com

Please don't change the structure of this table, just insert the necessary information.

In response to requests regarding dynamic capabilities of optical links using the "black link" approach, SG15 has completed work to describe the physical layer S_s and R_s reference points defined in G.698.1 and G.698.2 as an OTN Intra Domain Interface (IaDI). The changes will allow coloured endpoints to be managed using the existing G.874.1 model. The following documents were submitted to the ITU-T approval process:

- G.7712 Amendment 1, to enhance the use of the DCN to carry the OCh out of band overhead (OCh-O) across this new IaDI.
- G.872 Amendment 1, to describe the black link approach and define overhead communication for the OCh-O.
- G.709 Amendment 2 to support the applications in G.698.2 as an IaDI.

Note that the application codes in G.698.2 (2009) currently only cover 2.5Gb/s and 10Gb/s rates.

Annex S

Question(s):	**3**	**Meeting, date:**	**Geneva, 1-12 July 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Corrigendum of OTN terminology Recommendation**		

LIAISON STATEMENT

For action to:

For comment to:

For information to: **IETF ccamp WG**

Approval: **ITU-T SG 15**

Deadline:

Contact:	Yoshinori Koike NTT Japan	Tel: +81 422596723 Email: koike.yoshinori@lab.ntt.co.jp
Contact:	Tom Huber Tellabs Oy Finland	Tel: +1.630.798.6625 Email: tom.huber@tellabs.com

Please don't change the structure of this table, just insert the necessary information.

The experts of ITU-T SG15 Question 3 and Question 9 would like to inform you that the approval process has been initiated for Corrigendum 1 to Recommendation ITU-T G.870/Y.1352.

Attachment: Draft Corrigendum 1 to Recommendation ITU-T G.870/Y.1352 (2012) (for Consent, July 2013) (TD111/PLEN)

Annex T

Question(s):	**14**	**Meeting, date:**	**Geneva, 1-12 July 2013**
Study Group:	**15** **Working Party:**	**3**	
Source:	**ITU-T SG15**		
Title:	**Initiating approval of OTN NE Management Recommendations**		

LIAISON STATEMENT

For action to:	**-**
For comment to:	**-**
For information to:	**IETF CCAMP WG, ONF, BBF**
Approval:	**ITU-T SG15**
Deadline:	**-**

Contact:	Kam LAM Alcatel-Lucent U.S.A	Tel: +1 732 331 3476 Email: Kam.Lam@alcatel-lucent.com

Contact:

Please don't change the structure of this table, just insert the necessary information.

The experts of ITU-T SG15 Question 14 would like to inform we have initiated the approval process on the documents listed below.

- G.874 Revision
- G.874.1 Amendment 1

_____