INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 12061-2

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Information technology — Open Systems Interconnection — International Standardized Profiles: OSI Distributed Transaction Processing —

Part 2:

Support of OSI TP APDUs

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Profils normalisés internationaux: Traitement transactionnel réparti —

Partie 2: Prise en charge des APDU d'OSI TP

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Contents

Page

1 SCOPE 1
2 NORMATIVE REFERENCES 1
3 DEFINITIONS and ABBREVIATIONS 2
4 NOTATION 2
5 SUPPORT OF OSI TP PROTOCOL 3
6 CONFORMANCE 3

ANNEX
A TP PDU SUPPORT 4

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. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmon-ized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75 % of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 12061-2 was prepared with the collaboration of

— Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— Open Systems Environment Implementors' Workshop (OIW).

ISO/IEC ISP 12061 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — International Standardized Profiles: OSI Distributed Transaction Processing*:

— *Part 1: Introduction to the Transaction Processing Profiles*

— *Part 2: Support of OSI TP APDUs*

— *Part 3: Support of CCR APDUs*

— *Part 4: Support of Session, Presentation and ACSE PDUs*

— *Part 5: Application supported transactions — Polarized control (ATP11)*

— *Part 6: Application supported transactions — Shared control (ATP12)*

— *Part 7: Provider supported unchained transactions — Polarized control (ATP21)*

— *Part 8: Provider supported unchained transactions — Shared control (ATP22)*

— *Part 9: Provider supported chained transactions — Polarized control (ATP31)*

— *Part 10: Provider supported chained transactions — Shared control (ATP32)*

Annex A forms an integral part of this part of ISO/IEC ISP 12061.

Introduction

The aim of Open Systems Interconnection is to allow, with a minimum of technical agreement outside the interconnection standards, the interconnection of computer systems:

- from different manufacturers,
- under different management,
- of different levels of complexity,
- of different technologies.

Transaction Processing is concerned with identifiable information which can be related as transactions, which may involve two or more Open Systems. In the framework of Open Systems Interconnection (OSI) a transaction is defined as "a set of related operations characterized by four properties: atomicity, consistency, isolation and durability."

The definition highlights that a distributed transaction is more than a simple exchange of messages, but that the exchanges form a protected indivisible set.

This multi-part International Standardized Profile contains the complete specification of the six profiles identified in ISO/IEC TR 10000-2.[1]

Part 1 Introduces the overall structure of the specification of the OSI TP Profiles, including the definitions and abbreviations used through out the various parts of ISO/IEC 12061.

Part 2 contains the specification of the support of OSI TP APDUs for each of the profiles specified in parts 5 to 10.

Part 3 contains the specification of the support of the CCR APDUs for each of the profiles specified in parts 5 to 10.

Part 4 contains the specification of the support of ACSE, Presentation and Session APDUs for each of the profiles specified in parts 5 to 10.

Parts 5 to 10 specify the six profiles which are defined, based on the OSI TP standard. These six parts make reference to parts 2 to 4.

[1] ISO/IEC TR 10000-2: 1992, Information Technology - Framework and Taxonomy of International Standardized Profiles - Part2: Taxonomy of OSI Profiles

Information technology — Open Systems Interconnection — International Standardized Profiles: OSI Distributed Transaction Processing —

Part 2:
Support of OSI TP APDUs

1 Scope

This part of this ISO/IEC ISP 12061 specifies the status for the support of the OSI TP protocol for the profiles identified in ISO/IEC ISP 12061-1.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 12061. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 12061 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents, is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and ITU-T maintains published editions of its current Recommendations.

ISO/IEC 8327: 1987[1], *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification*

ISO/IEC 8327:1987 /Amd 3:1992, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification - Amendment 3: Additional synchronization functionality.*

ISO/IEC 8327-2:—[2] *Information technology - Open Systems Interconnection - Basic connection oriented session PICS Proforma - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 8650:1988, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element.*

ISO/IEC 8650-2:1995, *Information technology - Open Systems Interconnection - Protocol specification for the Association Control Service Element - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 8823:1988, *Information processing systems - Open Systems Interconnection - Connection oriented presentation protocol specification.*

[1] Under revision
[2] To be published

ISO/IEC 8823:1988 /Amd 5:1992, *Information processing systems - Open Systems Interconnection - Connection oriented presentation protocol specification - Amendment 5: Additional synchronisation functionality to the presentation service user.*

ISO/IEC 8823-2:—[2] *Information technology - Open Systems Interconnection - Connection oriented presentation protocol specification - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 8825:1990, *Information technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).*

ISO/IEC 9805:1990, *Information technology - Open Systems Interconnection - Protocol Specification for the Commitment, Concurrency and Recovery service element.*

ISO/IEC 9805-2:—[2] *Information technology - Open Systems Interconnection - Commitment, Concurrency and Recovery protocol - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 9805:1990 /Amd 2:1992, *Information technology - Open Systems Interconnection - Protocol Specification for the Commitment, Concurrency and Recovery service element - Amendment 2: Session mapping changes.*

ISO/IEC 10026-1:1992, *Information technology - Open Systems Interconnection - Distributed Transaction Processing - Part 1: OSI TP Model.*

ISO/IEC 10026-2:1992, *Information technology - Open Systems Interconnection - Distributed Transaction Processing - Part 2: OSI TP Service.*

ISO/IEC 10026-3:1992, *Information technology - Open Systems Interconnection - Distributed Transaction Processing - Part 3: OSI TP Protocol specification.*

ISO/IEC 10026-4:1995, *Information technology - Open Systems Interconnection - Distributed Transaction Processing - Part 4: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC ISP 11188-1:1995, *Information technology - International Standardized Profile - Common upper layer requirements - Part 1: Basic connection oriented requirements.*

3 Definitions and abbreviations

The definitions and abbreviations listed in ISO/IEC 12061-1 apply.

