INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10607-5

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

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

Technologies de l'information — Profil normalisé international AFTnn — Transfert, accès et gestion de fichier —

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

Reference number
ISO/IEC ISP 10607-5:1991(E)

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 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);
- OSI 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 2 : Definition of document types, constraint sets and syntaxes - Amendment 1 : Additional definitions*
- *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*

Annexes A and B form an integral part of this part of ISO/IEC ISP 10607.

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 Workshops : OSI Implementors Workshop (OIW), the European Workshop for Open Systems (EWOS) and the OSI 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:
AFT 22 - 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

a) read an FADU which is identified by node name, node number or by position (depending on constraint set and document type),

b) write (replace and/or extend and/or insert, depending on constraint set and document type) to a file, and

c) locate and erase within a file;

and optionally to

a) create and delete a file, and

b) 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.

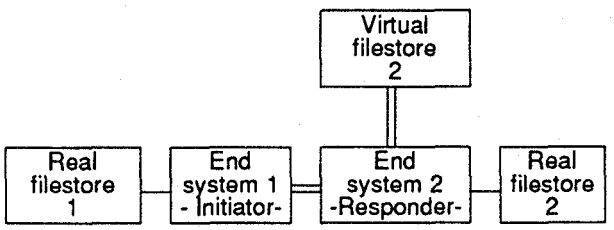

Figure 1 - File access between two end systems

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 8650
Presentation Layer	ISO 8824, 8825 ISO 8823
Session Layer	ISO 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, ISO/IEC ISP 10607-2 and ISO/IEC ISP 10607-2/Amd.1.

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 CCITT maintains published editions of its current Recommendations.

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

ISO 646:1983, *Information processing - ISO 7-bit coded character set for information interchange.*

ISO 4873:1986, *Information processing - ISO 8-bit code for information interchange - Structure and rules for implementation.*

ISO 6429:1988, *Information processing - Control functions for 7-bit and 8-bit coded character sets for character imaging devices.*

ISO 6937-2:1983, *Information processing - Coded character sets for text communication - Part 2 : Latin alphabetic and non-alphabetic graphic characters.*

ISO 8327:1987, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification.*

ISO 8327:1987/Add.2, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification - ADDENDUM 2: Incorporation of unlimited user data, ISO/IEC JTC1//SC21 N 2494.*

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/IEC 8571-5:1990, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 5 : Protocol Implementation Conformance Statement Proforma.*

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

ISO 8823:1988, *Information processing systems - Open Systems Interconnection - Connection Oriented Presentation Protocol Specification.*

ISO/IEC 8824:1990, *Information technology - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1).*

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

ISO 8859-1:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 1 : Latin alphabet No. 1.*

ISO/IEC TR 10000-1:1990, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1 : Framework.*

ISO/IEC TR 10000-2:1990, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2 : Taxonomy of Profiles.*

ISO/IEC ISP 10607-1:1990, *Information technology - International Standardized Profiles AFTnn - File Transfer,Access and Management - Part 1 : Specifica-*

tion of ACSE, Presentation and Session Protocols for the use by FTAM.

ISO/IEC ISP 10607-2:1990, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 2 : Definition of document types, constraint sets and syntaxes.*

ISO/IEC ISP 10607-2:1990/Amd.1:1991, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 2 : Definition of document types, constraint sets and syntaxes - Amendment 1 : Additional definitions.*

ISO/IEC ISP 10607-3:1990, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 3 : AFT11 - Simple File Transfer Service (unstructured).*

ISO/IEC ISP 10607-4:1991, *Information technology - International Standardized Profiles AFTnn - File Transfer, Access and Management - Part 4 : AFT12 - Positional File Transfer Service (flat).*

ISO/IEC ISP 10607-6:1991, *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.

The 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

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.

For fully supported attributes, this implies that at least the minimum range of attribute values, as defined in ISO 8571-2, shall be supported unless 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 ISPICS 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	ISP 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 of ISO/IEC ISP 10607 a PICS shall be made available stating support or non-support of each option identified in this part of ISO/IEC ISP 10607.

5.2 FTAM conformance

This part of ISO/IEC ISP 10607 specifies implementation options or selections such that conformant implementations will satisfy the conformance requirements of ISO 8571.

This part of ISO/IEC ISP 10607 includes some additional requirements above those required in ISO 8571-2 for a minimum range of values for the attributes that are supported (as indicated in annex A).

Implementations conforming to this part of ISO/IEC ISP 10607 shall state whether or not they support the initiator and/or the responder role. They shall implement all the supported (m) features (identified in annex A), unless they are part of an unimplemented optional feature. They shall state which optionally supported (o) features are implemented.

6 Virtual filestore

For interworking with implementations conforming to this part of ISO/IEC ISP 10607, the virtual filestore is restricted to files within the unstructured, flat and random access constraint sets.

The support for file and filestore characteristics, file actions, attribute groups and attributes is as specified in annex A.

6.1 Filenames

Apart from the minimum conformance requirements specified in ISO 8571-2, filenames have to be specified in the naming convention of the responding FTAM implementation. It is a local implementation matter of the FTAM responder, whether or not additional name mapping onto the real filestore's filename convention is supported.

A responder shall not require an initiator to use multiple component GraphicString filenames. Requests using a single-component filename value with a sequence of one GraphicString shall be responded to using a single-component filename value. Use of multiple-component sequences of GraphicString is outside the scope of this part of ISO/IEC ISP 10607.

6.2 Permitted actions file attribute

The values for the permitted actions attribute are not restricted by this part of ISO/IEC ISP 10607 (see also ISO 8571-1, figure 5 and ISO 8571-2, 12.2).

6.3 Action list term

The values for the action list term of access control attribute are not restricted by this part of ISO/IEC ISP 10607 (see also ISO 8571-1, figure 5 and ISO 8571-2, 12.16).

