

INTERNATIONAL
STANDARDIZED
PROFILE

ISO/IEC
ISP
10607-5

Second edition
1995-12-15

**Information technology — International
Standardized Profiles AFTnn — File
Transfer, Access and Management —**

Part 5:

AFT22 — Positional File Access Service (flat)

*Technologies de l'information — Profils normalisés internationaux AFTnn —
Transfert, accès et gestion de fichier —*

Partie 5: AFT22 — Service d'accès positionnel au fichier (plat)



Reference number
ISO/IEC ISP 10607-5:1995(E)

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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 or 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 JTC1. In addition to developing International Standards, ISO/IEC JTC1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized 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 10607-5 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 10607 consists of the following parts, under the general title *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management*:

- Part 1: *Specification of ACSE, Presentation and Session protocols for the use by FTAM*
- Part 2 : *Definition of document types, constraint sets and syntaxes*
- Part 3 : *AFT11 - Simple File Transfer Service (unstructured)*
- Part 4 : *AFT12 - Positional File Transfer Service (flat)*
- Part 5 : *AFT22 - Positional File Access Service (flat)*
- Part 6 : *AFT3 - File Management Service*

This second edition cancels and replaces the first edition (ISO/IEC ISP 10607-5: 1991), which has been technically revised. It also incorporates amendment 1:1994.

Annexes A and B form an integral part of this part of ISO/IEC ISP 10607. Annexes C and D are for information only.

Introduction

This part of ISO/IEC ISP 10607 is defined within the context of Functional Standardization, in accordance with the principles specified by ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles". The context of Functional Standardization is one part of the overall field of Information Technology (IT) standardization activities, covering base standards, profiles, and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined IT function. Profiles standardize the use of options and other variations in the base standards, and provide a basis for the development of uniform, internationally recognized system tests.

One of the most important roles for an ISP is to serve as the basis for the development (by organizations other than ISO and IEC) of internationally recognized tests and test centres. ISPs are produced not simply to legitimize a particular choice of base standards and options, but to promote real system interoperability. The development and widespread acceptance of tests based on this and other ISPs is crucial to the successful realization of this goal.

The text for this part of ISO/IEC ISP 10607 was developed in close co-operation among the FTAM Expert Groups of the three International OSI/OSI Workshops : OSE Implementors' Workshop (OIW), the European Workshop for Open Systems (EWOS) and the Asia-Oceania Workshop (AOW). This part of ISO/IEC ISP 10607 is harmonized among these three Workshops and it was finally ratified by the Workshops' plenary assemblies.

Information technology — International Standardized Profiles AFTnn — File Transfer, Access and Management —

Part 5: AFT22 — Positional File Access Service (flat)

1 Scope

1.1 General

This part of ISO/IEC ISP 10607 (AFT22) covers access to files between the filestores of two end systems, using the OSI connection-mode transport service to provide the interconnection. One end system acts in the initiator role and requests access to the file, the other end system acts in the responder role and provides access to the file in the virtual filestore.

These role combinations and the interoperability are shown in table 1.

Table 1 - Interoperable configurations

		Initiator		Responder	
		Sender	Receiver	Sender	Receiver
Initiator	Sender				X
	Receiver			X	
Responder	Sender		X		
	Receiver	X			

Access of files is supported for files with an unstructured, flat or random access constraint set and containing binary or character data.

This part of ISO/IEC ISP 10607 specifies implementations that support file transfer and file access, i.e. the ability to

- read an FADU which is identified by node name, node number or by position (depending on constraint set and document type),
- write (replace and/or extend and/or insert, depending on constraint set and document type) to a file, and
- locate and erase within a file;

and optionally to

- create and delete a file, and
- read the attributes of a file.

Grouping of actions is not mandatory. Therefore, the above file actions can be performed separately and also, multiple file actions can be performed within a given regime.

This part of ISO/IEC ISP 10607 specifies how the OSI FTAM application standard shall be used to provide the functions defined above. It does not specify total system capability. In particular, a system may operate this profile and at the same time engage in other communications. The requirements placed on an implementation in this part of ISO/IEC ISP 10607 are solely those necessary for operation of the protocol specified.