4 Notation

The notation introduced in ISO/IEC ISP 12061-1 applies.

5 Support of OSI TP protocol

The support of the OSI TP protocol is as described in annex A.
The structure of Annex A is based on the structure of annex A of ISO/IEC 10026-4, in particular in the numbering of the clauses.
When a clause of annex A of ISO/IEC 10026-4 is not relevant to the profiles, this is stated.

6 Conformance

To conform to the OSI TP Protocol used in any of the profiles in this Part of ISO/IEC ISP 12061, an implementation shall implement, according to the specifications given in ISO/IEC 10026-3:

- All mandatory features identified in annex A.
- All selected optional features, as identified in the completed TP PICS.

Annex A
(normative)

TP PDU support

A.1 Identification

No restriction is applied to clause A.1 of ISO/IEC 10026-4 by this part of ISO/IEC ISP 12061.

A.2 Claimed conformance to standards

A.2.1 ISO/IEC 10026-3

A.2.1.1 Version number(s)

Answer shall be "NONE".

A.2.1.2 Global conformance claim

Answer shall be "YES".

A.2.2 ISO/IEC 10026 amendments

Both answers shall be "NONE".

A.2.3 ISO/IEC 10026 technical corrigenda

Both answers shall be "NONE".

Table 1 - CONFORMANCE CLASSES SUPPORTED

ITEM #	CONFORMANCE CLASSES	ISO/IEC 10026-4	PROFILES						
			11	21	31	12	22	32	NOTES
1	Application Transaction Branches	O.n	M	NA	NA	M	NA	NA	1
2	Chained Provider Supported Transaction Branches	O.n	NA	NA	M	NA	NA	M	1
3	Unchained Provider Supported Transaction Branches	O.n	NA	M	NA	NA	M	NA	1

NOTES

1. Conformance to more than one profile may be claimed for an implementation. For example, an implementation that conforms to profile 21 will often be capable of conforming to the corresponding Profile 11.

A.3 Functional units, limits and protocol mechanisms

A.3.1 Support of functional units

Table 2 - SUPPORT OF FUNCTIONAL UNITS

ITEM #	FUNCTIONAL UNITS	ISO/IEC 10026-4			PROFILES						
					11	21	31	12	22	32	NOTES
		AS	CP	UP							
1	Dialogue	M	M	M	M	M	M	M	M	M	
2	Shared Control	O.n	O.n	O.n	NA	NA	NA	M	M	M	
3	Polarized Control	O.n	O.n	O.n	M	M	M	NA	NA	NA	
4	Handshake	O	O	O	M	M	M	O	O	O	
5	Commit	NA	M	M	NA	M	M	NA	M	M	
6	Chained Transactions	NA	M	NA	NA	NA	M	NA	NA	M	
7	Unchained Transactions	NA	NA	M	NA	M	NA	NA	M	NA	
8	Recovery	NA	M	M	NA	M	M	NA	M	M	

A.3.2 Protocol mechanisms implemented

A.3.2.1 Concatenation/separation

Table 3 - SUPPORT FOR CONCATENATION/SEPARATION

ITEM #	ROLE	ISO/IEC 10026-4	PROFILES						
			11	21	31	12	22	32	NOTES
1	Concatenation	O	O	O	O	O	O	O	1
2	Separation	M	M	M	M	M	M	M	

NOTES

1. Concatenated TP APDUs shall consist of :

   A. a sequence of PDV-list, where each PDV contains a single-ASN.1-Type, when the concatenated TP APDUs are embedded in a Presentation PDU such as P-DATA, or

   B. a sequence of EXTERNAL, where each encoding consist of a Single-ASN.1-Type, when the concatenated TP APDUs are embedded in a CCR APDU such as C-COMMIT-RC.

A.3.2.2 Association establishment

Table 4 - ASSOCIATION ESTABLISHMENT

ITEM #	ROLE	ISO/IEC 10026-4	PROFILES						
			11	21	31	12	22	32	NOTES
1	Initiator	C	O	M	M	O	M	M	1,2,4
2	Acceptor	C	O	M	M	O	M	M	1,3,4
3	Rejector	O	M	M	M	M	M	M	5,6

NOTES

1 When the commitment is supported, then the implementation must be able to support both the association initiator and acceptor role in order to be able to perform recovery adequately.

2 The initiator role here implies being capable of issuing an A-ASSOCIATE request and being capable of receiving an A-ASSOCIATE confirm.

3 The Acceptor role here implies being capable of receiving an A-ASSOCIATE indication and being capable of issuing an A-ASSOCIATE response with a positive answer.

4. For Profiles 11 and 12, at a minimum, the association establishment initiator role or the association establishment acceptor role shall be supported.

5. The Rejector role here implies being capable of receiving an A-ASSOCIATE indication and being capable of issuing an A-ASSOCIATE response with a negative answer.

6. Although it is mandatory to be able to reject an association, note that in some particular environments it could occur that the reject is always performed by some lower protocol machine (e.g. ACSE).