

INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC
ISP
10607-2

First edition
1990-12-15

AMENDMENT 1
1991-12-15

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

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

*Partie 2: Définition de types de documents, jeux de contraintes et
syntaxes*

AMENDEMENT 1: Définitions additionnelles



Reference number
ISO/IEC ISP 10607-2:1990/AMD.1:1991 (E)
AA Documents
Document Sharing Hub

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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 10607-2/Amd.1 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*

Annex A forms an integral part of this part of ISO/IEC ISP 10607.



Documents

Document Sharing Hub

Introduction

ISO/IEC ISP 10607-2 contains the definitions of document types, constraint sets, abstract syntaxes and transfer syntaxes as they are referenced in ISO/IEC ISP 10607-3, ISO/IEC ISP 10607-4 and ISO/IEC ISP 10607-5. This amendment specifies additional objects for the use in ISO/IEC ISP 10607-4 and ISO/IEC ISP 10607-5.

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

1 Scope

This amendment makes no changes to clause 1.

2 Normative references

Add the following reference at the end of clause 2.

ANSI/IEEE 754:1985, *Standard for Binary Floating-Point Arithmetic*.

3 Definitions

This amendment makes no changes to clause 3.

4 Abbreviations

This amendment makes no changes to clause 4.

5 Conformance

This amendment makes no changes to clause 5.

6 Document type definitions

Insert the following new text after the title of clause 6.

The definition of "lexical order" which appears in some of the following document type definitions, is a local implementation issue.

Add the following new subclauses 6.3 to 6.8.

6.3 NBS-6 Sequential file document type

6.3.1 Entry number : NBS-6

6.3.2 Information objects

Table 3 - Information objects in NBS-6

document type name	{ iso identified-organization oiw(14) ftamsig(5) document-type(5) sequential(6) } "NBS-6 FTAM sequential file"
abstract syntax names	
a) name for asname1	{ iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-as1(1) } "NBS abstract syntax AS1"
b) name for asname2	{ iso standard 8571 abstract-syntax(2) ftam-fadu(2) } "FTAM FADU"
transfer syntax names	{ joint-iso-ccitt asn1(1) basic-encoding(1) } "Basic Encoding of a single ASN.1 type"
parameter syntax PARAMETERS ::= SEQUENCE OF CHOICE { Parameter0, Parameter1, Parameter2 } Parameter0 ::= [0] INTEGER { univertime (23), gentime (24), boolean (1), null (5) } Parameter1 ::= [1] SEQUENCE { universal-class-number-1 INTEGER { int (2), bit (3), ia5 (22), graphic (25), general (27), octet (4) }, string-length INTEGER } Parameter2 ::= [2] SEQUENCE { private-class-number INTEGER { float (0) }, length-1 INTEGER, length-2 INTEGER }	
file model	{ iso standard 8571 file-model(3) hierarchical(1) } "FTAM hierarchical file model"
constraint set	{ iso standard 8571 constraint-set(4) sequential-flat(2) } "FTAM sequential flat constraint set"
file contents	Datatype1 ::= PrimType -- as defined by NBS abstract syntax AS1 in 8.3 Datatype2 ::= Node-Descriptor-Data-Element

6.3.3 Scope and field of application

The document type defines the contents of a file for storage, for transfer and access by FTAM.

NOTE - Storage refers to apparent storage within the virtual filestore.

6.3.4 References

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.*

6.3.5 Definitions

This definition makes use of the terms data element, data unit and file access data unit as defined in ISO 8571-1.

6.3.6 Abbreviations

FTAM File Transfer, Access and Management

6.3.7 Document semantics

The document consists of zero, one or more file access data units. Each FADU contains precisely zero or one data unit which consists of zero, one or more data elements. The order of each of these elements is significant.

The document structure takes any of the forms allowed by the FTAM hierarchical file model as constrained by the sequential flat constraint set (see table 3). These definitions appear in ISO 8571-2. As additional constraints FADU Identity will be limited to begin, end, first and next.

For a specific file the number of data elements in a data unit is given by the parameters. Each data element is a data type from the set of primitive data types defined in 8.3. Each data unit contains the same data element types in the same order as all other data units. These types are determined by the parameters 0 through 2.

