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Information technology — Group management protocol

Technologies de l'information — Protocole de gestion de groupe

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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CONTENTS

	<i>Page</i>
1 Scope	1
2 Normative references	1
3 Definitions	1
3.1 Terms defined in ITU-T Rec. X.601	1
3.2 Terms defined in ITU-T Rec. X.605	2
3.3 Terms defined in this Recommendation International Standard	2
4 Abbreviations	2
4.1 Message types	2
4.1.1 SM Message types	2
4.1.2 MM Message types	2
4.2 Miscellaneous	3
5 Conventions	3
6 Overview	3
6.1 Session Management	4
6.2 Membership Management	4
7 Protocol operations	6
7.1 Session Management	6
7.1.1 Session Creation	6
7.1.2 Session Announcement	7
7.1.3 Session Registration	7
7.1.4 Session Enrolment	8
7.1.5 Session Activation	8
7.2 Membership Management	9
7.2.1 Membership Update	11
7.2.2 User Information Request and Response	13
7.2.3 Session Leave	13
7.2.4 Session Termination	14
7.3 Security	15
8 GMP messages	17
8.1 Session Management message types	17
8.2 Session Management message formats	18
8.3 Membership Management message types	20
8.4 Membership Management message formats	20
9 GMP variables	22
9.1 Session-wide variables	22
9.2 Timers	22
Bibliography	23

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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Introduction

Conventional multicast transport protocols do not include a dynamic mechanism for group management according to the join/leave of receivers and for the modification of membership information.

GMP provides a framework for multicast session management (SM) mechanism and membership management (MM), which supports the required management of multicast sessions and their members. This protocol can be key to reliable multicast communications.

GMP will operate over conventional transport protocols and/or ECTP as shown in Figure 1.

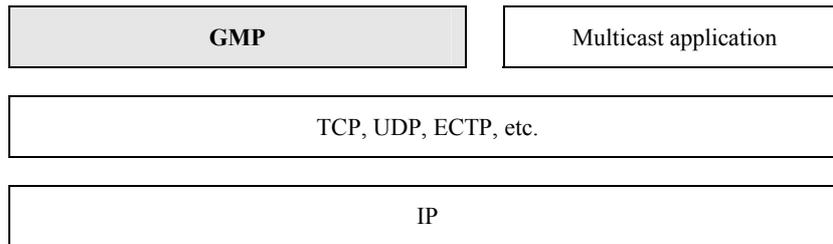


Figure 1 – GMP model (GMP protocol stack)

**INTERNATIONAL STANDARD
ITU-T RECOMMENDATION****Information technology – Group management protocol****1 Scope**

This Recommendation | International Standard provides a specification of a Group Management Protocol (GMP), which is an application-layer control protocol for creating a group session and for managing the group's participating members.

The GMP consists of session management (SM), membership management (MM), and the function of exchanging information between SM and MM. SM is responsible for session creation and deletion. MM manages the member lists based on session information retrieved from SM.

According to ITU-T Rec. X.601, "Multi-peer communications framework", the multi-peer communication service is achieved in seven distinct phases: registration, enrolment, activation, data transfer, deactivation, de-enrolment, and de-registration. Since one of these operations – data transfer – may be performed using ECTP or TCP, SM may perform the rest of operations: creation, announcement, registration, enrolment, activation, including session announcement. In addition, MM manages group members who are in enrolled or active groups.

SM may provide a convenient interface to users because it may be implemented on the Web. Operation of MM is transparent to users as in a transport protocol.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

- ITU-T Recommendation X.601 (2000), *Multi-peer communications framework*.
- ITU-T Recommendation X.605 (1998) | ISO/IEC 13252:1999, *Information technology – Enhanced Communications Transport Service definition*.
- ITU-T Recommendation X.606 (2001) | ISO/IEC 14476-1:2002, *Information technology – Enhanced Communications Transport Protocol: Specification of simplex multicast transport*.
- ITU-T Recommendation X.606.1 (2003) | ISO/IEC 14476-2:2003, *Information technology – Enhanced Communications Transport Protocol: Specification of QoS management for simplex multicast transport*.