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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

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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.

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

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

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.*

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.