INTERNATIONAL STANDARD

ISO/IEC 10175-2

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Information technology — Text and office systems — Document Printing Application (DPA) —

Part 2:
Protocol specification

Technologies de l'information — Bureautique — Application impression de documents (DPA) —

Partie 2: Spécification du protocole

Reference number
ISO/IEC 10175-2:1996(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 and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 10175-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 18, *Document processing and related communication.*

ISO/IEC 10175 consists of the following parts, under the general title *Information technology — Text and office systems — Document Printing Application (DPA)*:

— *Part 1: Abstract service definition and procedures*

— *Part 2: Protocol specification*

— *Part 3: Management abstract service definition*

Annex A forms an integral part of this part of ISO/IEC 10175.

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Information technology - Text and office systems - Document Printing Application (DPA) -

Part 2:
Protocol specification

Section 1 - General

1 Scope

ISO/IEC 10175 consists of three parts:

Part 1: Abstract service definition and procedures

Part 2: Protocol specification

Part 3: Management abstract service definition and procedures

This part of ISO/IEC 10175:

- specifies the abstract syntax of the Document Printing Application access protocol;
- specifies how the Document Printing Application access protocol supports the Document Printing Application abstract service as defined in ISO/IEC 10175-1;
- specifies the mapping of the Document Printing Application onto the services used;
- specifies the requirements for conformance with the Document Printing Application access protocol.

The Document Printing Application is one component of a coordinated set of facilities and standards needed to satisfy the printing requirements of the modern distributed office. Together, the capabilities provided can enable users to create and produce high-quality office documents in a consistent and unambiguous manner within a distributed open systems environment.

Specifically, ISO/IEC 10175 addresses those aspects of document processing that enable users in a distributed open systems environment to send electronic documents to shared, possibly geographically-dispersed printers, and to cause the documents to be printed in accordance with the desires of those users. For the purposes of ISO/IEC 10175, it is assumed that such documents have been composed in a form that is compatible with the destination printing system prior to their introduction to the Document Printing Application.

Other Standards deal with related aspects of document processing, such as the creation and formatting of electronic documents, and the underlying protocols used to transport electronic documents to a printing system. ISO/IEC 10175 is aligned with these related Standards as appropriate, and shares some information in common with them. Clause 2 identifies those standards that are directly applicable to this one.

The Document Printing Application defined in ISO/IEC 10175 is consistent with the model, architectural framework and design principles of the Distributed Office Applications Model (ISO/IEC 10031-1). This Document Printing

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Application Standard defines services and specifies access protocols available within the application layer of the Reference Model (ISO/IEC 7498-1).

The document printing application constitutes the final phase of the document processing cycle, i.e., the queuing, preparation, rendering and finishing of the fully composed form of the document on marking engines and other image generation devices. This cycle includes other processes such as document creation and interchange through public and private networks.

ISO/IEC 10175 is oriented toward satisfying the following subset of the overall document processing functional requirements:

- an ability for multiple users to share access to distributed printers;
- an ability for users to convey information to a printing system to influence the scheduling and processing requirements of a print-job;
- a capability for users to monitor and manage the progress of their print-jobs;
- a capability for printing systems, and associated facilities, to protect against unauthorized printing of documents.

Many different document formats have been developed for printing purposes, and are in wide use. For this reason, the Document Printing Application has been developed with a view toward supporting arbitrary document formats in a transparent manner. That is, the specific content or format of an electronic document is independent of the access protocol defined by the Document Printing Application Standard. The only requirement is that the destination printing system be capable of dealing with the format of the transmitted document, and possess the features and functionality needed to successfully render the document.

However, in spite of this generality of focus, ISO/IEC 10175 is particularly oriented toward providing the features needed to assist in the transport and faithful rendering of documents formatted in the Standard Page Description Language (SPDL - ISO/IEC 10180).

The access protocol defined by this part of ISO/IEC 10175 enables a user to convey document files to a document print-server, along with the parameters needed to express the user's desires regarding the scheduling and production of the ensuing print-job. In addition, the protocol permits a user to inquire about the status, capabilities and characteristics of a document print-server in order to choose from a variety of printing devices, depending on capabilities, formats, logistic convenience, cost, ownership and availability.

The protocol also allows users to inquire about jobs, modify the characteristics and progress of jobs, and obtain feedback about a job.