6.4 Format effectors

When a single format effector for vertical (or horizontal) movement is optionally permitted to effect a combined vertical and horizontal movement, implementations shall not use this single format effector for effecting the combined vertical and horizontal movement.

NOTES

1 For further information see ISO 646:1983, 4.1.2.2 and 6.4; ISO 6429:1988, E.1.2; and ISO 4873:1986, A.3.2.

2 This part of ISO/IEC ISP 10607 requires only support of C0 control characters of ISO 646, containing among others the format effectors <CR> and <LF>. Implementations should use <CR> <LF> pairs as line terminators.

6.5 Document type FTAM-1 Unstructured text file

For FTAM-1 the support level for combinations of universal-class-number and string-significance parameters is as specified in table 3.

Table 3 - string significance, universal class number

string significance / universal class number	variable	fixed	not-significant
26 VisibleString	m	m	i
22 IA5String	i	i	m
25 GraphicString	m	m	i
27 GeneralString	i	i	m

All other values and combinations are outside the scope of this part of ISO/IEC ISP 10607.

6.6 Document type FTAM-2 Sequential text file

For FTAM-2 the support level for combinations of universal-class-number and string-significance parameter is as specified in table 4.

Table 4 - string significance, universal class number

string significance / universal class number	variable	fixed	not-significant
26 VisibleString	i	i	m
22 IA5String	i	i	o
25 GraphicString	i	i	m
27 GeneralString	i	i	o

All other values and combinations are outside the scope of this part of ISO/IEC ISP 10607.

6.7 Document type NBS-9 File-directory file

Creation and deletion of NBS-9 files are outside the scope of this part of ISO/IEC ISP 10607.

When reading an NBS-9 document a responder is only required to return the filename attribute, subject to local security and access control. All other requested attributes need not be returned.

6.8 Document type INTAP-1 Record file

The support of the transfer syntax INTAP-TS1 is an option. INTAP-1 may be implemented without supporting the compression method as defined in INTAP-TS1.

6.9 Document type NBS-12 Simple text file

For NBS-12 the combinations of parameters are supported as shown in table 5.

All other values and combinations are outside the scope of this part of ISO/IEC ISP 10607.

6.10 Document type NBS-10 Random binary access file

Support for NBS-10 requires support for the abstract syntax NBS-AS3.

As an additional exception to the rules of encoding and decoding of ASN.1 INTEGER type values (see part 1 of ISO/IEC ISP 10607, 8.2) the parameters

NBS-Node-Name.starting-fadu
NBS-Node-Name.fadu-count

may be encoded so that the length of the contents octets is no more than eight octets. In such a case the receiver may reject the corresponding FTAM PDU.

NOTE - This subclause will be moved to a future edition of ISO/IEC ISP 10607-1.

7 File protocol

To support the internal file service identified in this part of ISO/IEC ISP 10607, the basic file protocol and the basic bulk data transfer protocol are included. The error recovery file protocol machine, which may be null depending upon whether or not the recovery or restart data transfer functional units are in use, is used to provide the external file service specified in this part of ISO/IEC ISP 10607. Annex A summarizes the characteristics of the file protocol.

7.1 Length of FPDUs

FTAM protocol machines shall be able to parse and process at a minimum 7 k octets of FTAM PCI, FTAM structural and FTAM user data (including grouped FPDUs) as they would be encoded with the ASN.1 Basic Encoding Rules.

7.2 File service class

An initiator implementation shall include the access class in the F-INITIALIZE request PDU.

7.3 Diagnostic parameter

A value for the diagnostic parameter in a response FPDU shall be sent when the action result or state result parameters are not success.

Table 5 - Parameter support of NBS-12

universal-class-number	character-set escape sequences as defined for registration numbers C0 G0 G1 (see note)	string-significance
22 IA5String	(parameter absent)	variable, fixed
25 GraphicString	(parameter absent)	variable, fixed
25 GraphicString	- 6 100	variable, fixed
26 VisibleString	(parameter absent)	variable, fixed
27 GeneralString	(parameter absent)	variable, fixed
27 GeneralString	1 6 100	variable, fixed

NOTE - If the character-set parameter is absent, the defaults apply as shown in tables 6 and 7.

Table 6 - Default registration numbers for NBS-12

universal-class-number	Default registration numbers C0	G0	G1
22 IA5String	1	2	-
25 GraphicString	-	2	-
26 VisibleString	-	2	-
27 GeneralString	1	2	-

Table 7 - Character sets and escape sequences for NBS-12

Registration number	Content	Escape sequence
1	C0 set of ISO 646	ESC 2/1 4/0
2	ISO 646 IRV	-
6	ISO 646 USA Version-X 3.4 - 1968 (Left-hand part of ISO 8859-1)	ESC 2/8 4/2
100	Right-hand part of Latin Alphabet No 1 ISO 8859-1	ESC 2/13 4/1

For the diagnostic parameter of F-INITIALIZE, F-P-ABORT and F-RECOVER PDUs the term suggested delay shall be supported if the recovery functional unit is implemented.

7.4 Passwords

The parameters filestore password for F-INITIALIZE PDU and create password for F-CREATE PDU shall be supported for initiators and are optionally supported for responders.

If the security attribute group is supported, the access passwords parameters for F-SELECT, F-CREATE and F-RECOVER PDUs shall be supported for initiators and are optionally supported for responders.

7.5 Initiator identity

The initiator identity parameter of F-INITIALIZE PDU shall be supported both by initiator and responder implementations.

7.6 Initiator identity, passwords and account

An initiator must be capable of both sending and not sending initiator identity, filestore password and, if implemented, access passwords, create password and account to satisfy the requirements of a responder.

