

INTERNATIONAL STANDARD

ISO/IEC
13235-3

First edition
1998-12-01

Information technology — Open Distributed Processing — Trading Function —

Part 3: Provision of Trading Function using OSI Directory service

Technologies de l'information — Traitement distribué ouvert — Fonction commerciale —

Partie 3: Fourniture de fonction commerciale utilisant le service d'annuaire OSI



| Contents | <i>Page</i> |
|---|-------------|
| 1 Scope and field of application..... | 1 |
| 2 Normative References..... | 1 |
| 2.1 Identical Recommendations International Standards..... | 1 |
| 3 Definitions..... | 2 |
| 4 Abbreviations..... | 4 |
| 5 Overview..... | 4 |
| 6 Schema..... | 5 |
| 6.1 General..... | 6 |
| 6.2 Trader Entry..... | 7 |
| 6.2.1 commonName..... | 7 |
| 6.2.2 traderInterface..... | 8 |
| 6.2.3 dsaName..... | 8 |
| 6.2.4 typeRepos..... | 8 |
| 6.2.5 defSearchCard..... | 8 |
| 6.2.6 maxSearchCard..... | 8 |
| 6.2.7 defMatchCard..... | 9 |
| 6.2.8 maxMatchCard..... | 9 |
| 6.2.9 defReturnCard..... | 9 |
| 6.2.10 maxReturnCard..... | 9 |
| 6.2.11 defHopCount..... | 10 |
| 6.2.12 maxHopCount..... | 10 |
| 6.2.13 defFollowPolicy..... | 10 |
| 6.2.14 maxFollowPolicy..... | 11 |
| 6.2.15 maxLinkFollowPolicy..... | 11 |
| 6.2.16 supportsModifiableProperties..... | 11 |
| 6.2.17 supportsDynamicProperties..... | 11 |
| 6.2.18 supportsProxyOffers..... | 12 |
| 6.2.19 maxList..... | 12 |
| 6.2.20 requestIdStem..... | 12 |
| 6.2.21 description..... | 12 |
| 6.2.22 userPassword..... | 12 |
| 6.2.23 Other X.500 attributes..... | 12 |
| 6.3 Trader Policy Entry..... | 13 |
| 6.3.1 commonName..... | 13 |
| 6.3.2 typeManagementConstraint..... | 13 |
| 6.3.3 searchConstraint..... | 14 |
| 6.3.4 offerAcceptanceConstraint..... | 14 |
| 6.3.5 Other X.500 attributes..... | 14 |

| | <i>Page</i> |
|-------|--|
| 6.4 | Service Offer Entry 14 |
| 6.4.1 | sOfferId 15 |
| 6.4.2 | serviceInterfaceId 16 |
| 6.4.3 | serviceTypeId 16 |
| 6.4.4 | hasDynamicProperties 16 |
| 6.4.5 | hasModifiableProperties 17 |
| 6.4.6 | dynamicProps 17 |
| 6.4.7 | Other X.500 attributes 17 |
| 6.5 | Trader Link Entry 18 |
| 6.5.1 | linkName 18 |
| 6.5.2 | linkId 18 |
| 6.5.3 | targetTraderInterfaceId 19 |
| 6.5.4 | defPassOnFollowRule 19 |
| 6.5.5 | limitingFollowRule 19 |
| 6.5.6 | Other X.500 attributes 19 |
| 6.6 | Proxy Offer Entry 20 |
| 6.6.1 | proxyOfferId 20 |
| 6.6.2 | proxyLookUpInterfaceId 21 |
| 6.6.3 | constraintRecipe 21 |
| 6.6.4 | ifMatchAll 21 |
| 6.6.5 | Other X.500 attributes 21 |
| 6.7 | Other X.500 entries used by the T-DUA 22 |
| 7 | Operations 22 |
| 7.1 | Initialisation 23 |
| 7.2 | Client operations 23 |
| 7.3 | Register operations 23 |
| 7.3.1 | Export 23 |
| 7.3.2 | Withdraw 25 |
| 7.3.3 | Modify 25 |
| 7.3.4 | Describe 26 |
| 7.3.5 | Withdraw with constraint 26 |
| 7.3.6 | Resolve 27 |
| 7.4 | Look up operations 27 |
| 7.4.1 | Query operation 27 |
| 7.4.2 | Policies 28 |
| 7.4.3 | Searching locally 28 |
| 7.4.4 | Searching Federated Traders 29 |
| 7.4.5 | Searching Proxy Offers 29 |
| 7.4.6 | Service Offer returned 29 |
| 7.5 | Link operations 29 |
| 7.5.1 | Add Link 29 |
| 7.5.2 | Remove Link 30 |
| 7.5.3 | Modify Link 30 |
| 7.5.4 | Describe Link 31 |
| 7.5.5 | List Links 31 |
| 7.6 | Proxy Offer operations 31 |
| 7.6.1 | Export Proxy 31 |
| 7.6.2 | Withdraw Proxy 32 |
| 7.6.3 | Describe Proxy 33 |

| | <i>Page</i> | |
|---|---|----|
| 7.7 | Trader Attribute Operations..... | 33 |
| 7.8 | Administrative operations..... | 33 |
| 7.8.1 | List Offers..... | 33 |
| 7.8.2 | List Proxies..... | 34 |
| 7.9 | Dynamic Property Evaluation operations..... | 34 |
| 7.9.1 | EvalDP..... | 34 |
| 8 | Type Repository..... | 35 |
| 8.1 | X.500 schema and the Minimal Type Repository..... | 35 |
| 9 | Dynamic Properties..... | 36 |
| 9.1 | Exporting a Service Offer..... | 36 |
| 9.2 | Importing a Service Offer..... | 36 |
| Annex A – Trader definitions schema definition..... | | 37 |
| Annex B – Sample service description schema definition..... | | 47 |

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. 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 13235-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 33, *Distributed application services*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.952.

