International Telecommunication Union

ITU-T G.7041/Y.1303

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Amendment 2

(07/2010)

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Data over Transport – Generic aspects – General

SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS AND NEXT-GENERATION NETWORKS

Internet protocol aspects – Transport

Generic framing procedure (GFP)

Amendment 2

Recommendation ITU-T G.7041/Y.1303 (2008) – Amendment 2

ITU-T

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Recommendation ITU-T G.7041/Y.1303

Generic framing procedure (GFP)

Amendment 2

Summary

Amendment 2 to Recommendation ITU-T G.7041/Y.1303 adds the following information:

1) Removal of references to "T-MPLS".
2) Removal of the obsolete UPI for the multi-cast MPLS mapping.
3) Update to a reference.
4) New footnote to clarify the minimum Inter-Packet Gap requirements at a GFP-T egress port carrying an Ethernet client.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.7041/Y.1303	2001-12-14	15
1.1	ITU-T G.7041/Y.1303 (2001) Amend. 1	2002-06-13	15
1.2	ITU-T G.7041/Y.1303 (2001) Cor. 1	2003-03-16	15
1.3	ITU-T G.7041/Y.1303 (2001) Amend. 2	2003-03-16	15
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2.1	ITU-T G.7041/Y.1303 (2003) Amend. 2	2004-06-13	15
2.2	ITU-T G.7041/Y.1303 (2003) Amend. 1	2004-10-07	15
2.3	ITU-T G.7041/Y.1303 (2003) Cor. 1	2005-01-13	15
2.4	ITU-T G.7041/Y.1303 (2003) Amend. 3	2005-01-13	15
3.0	ITU-T G.7041/Y.1303	2005-08-22	15
3.1	ITU-T G.7041/Y.1303 (2005) Amend. 1	2006-03-29	15
3.2	ITU-T G.7041/Y.1303 (2005) Cor. 1	2006-12-14	15
3.3	ITU-T G.7041/Y.1303 (2005) Amend. 2	2007-07-29	15
4.0	ITU-T G.7041/Y.1303	2008-10-07	15
4.1	ITU-T G.7041/Y.1303 (2008) Amend. 1	2009-01-13	15
4.2	ITU-T G.7041/Y.1303 (2008) Amend. 2	2010-07-29	15

FOREWORD

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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.

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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, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

Recommendation ITU-T G.7041/Y.1303

Generic framing procedure (GFP)

Amendment 2

1) Clause 2

Add the following reference, which is an update to existing IETF RFC 3032:

[IETF RFC 5332] IETF RFC 5332 (2008), *MPLS Multicast Encapsulations*.

2) Clause 6.1.3.1

In Table 6-3, change the table rows and add a note as follows:

0000 1101	Frame-Mapped MPLS ~~(Unicast) and Frame-Mapped T-MPLS~~
0000 1110	~~Frame-Mapped MPLS (Multicast)~~See Note 4
NOTE 4 – This UPI value had been assigned to multicast MPLS frames, which is a mapping that is no longer applicable. This UPI value should not be used.	

3) Clause 7.6

Modify the first paragraph of clause 7.6 as follows:

The direct mapping of MPLS into GFP is intended for applications that wish to transport MPLS-shim PDUs directly over SDH containers. ~~This mapping applies to both IP/MPLS and T-MPLS PDUs.~~ The MPLS PDU~~, either unicast or multicast,~~ contains one or more MPLS-specific label stack entries (as specified in [IETF RFC 3032]) and an MPLS payload information field. All octets in the MPLS PDU are placed in the payload information field of a GFP-F frame. Both octet-alignment and bit identification within octets are maintained within the GFP-F PDU. This direct mapping of MPLS into GFP is intended to be the default mapping when MPLS client signals are directly carried over a transport network.

4) Clause 8.4.1.2.4

Add a note to clause 8.4.1.2.4 as follows:

8.4.1.2.4 Full-duplex gigabit Ethernet payload

Gigabit Ethernet (GbE) output data rate (after 8B/10B encoding) shall be 1250 Mbit/s ±100 ppm, as specified in [IEEE 802.3]. Output signal timing requirements are further specified in clauses 38.5 and 38.6 (1000BASE-LX optical fibre interfaces) and clauses 39.3.1 and 39.3.3 of [IEEE 802.3] (1000BASE-CX (short-haul copper interface)). Output signals will normally be generated with a minimum IPG of 12 octets, per clause 4.4.2.3 of [IEEE 802.3], GbE idle characters are two octets, as defined in clause 36.2.4.12 of [IEEE 802.3]. If rate adaptation is performed using full-duplex GbE Idle insert/removal, any number of /I2/s may be removed in any IPG, such that their removal shall not result in no /I/ and not less than 8 octets including /T/, /R/ and /I/ remaining between frames (see note), as required for successful frame delineation according to Figures 36-7a and 36-7b of [IEEE 802.3]. Any number of /I2/s may be added in any IPG. Rate adaptation may also be required when a continuous stream of eight-character configuration ordered sets (consisting of

alternating /C1/C2/) is received. Since a minimum of three consecutive /C1/C2/ configuration ordered sets are required to be received before the configuration set is recognized, rate adaptation, by inserting a replica of the received /C1/C2/ sequence, or deleting a received /C1/C2/ sequence shall only occur after three consecutive identical /C1/C2/ sequences have been received and retransmitted. Depending on implementation, a continuous stream of 10B_ERR neutral disparity or transmission error (/V/) characters could be generated at egress, which still requires rate adaptation. In this case, rate adaptation may be performed by removing or replicating a 10B_ERR or /V/ character after 12 consecutive 10B_ERR or /V/ characters have been received and retransmitted.

NOTE – The 8-octet limit is described in Note 3 of clause 4.4.2 of [IEEE 802.3]. Note that [IEEE 802.3] does not specify the amount of IPG shrinkage that the receiver must tolerate without frame loss.

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