The contents of the initiator identity, filestore password, access passwords, create password and account shall be in the convention of the responding implementation.

7.7 Presentation contexts

Values of the presentation context management parameter other than FALSE are outside the scope of this part of ISO/IEC ISP 10607. Therefore, the contents type list parameter of F-INITIALIZE PDU shall be used in all instances of communications.

7.8 FTAM quality of service

This part of ISO/IEC ISP 10607 specifies no relation between the values of the ftam-quality-of-service parameter and the selection of restart data transfer or recovery functional units.

7.9 Recovery mode parameter

Responder implementations supporting the restart data transfer or the recovery functional unit shall be able to negotiate the recovery mode parameter value to a value other than none from the value received in an F-OPEN request.

7.10 FADU identity parameter

The allowed values for the file access data unit identity parameter are dependent upon the constraint set and document type of the file and the use of the file access service class, as specified in table 8.

7.11 Recommendations

7.11.1 The optional limited file management functional unit is used to create and delete a file. Therefore this functional unit should be supported.

7.11.2 Since F-CANCEL is more effective when mapped onto P-RESYNCHRONIZE, implementations should support the session resynchronize functional unit.

7.11.3 The implementation information parameter of F-INITIALIZE may be used to pass information as a series of values, separated by ";" (for example AFT22; ENV-41207; NBS-Phase2; NBS-Phase3; INTAP-AP122).

7.11.4 If the concurrency control parameter is not supported, the following file locks should apply:

a) If the requested access parameter includes only the read or read attribute action, then:

requested action	- shared/exclusive (local choice)
not requested read attribute action	- not required
all other write actions	- no access

b) If the requested access parameter includes at least one of the replace, extend or delete file actions, then:

requested actions	- exclusive
all other actions	- no access

If the concurrency control parameter is supported but not present, then the file locks specified above should also be applied by default.

Table 8 - FADU identities for document types

FADU Identity / Constraint Set	Begin	End	First	Last	Current	Next	Previous	Node Seq	Node Number
FTAM unstructured constraint set	-	-	m	-	-	-	-	-	-
FTAM-1	-	-	m	-	-	-	-	-	-
FTAM-3	-	-	m	-	-	-	-	-	-
NBS-9	-	-	m	-	-	-	-	-	-
INTAP-1	-	-	m	-	-	-	-	-	-
FTAM sequential flat constraint set	o	o	o	o	o	o	o	-	o
FTAM-2	m	m	m	i	i	m	i	-	i
FTAM-4	m	m	m	i	i	m	i	-	i
NBS-6	m	m	m	x	x	m	x	-	x
NBS-12	m	m	m	x	x	m	x	-	x
FTAM ordered flat constraint set	o	o	o	o	o	o	o	o	o
NBS-8	m	m	i	i	m	m	m	m	i
FTAM ordered flat constraint set with unique names	o	o	-	-	o	o	o	o	o
NBS-11	m	m	-	-	m	m	m	m	i
NBS ordered flat constraint set	o	o	o	o	o	o	o	-	o
NBS-7	m	m	m	m	m	m	m	-	m
NBS random access constraint set	o	o	-	-	-	-	-	o	o
NBS-10	m	m	-	-	-	-	-	m	m

NOTE - The support of FADU identities marked "m" will be dependent on the actions which have been implemented.

Annex A

(normative)

ISPICS Requirements List

for ISO/IEC ISP 10607-5 (AFT22)

In the event of a discrepancy becoming apparent in the body of this part of ISO/IEC ISP 10607 and the tables in this annex, this annex is to take precedence.

This annex specifies the constraints and characteristics of this part of ISO/IEC ISP 10607 on what shall or may appear in the implementation columns of an ISPICS. This annex is completely based on ISO/IEC 8571-5. It uses only a selection of the tables from ISO/IEC 8571-5 which are necessary for the specification of the ISP status, and retains their numbering, in order to facilitate the filling in of the respective PICS Proforma by an implementor.

Tables marked "(Void)" refer to features that are dependent on features which are outside the scope of this part of ISO/IEC ISP 10607.

The terminology is used as defined in ISO/IEC 8571-5. In addition, the status of this part of ISO/IEC ISP 10607, i.e. the conformance requirements, is specified in the I- and R-columns of the tables in this annex, using the terms as defined in ISO/IEC ISP 10607-5, 3.2.

Section 1 : (Void)

Section 2 : General ISO 8571 Detail

A.3 ISO 8571 Protocol versions

1	FTAM protocol version number(s)	**version-1**

A.4 ISO 8571 Addenda

1	ISO 8571-1	—
2	ISO 8571-2	—
3	ISO 8571-3	—
4	ISO 8571-4	—
5	ISO 8571-5	—

A.5 Defect report numbers and amendments

see annex B

A.6 Global statement of conformance

1	Does ISO/IEC ISP 10607-5 conform to ISO 8571 ?	**yes**

A.7 Initiator / Responder capability

	ROLES	D	I	R
1	Sender	o	o	o
2	Receiver	o	o	o

A.8 Application context name details

1	**ISO 8571-4 defines a value for a simple transfer mechanism. Other values are not defined in this part of ISO/IEC ISP 10607.**

