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Information technology — Text and office systems — Document Filing and Retrieval (DFR) —

Part 1:
Abstract service definition and procedures

AMENDMENT 2: Combined usage of DFR and DTAM

Technologies de l'information — Bureautique — Classement et récupération de documents (DFR) —

Partie 1: Procédures et définition de service abstrait

AMENDEMENT 2: Usage combiné de DFR et DTAM

Reference number
ISO/IEC 10166-1:1991/Amd.2:1996(E)

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.

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Amendment 2 to International Standard ISO/IEC 10166-1:1991 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 18, *Document processing and related communication*.

Information technology — Text and office systems — Document Filing and Retrieval (DFR) —

Part 1:

Abstract service definition and procedures

AMENDMENT 2: Combined usage of DFR and DTAM

Introduction

Add the following new paragraph as the last paragraph of the Introduction before NOTES.

Document Filing and Retrieval application can be combined with DTAM (Document Transfer And Manipulation). Both DTAM and DFR are applications that allow remote operations on any kind of document. While DFR is concerned with filing and retrieval of documents as a whole, manipulating inner parts of a document is in the scope of DTAM. When there is a need to manipulate documents and parts of documents that are kept within the Document Store, the combined use of DFR and DTAM services is applied.

Subclause 3.1.8

Add a new subclause with following text.

3.1.8 The following terms are used with the meanings defined in ITU-T Recommendation T.435.

DTAM-DM-Protocol
DTAM-DM port
DTAM-DM Server

Subclause 3.2.14 DFR/DTAM-Server and 3.2.15 DFR/DTAM-User

Add new subclauses 3.2.14 DFR/DTAM-DM-server and 3.2.15 DFR/DTAM-DM-user with following text, and renumber subsequent subclauses accordingly.

3.2.14 DFR/DTAM-DM-server: That part of the application defined in this International Standard that supplies the combined usage of DFR and DTAM-DM.

3.2.15 DFR/DTAM-DM-user: The consumer of services supplied by a *DFR/DTAM-DM-server*. At any time it is acting for a security subject and takes on the privileges of that security subject.

Clause 4 Abbreviations

Add the following abbreviation to the bottom of the abbreviation list.

DTAM	Document Transfer And Manipulation
DTAM-DM	DTAM enhanced document manipulation

Subclause 6 DFR Abstract Model

Add the following text and Figure 1.1 at the bottom of subclause 6.

The DFR/DTAM-DM environment comprises two atomic objects, the DFR/DTAM-DM-server and the DFR/DTAM-DM-user. The DFR/DTAM-DM-server acts as a provider of services to the DFR/DTAM-DM-user. The DFR/DTAM-DM-server is described using an abstract model in order to define the service provided by the DFR/DTAM-DM-server - the DFR/DTAM-DM abstract service. Figure 1.1 shows the model.

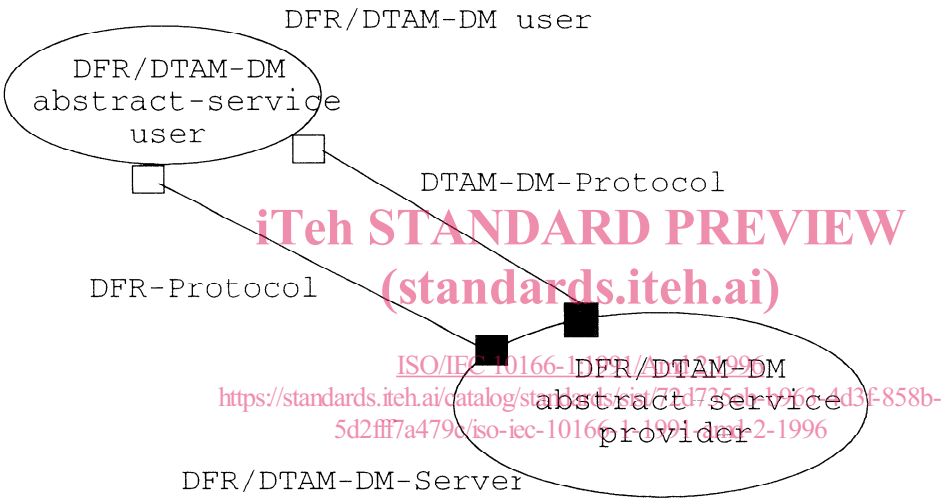

Figure 1.1 — DFR/DTAM-DM Abstract-service

Subclause 6.1 Objects in DFR Environment

Addthe following new paragraphs at the bottom of subclause 6.1.

