INTERNATIONAL TELECOMMUNICATION UNION

ITU-T G.7041/Y.1303

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Amendment 3
(01/2005)

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ITU-T Recommendation G.7041/Y.1303

Generic framing procedure (GFP)

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Summary

This amendment to ITU-T Rec. G.7041/Y.1303 (12/2003) covers the direct mapping into GFP of those protocols used for the control plane of MPLS. It also includes a new UPI code to distinguish unicast and multicast MPLS.

Source

Amendment 3 to ITU-T Recommendation G.7041/Y.1303 (2003) was approved on 13 January 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.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

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.7041/Y.1303

Generic framing procedure (GFP)

Amendment 3

1) Clause 2, References

Add the following new references:

– IETF RFC 791/STD0005 (1981), *Internet Protocol*.

– IETF RFC 1195 (1990), *Use of OSI IS-IS for Routing in TCP/IP and Dual Environments*.

– IETF RFC 2460 (1998), *Internet Protocol, Version 6 (IPv6) Specification*.

– IETF RFC 3032 (2001), *MPLS Label Stack Encoding*.

– ISO/IEC 10589:2002, *Information technology – Telecommunications and information exchange between systems – Intermediate System to intermediate system intra-domain routeing information exchange protocol for use in conjunction with the protocol for providing the connectionless-mode network service (ISO 8473)*.

2) Table 6-3

Modify Table 6-3 as follows in order to assign a UPI code to distinguish the direct mapping of unicast and multicast MPLS into GFP-F:

Table 6-3/G.7041/Y.1303 – 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 HDLC/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

Table 6-3/G.7041/Y.1303 – User payload identifiers for GFP client frames

PTI = 000	
Type bits <7:0>	**GFP frame payload area**
0000 1101	Frame-Mapped MPLS (Unicast)
0000 1110	Frame-Mapped MPLS (Multicast)
0000 1111	Frame-Mapped IS-IS
0001 0000	Frame-Mapped IPv4
0001 0001	Frame-Mapped IPv6
0001 0010 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) New clause 7.7

Add new clause 7.7 as follows:

7.7 Direct mapping of IP and IS-IS PDUs into GFP-F frames

The direct mapping of IPv4, IPv6, and OSI 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), and IS-IS PDU (OSI/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 PDUs and GFP-F frame is illustrated in Figure 7-z.

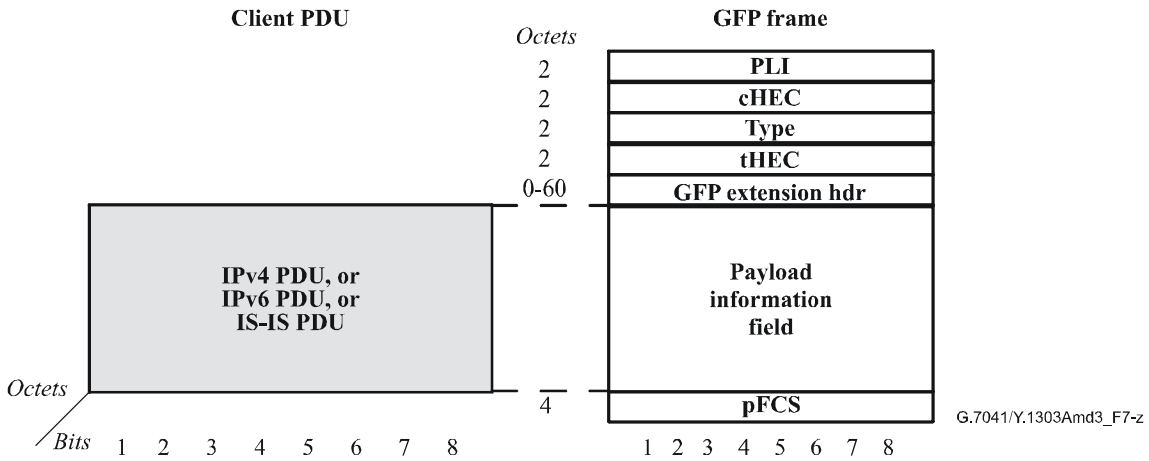

Figure 7-z/G.7041/Y.1303 – IPv4/IPv6/IS-IS PDUs and GFP Frame Relationships

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For further details, please refer to the list of ITU-T Recommendations.

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