NOTE - This part of ISO/IEC 10175 specifies one concrete realization of the Document Printing Application abstract-service, utilizing the Remote Operations Service Element (ISO/IEC 9072), the Association Control Service Element (ISO/IEC 8649/8650) and the Reliable Transfer Service Element (ISO/IEC 9066); however, other concrete realizations of the Document Printing Application are possible, using different underlying services and protocols, so long as they conform to the abstract-service defined in part 1 of ISO/IEC 10175-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 10175. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 10175 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 216: 1975[1)], *Writing paper and certain classes of printed matter - Trimmed sizes - A and B series.*

1) Currently under revision

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ISO 269: 1985, *Correspondence envelopes - Designation and sizes.*

ISO 639: 1988[1)], *Code for the representation of names of languages.*

ISO/IEC 646: 1991, *Information technology - ISO 7-bit coded character set for information interchange.*

ISO/IEC 2022: 1994, *Information technology - Character code structure and extension techniques.*

ISO 2375: 1985, *Data processing - Procedure for registration of escape sequences.*

ISO 3166: 1993[1)], *Codes for the representation of names of countries.*

ISO/IEC 6429: 1992, *Information technology - Control functions for coded character sets.*

ISO/IEC 6937: 1994, *Information technology - Coded graphic character set for text communication - Latin alphabet.*

ISO/IEC 7350: 1991, *Information technology - Registration of repertoires of graphic characters from ISO/IEC 10367.*

ISO/IEC 7498-1: 1994, *Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model.*

ISO/IEC 7498-2: 1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 2: Security Architecture.*

ISO 8571-3: 1988, *Information processing systems - Open Systems Interconnection - File Transfer, Access and Management - Part 3: File Service Definition.*

ISO 8613-1: 1989, *Information processing - Text and office systems - Office Document Architecture (ODA) and interchange format - Part 1: Introduction and general principles.*

ISO/IEC 8649: 1988[1)], *Information processing systems - Open Systems Interconnection - Service Definition for the Association Control Service Element.*

ISO/IEC 8822: 1994, *Information technology - Open Systems Interconnection - Presentation service definition.*

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 9066-1: 1989, *Information processing systems - Text communication - Reliable Transfer - Part 1: Model and service definition.*

ISO/IEC 9072-1: 1989, *Information processing systems - Text communication - Remote Operations - Part 1: Model, notation and service definition.*

ISO/IEC 9541-1: 1991, *Information technology - Font information interchange - Part 1: Architecture.*

ISO/IEC 9541-2: 1991, *Information technology - Font information interchange - Part 2: Interchange Format.*

ISO/IEC 9594-2: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 2: Models.*

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ISO/IEC 9594-3: 1990, *Information technology - Open Systems Interconnection - The Directory - Part 3: Abstract service definition.*

ISO/IEC 9945-1: 1996, *Information technology - Portable Operating System Interface (POSIX) - Part 1: System Application Program Interface (API) [C Language]* [ANSI/IEEE Std 1003.1].

ISO/IEC 10021-3: 1990, *Information technology - Text Communication - Message-Oriented Text Interchange Systems (MOTIS) - Part 3: Abstract Service Definition Conventions.*

ISO/IEC 10021-4: 1990, *Information technology - Text Communication - Message-Oriented Text Interchange Systems (MOTIS) - Part 4: Message Transfer System: Abstract Service Definition and Procedures.*

ISO/IEC 10031-1: 1991, *Information technology - Text and office systems - Distributed-office-applications model - Part 1: General model.*

ISO/IEC 10031-2: 1991, *Information technology - Text and office systems - Distributed-office-applications model - Part 2: Distinguished-object-reference and associated procedures.*

ISO/IEC 10166-1: 1991, *Information technology - Text and office systems - Document filing and retrieval (DFR) - Part 1: Abstract service definition and procedures.*

ISO/IEC 10180: 1995, *Information technology - Processing languages - Standard Page Description Language (SPDL).*

ISO/IEC 10367: 1991, *Information technology - Standardized coded graphic character sets for use in 8-bit codes.*

ISO/IEC 10538: 1991, *Information technology - Control functions for text communication.*

ISO/IEC 10646-1: 1993, *Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane.*

ISO/IEC 10740-1: 1993, *Information technology - Text and office systems - Referenced Data Transfer (RDT) - Part 1: Abstract service definition.*

RFC 1759, *Printer MIB*, Proposed Internet Standard, R. Smith, F. Wright, T. Hastings, S. Zilles, J. Gyllenskog, March 1995.