The DFR/DTAM-DM-server is modelled as an atomic object. It supplies the DFR port and the DTAM-DM port abstract-services to the DFR/DTAM-DM-user. The definition of the DFR/DTAM-DM-server object is as follows:

dfr-dtam-dm-server **OBJECT**
PORTS { dfr-port [S], dtam-dm-port [S] }
::= id-dfr-dtam-dm-server

The DFR/DTAM-DM-user is modelled as a separate object. The DFR/DTAM-DM-user consumes the DFR port and the DTAM-DM port abstract-services by the DFR/DTAM-DM-server.

```
dfr-dtam-dm-user    OBJECT
                    PORTS { dfr-port [C], dtam-dm-port [C] }
                    ::= id-dfr-dtam-dm-user
```

*Also make the same addition for the ASN.1 definition of the **dfr-dtam-dm-server** and the **dfr-dtam-dm-user** in Annex C, page 104, following the definition of the **dfr-user**.*

Subclause 6.2 DFR Port

Add the following paragraphs at the bottom of subclause 6.2.

A DFR/DTAM-DM-user is joined to, and interacts with, a DFR/DTAM-DM-server by means of both DFR and DTAM-DM ports. The collection of capabilities provided by these ports forms the DFR/DTAM-DM-server abstract services. These capabilities include, for example, obtaining information on, fetching, deleting, and manipulating complete and inner parts of a document residing in the DFR/DTAM-DM-server.

By means of the bind-operation and unbind-operation an application-association between the DFR/DTAM-DM-server and the DFR/DTAM-DM-user is established and released. The **dtam-dm-port** is defined in ITU-T Recommendation T.435.

Subclause 7.1.1 Bind-argument Parameters

*Change the ASN.1 definition of **Dfr-Bind-Argument** as follows:*

```
DfrBindArgument ::= SEQUENCE {
        initiator-name                  [0]     DistinguishedName,
        credentials                     [1]     Credentials,
        retrieve-restrictions           [2]     Restrictions OPTIONAL,
                                                -- default is none --
        dfr-configuration-request       [3]     BOOLEAN DEFAULT FALSE,
        bind-security                   [4]     BindSecurity OPTIONAL,
        priority                        [5]     Priority DEFAULT medium,
        dor-for-produce-operations      [6]     BOOLEAN DEFAULT TRUE,
        dor-for-consume-operations      [7]     BOOLEAN DEFAULT TRUE,
        protocol-version                [8]     INTEGER {
                                                        version-1       (1),
                                                        version-2       (2) } DEFAULT {1},
        bilateralInformation            [9]     SEQUENCE OF
                                        BilateralInformationEntry OPTIONAL,
        dTAM-manipulation-capabilities  [10]    ManipulationCapabilities OPTIONAL,
        dTAM-protocol-version           [11]    BITSTRING {
                                                        version-1 (0) } DEFAULT {0}  },
        dfr-profile-selection           [12]    OBJECT IDENTIFIER OPTIONAL,
        application-requirements        [13]    ApplicationRequirement OPTIONAL  }
```

Also, make the same change to the ASN.1 definition of ***DfrBindArgument*** *in Annex C on page 105.*

Subclause 7.1.1 Bind-argument Parameters

Change paragraph ***h)*** *as follows.*

h) protocol-version (O): This parameter indicates the DFR protocol version which the DFR-User requests. If the DFR-Server can honor this request, DFR Abstract-Bind continues normally. Otherwise, the DFR-Server will issue error.

1) **version-1** is defined by ISO/IEC 10166-1:1991.

2) **version-2** is defined by ISO/IEC 10166-1:1991 together with ISO/IEC 10166-1:1991/Amd 1 and ISO/IEC 10166-1:1991/Amd 2.

NOTE - Since a server that knows only the DFR protocol version 1 will not understand a version request, such a request will lead to an (implementation dependent) error. A server that knows the DFR protocol version 2 may accept the bind from a version 1 client or return an **unclassified-server-error**.