For Datatype1, the string-length field of Parameter1 specifies the length of the value in octets for the INTEGER, BIT STRING and OCTET STRING types. For character-type data elements, the string-length indicates the actual number of characters from the specified character set, not including any escape sequences or overhead from the character encoding.

For floating point numbers, finite form, length-1 and length-2 specify the length in bits of mantissa and exponent, respectively. The length-1 and length-2 values are irrelevant for the other choices of floating point numbers.

6.3.8 Abstract syntactic structure

The abstract syntactic structure of the document is a hierarchically structured file as defined in the ASN.1 module ISO8571-FADU in ISO 8571-2, in which each of the file access data units has the abstract syntactic structure of NBS-AS1 as defined by the parameters.

6.3.9 Definition of transfer

6.3.9.1 Datatype definitions

The file consists of data values which are of either

a) Datatype1 defined in table 3, where the PrimType in the datatype is given by the NBS-AS1 definition; or

b) Datatype2 defined in table 3, the ASN.1 datatype declared as "Data-Element" in the ASN.1 module ISO8571-FADU.

6.3.9.2 Presentation data values

The document is transferred as a series of presentation data values, each of which is either

a) one value of the ASN.1 datatype "Datatype1", carrying one of the data elements from the document. All values are transmitted in the same (but any) presentation context established to support the abstract syntax name "asname1"; or

b) a value of "Datatype2". All values are transmitted in the same (but any) presentation context established to support the abstract syntax name "asname2".

NOTES

1 Specific carrier standards may impose additional constraints on the presentation context to be used, where the above permits a choice.

2 Any document type defined in this entry either makes no use of Datatype2, or starts with a Datatype2 transmission.

Boundaries between presentation data values in the same presentation context, and boundaries between P-DATA primitives, are chosen locally by the sending entity at the time of transmission, and carry no semantics of the document type. Receivers which support this document type shall accept a document with any of the permitted transfer options (e.g., document type parameters and transfer syntaxes).

6.3.9.3 Sequence of presentation data values

The sequence of presentation data values of type a) and the sequence of presentation data values of types a) and b) is the same as the sequence of data elements within a data unit, and data units in the hierarchical structure, when flattened according to the definition of the hierarchical file model in ISO 8571-2.

6.3.10 Transfer syntax

An implementation supporting this document type shall support the transfer syntax generation rules named in table 3 for all presentation data values transferred.

Implementations may optionally support other named transfer syntaxes.

6.3.11 ASE specific specifications

6.3.11.1 Structural simplification

This simplification loses information.

The document type NBS-6 may be simplified to the document type FTAM-3 (allowed only when reading the file). The octet representation of the transferred data is unpredictable. It will usually correspond to the data values as stored in the local real filestore of the responder.

6.3.11.2 Access context selection

A document of type NBS-6 may be accessed in any one of the access contexts defined in the sequential flat constraint set. The presentation data units transferred in each case are those derived from the structuring elements defined for that access context in ISO 8571-2.

6.3.11.3 The INSERT operation

When the INSERT operation is applied at the end of file, the transferred material shall be the series of FADUs which would be generated by reading any NBS-6 document with the same parameter values in access context FA.