Section 3 : Syntax Detail

A.9 Abstract syntaxes

	Object Descriptor	Object Identifier	D	I	R
1	**FTAM PCI**	{iso standard 8571 abstract-syntax(2) ftam-pci(1) }	m	m	m
2	**FTAM FADU**	{iso standard 8571 abstract-syntax(2) ftam-fadu(2) }	o	m	m
3		{joint-iso-ccitt association-control(2) abstract-syntax(1) apdus(0) version1(1) }	m	m	m
4	**FTAM unstructured text abstract syntax**	{iso standard 8571 abstract-syntax(2) unstructured-text(3) }	o	m	m
5	**FTAM unstructured binary abstract syntax**	{iso standard 8571 abstract-syntax(2) unstructured-binary(4) }	o	m	m
6	**NBS file directory entry abstract syntax**	{iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-as2(2) }	-	c	c
7	**INTAP abstract syntax AS1**	{iso member-body 392 ftam(10) abstract-syntax(3) intap-as1(1) }	-	c	c
8	**NBS abstract syntax AS1**	{iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-as1(1) }	-	c	c
9	**NBS random access node name abstract syntax**	{iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-node-name(3) }	-	c	c
10	**NBS random binary access file abstract syntax**	{iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-random-binary(4) }	-	c	c
11	**NBS simple text abstract syntax**	{iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-simple-text(5) }	-	c	c

NOTES

1 ISO 8571 requires the presence of the transfer syntax derived from the "Basic Encoding of a single ASN.1 type" {joint-iso-ccitt asn1 (1) basic-encoding(1)} encoding rules for transfer of the "FTAM PCI" and the "FTAM FADU" abstract syntaxes. Implementation detail of this transfer syntax, and other transfer syntaxes supported, is specified in the PICS of ISO 8823.

2 The support requirements for the conditional abstract syntaxes depend on the constraint sets and document types which are implemented (see clause A.13).

Section 4 : Virtual Filestore Detail

A.10 Virtual filestore

This clause details the conformance to the file model, file attribute support and to file structure support.

A.10.1 File model

	FILE MODEL	D	R
1	Hierarchical	o	m
2	Other models	-	i

A.10.2 Attributes

A.10.2.1 Attribute groups

The level of support within each group is stated in A.10.2.2.

	ATTRIBUTE GROUP NAME	D	I	R
1	Kernel	m	m	m
2	Storage	o	o	o
3	Security	o	o	o
4	Private	o	i	i

A.10.2.2 Attribute values

	KERNEL GROUP (INITIATOR)	D	I full	RANGE OF VALUES
1	Filename	f	m	see A.10.2.3
2	Permitted Actions	f	m	see 6.2
3	Contents Type	f	m	see A.12.7.2

NOTE - *An initiator shall not partially support attributes.*

	KERNEL GROUP (RESPONDER)	D	R full	RANGE OF VALUES
4	Filename	f	m	see A.10.2.3
5	Permitted Actions	f	m	see 6.2
6	Contents Type	f	m	see A.12.7.2

	STORAGE GROUP (INITIATOR)	D	I full	RANGE OF VALUES
7	Storage account	f	m	
8	File availability	f	m	
9	Future filesize	f	m	see ISO/IEC ISP 10607-1 8.2

NOTE - An initiator shall not partially support attributes.

	STORAGE GROUP (RESPONDER)	D	R full	R partial	RANGE OF VALUES
10	Storage account	p	o	o	
11	Date and time of creation	p	o	o	
12	Date and time of last modification	p	o	o	
13	Date and time of last read access	p	o	o	
14	Date and time of last attribute modification	p	o	o	
15	Identity of creator	p	o	o	
16	Identity of last modifier	p	o	o	
17	Identity of last reader	p	o	o	
18	Identity of last attribute modifier	p	o	o	
19	File availability	p	m	x	
20	Filesize	p	m	x	see ISO/IEC ISP 10607-1 8.2
21	Future filesize	p	o	o	see ISO/IEC ISP 10607-1 8.2

	SECURITY GROUP (INITIATOR)	D	I full	RANGE OF VALUES
22	Access control	f	m	see A.12.2
23	Legal qualifications	f	m	

NOTE - An initiator shall not partially support attributes.

	SECURITY GROUP (RESPONDER)	D	R full	R partial	RANGE OF VALUES
24	Access control	p	m	x	see A.12.2
25	Legal qualifications	p	o	o	

A.10.2.3 Filename detail

See 6.1

A.10.3 File structures

A.10.3.1 Constraint sets

	CONSTRAINT SET NAME	D	I	R	DEPTH
1	Unstructured	o	m	m	-
2	Sequential flat	o	m	m	-
3	Ordered flat	o	o	o	-
4	Ordered flat with unique names	o	o	o	-
5	Ordered hierarchical	o	i	i	
6	General hierarchical	o	i	i	
7	General hierarchical with unique names	o	i	i	
8	NBS ordered flat	-	o	o	-
9	NBS random access	-	o	o	-

A.10.3.2 File and filestore actions

A.10.3.2.1 Filestore actions

Support for filestore actions is dependent upon the functional units implemented (see A.12.4 and A.12.5).

A.10.3.2.2 File actions

	RESPONDER / ACTION	CONSTRAINT SET: unstructured D	unstructured R	sequential flat D	sequential flat R	ordered flat D	ordered flat R	ordered flat with unique names D	ordered flat with unique names R	NBS ordered flat D	NBS ordered flat R	NBS random access D	NBS random access R
1	Locate	———		o	m	o	m	o	m	-	m	-	m
2	Read	o	m	o	m	o	m	o	m	-	m	-	m
3	Insert	———		o	o	o	o	o	o	-	o	-	o
4	Replace	o	o	———		o	o	o	o	-	o	-	o
5	Extend	o	o	———		o	o	o	o	———		———	
6	Erase	o	m	o	m	o	m	o	m	-	m	-	m

NOTE - The support of at least one of insert, replace, extend is required.

