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Information technology — Open Distributed Processing —

Part 2: General Inter-ORB Protocol (GIOP)/Internet Inter-ORB Protocol (IIOP)

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Partie 2: «General Inter-ORB Protocol (GIOP)/Internet Inter-ORB Protocol (IIOP)»

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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.

ISO/IEC 19500-2 was prepared by the Object Management Group (OMG) and was adopted, under the PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

ISO/IEC 19500 consists of the following parts, under the general title *Information technology — Open Distributed Processing*:

— *Part 2: General Inter-ORB Protocol (GIOP)/Internet Inter-ORB Protocol (IIOP)*

NOTE Other parts will be added in the future.

Introduction

The rapid growth of distributed processing has lead to a need for a coordinating framework for the standardization of Open Distributed Processing (ODP). ITU-T Recommendations X.901-904 | ISO/IEC 10746, the Reference Model of Open Distributed Processing (RM-ODP) provides such a framework. It defines an architecture within which support of distribution, interoperability and portability can be integrated.

Within the framework provided by the RM-ODP, ITU-T Rec. X.931 | ISO/IEC 14752, ODP - Protocol Support for Computational Interactions, defines how interactions between computational objects in a computational specification of a system relate to protocol support for those interactions in an engineering specification of that system.

Annex A to ITU-T Rec. X.931 | ISO/IEC 14752 defines a mapping to the General Inter-ORB Protocol (GIOP) and the Internet Inter-ORB Protocol (IIOP) which are specified by this International Standard.

GIOP is the base for all interoperability and support for all object request broker (ORB) functionality in the Common Object Request Broker Architecture (CORBA) specified by the Object Management Group (OMG). IIOP is the mapping of GIOP for the Internet.

Note: This document is technically aligned with the OMG CORBA GIOP and IIOP specifications.

Information technology — Open Distributed Processing —

Part 2: General Inter-ORB Protocol (GIOP)/Internet Inter-ORB Protocol (IIOP)

1 Scope

This standard specifies the General Inter-ORB Protocol (GIOP) for object request broker (ORB) interoperability. GIOP can be mapped onto any connection-oriented transport protocol that meets a minimal set of assumptions defined by this standard.

This standard also defines the Internet Inter-ORB Protocol (IIOP), a specific mapping of the GIOP which runs directly over connections that use the Internet Protocol and the Transmission Control Protocol (TCP/IP connections).

This standard provides a widely implemented and used particularization of ITU-T Rec. X.931 | ISO/IEC 14752, *Information technology — Open Distributed Processing— Protocol support for computational interactions*. It supports interoperability and location transparency in ODP systems.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.902 (1995) | ISO/IEC 10746-2:1996, *Information technology — Open Distributed Processing — Reference Model: Foundations*
- ITU-T Recommendation X.903 (1995) | ISO/IEC 10746-3:1996, *Information technology — Open Distributed Processing — Reference Model: Architecture*
- ITU-T Recommendation X.920 (1997) | ISO/IEC 14750:1999, *Information technology — Open Distributed Processing — Interface Definition Language*
- ISO/IEC 14752:2000, *Information technology — Open Distributed Processing — Protocol support for computational interactions*
- ISO/IEC 8859-1: 1998, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*
- ISO/IEC 10646-1:2000, *Information technology — Universal Multiple-Octect Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

2.2 Other Specifications

- CORBA 2.3 - The Common Object Request Broker: Architecture and Specification, Revision 2.3, Object Management Group, June 1999 (OMG Doc Number: Formal/98-12-01, ftp://ftp.omg.org/pub/docs/formal/98-12-01.pdf)
- CORBAservices: Common Object Services Specification, Object Management Group, December 1998 (OMG Doc Number: Formal/98-12-09, ftp://ftp.omg.org/pub/docs/formal/98-12-09.pdf)
- Java™ to IDL Language Mapping, Object Management Group, July 1999 (OMG Doc Number: Formal/99-07-59, ftp://ftp.omg.org/pub/docs/formal/99-07-59.pdf)
- STD 007 (also, RFC 793), Transmission Control Protocol, J. Postel, Internet Engineering Task Force, Sept. 1981
- STD 005 (also, RFC 791), Internet Protocol, J. Postel, Internet Engineering Task Force, Sept. 1981
- OSF Character and Code Set Registry, OSF DCE FRC 40.1 (Public Version), S. (Martin) O'Donnell, June 1994.
- RPC Runtime Support For I18N Characters — Functional Specification, OSF DCE SIG RFC 41.2, M. Romagna, R. Mackey, November 1994.

3 Definitions

For the purposes of this International Standard, the following definitions apply:

3.1 Recommendations | International Standards

This International Standard makes use of the following terms defined in ITU-T Rec. X.902 | ISO/IEC 10746-2:

behavior

interface

instance

object

state

type

This International Standard makes use of the following terms defined in ITU-T Rec. X.903 | ISO/IEC 10746-3:

operation

stub