This part of ISO/IEC ISP 10607 describes the actions and attributes of the virtual filestore, and the service provided by the file service provider to file service users, together with the necessary communications between the initiator and the responder.

1.2 Position within the taxonomy

This part of ISO/IEC ISP 10607 is identified in ISO/IEC TR 10000-2 as "AFT22 - Positional File Access Service (flat)".

It may be combined with any T-Profiles (see ISO/IEC TR 10000) specifying the OSI connection-mode transport service.

1.3 Scenario

The model used is one of two end systems establishing an association and accessing files in the responder's virtual filestore as shown in figure 1.

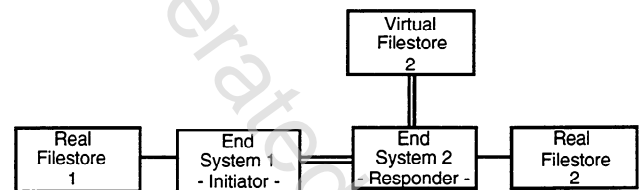


Figure 1 - File access between two end systems

Specifications of this part of ISO/IEC ISP 10607 apply on the double lines of figure 1. The mapping between the virtual filestore and the real filestore together with the local data management system is not defined in this part of ISO/IEC ISP 10607.

This part of ISO/IEC ISP 10607 defines the selection of specific virtual filestore options, file service options and file protocol options. The required functions from the supporting protocol stack of ACSE, presentation and session are specified in ISO/IEC ISP 10607-1 (see also table 2).

Table 2 - Profile Stack

Application Layer	ISO 8571 ISO/IEC 8650
Presentation Layer	ISO/IEC 8824-1, ISO/IEC 8825-1, ISO/IEC 8823
Session Layer	ISO/IEC 8327

The document types, constraint sets and syntaxes which are referenced in this part of ISO/IEC ISP 10607 are defined in ISO 8571-2 and in ISO/IEC ISP 10607-2.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 10607. 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 10607 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.

Corrigenda to the base standards referenced : See annex C for a complete list of these documents which are identified in this part of ISO/IEC ISP 10607.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.225 (1994) | ISO/IEC 8327-1:1), *Information technology - Open Systems Interconnection - Connection-oriented session protocol : Protocol specification.*
- ITU-T Recommendation X.226 (1994) | ISO/IEC 8823-1:1994, *Information technology - Open Systems Interconnection - Connection-oriented presentation protocol : Protocol specification.*
- ITU-T Recommendation X.227 (1995) | ISO/IEC 8650-1:1), *Information technology - Open Systems Interconnection - Connection-oriented protocol for the Association Control Service Element : Protocol specification.*
- 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.690 (1994) | ISO/IEC 8825-1:1995, *Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).*

2.2 Additional references

- ISO/IEC 646:1991, *Information technology - ISO 7-bit coded character set for information interchange.*
- ISO/IEC 6937:1994, *Information technology - Coded graphic character set for text communication - Latin alphabet.*
- ISO 8571-1:1988, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 1 : General introduction.*
- ISO 8571-2:1988, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 2 : Virtual Filestore Definition.*
- ISO 8571-3:1988, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 3 : File Service Definition .*
- ISO 8571-4:1988, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 4 : File Protocol Specification.*
- ISO 8571-4:1988/Amd.4:1992, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 4 : File Protocol Specification - Amendment 4 .*
- ISO/IEC 8571-5:1990, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 5 : Protocol Implementation Conformance Statement Proforma.*
- ISO 8859-1:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 1 : Latin alphabet No. 1.*
- ISO/IEC TR 10000-1:1992²⁾, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1 : Framework.*
- ISO/IEC TR 10000-2:1994²⁾, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2 : Principles and Taxonomy for OSI Profiles.*
- ISO/IEC ISP 10607-1:1995, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 1 : Specification of ACSE, Presentation and Session protocols for the use by FTAM.*
- ISO/IEC ISP 10607-2:1995, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 2 : Definition of document types, constraint sets and syntaxes.*
- ISO/IEC ISP 10607-3:1995, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 3 : AFT11 - Simple File Transfer Service (unstructured).*
- ISO/IEC ISP 10607-4:1995, *Information technology - International Standardized Profiles AFTnn - File*

1) To be published.

