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## **Terms and definitions for Ethernet frames over Transport**

ITU-T Recommendation G.8001/Y.1354



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# ITU-T Recommendation G.8001/Y.1354

## Terms and definitions for Ethernet frames over Transport

### Summary

ITU-T Recommendation G.8001/Y.1354 provides definitions and abbreviations used in Ethernet frames over Transport (EoT).

### Source

ITU-T Recommendation G.8001/Y.1354 was approved on 29 March 2008 by ITU-T Study Group 15 (2005-2008) under the ITU-T Recommendation A.8 procedure.

### History

Edition		Approval
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1.1	G.8001/Y.1354 (2006) Amend.1	2007-07-29
2.0	G.8001/Y.1354	2008-03-29

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# ITU-T Recommendation G.8001/Y.1354

## Terms and definitions for Ethernet frames over Transport

### 1 Scope

This Recommendation contains a complete listing of the definitions and abbreviations used in the Recommendations associated with Ethernet frames over Transport (EoT).

### 2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T G.809] ITU-T Recommendation G.809 (2003), *Functional architecture of connectionless layer networks*.
- [ITU-T G.8010] ITU-T Recommendation G.8010/Y.1306 (2004), *Architecture of Ethernet layer networks*; Amendment 1 (2006).
- [ITU-T G.8011] ITU-T Recommendation G.8011/Y.1307 (2004), *Ethernet over Transport – Ethernet services framework*.
- [ITU-T G.8011.1] ITU-T Recommendation G.8011.1/Y.1307.1 (2004), *Ethernet private line service*.
- [ITU-T G.8011.2] ITU-T Recommendation G.8011.2/Y.1307.2 (2005), *Ethernet virtual private line service*.
- [ITU-T G.8012] ITU-T Recommendation G.8012/Y.1308 (2004), *Ethernet UNI and Ethernet NNI*.
- [ITU-T G.8021] ITU-T Recommendation G.8021/Y.1341 (2007), *Characteristics of Ethernet transport network equipment functional blocks*.
- [ITU-T Y.1731] ITU-T Recommendation Y.1731 (2008), *OAM functions and mechanisms for Ethernet based networks*.

### 3 Definitions

This Recommendation defines the following terms:

- 3.1 access link:** The connection between the customer equipment and carrier equipment at the edge of the transport network that is realized through a UNI.
- 3.2 customer:** The entity that has ownership authority over a set of flow points. The customer may have one or more service instances.
- 3.3 EoT-NNI:** An NNI for the transfer of ETH\_CI traffic units over a transport layer network referred to in [ITU-T G.8012].
- 3.4 EoT management network (EoT.MN):** An EoT management network is a subset of a TMN that is responsible for managing those parts of a network element that contain EoT layer network entities. An EoT.MN may be subdivided into a set of EoT management subnetworks.

**3.5 EoT management subnetwork (EoT.MSN):** An EoT management subnetwork (EoT.MSN) consists of a set of separate embedded communication channels (ECC) and associated intra-site data communication links which are interconnected to form a data communication network (DCN) within any given EoT transport topology. For EoT, the physical channel supporting the ECC is the Ethernet management communication channel (MCC) as defined in [ITU-T Y.1731]. An EoT.MSN represents an EoT specific local communications network (LCN) portion of a network operator's overall data communication network or TMN.

**3.6 EoT network element (EoT.NE):** That part of a network element that contains entities from one or more EoT layer networks. An EoT.NE may therefore be a standalone physical entity or a subset of a network element. It supports at least network element functions (NEF) and may also support an operations system function (OSF). It contains managed objects (MO), a message communication function (MCF) and a management application function (MAF). The functions of an EoT.NE may be contained within an NE that also supports other layer networks. These layer network entities are considered to be managed separately from EoT entities. As such, they are not part of the EoT.MN or EoT.MSN.

**3.7 EPL Type 1:** An EPL Type 1 service carries the ETH\_CI traffic units between two Ethernet UNIs.

**3.8 EPL Type 2:** An EPL Type 2 service carries the information from the 8B/10B symbol stream between two Ethernet UNIs.

**3.9 ETH\_CI group:** A group of ETH\_CI signals that is monitored as a single MEG. For this purpose, ETH OAM is added to one of the ETH\_CI signals in the group.

**3.10 ETH path:** The highest ETH MEG level in a set of eight MEG levels.

**3.11 ETH section:** The lowest ETH MEG level in a set of eight MEG levels.

**3.12 ETH tandem connection:** An intermediate ETH MEG level in a set of eight MEG levels.

**3.13 Ethernet connection:** The ETH connection or ETH connectivity (as described in [ITU-T G.8010]) between the UNI-Ns that are part of the same network Ethernet service instance.

**3.14 Ethernet flow replication point (ETHF\_PP):** Connection point between <Srv>/ETH adaptation source and sink. ETH\_CI from source Ethernet flow point (ETH\_FP) is replicated and delivered across ETHF\_PP to sink Ethernet termination flow point (ETH\_TFP).

**3.15 Ethernet replicated information (ETH\_PI):** Replicated ETH\_CI delivered across ETHF\_PP or ETH\_TFP.

**3.16 Ethernet service:** An Ethernet service supports an Ethernet flow (as defined in [ITU-T G.8010]). It is defined by the topology of the Ethernet network and a corresponding set of attributes associated with the Ethernet connection (EC), the UNI ports, and NNI ports.