3 Definitions

For the purposes of this part of ISO/IEC 10175, the definitions given in ISO/IEC 10175-1 and the following definitions apply.

3.1 Association control service element (ACSE) definitions

This part of ISO/IEC 10175 makes use of the following terms defined in ISO/IEC 8649:

Association Control Service Element

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3.2 Reliable transfer service element (RTSE) definition

This part of ISO/IEC 10175 makes use of the following term defined in ISO/IEC 9066:

Reliable Transfer Service Element

3.3 Remote operations service element (ROSE) definitions

This part of ISO/IEC 10175 makes use of the following terms defined in ISO/IEC 9072:

argument
bind-operation
operation
Remote Operations
Remote Operations Service Element
unbind-operation

4 Abbreviations

For the purposes of this part of ISO/IEC 10175 the abbreviations given in ISO/IEC 10175-1 and the following abbreviations apply.

AE	Application Entity
ASE	Application Service Element
ACSE	Association Control Service Element
DPSE	Document Printing Service Element
DPASE	Document Printing Administration Service Element
RO (or ROS)	Remote Operations
ROSE	Remote Operations Service Element
RT (or RTS)	Reliable Transfer
RTSE	Reliable Transfer Service Element

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Section 2 - DPA access protocol specification

5 Overview of the protocol

5.1 DPA access protocol model

ISO/IEC 10175-1 describes an abstract model of the Document Printing Application, and the DPA Abstract-Service which is provided to the DP-User.

This clause describes how the DPA Abstract-Service is supported by instances of OSI communication when an abstract-service user and an abstract-service provider are realized as application-processes located in different open systems.

In the OSI environment, communication between application-processes is represented in terms of communication between a pair of application-entities (AEs) using the presentation-service. The functionality of an application-entity is factored into a set of one or more application-service-elements (ASEs). The interaction between AEs is described in terms of their use of the services provided by the ASEs.

Access to the DPA Abstract-Service is supported by two application-service-elements, each supporting a port paired between a DP-User and the DP-Server in the abstract model. The Document Printing Service Element (DPSE) supports the services of the printing-port; and the Document Printing Administration Service Element (DPASE) supports the services of the administration port. The DPSE and DPASE are asymmetric ASEs; that is, the DP-User acts as the consumer, and the DP-Server acts as the supplier, of the DPA Abstract-Service.

These two application-service-elements are in turn supported by other application-service-elements.

The Remote Operations Service Element (ROSE) supports the request/reply paradigm of the abstract-operations that occur at the DPA-port in the abstract model. The DPSE and DPASE provide the mapping function of the abstract-syntax notation of this abstract-service onto the services provided by the ROSE.

The Association Control Service Element (ACSE) supports the establishment and release of an application-association between a pair of AEs. Associations between a DP-User and the DP-Server may be established only by the DP-User, and only the initiator of an established association can release it.

The combination of one or more of the DPSE and DPASE, together with the supporting ASEs, defines the application-context of an application-association. Note that a single application-association may be used to support one or more port types paired between two objects in the abstract model.

Table 1 identifies the application-contexts defined in this part of ISO/IEC 10175 for the DPA access protocol. Definition of other application-contexts which include DPA service elements is not precluded but is outside the scope of this International Standard.

Table 1 - Application-contexts for the DPA access protocol

application context	DPSE	DPASE	ROSE	RTSE	ACSE
dpa-access	C	–	X	–	X
dpa-access-and-management	C	C	X	–	X
dpa-reliable-access	C	–	X	X	X
dpa-reliable-access-and-management	C	C	X	X	X

X : present C : present, with initiator the consumer – : absent

In the case of the DP-Server, support for the dpa-access application-context is mandatory, and support for the other application-contexts is optional.

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In the case of the DP-User, support for each application-context is optional.

Figure 1 models an application-context between a DP-User and a DP-Server.