6.4 NBS-7 Random access file document type

6.4.1 Entry number : NBS-7

6.4.2 Information objects

Table 4 - Information objects in NBS-7

document type name	{ iso identified-organization oiw(14) ftamsig(5) document-type(5) random-file(7) } "NBS-7 FTAM random access file"
abstract syntax names	
a) name for asname1	{ iso identified-organization oiw(14) ftamsig(5) abstract-syntax(2) nbs-as1(1) } "NBS abstract syntax AS1"
b) name for asname2	{ iso standard 8571 abstract-syntax(2) ftam-fadu(2) } "FTAM FADU"
transfer syntax names	{ joint-iso-ccitt asn1(1) basic-encoding(1) } "Basic Encoding of a single ASN.1 type"
parameter syntax PARAMETERS ::= SEQUENCE OF CHOICE { Parameter0, Parameter1, Parameter2 } Parameter0 ::= [0] INTEGER { univer-time (23), gen-time (24), boolean (1), null (5) } Parameter1 ::= [1] SEQUENCE { universal-class-number-1 INTEGER { int (2), bit (3), ia5 (22), graphic (25), general (27), octet (4) }, string-length INTEGER } Parameter2 ::= [2] SEQUENCE { private-class-number INTEGER { float (0) }, length-1 INTEGER, length-2 INTEGER }	
file model	{ iso standard 8571 file-model(3) hierarchical(1) } "FTAM hierarchical file model"
constraint set	{ iso identified-organization oiw(14) ftamsig(5) constraint-set(4) nbs-ordered-flat(1) } "NBS ordered flat constraint set"
file contents	Datatype1 ::= PrimType -- as defined by NBS abstract syntax AS1 in 8.3 Datatype2 ::= CHOICE { Node-Descriptor-Data-Element, Enter-Subtree-Data-Element, Exit-Subtree-Data-Element }

6.4.3 Scope and field of application

The document type defines the contents of a file for storage, for transfer and access by FTAM.

NOTE - Storage refers to apparent storage within the virtual filestore.

6.4.4 References

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.*

6.4.5 Definitions

This definition makes use of the terms data element, data unit and file access data unit as defined in ISO 8571-1.

6.4.6 Abbreviations

FTAM File Transfer, Access and Management

6.4.7 Document semantics

The document consists of zero, one or more file access data units. Each FADU contains precisely zero or one data unit which consists of zero, one or more data elements. The order of each of these elements is significant.

The document structure takes any of the forms allowed by the FTAM hierarchical file model as constrained by the NBS-ordered-flat constraint set (see table 4). These definitions appear in 7.1.

For a specific file the number of data elements in a data unit is given by the parameters. Each data element is a data type from the set of primitive data types defined in 8.3. Each data unit contains the same data element types in the same order as all other data units. These types are determined by the parameters 0 through 2.

For Datatype1, the string-length field of Parameter1 specifies the length of the value in octets for the INTEGER, BIT STRING and OCTET STRING types. For character-type data elements, the string-length indicates the actual number of characters from the specified character set, not including any escape sequences or overhead from the character encoding.

For floating point numbers, finite form, length-1 and length-2 specify the length in bits of mantissa and exponent, respectively. The length-1 and length-2 values are irrelevant for the other choices of floating point numbers.

6.4.8 Abstract syntactic structure

The abstract syntactic structure of the document is a hierarchically structured file as defined in the ASN.1 module ISO8571-FADU in ISO 8571-2, in which each of the file access data units has the abstract syntactic structure of NBS-AS1 as defined by the parameters.

6.4.9 Definition of transfer

6.4.9.1 Datatype definitions

The file consists of data values which are of either

a) Datatype1 defined in table 4, where the PrimType in the datatype is given by the NBS-AS1 definition; or

b) Datatype2 defined in table 4, the ASN.1 datatype declared as "Data-Element" in the ASN.1 module ISO8571-FADU.

6.4.9.2 Presentation data values

The document is transferred as a series of presentation data values, each of which is either

a) one value of the ASN.1 datatype "Datatype1", carrying one of the data elements from the document. All values are transmitted in the same (but any) presentation context established to support the abstract syntax name "asname1"; or

b) a value of "Datatype2". All values are transmitted in the same (but any) presentation context established to support the abstract syntax name "asname2".

NOTES

1 Specific carrier standards may impose additional constraints on the presentation context to be used, where the above permits a choice.

2 Any document type defined in this entry either makes no use of Datatype2, or starts with a Datatype2 transmission.

Boundaries between presentation data values in the same presentation context, and boundaries between P-DATA primitives, are chosen locally by the sending entity at the time of transmission, and carry no semantics of the document type. Receivers which support this document type shall accept a document with any of the permitted transfer options (e.g., document type parameters and transfer syntaxes).

6.4.9.3 Sequence of presentation data values

The sequence of presentation data values of type a) and the sequence of presentation data values of types a) and b) is the same as the sequence of data elements within a data unit, and data units in the hierarchical structure, when flattened according to the definition of the hierarchical file model in ISO 8571-2.