**3.17 Ethernet service area:** Identifies the portion of a network that supports an Ethernet service instance.

**3.18 Ethernet service instance:** An Ethernet service instance is a particular instantiation of an Ethernet service supported by a particular flow domain (as defined in [ITU-T G.8010]) with a defined set of characteristics as well as at least two UNIs.

**3.19 Ethernet termination flow replication point (ETHTF\_PP):** Connection point between <Srv>/ETH adaptation source and sink. ETH\_CI from source Ethernet termination flow point (ETH\_TFP) is replicated and delivered across ETHTF\_PP to sink filter process.

**3.20 ETY-NNI:** An NNI for the transfer of ETH\_CI traffic units over a physical Ethernet interface.

- 3.21 ETY-UNI:** An UNI for the transfer of ETH\_CI traffic units over a physical Ethernet interface.
- 3.22 EVPL Type 1:** EVPL over Multiplexed Access and dedicated CO-CS and CO-PS (this is also recognized as Multiplexed Access EPL).
- 3.23 EVPL Type 2:** EVPL over shared CO-CS, CO-PS, and CL-PS.
- 3.24 EVPL Type 3:** EVPL over multiplexed access and shared CO-CS, CO-PS, and CL-PS.
- 3.25 maintenance entity:** The entity between two of the flow/connection points in a maintenance entity group.
- 3.26 maintenance entity group:** A maintenance entity group is defined, for the purpose of fragment/connection monitoring, between a set of flow/connection points within a fragment/connection. This set of flow/connection points may be located at the boundary of one administrative domain or a protection domain, or the boundaries of two adjacent administrative domains. The maintenance entity group consists of one or more maintenance entities.
- 3.27 maintenance entity group end point compound sink function:** A compound transport processing function which accepts the characteristic information of the layer network at its input, extracts and processes the OAM information related to the maintenance entity group's monitoring, filters the information for OAM information belonging to the maintenance entity group, adapts the information and presents it as the characteristic information of the layer or a client layer at its output, potentially as a (client) layer maintenance signal (e.g., AIS).
- 3.28 maintenance entity group end point compound source function:** A compound transport processing function which accepts the characteristic information of the layer or a client layer network at its input, adapts that information, filters it for OAM information interfering with its own OAM information, adds OAM information to allow the maintenance entity group to be monitored and presents the resulting information at its output.
- 3.29 maintenance entity group intermediate point compound function:** A compound transport processing function which accepts the characteristic information of the layer network at its input, reacts to OAM information related to maintenance entity group's on-demand monitoring and presents the characteristic information without the OAM it reacted to at its output.
- 3.30 multiplexing:** Occurs between two layer networks, the CI of multiple client layer traffic streams are combined into a single AI stream to which trail overhead is added to form a single CI traffic stream of the server layer ((connectionless) trail). Each client traffic stream is assigned an identifier that is unique within the context of the server layer (connectionless) trail. The server layer trail overhead is used to monitor the integrity of the client layer signals. The server layer (connectionless) trail may be point-to-point or point-to-multipoint or multipoint-to-multipoint.
- 3.31 network termination:** The network element in the transport network, which is connected to the customer edge equipment.
- 3.32 network-to-network interface (NNI):** An interface that is used for the interconnection of networks elements within a transport network.
- 3.33 on-demand monitoring:** A method to infer a specific status or performance characteristic of a maintenance entity or a set of maintenance entities within a maintenance entity group at a specific point in time with the purpose to obtain a snapshot of the performance or to diagnose an identified fault condition or performance degradation.
- 3.34 pro-active monitoring:** A method to continuously infer the status and performance of a maintenance entity group with the purpose to detect disturbances, faults and degradations immediately after their occurrence in order to verify the service level agreement and/or initiate recovery actions to restore the service to the guaranteed level.

**3.35 traffic conditioning function:** A "transport processing function" which accepts the characteristic information of the layer network at its input, classifies the traffic units according to configured rules, meters each traffic unit within its class to determine its eligibility, polices non-conformant traffic units and presents the remaining traffic units at its output as characteristic information of the layer network.

**3.36 user-to-network interface (UNI):** An interface that is used for the interconnection of customer equipment with a network element of the transport network.

#### **4 Abbreviations**

This Recommendation uses the following abbreviations:

AI	Adapted Information
CI	Characteristic Information
CL-PS	Connectionless Packet Switched
CO-CS	Connection-Oriented Circuit Switched
CO-PS	Connection-Oriented Packet Switched
EC	Ethernet Connection
EPL	Ethernet Private Line
ETH	Ethernet layer network
ETH_CI	Ethernet MAC Characteristic Information
ETH_FP	Ethernet Flow Point
ETH_TFP	Ethernet Termination Flow Point
ETY	Ethernet PHY layer network; Ethernet PHY layer
ETY-NNI	Ethernet NNI
ETY-UNI	Ethernet UNI
EVPL	Ethernet Virtual Private Line
MAC	Media Access Control
MEG	Maintenance Entity Group
NNI	Network Node Interface; Network-to-Network Interface
OAM	Operations, Administration and Maintenance
UNI	User Network Interface
UNI-C	Customer side of UNI
UNI-N	Network side of UNI

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