Subclause 7.1.1 Bind-argument parameters

Add the following new paragraph after paragraph ***j)****.*

k) ManipulationCapabilities (C): This parameter indicates the DTAM-DM capabilities the DTAM-DM client wants to use during the association. The capability are negotiated with the DTAM-DM server. If the DTAM-DM server can support these capabilities, the bind operation continues normally. If the DTAM-DM server cannot support these capabilities, such a request will lead to an error. This parameter is conditional, and must be present in the DFR/DTAM-DM environment. **ManipulationCapabilities** is defined in ITU-T Recommendation T.435.

l) dTAM-protocol-version (O): This parameter indicates the DTAM-DM protocol versions which the DFR/DTAM-DM client requests. It is a variable length bit string where each bit set to one indicates the version of the DTAM-DM protocol which is requested. Multiple bits may be set indicating the support of multiple versions. No trailing bits higher than the highest version of this recommendation which the client supports are included. That is, the last bit of the string is set to one. When this parameter is absent, the default value "**version-1**" is applied. If the DFR/DTAM-DM server supports a requested protocol version, DTAM-DM Abstract-Bind continues normally. Otherwise, the DFR-DTAM-DM server will issue an error.
Version-1 is defined by ITU-T T.436: 1994. This parameter may only be used in the DFR/DTAM-DM environment.

m) dfr-profile-selection (O): This parameter indicates the DFR profile the DFR-User wants to use during the association. The DFR profile is negotiated with the DFR-Server. If the DFR-Server can support this profile, the bind operation continues normally. If the DFR-Server cannot support this profile, such a request will lead to an error, and **profile-mismatch** error is returned. If this parameter is omitted, DFR-Server lists its supported profiles in the **profile-supported** parameter in the **DfrBindResult**.

n) application-requirements (O): This parameter indicates the additional application requirements which are negotiated between the DFR-Server and the DFR-User. If the DFR-Server can support this requirements, the bind

operation continues normally. If the DFR-Server cannot support this requirement, such a request will lead to an error, and **application-requirement-mismatch** is returned.

```
ApplicationRequirement ::= CHOICE {
                              [0]     OCTET STRING,
                              [1]     OBJECT IDENTIFIER }
```

Subclause 7.1.2 Bind-result parameters

Change the ASN.1 definition of ***DfrBindResult*** *as follows.*

```
DfrBindResult ::= SET {
        authentication-attributes          [0]    SET OF AuthenticationAttribute,
        constraints-supported              [1]    SET OF ConstraintsType
                                                          OPTIONAL,
        dfr-document-types-supported       [2]    SET OF TypeAndAttribute
                                                       OPTIONAL,
        function-set-supported             [3]    FunctionSetType OPTIONAL,
        maximum-length-supported           [4]    INTEGER OPTIONAL,
        dor-for-produce-operations         [5]    BOOLEAN DEFAULT TRUE,
        dor-for-consume-operations         [6]    BOOLEAN DEFAULT TRUE,
        rOA-protocols-accessee             [7]    ROAProtocols OPTIONAL,
        rOA-protocols-accessor             [8]    ROAProtocols OPTIONAL,
        bilateralInformation               [9]    SEQUENCE OF
                                           BilateralInformationEntry OPTIONAL,
        server-selected-protocol-version   [10]   INTEGER {
                                                       version-1        (1),
                                                       version-2        (2) } OPTIONAL,
        server-selected-dTAM-capabilities [11]    SEQUENCE OF OdaApplicationCapabilities,
        server-selected-dTAM-protocol-version [12]     BITSTRING {
                                                          version-1 (1) } OPTIONAL }
```


Also, make the same change to the ASN.1 definition of ***DfrBindResult*** *in Annex C on page 106.*

Subclause 7.1.2 Bind-result parameters

Add the following paragraphs after paragraph ***k)****.*

l) **server-selected-dTAM-capabilities (C):** This parameter specifies the ODA characteristics (document application profile and, optionally, non basic document characteristics) as the receiving capabilities of the DFR/DTAM-DM server. The continued progress of the service is only guaranteed if the DFR/DTAM-DM client acts within the receiving capabilities of the DFR/DTAM-DM server. This parameter is conditional, and must be present in the DFR/DTAM-DM environment. **OdaApplicationCapabilites** is defined in ITU-T Recommendation T.435.