A.10.3.2.3 Access contexts supported

	RESPONDER / ACCESS CONTEXT	CONSTRAINT SET: unstructured D	unstructured R	sequential flat D	sequential flat R	ordered flat D	ordered flat R	ordered flat with unique names D	ordered flat with unique names R	NBS ordered flat D	NBS ordered flat R	NBS random access D	NBS random access R
1	US	———		———		———		———		———		———	
2	UA	o	m	o	m	o	m	o	m	-	m	-	m
3	FS	———		———		———		———		———		———	
4	FL	———		———		———		———		———		———	
5	FA	———		o	m	o	m	o	m	-	m	———	
6	HN	———		———		———		———		———		———	
7	HA	———		———		o	o	o	o	-	o	———	

A.10.4 Additional information

(Void)

A.10.5 Override

	RESPONDER OVERRIDE	D	R
1	Create failure	o	m
2	Select old file	o	m
3	Delete and create with old attributes	o	o
4	Delete and create with new attributes	o	m

NOTE - The specification of the role of initator is given in A.12.15.

Section 5 : File Protocol Detail

A.11 File protocol

See 7.1

Subclauses A.11.2 to A.11.24 specify an indication of which PDUs are supported. The conformance requirements for PDUs are dependent on the particular functional units implemented. PDUs indicated in A.11.8 to A.11.24 as conditional shall be considered as mandatory when a particular functional unit is implemented, according to the following table.

PDUs	Clause	Functional Units								
		Ker-nel	Read	Write	Ac-cess	LFM	EFM	Grou-ping	Reco-very	Re-start
F-CREATE	A.11.8					m				
F-DELETE	A.11.9					m				
F-READ-ATTRIB	A.11.10					m				
F-CHANGE-ATTRIB	A.11.11						m			
F-OPEN	A.11.12		m	m						
F-CLOSE	A.11.13		m	m						
F-BEGIN-GROUP	A.11.14							m		
F-END-GROUP	A.11.15							m		
F-RECOVER	A.11.16								m	
F-LOCATE	A.11.17				m					
F-ERASE	A.11.18				m					
F-READ	A.11.19		m							
F-WRITE	A.11.20			m						
F-DATA-END	A.11.21		m	m						
F-TRANSFER-END	A.11.22		m	m						
F-CANCEL	A.11.23		m	m						
F-RESTART	A.11.24									m

NOTES

1 In order to keep the protocol tables compact some forward references have been introduced to clauses which expand upon the detail of field support.

2 The FTAM protocol will require a number of optional lower layer services to be available (e.g. Application Entity Titles in ACSE). This requirement is outside the scope of this ISPICS Requirements List.

A.11.1 GraphicString support

(Void)

A.11.2 FTAM regime establishment

		D	I	D	R	
1	**F-INITIALIZE PDU**	m	**m**	m	**m**	
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	State result	———		m	**m**	all values defined in ISO 8571
3	Action result	———		m	**m**	all values defined in ISO 8571
4	Protocol version	m	**m**	m	**m**	see A.3
5	Implementation information	o	**o**	o	**o**	see A.12.1
6	Presentation context management	m	**m**	m	**m**	see 7.7, note 1
7	Service class	m	**m**	m	**m**	see A.12.4
8	Functional units	m	**m**	m	**m**	see A.12.5
9	Attribute groups	m	**m**	m	**m**	see A.10.2
10	Shared ASE information	o	**i**	o	**i**	
11	FTAM Quality of Service	m	**m**	m	**m**	see A.12.8
12	Contents type list	o	**m**	o	**m**	see A.12.7.1, 7.7
13	Initiator identity	o	**m**	———		see 7.5, 7.6
14	Account	o	**o**	———		see 7.6
15	Filestore password	o	**m**	———		see A.12.11, 7.4, 7.6
16	Diagnostic	———		o	**m**	see A.12.6, 7.3
17	Checkpoint window	m	**m**	m	**m**	see note 2

NOTES
1 The values available for the presentation context management field depend upon the functional units implemented in ISO 8823.
2 Checkpoint window field is indicated as mandatory in accordance with ISO 8571-4. The field is defaulted to the value 1.

A.11.3 FTAM regime termination (orderly)

		D	I	D	R	
1	**F-TERMINATE PDU**	m	**m**	m	**m**	
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Shared ASE information	o	**i**	o	**i**	
3	Charging	———		o	**o**	see A.12.10

A.11.4 FTAM regime termination (abrupt) by service user

		D	I	R	
1	**F-U-ABORT PDU**	m	m	m	
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Action result	m	m	m	all values defined in ISO 8571
3	Diagnostic	o	m	m	see A.12.6, 7.3

A.11.5 FTAM regime termination (abrupt) by service provider

		D	I	R	
1	**F-P-ABORT PDU**	m	m	m	
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Action result	m	m	m	all values defined in ISO 8571
3	Diagnostic	o	m	m	see A.12.6, 7.3

A.11.6 File selection

		D	I	D	R	
1	**F-SELECT PDU**	m	m	m	m	
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	State result	———		m	m	all values defined in ISO 8571
3	Action result	———		m	m	all values defined in ISO 8571
4	Attributes	m	m	m	m	see A.10.2
5	Requested access	m	m	———		see A.12.16
6	Access passwords	o	m	———		see 7.4, 7.6
7	Concurrency control	o	o	———		see A.12.13, 7.11.4
8	Shared ASE information	o	i	o	i	
9	Account	o	o	———		see 7.6
10	Diagnostic	———		o	m	see A.12.6, 7.3

A.11.7 File deselection

		D	I	D	R	
1	**F-DESELECT PDU**	m	**m**	m	**m**	
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	**m**	all values defined in ISO 8571
3	Charging	———		o	**o**	see A.12.10
4	Shared ASE information	o	**i**	o	**i**	
5	Diagnostic	———		o	**m**	see A.12.6, 7.3