ISO/IEC 13235-3 consists of the following parts, under the general title *Information technology — Open Distributed Processing — Trading Function*:

- *Part 1: Specification*
- *Part 2: (TBD)*
- *Part 3: Provision of Trading Function using OSI Directory service*

Annex A forms an integral part of this part of ISO/IEC 13235. Annex B is for information only.

Introduction

The ODP Trading Function (see ITU-T Rec. X.950-Series | ISO/IEC 13235) provides the means to offer a service and the means to discover services that have been offered. ITU-T Rec. X.950 | ISO/IEC 13235-1 defines an enterprise Specification, an information Specification and a computational Specification of this Trading Function. No engineering Specification is defined in ITU-T Rec. X.950 | ISO/IEC 13235-1. This Recommendation | International Standard describes how the Specifications of the Trading Function in ITU-T Rec. X.950 | ISO/IEC 13235-1 can be engineered using OSI Directory Service (see ITU-T Rec. X.500 | ISO/IEC 9594-1) to store information and to provide support mechanisms. This Specification does not prescribe that a trader must be engineered by using OSI Directory. But if OSI Directory is used, this Specification defines standardised templates for information entries (e.g. service offer and link information objects) in the Directory DIT.

Clause 5 gives an overview of how the Trading Function is implemented as a combination of X.500 DUA and DSA. The X.500 DSA is used to store the Trader Information Object and a Trader DUA (T-DUA) implements the functionality required by a Trader, which is difficult, or impossible, to implement using OSI Directory services.

Clause 6 defines the standardised templates for information entries of the Trader Information Object, the information known to a particular Trader.

Clause 7 describes mapping of Trading Function operations to appropriate Directory operations.

Clause 8 specifies a minimal Type Repository Function necessary to enable the correct functioning of the X.500 Directory for Trading.

Clause 9 describes the mechanisms used to enable the handling of dynamic properties of a Trader's service offers.

This Specification contains two annexes.

Annex A is a normative schema definition of Trader definitions.

Annex B is an informative schema definition of a sample service description.

INTERNATIONAL STANDARD**ITU-T RECOMMENDATION****INFORMATION TECHNOLOGY –
OPEN DISTRIBUTED PROCESSING – TRADING FUNCTION:
PROVISION OF TRADING FUNCTION USING OSI DIRECTORY SERVICE****1 Scope and field of application**

This Specification describes how the ODP Trading Function can be realised using information entries and support mechanisms of the OSI Directory. This Specification is to be used in conjunction with the ODP Trading Function Standard (ITU-T Rec. X.950 | ISO/IEC 13235-1). If there are any discrepancies between the prescriptive statements in ITU-T Rec. X.950 | ISO/IEC 13235-1 and those in this Specification, the prescriptive statements in ITU-T Rec. X.950 | ISO/IEC 13235-1 take precedence.

The scope of this Specification is:

- standardised templates for Trading Function information objects in the DIT;
- descriptions of mapping of Trading Function operations to appropriate Directory operations;
- description of use of other Directory features to provide the support mechanisms for implementing the ODP Trading Function.

This Specification does not prescribe that a trader must be engineered by using OSI Directory. But if OSI Directory is used, this Specification defines standardised templates for information entries (e.g. service offer and link information objects) in the Directory DIT. This Specification does not put any restrictions on where these entries are placed in the Directory DIT. That is, this Specification does not standardise any structure rules. This Specification does describe a mechanism to provide the Trading Function using OSI Directory.

The field of application of this Specification is for the construction of the ODP Trading Function using the OSI Directory, when required.

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.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.500 (1993) | ISO/IEC 9594-1:1995, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services.*
- ITU-T Recommendation X.501 (1993) | ISO/IEC 9594-2:1995, *Information technology – Open Systems Interconnection – The Directory: Models.*
- ITU-T Recommendation X.509 (1993) | ISO/IEC 9594-8:1995, *Information technology – Open Systems Interconnection – The Directory: Authentication framework.*
- ITU-T Recommendation X.511 (1993) | ISO/IEC 9594-3:1995, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition.*
- ITU-T Recommendation X.519 (1993) | ISO/IEC 9594-5:1995, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications.*

- ITU-T Recommendation X.520 (1993) | ISO/IEC 9594-6:1995, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types.*
- ITU-T Recommendation X.521 (1993) | ISO/IEC 9594-7:1995, *Information technology – Open Systems Interconnection – The Directory: Selected object classes.*
- ITU-T Recommendation X.680 (1994) | ISO/IEC 8824-1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation.*
- ITU-T Recommendation X.681 (1994) | ISO/IEC 8824-2:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Information object specification.*
- ITU-T Recommendation X.682 (1994) | ISO/IEC 8824-3:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification.*
- ITU-T Recommendation X.683 (1994) | ISO/IEC 8824-4:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Parameterization of ASN.1 specifications.*
- 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.950 (1997) | ISO/IEC 13235-1¹⁾, *Information technology – Open distributed processing – Trading function: Specification.*

¹⁾ To be published.