INTERNATIONAL STANDARD

ISO/IEC 14753

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Information technology — Open Distributed Processing — Interface references and binding

Technologies de l'information — Traitement distribué ouvert — Références et liaisons d'interfaces

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CONTENTS

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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.

International Standard ISO/IEC 14753 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 7, *Software engineering*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.930.

Annexes A and B form an integral part of this International Standard. Annex C is for information only.

Introduction

The rapid growth of distributed processing has led to a need for a coordinating framework for the standardization of Open Distributed Processing (ODP). The Reference Model of ODP provides such a framework. It creates an architecture within which support of distribution, interworking and portability can be integrated.

One of the components of the architecture is the ODP binding function. The binding function provides the means to establish liaisons and create channels across autonomous systems in order to support interworking and communication between objects. An interface reference embodies the information needed to establish bindings and further embodies the information required to maintain bindings between computational objects in the presence of distribution.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN DISTRIBUTED PROCESSING – INTERFACE REFERENCES AND BINDING

1 Scope and Field of application

1.1 Scope

Interface references are crucial to interworking between ODP systems and federation of groups of ODP systems. An interface reference embodies the information needed to establish bindings, including binding to objects at nodes that support several different communication protocols and binding to objects in different management domains. An interface reference further embodies the information required for the engineering mechanism to maintain bindings between computational objects in the presence of distribution transparencies such as migration transparency. They are the foundation of ODP location and relocation transparency.

This Recommendation | International Standard includes:

- a framework for binding interfaces and a generic binding protocol (for both stream and operational interfaces);
- a specification of the generic information structure of interface references (for both stream and operational interfaces);
- representation(s) for interface references when transferred using standardized protocols;
- identification of procedures for the management and transfer of interface references with respect to individual transparencies;
- identification of node management interfaces related to binding and federation which create or transform interface references;
- identification of requirements for quality of service information and for invocation of QoS or related measurement procedures.

This Recommendation | International Standard provides an engineering description of the functionality needed to support the computational binding of objects in ODP systems. Security and support for group communication are important issues, but not within the scope of this Recommendation | International Standard.

1.2 Field of Application

This Recommendation | International Standard enables interworking between ODP systems.

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 the currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.901 (1997) | ISO/IEC 10746-1:1998, *Information technology – Open distributed processing – Reference Model:* Overview.
- 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.910 (1998) | ISO/IEC 14771:1999, *Information technology – Open distributed processing – ODP Naming framework.*
- ITU-T Recommendation X.931 (1998) | ISO/IEC 14752:1999, *Information technology – Open distributed processing – Protocol Support for Computational Interactions.*
- ITU-T Recommendation X.950 (1997) | ISO/IEC 13235-1:1998, *Information technology – Open distributed processing – Trading function: Specification.*
- ITU-T Recommendation X.960[1)] | ISO/IEC 14769[1)], *Information technology – Open distributed processing – Type repository function.*
- ISO/IEC 9075-1[1)], *Information technology – Database language SQL – Part 1: Frame.*

2.2 Specifications of the Object Management Group

- CORBA: The Common Object Request Broker: Architecture and Specification, Revision 2.1, Object Management Group, August 1997 (OMG Doc Number Formal/97-09-01).

Temporary Note: A reference explanatory report is circulated with the DIS ballot on this specification.

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1) To be published.