A.11.8 File creation

		D	I	D	R	
1	**F-CREATE PDU**	c	**c**	c	**c**	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	State result	———		m	**m**	all values defined in ISO 8571
3	Action result	———		m	**m**	all values defined in ISO 8571
4	Override	m	**m**	———		see A.12.15
5	Initial attributes	m	**m**	m	**m**	see A.10.2
6	Create password	o	**m**	———		see A.12.12, 7.4, 7.6
7	Requested access	m	**m**	———		see A.12.16
8	Access passwords	o	**m**	———		see 7.4, 7.6
9	Concurrency control	o	**o**	———		see A.12.13, 7.11.4
10	Shared ASE information	o	**i**	o	**i**	
11	Account	o	**o**	———		see 7.6
12	Diagnostic	———		o	**m**	see A.12.6, 7.3

A.11.9 File deletion

		D	I	D	R	
1	**F-DELETE PDU**	c	c	c	c	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	m	all values defined in ISO 8571
3	Shared ASE information	o	i	o	i	
4	Charging	———		o	o	see A.12.10
5	Diagnostic	———		o	m	see A.12.6, 7.3

A.11.10 Read attributes

		D	I	D	R	
1	**F-READ-ATTRIB PDU**	c	c	c	c	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	m	all values defined in ISO 8571
3	Attribute names	m	m	———		
4	Attributes	———		o	m	see A.10.2
5	Diagnostic	———		o	m	see A12.6, 7.3

A.11.11 Change attributes

i

A.11.12 File open

		D	I	D	R	
1	**F-OPEN PDU**	c	m	c	m	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	State result	———		m	m	all values defined in ISO 8571
3	Action result	———		m	m	all values defined in ISO 8571
4	Processing mode	m	m	———		see A.12.17
5	Contents type	m	m	m	m	see A.12.7.2

6	Concurrency control	o	o	o	o	see A.12.13, 7.11.4
7	Shared ASE information	o	i	o	i	
8	Enable FADU locking	m	m	———		see note 3
9	Activity identifier	o	o	———		
10	Diagnostic	———		o	m	see A.12.6, 7.3
11	Recovery mode	m	m	m	m	see A. 12.18
12	Remove contexts	o	i	———		
13	Define contexts	o	i	———		
14	Presentation action	———		m	m	see notes 1 and 2

NOTES
1 The values available for the presentation action field depend upon the functional units implemented in ISO 8823.
2 Presentation action field is indicated as mandatory in accordance with ISO 8571-4. The field is defaulted to FALSE.
3 Enable FADU locking field is indicated as mandatory in accordance with ISO 8571-4. The field is defaulted to FALSE.

A.11.13 File close

		D	I	D	R	
1	**F-CLOSE PDU**	c	m	c	m	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	m	m	m	m	all values defined in ISO 8571
3	Shared ASE information	o	i	o	i	
4	Diagnostic	o	m	o	m	see A.12.6, 7.3

A.11.14 Beginning of grouping

		D	I	R	
1	**F-BEGIN-GROUP PDU**	c	c	c	see A.11, A.12.5
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Threshold	m	m	-	

A.11.15 End of grouping

		D	I	R	
1	**F-END-GROUP PDU**	c	c	c	see A.11, A.12.5
	The F-END-GROUP PDU carries no fields				

A.11.16 Regime recovery

		D	I	D	R	
1	**F-RECOVER PDU**	c	c	c	c	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	State result	———		m	m	all values defined in ISO 8571
3	Action result	———		m	m	all values defined in ISO 8571
4	Activity identifier	m	m	———		
5	Bulk transfer number	m	m	———		see ISO/IEC ISP 10607-1 8.2
6	Requested access	m	m	———		see A.12.16
7	Access passwords	o	m	———		see 7.4, 7.6
8	Contents type	———		m	m	see A.12.7.2
9	Recovery point	m	m	m	m	
10	Diagnostic	———		o	m	see A.12.6, 7.3
11	Remove contexts	o	i	———		see notes
12	Define contexts	o	i	———		see notes
13	Presentation action	———		m	m	see notes

NOTES

1 The values available for the presentation action field depend upon the functional units implemented in ISO 8823.

2 Presentation action field is indicated as mandatory in accordance with ISO 8571-4. The field is defaulted to FALSE.

A.11.17 Locate file access data unit

		D	I	D	R	
1	**F-LOCATE PDU**	c	m	c	m	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	m	all values defined in ISO 8571
3	FADU identity	m	m	o	o	see 7.10, note
4	FADU lock	o	o	———		see A.12.14
5	Diagnostic	———		o	m	see A.12.6, 7.3

NOTE - See also ISO/IEC ISP 10607-1 8.2.

A.11.18 Erase file access data unit

		D	I	D	R	
1	**F-ERASE PDU**	c	m	c	m	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	m	all values defined in ISO 8571
3	FADU identity	m	m	-	-	see 7.10, note
4	Diagnostic	———		o	m	see A.12.6, 7.3

NOTE - See also ISO/IEC ISP 10607-1 8.2.

A.11.19 Read bulk data

		D	I	
1	**F-READ PDU**	c	m	see A.11, A.12.5
	FIELD NAME			**RANGE OF VALUES OR REFERENCE**
2	FADU identity	m	m	see 7.10, note
3	Access context	m	m	see A.10.3.2.3
4	FADU lock	o	o	see A.12.14

NOTE - See also ISO/IEC ISP 10607-1 8.2.

A.11.20 Write bulk data

		D	I	
1	**F-WRITE PDU**	c	m	see A.11, A.12.5
	FIELD NAME			**RANGE OF VALUES OR REFERENCE**
2	FADU operation	m	m	
3	FADU identity	m	m	see 7.10, note
4	FADU Lock	o	o	see A.12.14

NOTE - See also ISO/IEC ISP 10607-1 8.2.

