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**Information technology — Relayed  
multicast protocol: Specification for  
simplex group applications**

*Technologies de l'information — Protocole de multidiffusion relayé:  
Spécification relative aux applications de groupe simplex*



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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

This third edition cancels and replaces the second edition (ISO/IEC 16512-2:2011), which has been technically revised.

ISO/IEC 16512-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in collaboration with ITU-T. The identical text is published as ITU-T X.603.1 (03/2012).

ISO/IEC 16512 consists of the following parts, under the general title *Information technology — Relayed multicast protocol*:

- *Part 1: Framework*
- *Part 2: Specification for simplex group applications*



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## **Introduction**

This Recommendation | International Standard specifies the relayed multicast protocol part 2 (RMCP-2), which is an application-layer relayed multicast protocol for simplex group applications. RMCP-2 can construct an optimized and robust one-to-many relayed multicast delivery path over IP-based networks. Along the relayed multicast delivery path, several types of data delivery channels can be constructed according to the requirements of the application services.





**INTERNATIONAL STANDARD  
ITU-T RECOMMENDATION**

**Information technology – Relayed multicast protocol:  
Specification for simplex group applications**

## 1 Scope

This Recommendation | International Standard specifies the relayed multicast protocol part 2 (RMCP-2), an application-layer protocol that constructs a multicast tree for data delivery from one sender to multiple receivers over an IP-based network, where IP multicast is not fully deployed. RMCP-2 defines relayed multicast data transport capabilities over IP-based networks for simplex group applications.

This Recommendation | International Standard specifies the following:

- a) descriptions of the entities, control and data delivery models of RMCP-2;
- b) description of the functions and procedures of multicast agents (MAs) to construct a one-to-many relayed data path and to relay data for simplex communication;
- c) description of the security features of the basic RMCP-2; and
- d) definitions of messages and parameters of the basic RMCP-2 and secure RMCP-2.

Annex A defines a membership authentication procedure for use with the secure RMCP-2. Annex B provides a method for sharing information among session managers (SMs) when multiple SMs are used. Annexes C-G provide informative material related to RMCP-2. Annex H contains an informative bibliography.

## 2 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.

### 2.1 Identical Recommendations | International Standards

- Recommendation ITU-T X.603 (2012) | ISO/IEC 16512-1:2012, Information technology – Relayed multicast protocol: Framework.

### 2.2 Additional references

- ISO/IEC 9797-2:2011, *Information technology – Security techniques – Message Authentication Codes (MACs) – Part 2: Mechanisms using a dedicated hash-function.*
- ISO/IEC 9798-3:1998, *Information technology – Security techniques – Entity authentication – Part 3: Mechanisms using digital signature techniques.*
- ISO/IEC 18033-2:2006, *Information technology – Security techniques – Encryption algorithms – Part 2: Asymmetric ciphers.*
- ISO/IEC 18033-3:2010, *Information technology – Security techniques – Encryption algorithms – Part 3: Block ciphers.*
- ISO/IEC 18033-4:2011, *Information technology – Security techniques – Encryption algorithms – Part 4: Stream ciphers.*
- IETF RFC 768 (1980), *User Datagram Protocol.*
- IETF RFC 793 (1981), *Transmission Control Protocol.*
- IETF RFC 2003 (1996), *IP Encapsulation within IP.*
- IETF RFC 3830 (2004), *MIKEY: Multimedia Internet KEYing.*
- IETF RFC 4279 (2005), *Pre-Shared Key Ciphersuites for Transport Layer Security (TLS).*
- IETF RFC 4535 (2006), *GSAKMP: Group Secure Association Key Management Protocol.*