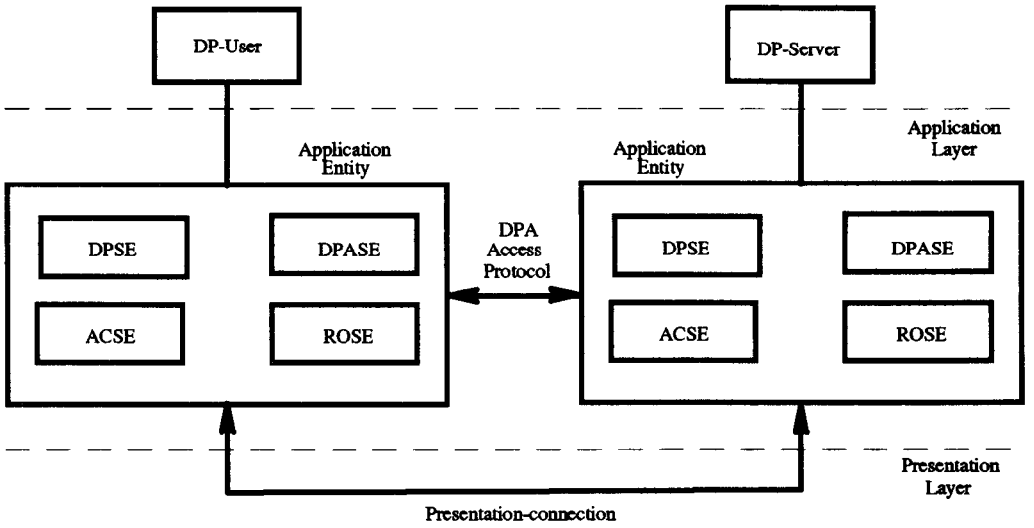


Figure 1 - Application-context between a DP-User and a DP-Server

5.2 Services Provided by the DPA Access Protocol

The DPA Access Protocol comprises the following operations which provide the services defined in ISO/IEC 10175-1.

- DP-bind and DP-unbind
  - DpBind
  - DpUnbind
- Document Print Service Element (DPSE)
  - Print
  - ModifyJob
  - CancelJob
  - ListObjectAttributes
- Document Printing Administration Service Element (DPASE)
  - PromoteJob
  - InterruptJob
  - PauseJob
  - ResumeJob

5.3 Use of Underlying Services

The DPA Access Protocol makes use of underlying services as defined in ISO/IEC 9072-1 and the following qualifications.

5.3.1 Use of ROSE Services

The remote operations of the DPA Access Protocol are level 2 (asynchronous) operations.

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5.3.2 Use of RTSE Services

When included in an application-context, the RTSE is used in the normal mode, which implies the use of the normal mode of the ACSE and of the presentation.

5.3.3 Use of ACSE Services

If the RTSE is not included in an application-context, the DP-bind and DP-unbind are the sole users of the A-ASSOCIATE and A-RELEASE services of the ACSE in the normal mode. The ROSE is the sole user of the A-ABORT and A-P-ABORT services of the ACSE.

If the RTSE is included in an application-context, the RTSE is the sole user of the ACSE services.

6 DPA access protocol abstract-syntax definition

The abstract-syntax of the DPA Access Protocol is defined using the abstract-syntax notation (ASN.1) defined in ISO/IEC 8824, and the remote operations notation defined in ISO/IEC 9072-1.

```
DPAAccessProtocol { iso standard dpa(10175) part-2(2) modules(0) access-
protocol(4)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- PROLOGUE --

EXPORTS

-- DPA  Application Service Elements --
        dPSE, dPASE;

IMPORTS

-- Application Service Elements and Application Contexts --
        APPLICATION-SERVICE-ELEMENT, APPLICATION-CONTEXT, aCSE
                FROM Remote-Operations-Notation-extension
                    { joint-iso-ccitt remote-operations(4) notation-extension(2)}

        rTSE
                FROM Reliable-Transfer-APDUs { joint-iso-ccitt reliable-
transfer(3) apdus(0)}

-- DPA Abstract-Service Parameters --
        DpBind, DpUnbind, Print, ModifyJob, CancelJob, ListObjectAttributes,
        PromoteJob, Interrupt, Pause, Resume,
        AttributeError, AccessError, UpdateError, SecurityError, ServiceError,
        DocumentAccessError, PrinterError, SelectionError
                FROM DPAAbstractService { iso standard dpa(10175) part-1(1)
                    modules(0) abstract-service (1) }

-- Object Identifiers --

        id-ac-dpa-access, id-ac-dpa-reliable-access,
        id-ac-dpa-access-and-management,
        id-ac-dpa-reliable-access-and-Management, id-as-acse, id-as-dpse,
        id-as-dpase, id-as-dpa, id-as-dpa-rtse, id-ase-dpse, id-ase-dpase
            FROM DPAProtocolObjectIdentifiers{  iso standard dpa(10175) part-2(2)
                 modules(0) object-identifiers(5) };
```