2) Currently under revision.

Transfer, Access and Management - Part 4 : AFT12 - Positional File Transfer Service (flat).

- ISO/IEC ISP 10607-6:1995, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 6 : AFT3 - File Management Service.*

3 Definitions

For the purpose of this part of ISO/IEC ISP 10607, the following definitions apply.

Terms used in this part of ISO/IEC ISP 10607 are defined in the referenced base standards.

In addition, the following terms are defined.

3.1 General

3.1.1 interwork : to be able to communicate to satisfy the intent of the initiator.

3.2 Support level

To specify the support level of protocol features for this part of ISO/IEC ISP 10607, the following terminology is defined.

3.2.1 supported; m : Any feature denoted by “m” is mandatory or optional in the base standard. That feature shall be supported, i.e. its syntax and procedures shall be implemented as specified in the base standard or in this part of ISO/IEC ISP 10607 by all implementations claiming conformance to this part of ISO/IEC ISP 10607.

However, it is not a requirement that the feature shall be used in all instances of communication, unless mandated by the base standard or stated otherwise in this part of ISO/IEC ISP 10607.

NOTES

1 For features which are optional in the base standard, conformant implementations shall be able to interwork with other implementations not supporting this feature.

2 The support of a feature can be conditional, depending on the support of a class of features to which it belongs, e.g. an attribute in an attribute group, a parameter in a PDU, a PDU in a functional unit.

3.2.2 optionally supported; o : Any feature denoted by “o” is left to the implementation as to whether that feature is implemented or not.

If an attribute group with a support level of “o” is chosen to be implemented, then all the attributes in this group that are classified as “m” shall be supported.

If a parameter is optionally supported, then the syntax shall be supported, but it is left to each implementation whether the procedures are implemented or not.

When receiving an optional parameter which is not subject of negotiation and is not supported by the receiver, the receiver shall at least inform the sender by informative diagnostic and interworking shall not be disrupted.

3.2.3 conditionally supported; c : Any feature denoted by “c” shall be supported under the conditions

specified in this part of ISO/IEC ISP 10607. If these conditions are not met, the feature is outside the scope of this part of ISO/IEC ISP 10607.

3.2.4 excluded; x : Any feature denoted by “x” is excluded in this part of ISO/IEC ISP 10607, i.e. it shall not be implemented.

3.2.5 outside the scope; i : Any feature denoted by “i” is outside the scope of this part of ISO/IEC ISP 10607, i.e. it may be ignored, and will therefore not be subject of an ISP conformance test. However the syntax of all parameters of supported PDUs shall be implemented, even if the procedures are not (i.e. the receiver shall be able to decode the PDU).

3.2.6 not applicable; - : Any feature denoted by “-” is not defined in the context where it is mentioned, e.g. a parameter which is not part of the respective PDU. The occurrence of “not applicable” features is mainly due to the format of the tables in the Profile Requirements List.

4 Abbreviations

ACSE	Association Control Service Element
AFT	Profile sub-class : File Transfer, Access and Management
CR	Carriage Return
FADU	File Access Data Unit
FPDU	File Protocol Data Unit
FTAM	File Transfer, Access and Management
IA5	International Alphabet No. 5
IRV	International Reference Version
ISP	International Standardized Profile
ISPICS	Profile Implementation Conformance Statement
LF	Line Feed
OSI	Open Systems Interconnection
PCI	Protocol Control Information
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement

Definitions and abbreviations used in ISO/IEC ISP 10607-5, annex A are defined in ISO 8571.

Support level for protocol features

m	supported
o	optionally supported
c	conditionally supported
x	excluded
i	outside the scope
-	not applicable

5 Conformance

This part of ISO/IEC ISP 10607 states requirements upon implementations to achieve interworking. A claim of conformance to this part of ISO/IEC ISP 10607 is a claim that all requirements in the relevant base standards are satisfied, and that all requirements in the following clauses and in annex A are satisfied. Annex A states the relationship between these requirements and those of the base standards.

5.1 Conformance statement

For each implementation claiming conformance to this part