

International Telecommunication Union

**ITU-T**

**G.8113.2/Y.1372.2**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**Amendment 1**  
(08/2013)

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

**Amendment 1: Security considerations for  
MPLS-TP and updates to references**

Recommendation ITU-T G.8113.2/Y.1372.2 (2012) –  
Amendment 1



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# **Recommendation ITU-T G.8113.2/Y.1372.2**

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

### **Amendment 1**

#### **Security considerations for MPLS-TP and updates to references**

#### **Summary**

Amendment 1 to Recommendation ITU-T G.8113.2/Y.1372.2 (2012) contains new material related to security considerations for multi-protocol label switching transport profile (MPLS-TP) and updates references to IETF Requests for Comments (RFCs) and Recommendations that have been approved since initial approval of the Recommendation.

#### **History**

| Edition | Recommendation                       | Approval   | Study Group |
|---------|--------------------------------------|------------|-------------|
| 1.0     | ITU-T G.8113.2/Y.1372.2              | 2012-11-20 | 15          |
| 1.1     | ITU-T G.8113.2/Y.1372.2 (2012) Amd.1 | 2013-08-29 | 15          |

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## Recommendation ITU-T G.8113.2/Y.1372.2

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

#### Amendment 1

#### Security considerations for MPLS-TP and updates to references

##### 1) Scope

This amendment contains modified text to be added to Recommendation ITU-T G.8113.2/Y.1372.2 related to security considerations for multi-protocol label switching transport profiles (MPLS-TPs), as well as updates to references, Recommendations and IETF Requests for Comments (RFCs) that have been approved since the initial approval of Recommendation ITU-T G.8113.2/Y.1372.2.

##### 2) References

None.

##### 3) Text modification for ITU-T G.8113.2

###### 3.1) Modifications to clause 2

*Add the following new reference to clause 2:*

[ITU-T G.8121.2] Recommendation ITU-T G.8121.2/Y.1381.2 (2013), *Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.2/Y.1372.2.*

###### 3.2) Correction to title of clause 6.2

*Replace the title of clause 6.2 with:*

##### 6.2 Maintenance Entity Group (MEG)

###### 3.3) Update clauses 7.2 and 9.3 referring to [ITU-T G.8121.2]

*Update clause 7.2 as shown:*

##### 7.2 OAM functions specification

Table 7-1 provides a summary of MPLS-TP OAM functions, protocols used, and the corresponding IETF RFCs. All control messages are carried using G-ACh. Functional processing of these messages is described in [b-ITU-T G.8121.2].

*Update clause 9.3 as shown*

##### 9.3 Alarm indication signal (AIS) and link down indication (LDI) procedures

...

When a MEP receives an AIS message, it detects the dAIS defect as described in clause 6.1 of [b-ITU-T G.8121.2].

### 3.4) Add new clause 10

#### 10 Security

According to clause 6.3, packets originating outside the MEG are encapsulated by the MEP at the ingress and transported transparently through the MEG. This encapsulation significantly reduces the risk of an attack from outside the MEG. The MEP at the egress also prevents OAM packets from leaving a MEG.

The use of the CV tool improves network integrity by ensuring traffic is not misconnected or mismerged between LSPs. The expected MEP-ID is provisioned at the sink MEP; this allows the received MEP-ID to be verified with a high degree of certainty, which significantly reduces the possibility of an attack.

The use of globally unique identifiers for MEPs by combination of a globally unique MEG\_ID with a MEP ID provides an absolute authoritative detection of persistent misconnection between LSPs. A globally unique MEG\_ID should be used when an LSP between the networks of different national operators crosses national boundaries since non-uniqueness can result in undetected misconnection in a scenario where two LSPs use a common MEG-ID.

For the use of any other OAM tools, it is assumed that MEPs and MIPs that start using the tools verify the integrity of the path and the identity of the source MEP. If a misconnection is detected, the tool in use shall be disabled immediately.

### 3.5) Modifications to bibliography

*Update the bibliography as shown:*

- ~~[b-ITU T G.8121.2]~~ Recommendation ITU T G.8121.2/Y.1381.2 (2011),  
*Characteristics of MPLS-TP equipment functional blocks supporting G.8113.2/Y.1372.2.*
- [b-IANA PW Reg] Pseudowire Associated Channel Types,  
<<http://www.iana.org/assignments/pwe3-parameters/pwe3-parameters.xml#pwe3-parameters-10>>
- ~~[b-IETF RFC itu t identifiers]~~ IETF Internet Draft draft ietf mpls tp itu t identifiers 06, *MPLS-TP Identifiers Following ITU T Conventions.*
- [b-IETF RFC 6941] IETF RFC 6941 (2013), *MPLS-TP Security Framework.*

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