A.11.21 End of data transfer

		D	I	R	
1	**F-DATA-END PDU**	c	m	m	see A.11, A.12.5
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Action result	m	m	m	all values defined in ISO 8571
3	Diagnostic	o	m	m	see A.12.6, 7.3

A.11.22 End of transfer

		D	I	D	R	
1	**F-TRANSFER-END PDU**	c	m	c	m	see A.11, A.12.5
	FIELD NAME					**RANGE OF VALUES OR REFERENCE**
2	Action result	———		m	m	all values defined in ISO 8571
3	Shared ASE information	o	i	o	i	
4	Diagnostic	———		o	m	see A.12.6, 7.3

A.11.23 Cancel data transfer

		D	I	R	
1	**F-CANCEL PDU**	c	m	m	see A.11, A.12.5
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Action result	m	m	m	all values defined in ISO 8571
3	Shared ASE information	o	i	i	
4	Diagnostic	o	m	m	see A.12.6, 7.3

A.11.23.1 F-CANCEL mapping

See 7.11.2

A.11.24 Restart data transfer

		D	I	R	
1	**F-RESTART PDU**	c	c	c	see A.11, A.12.5
	FIELD NAME				**RANGE OF VALUES OR REFERENCE**
2	Checkpoint identifier	m	m	m	

A.12 Expanded PDU field and filestore detail

This clause identifies further PDU field and filestore detail to expand on that given in A.10 and A.11.

A.12.1 Implementation information detail

See 7.11.3

A.12.2 Access control detail

	Access control element terms	D	I	R	RANGE OF VALUES
1	Action list	m	m	m	see 6.3
2	Concurrency access	o	o	o	see A.12.3.3
3	Identity	o	o	o	
4	Passwords	o	o	o	see A.12.3.5, A.12.3.6, 7.6
5	Location	o	o	o	

6	Maximum number of access control elements supported	**(Void)**

A.12.3 Access control element detail

A.12.3.1 Action list detail (initiator)

(Void)

A.12.3.2 Action list detail (responder)

(Void)

A.12.3.3 Concurrency access term

If the concurrency access term is supported in the access control element the following details of the concurrency control shall be available with each action.

	Action	not required D	not required I	not required R	shared D	shared I	shared R	exclusive D	exclusive I	exclusive R	no access D	no access I	no access R
1	Read	o	o	o	o	o	o	o	o	o	o	o	o
2	Insert	o	o	o	o	o	o	o	o	o	o	o	o
3	Replace	o	o	o	o	o	o	o	o	o	o	o	o
4	Extend	o	o	o	o	o	o	o	o	o	o	o	o
5	Erase	o	o	o	o	o	o	o	o	o	o	o	o
6	Read attributes	o	o	o	o	o	o	o	o	o	o	o	o
7	Change attributes	o	i	i	o	i	i	o	i	i	o	i	i
8	Delete file	o	o	o	o	o	o	o	o	o	o	o	o

A.12.3.4 Identity term

(Void)

A.12.3.5 Initiator access passwords

If the passwords term of the access control element is implemented the following values shall be implemented for the initiator role.

	Initiator Access Passwords	D	I
1	OctetString	o	o
2	GraphicString	o	o

A.12.3.6 Responder access passwords

If the passwords term of the access control element is implemented the following values shall be implemented for the responder role.

		OctetString D	OctetString R	GraphicString D	GraphicString R
1	Read-password	o	o	o	o
2	Insert-password	o	o	o	o
3	Replace-password	o	o	o	o
4	Extend-password	o	o	o	o
5	Erase-password	o	o	o	o
6	Read-attribute-password	o	o	o	o
7	Change-attribute-password	o	i	o	i
8	Delete-password	o	o	o	o

A.12.3.7 Location term

(Void)

A.12.3.7.1 Application Entity Titles detail

(Void)

A.12.3.8 Access control element combinations

				D	R
1	Identity	Password	Location	o	o
2	Identity	Password		o	o
3	Identity		Location	o	o
4		Password	Location	o	o
5	Identity			o	o
6		Password		o	o
7			Location	o	o

NOTE - Implementation of access control without any of the above combinations is valid.

A.12.4 Service class field detail

	SERVICE CLASSES	D	I	R	
1	Transfer class	o	i	i	
2	Access class	o	m	m	see 7.2
3	Management class	o	i	i	
4	Transfer and management class	o	i	i	
5	Unconstrained class	o	i	i	

NOTE - A conformant initiator is only permitted to specify those combinations defined in ISO 8571-3.

A.12.5 Functional unit field detail

	FUNCTIONAL UNITS	SERVICE CLASSES Access D	I	R	
1	Kernel	m	m	m	
2	Read	m	m	m	
3	Write	m	m	m	
4	File Access	m	m	m	
5	Limited File Management	o	o	o	see 7.11.1
6	Enhanced File Management	o	i	i	
7	Grouping	o	o	o	
8	FADU Locking	o	o	o	
9	Recovery	o	o	o	see note
10	Restart data transfer	o	o	o	see note

NOTE - The recovery and the restart data transfer functional units are only available at the internal file service interface and should only be explicitly referenced in the protocol.

A.12.6 Diagnostic field detail

		D	I	R	
1	Diagnostic type	m	m	m	
2	Error identifier	m	m	m	
3	Error observer	m	m	m	
4	Error source	m	m	m	
5	Suggested delay	o	c	c	see 7.3
6	Further details	o	m	m	
7	GraphicString requirements for further details parameter : **Only the support of character strings of the ISO 646 IRV (G0) character set is required.** **NOTE - Other character sets such as ISO 8859-1, ISO 6937-2, Katakana, Kanji, etc, for G0 and G1 may be included for regional use of this part of ISO/IEC ISP 10607.**				

A.12.7 Contents type detail

A.12.7.1 Contents type list parameter

		D	I	R	Maximum number of elements
1	document type specifications	o	o	m	
2	abstract syntax specifications	o	o	m	

A.12.7.2 Contents type parameter

		D	I	R
1	document type specifications	o	m	m
2	abstract syntax / constraint set pair specifications	o	i	i

NOTE - The detail of document types supported is contained in clause A.13.