m) **server-selected-dTAM-protocol-version (O):** This parameter indicates the DTAM-DM protocol version which the DFR/DTAM-DM server selected. This parameter is only present in the DFR/DTAM-DM environment and if **dTAM-protocol-version** is specified in the bind argument. If the DFR/DTAM-DM server supports the

DTAM-DM protocol version specified by the DFR/DTAM-DM user, the DFR/DTAM-DM server includes the value corresponding to the specified DTAM-DM protocol version in this parameter. If the DFR/DTAM-DM server does not support the DTAM-DM protocol version specified by the DFR/DTAM-DM user, the DFR/DTAM-DM server includes the value corresponding to one of the DTAM-DM protocol versions supported by the DFR/DTAM-DM server.

Subclause 7.1.3 Bind-error parameters

Add the following sentence at the end of this subclause.

ProfileProblem reports that the DFR/DTAM-DM server does not support the requested DTAM-DM manipulation capabilities. The manipulation capabilities that are supported by the DFR/DTAM-DM server are indicated by this parameter.

Change the ASN.1 definition of ***DFRBindError*** *as follows.*

```
DfrBindError ::= CHOICE {
        service-error    [0]    ServiceProblem,
        security-error   [1]    SecurityProblem,
        dtam-dm-error    [2]    ManipulationProblem }

ManipulationProblem ::= SEQUENCE OF ManipulationCapabilities
```

Also, make the same changes to the ASN.1 definition of ***DfrBindError*** *in Annex C on page 107.*

Subclause 8.3.10 Service-error

Change the ASN.1 definition of ***ServiceProblem*** *as follows.*

```
ServiceProblem ::= ENUMERATED {
        sever-busy                          (1),    -- please wait and repeat --
        server-unavailable                  (2),    -- please unbind --
        operation-too-complex               (3).    -- e.g. search-criteria --
        resource-limit-exceeded             (4),    -- e.g. when creating a bulky object --
        maximum-length-exceeded             (5),    -- in an abstract operation --
        cannot-continue                     (6),    -- e.g. search-domain altered --
        unclassified-server-error           (7),    -- implementation specific --
        function-set-violation              (8),    -- see 8.4 --
        too-many-search-hits                (9),    -- hit exceeds large-set-lower-limit --
        profile-mismatch                    (10),
        application-requirements-mismatch   (11) }
```

Also, make the same change to the ASN.1 definition of ***ServiceProblem*** *in the Annex C on page 118.*

Add following paragraphs after the paragraph ***i)****.*

j) profile-mismatch: The DFR profile requested by the DFR-User is not supported by the DFR-Server.

k) application-requirements-mismatch: The application requirements requested by the DFR-User is not supported by the DFR-Server.

Annex B

Add the following ASN.1 definitions at the bottom of the -- Objects -- definition on page 100, after the definition of ***id-dfr-user****.*

```
id-dfr-dtam-dm-server   ID ::= {id-ot 2}
id-dfr-dtam-dm-user     ID ::= {id-ot 3}
```

Annex C

Add the following ASN.1 IMPORTS section on page 103, after the definition of -- Distinguished Object Reference --.

```
OdaApplicationCapabilities, ManipulationCapabilities, dtam-dm-port
        FROM DTAM-DM-AbstractServices
                {ccitt recommendation t435 dm(1) modules(0) abstract-services(1)}
```


Annex G

Add a new informative Annex G as follows:

Annex G

(Informative)

Combined use of DFR and DTAM-DM

The configuration for combined use of DFR and DTAM-DM constitutes a client and a server system. The service user makes use of both DFR and DTAM-DM client services while the server provides both DFR and DTAM-DM services.
The following procedures are applied to the combined use of DFR and DTAM-DM.

G.1 Association establishment

The user creates a DFR/DTAM-DM association to the server by the DFR Bind operation. Subsets of the DFR and the DTAM-DM operations may be used and agreed during association establishment. These subsets may be based on International Standards, ITU-T Recommendations, or bilateral agreements.

G.2 Document filing and retrieval

After association establishment, the user can perform any DFR abstract operations, for example, to browse, retrieve, manage and delete documents in the document store.

G.3 Document manipulation

The user selects a document using a DFR service and obtains a document identification. Before manipulating documents the user modifies the access rights of the entire document for other users using the DFR reserve service