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```
-- Application Context omitting RTSE--
dpa-access APPLICATION-CONTEXT
    APPLICATION SERVICE ELEMENTS {  aCSE  }
    BIND DpBind
    UNBIND DpUnbind
    REMOTE OPERATIONS { rOSE  }
    INITIATOR CONSUMER OF { dPSE }
    ABSTRACT-SYNTAXES {
        id-as-acse,   -- of ACSE --
        id-as-dpse,   -- of DPSE, including ROSE --
        id-as-dpa }   -- of DPABind and DPAUnbind--
    ::= id-ac-dpa-access

dpa-access-and-management APPLICATION-CONTEXT
    APPLICATION SERVICE ELEMENTS {  aCSE  }
    BIND DpBind
    UNBIND DpUnbind
    REMOTE OPERATIONS { rOSE }
    INITIATOR CONSUMER OF { dPSE, dPASE }
    ABSTRACT-SYNTAXES {
        id-as-acse,  -- of ACSE --
        id-as-dpse,  -- of DPSE, including ROSE --
        id-as-dpase, -- of DPASE, including ROSE --
        id-as-dpa }  -- of DpBind and DpUnbind--
    ::= id-ac-dpa-access-and-management

-- Application Context including RTSE--
dpa-reliable-access APPLICATION-CONTEXT
    APPLICATION SERVICE ELEMENTS {  aCSE, rTSE  }
    BIND DpBind
    UNBIND DpUnbind
    REMOTE OPERATIONS {  rOSE  }
    INITIATOR CONSUMER OF { dPSE }
    ABSTRACT-SYNTAXES {
        id-as-acse,      -- of ACSE --
        id-as-dpse,      -- of DPSE, including ROSE --
        id-as-dpa-rtse } -- of DpBind and DpUnbind including RTSE--
    ::= id-ac-dpa-reliable-access

dpa-reliable-access-and-management APPLICATION-CONTEXT
    APPLICATION SERVICE ELEMENTS {  aCSE, rTSE  }
    BIND DpBind
    UNBIND DpUnbind
    REMOTE OPERATIONS { rOSE }
    INITIATOR CONSUMER OF { dPSE, dPASE }
    ABSTRACT-SYNTAXES {
        id-as-acse,      -- of ACSE --
        id-as-dpse,      -- of DPSE, including ROSE --
        id-as-dpase,     -- of DPASE, including ROSE --
        id-as-dpa-rtse } -- of DpBind and DpUnbind including RTSE--
    ::= id-ac-dpa-reliable-access-and-management
```


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```
-- DPA Service Element --
dPSE APPLICATION-SERVICE-ELEMENT
        CONSUMER INVOKES {
                print,
                modify-job,
                cancel-job,
                list-object-attributes }
        SUPPLIER INVOKES  {  }
        ::= id-ase-dpse

dPASE APPLICATION-SERVICE-ELEMENT
        CONSUMER INVOKES {
                interrupt,
                pause,
                resume,
                promote-job }
        SUPPLIER INVOKES {  }
        ::= id-ase-dpase

--  Remote Operations --
print                       Print                 ::= 1
modify-job                  ModifyJob             ::= 2
cancel-job                  CancelJob             ::= 3
list-object-attributes      ListObjectAttributes  ::= 4
promote-job                 PromoteJob            ::= 5
interrupt-job               InterruptJob          ::= 6
resume-job                  ResumeJob             ::= 7
pause-job                   PauseJob              ::= 8

-- Remote Errors --
attribute-error             AttributeError        ::= 1
access-error                AccessError           ::= 3
update-error                UpdateError           ::= 4
security-error              SecurityError         ::= 9
service-error               ServiceError          ::= 10
document-access-error       DocumentAccessError   ::= 11
printer-error               PrinterError          ::= 12
selection-error             SelectionError        ::= 13

END   -- of  DPAAccessProtocol --
```

7 Conformance

A DPA system claiming conformance to the DPA Access Protocol specified in this part of ISO/IEC 10175 shall comply with the requirements noted below.