A.12.8 FTAM quality of service details

See 7.8

A.12.9 Details of shared ASE information

(Void)

A.12.10 Details of charging

	Charging	D	R
1	Resource identifier term	m	m
2	Charging unit term	m	m
3	Charging value term	m	m

A.12.11 Filestore password detail

	Filestore Password	D	I	R
1	OctetString	o	o	o
2	GraphicString	o	o	o

A.12.12 Create password detail

	Create Password	D	I	R
1	OctetString	o	o	o
2	GraphicString	o	o	o

A.12.13 Concurrency control

A.12.13.1 Supported values

		Concurrency control implemented values											
		not required			shared			exclusive			no access		
	Action	D	I	R	D	I	R	D	I	R	D	I	R
1	Read	o	o	o	o	o	o	o	o	o	o	o	o
2	Insert	o	o	o	o	o	o	o	o	o	o	o	o
3	Replace	o	o	o	o	o	o	o	o	o	o	o	o
4	Extend	o	o	o	o	o	o	o	o	o	o	o	o
5	Erase	o	o	o	o	o	o	o	o	o	o	o	o
6	Read attrib	o	o	o	o	o	o	o	o	o	o	o	o
7	Change attrib	o	i	i	o	i	i	o	i	i	o	i	i
8	Delete file	o	o	o	o	o	o	o	o	o	o	o	o

A.12.13.2 Responder default values

See 7.11.4

A.12.14 FADU locking

		FADU Locking Support Values											
		not required			shared			exclusive			no access		
		D	I	R	D	I	R	D	I	R	D	I	R
1	Read	o	o	o	o	o	o	o	o	o	o	o	o
2	Insert	o	o	o	o	o	o	o	o	o	o	o	o
3	Replace	o	o	o	o	o	o	o	o	o	o	o	o
4	Extend	o	o	o	o	o	o	o	o	o	o	o	o
5	Erase	o	o	o	o	o	o	o	o	o	o	o	o

A.12.15 Initiator override

	Initiator Override	D	I
1	Create failure	o	o
2	Select old file	o	o
3	Delete and create with old attributes	o	o
4	Delete and create with new attributes	o	o

NOTE - The specification of the role of responder is given in A.10.5.

A.12.16 Requested access

	Action	D	I	R	
1	Read	o	m	m	
2	Insert	o	o	o	see note
3	Replace	o	o	o	see note
4	Extend	o	o	o	see note
5	Erase	o	m	m	
6	Read attribute	o	o	o	
7	Change attribute	o	i	i	
8	Delete file	o	o	o	

NOTE - The support of at least one of insert, replace, extend is required.

A.12.17 Processing mode

	Processing mode	D	I	R	
1	Read	o	m	m	
2	Insert	o	o	o	see note
3	Replace	o	o	o	see note
4	Extend	o	o	o	see note
5	Erase	o	m	m	

NOTE - The support of at least one of insert, replace, extend is required.

A.12.18 Recovery mode

	Recovery mode	D	I	R	
1	None	o	m	m	see 7.9
2	At start of transfer	o	m	m	
3	Any active checkpoint	o	o	o	

Section 6 : Document Types

A.13 Document types

Conformance to document types is given at two levels. The following table indicates which document types have some level of support. The detail of that level of support is stated in the following clauses.

	Entry number	FTAM-1	D	I	R
1	Object descriptor	ISO FTAM unstructured text	o	m	m
	Object identifier	{iso standard 8571 document-type(5) unstructured-text(1)}			

	Entry number	FTAM-2	D	I	R
2	Object descriptor	ISO FTAM sequential text	o	m	m
	Object identifier	{iso standard 8571 document-type(5) sequential-text(2)}			

	Entry number	FTAM-3	D	I	R
3	Object descriptor	ISO FTAM unstructured binary	o	m	m
	Object identifier	{iso standard 8571 document-type(5) unstructured-binary(3)}			

	Entry number	FTAM-4	D	I	R
4	Object descriptor	ISO FTAM sequential binary	o	o	o
	Object identifier	{iso standard 8571 document-type(5) sequential-binary(4)}			

	Entry number	NBS-6	D	I	R
5	Object descriptor	NBS-6 FTAM sequential file	-	o	o
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) sequential(6) }			

	Entry number	NBS-7	D	I	R
6	Object descriptor	NBS-7 FTAM random access file	-	o	o
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) random-file(7) }			

	Entry number	NBS-8	D	I	R
7	Object descriptor	NBS-8 FTAM indexed file	-	o	o
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) indexed-file(8) }			

	Entry number	NBS-9	D	I	R	
8	Object descriptor	NBS-9 FTAM file directory file	-	o	o	see 6.7
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) file-directory(9) }				

	Entry number	NBS-10	D	I	R	
9	Object descriptor	NBS-10 FTAM random binary access file	-	o	o	see 6.10
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) random-binary(10) }				

	Entry number	NBS-11	D	I	R
10	Object descriptor	NBS-11 FTAM indexed file with unique keys	-	o	o
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) indexed-file-with-unique-keys(11) }			

	Entry number	NBS-12	D	I	R	
11	Object descriptor	NBS-12 FTAM simple text file	-	o	o	see 6.9
	Object identifier	{iso identified-organization oiw(14) ftamsig(5) document-type(5) simple-text-file(12) }				

	Entry number	INTAP-1	D	I	R	
12	Object descriptor	INTAP record file	-	o	o	see 6.8
	Object identifier	{iso member-body 392 ftam(10) document-type(2) intap-record-file(1) }				