International Telecommunication Union

ITU-T G.8011/Y.1307

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Amendment 1
(08/2005)

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ITU-T Recommendation G.8011/Y.1307

Ethernet over Transport – Ethernet services framework

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Summary

This amendment provides more information on traffic management/metering resulting from the development of ITU-T Rec. G.8011.2/Y.1307.2.

Source

Amendment 1 to ITU-T Recommendation G.8011/Y.1307 (2004) was approved on 22 August 2005 by ITU-T Study Group 15 (2005-2008) under the ITU-T Recommendation A.8 procedure.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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ITU-T Recommendation G.8011/Y.1307

Ethernet over Transport – Ethernet services framework

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1) Clause 7.6

Modify the text in clause 7.6 as follows:

7.6 Bandwidth profile

Bandwidth profile is applicable per service instant. It is applicable both at the UNI and the NNI interfaces. It defines an upper bound on the volume of the expected service frames belonging to a particular service instance.

Bandwidth profile defines four traffic parameters. Those parameters are ~~that characterize the ETH_CI flow arrival pattern at the UNI or the NNI. Four parameters are defined,~~ Committed Information Rate (CIR), Committed Burst Size (CBS), Excess Information Rate (EIR), and Excess Burst Size (EBS). CIR and CBS are related ~~together~~ in such a way that CBS must be defined when CIR is set at a value that is greater than 0. EIR and EBS are related in the same way as CIR and CBS.

CIR is defined as the maximum information rate the network is committed to transfer under normal conditions. Performance metrics in terms of frame delay and loss are applicable only to those frames that are within the CIR. CBS defines a limit on the maximum number of information units available for a burst of ingress service frames sent at the interface speed to remain CIR-conformant.

EIR is the maximum information rate by which a user can exceed its CIR. EBS defines a limit on the maximum number of information units available for a burst of ingress service frames sent at the interface speed to remain EIR-conformant. Performance metrics in terms of frame delay and loss are not applicable to the frames that are within the service EIR.

The bandwidth profile traffic parameters are enforced using a metering algorithm as part of the traffic conditioning. Two additional parameters relevant to the operation of the metering algorithms are introduced. Those parameters are, the coupling flag (CF) and the colour mode (CM). CF and CM are referred to as bandwidth profile parameters. They allow for a choice between the different modes of operations for the metering algorithm. CF and CM take the values 0 or 1 only.

Ingress service frames are disposed of based on their conformance to CIR and EIR. Higher discard precedence is assigned to frames that are conformant to EIR (i.e., yellow coloured frames) than that assigned to frames that are conformant to CIR (i.e., green coloured frames). Yellow frames are expected to be dropped first when congestion is encountered at the service layer. Frames that are non-conformant to either CIR or EIR (i.e., red frames) are dropped at the interface.

~~The bandwidth profile parameters constitute an input to a traffic conditioning function defined in ITU-T Rec. G.8010/Y.1306.~~

~~The terms CIR, CBS, EIR and EBS and the applicability to this Recommendation is for further study. The relationship of bandwidth profile to CoS and the applicability to multipoint-to-multipoint services is for further study.~~

~~The definition of CIR, CBS, EIR and EBS will be provided in a Y-series Recommendation. A description of CIR and CBS is currently provided in Appendix II/G.8011.1/Y.1307.1.~~

2) Clause 8.1.2

Add the following paragraph to the end of clause 8.1.2:

On ingress, the onus is on customer equipment to shape the service instance that will be multiplexed to ensure sufficient fairness to avoid congestion of the access link. The network can ensure service instance bandwidth on the ETH link with traffic conditioning.

3) Table 9-1

Modify Table 9-1 in clause 9 as follows:

Table 9-1/G.8011/Y.1307 – NNI service attributes

Layer	NNI service attribute	Service attribute parameters and values
ETH	MAC service	IEEE 802.3-2002 Frame format
	NNI ID	Arbitrary text string to identify each NNI instance
	NNI EC ID	Arbitrary text string to identify each EC instance
	Multiplexed Link	Yes, No
	VLAN ID mapping	~~For further study~~Specify
	Bundling	For further study
	Bandwidth profile	For further study
	Layer 2 Control Protocol Processing	Block, process, pass per protocol on ingress Generate or none per protocol on egress
Server	Server layer	Specify

4) New clause 9.1.4

Insert a new clause after clause 9.1.3 as follows and renumber consecutive clauses accordingly:

9.1.4 Multiplexed link

This attribute indicates if the NNI link is multiplexed (i.e., contains multiple service instances) or not. The options are: yes or no.

In the case of multiplexed link, one ETH link is used to transport ETH_CI of multiple customers' service instances. Since logical separation is used on the ETH link flow, identifiers for flow isolation (e.g., S-VLAN tag) need to be specified.

5) Clause 9.1.5

Modify the text of the previous clause 9.1.4, now clause 9.1.5, as follows:

9.1.5 VLAN ID Mapping

At the NNI there can be a mapping of each service provider VLAN ID to at most one EC.

In the case of no multiplexed link (see 9.1.4), there is no S-VLAN ID and, therefore, this mapping is not applicable.

In the case of multiplexed link, the value of the S-VLAN ID mapped to EC ID must be specified.

Note that more than only one S-VLAN ID can point to the same EC.

~~For further study.~~

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