International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.7041/Y.1303

Amendment 2

(07/2007)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

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

ITU-T Recommendation G.7041/Y.1303 (2005) – Amendment 2

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ITU-T Recommendation G.7041/Y.1303

Generic framing procedure (GFP)

Amendment 2

Summary

The contents of Amendment 2 of ITU-T Recommendation G.7041/Y.1303 may be summarized as follows:

- The text and figure for the direct mapping of IS-IS data frames into GFP-F has been expanded to include any OSI network layer protocol.
- Text has been added to clarify that the client data frame PTI codes for MPLS also apply to T-MPLS.

Source

Amendment 2 to ITU-T Recommendation G.7041/Y.1303 (2005) was approved on 29 July 2007 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, 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/.

ITU-T Recommendation G.7041/Y.1303

Generic framing procedure (GFP)

Amendment 2

1) Clause 2

Add the following new references alphanumerically to clause 2:

[ISO 9542] ISO 9542:1988, *Information processing systems – Telecommunications and information exchange between systems – End system to Intermediate system routeing exchange protocol for use in conjunction with the Protocol for providing the connectionless-mode network service*.

[ISO/IEC 8473] ISO/IEC 8473-1:1998, *Information technology – Protocol for providing the connectionless-mode network service: Protocol specification*.

2) Table 6-3

Revise Table 6-3 as indicated by the change bars below:

Table 6-3 – User payload identifiers for GFP client frames

PTI = 000	
Type bits <7:0>	**GFP frame payload area**
0000 0000 1111 1111	Reserved and not available
0000 0001	Frame-Mapped Ethernet
0000 0010	Frame-Mapped PPP
0000 0011	Transparent Fibre Channel
0000 0100	Transparent FICON
0000 0101	Transparent ESCON
0000 0110	Transparent Gb Ethernet
0000 0111	Reserved for future
0000 1000	Frame-Mapped Multiple Access Protocol over SDH (MAPOS)
0000 1001	Transparent DVB ASI
0000 1010	Framed-Mapped IEEE 802.17 Resilient Packet Ring
0000 1011	Frame-Mapped Fibre Channel FC-BBW
0000 1100	Asynchronous Transparent Fibre Channel
0000 1101	Frame-Mapped MPLS (Unicast) and Frame-Mapped T-MPLS
0000 1110	Frame-Mapped MPLS (Multicast)
0000 1111	Frame-Mapped OSI Network Layer Protocols (IS-IS, ES-IS, CLNP)
0001 0000	Frame-Mapped IPv4

Table 6-3 – User payload identifiers for GFP client frames

PTI = 000	
Type bits <7:0>	**GFP frame payload area**
0001 0001	Frame-Mapped IPv6
0001 0010	Frame-mapped DVB-ASI
0001 0011 through 1110 1111	Reserved for future standardization
1111 0000 through 1111 1110	Reserved for proprietary use (Note)
NOTE – The use of proprietary code values is described in Annex A/G.806.	

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 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 7.7

Modify clause 7.7 as follows:

7.7 Direct mapping of IP and ~~IS-IS~~OSI network layer PDUs into GFP-F frames

The direct mapping of IPv4, IPv6, and OSI network layer PDUs into GFP is intended for applications that wish to transport IP/OSI PDUs directly over SDH containers. The IPv4 PDU (IETF RFC 791/STD0005), IPv6 PDU (IETF RFC 2460), CLNP PDU [ISO/IEC 8473], ES-IS PDU [ISO 9542], and IS-IS PDU (ISO/IEC 10589) contain one or more client-specific header entries and a client payload information field. All octets in the client 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.

The GFP Payload FCS is required and is computed as specified in 6.1.2.2.1.1 and inserted in the pFCS field. The PFI field is set to 1. This relationship between the IPv4, IPv6 or ~~IS-IS~~OSI network layer PDUs and GFP-F frame is illustrated in Figure 7-7.

5) Figure 7-7

Modify Figure 7-7 and its title as shown:

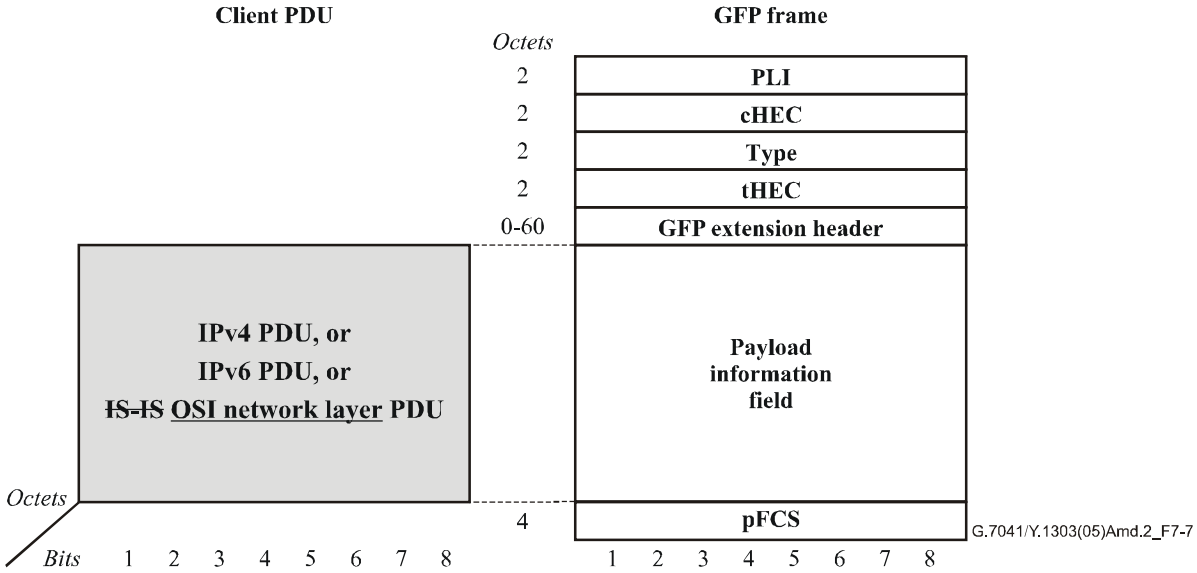

Figure 7-7 – IPv4/IPv6/~~IS-IS~~OSI network layer PDUs and GFP frame relationships

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Printed in Switzerland
Geneva, 2007