7.1 Statement Requirements

The following shall be stated:

a) the type of system for which conformance is claimed, DP-User or DP-Server;

b) the application-contexts defined in clause 4 for which conformance is claimed.

Table 2 classifies the support for application-contexts required for conformance to the DPA Access Protocol.

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Table 2 - Required support for application-contexts

application context	DP-User	DP-Server
dpa-access	Optional	Mandatory
dpa-access-and-management	Optional	Optional
dpa-reliable-access	Optional	Optional
dpa-reliable-access-and-management	Optional	Optional

7.2 Static Requirements

The system shall

a) conform to the abstract-syntax definition(s) of the DPA Access Protocol defined in clause 4 of this part of ISO/IEC 10175 required by the application-contexts for which conformance is claimed;

b) conform to one of the conformance levels (1, 1M, 2, or 2M) defined in Annex E of ISO/IEC 10175-1 by implementing and supporting the specified operations, object classes, and attributes, including the required CHOICE type components and OPTIONAL components of the operation and attribute types;

c) implement functional support for an attribute and attribute values in all operations defined in ISO/IEC 10175-1, that are implemented in any operation, except where:

   1) part 1 forbids (e.g. certain attributes shall not be modifiable with ModifyJob),

   2) such implementation would violate the server's security policy or,

   3) the attribute is not required for implementation in the declared conformance level and such implementation of that attribute would prove exceedingly difficult (For example, modifying an attribute that would require jobs to be rebound to different printers in an implementation that pre-binds job to printers when the jobs are accepted);

d) implement functional support for standard-defined attributes and/or standard-defined attribute values, rather than, or in addition to, implementation-defined attributes and/or attribute values with the same semantic definitions;

e) implement the full range of values for integer and string attribute-types for any attributes of such types that are implemented;

f) implement functional support for the transfer method: **id-val-transfer-method-with-request** as a minimum.

7.3 Dynamic Requirements

The system shall

a) conform to the mapping onto used services, required by the application-context defined in clause 4 of this part of ISO/IEC 10175 for which conformance is claimed;

b) conform to the use of underlying services as defined in 3.3.

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Annex A

(normative)

Formal assignment of protocol object identifiers

All object identifiers defined in this part of ISO/IEC 10175 are formally assigned in this annex using ASN.1. The specified values are cited in the ASN.1 module of section 4 of this part of ISO/IEC 10175.

This Annex is definitive for all values except those for ASN.1 modules of this part of ISO/IEC 10175. The definitive assignments for those occur in the modules themselves.

```
DPAProtocolObjectIdentifiers { iso standard dpa(10175) part-2(2) modules(0)
                               object-identifiers(5)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- PROLOGUE --

-- EXPORTS EVERYTHING --

IMPORTS  -- nothing -- ;

-- DPA Protocol --
ID ::= OBJECT IDENTIFIER
id-dpa-protocol  ID ::= { iso standard dpa(10175) part-2(2) }

-- Categories --
id-ac           ID ::= { id-dpa-protocol 1 }    -- application context --
id-as           ID ::= { id-dpa-protocol 2 }    -- abstract-syntax --
id-ase          ID ::= { id-dpa-protocol 3 }    -- application service element --

-- Application Context --
id-ac-dpa-access                          ID ::= { id-ac 0 }
id-ac-dpa-access-and-management           ID ::= { id-ac 1 }
id-ac-dpa-reliable-access                 ID ::= { id-ac 2 }
id-ac-dpa-reliable-access-and-management  ID ::= { id-ac 3 }

-- Abstract-Syntaxes --
id-as-acse         ID ::= { id-as 0 }
id-as-dpse         ID ::= { id-as 1 }
id-as-dpase        ID ::= { id-as 2 }
id-as-dpa          ID ::= { id-as 3 }
id-as-dpa-rtse     ID ::= { id-as 4 }

-- Application Service Element --
id-ase-dpse        ID ::= {id-ase 0}
id-ase-dpase       ID ::= {id-ase 1}

END      -- of DPAProtocolObjectIdentifiers --
```


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