

Information technology — Document description and processing languages — Minimum requirements for specifying document rendering systems

Part 1:
Feature specifications for document
rendering systems

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National foreword

This British Standard is the UK implementation of ISO/IEC 24754-1:2008, incorporating corrigendum August 2011.

The UK participation in its preparation was entrusted to Technical Committee IST/41, Document description and processing language.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Information technology — Document
description and processing languages —
Minimum requirements for specifying
document rendering systems —**

Part 1: Feature specifications for document rendering systems

*Technologies de l'information — Description des documents et
langages de traitement — Exigences minimales pour spécifier les
systèmes de conversion de documents*

*Partie 1: Spécifications des caractéristiques pour les systèmes
de conversion de documents*



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Foreword

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ISO/IEC 24754-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*

ISO/IEC 24754 consists of the following parts, under the general title *Information technology — Document description and processing languages — Minimum requirements for specifying document rendering systems*

- *Part 1: Feature specifications for document rendering systems*
- *Part 2: Formatting specifications for document rendering systems*

BS ISO/IEC 24754-1:2008
ISO/IEC 24754-1:2008 (E)

Information technology — Document description and processing languages — Minimum requirements for specifying document rendering systems

Part 1:

Feature specifications for document rendering systems

1 Scope

When a structured document is interchanged between an originator and a recipient, the recipient refers to the style specifications that the originator provides to reconstruct the presentation. However, when the recipient does not have sufficient rendering functionality, it may fail to reconstruct the presentation output as the originator expected. In order to preserve presentation output in the course of interchange, the originator and recipient need to negotiate over functionalities referring to the specifications of document rendering systems. To satisfy this requirement, ISO/IEC 24754 provides the minimum requirements for specifying document rendering systems. The document specification format shall have the same minimum requirements described here.

ISO/IEC 24754 can apply to the document processing environment, where a document is given in a logically structured format which is expressed by a structure markup language, and the visual representation of the document is described by means of the external style and layout specifications which a style and layout specifications language provides. The visual representation of the given document is generated when the style and layout specifications are applied to the logical structure by a document rendering system.

This part of ISO/IEC 24754 provides an abstract list of the features that a rendering system for an authored document may have. The list provides a frame of reference, against which the user and implementor can compare the features of document rendering systems. However, this part of ISO/IEC 24754 does not specify a concrete interchange syntax or direct how each document rendering system shall behave.

This part of ISO/IEC 24754 provides the minimum requirements to specify the features that a document rendering system which transforms formatting objects to rendering output. It may be used as a frame of reference, against which the user, implementer, or software agent may compare the features of a document rendering system. According to these requirements, the user may express what he or she expects of a document rendering system, the implementer may describe the functionality and capability of the document rendering system that he or she implements, and the software agent may negotiate a minimum set of functionality and capability that are shared across different document rendering system implementations.

2 Terms and definitions

2.1 document rendering system

software agent which takes in formatted document and generates rendered output

2.2 rendering

transforming of a structured document from a certain set of constraints to another set of constraints

NOTE: In most cases, a rendered document has stronger constraints than a pre-rendering document does.

2.3 feature

characteristic which a document rendering system supports in order to process a document, particularly at times when the document rendering system negotiate the rendering content with physical boundaries, e.g. line break or page break, of the output media

2.4 paged media

form of media, which is divided into one or more smaller repetitive areas, each of which has its own independent geometric attributes

2.5 region

geometric part of a page that has static position and can appear at the same position on sequential pages

2.6 area

arbitrary part on a page that may have a floating position or be handled as a flowed object

2.7 header

a set of objects that are positioned at the beginning of each page of a document, which may include such objects as page number, title of document, etc.

2.8 footer

objects that are positioned at the end of each page of a document, which may include such objects as page number, title of document, etc.

2.9 operator

a person who interacts with a document or with the document rendering system in order to print or display the document

3 Features of a document rendering system

3.1 General description of a document rendering system

3.1.1 Supported output device

The output device(s) that the document rendering system supports are described. E.g. printing systems and browsers.

3.1.2 Supported document formats

The document formats, e.g. XML, RTF, which the document rendering system supports to express the logical structure of a given document are described.

3.1.3 Supported style languages

The style specification languages, DSSSL and other style specification languages, that the document rendering system supports are described.

3.1.4 Rendering media dimension

The dimension of the rendering media, whether it is paged media or non-paged media, is described here. If the rendering media is paged, supported page sizes are described, e.g. A4, Letter, Legal.

3.1.5 Colour support

The level of support for colour is described, referring to whether colour is supported by the document rendering system, and if colour is supported, what colour profiles are supported. Colour system, e.g. RGB and CMYK, and depth of colour, e.g. 8-bit (256 colours) and 24-bit (16 million colours).

3.1.6 Dynamic content generation

The support for dynamically-generated content, meaning content calculated by and supplied by the stylesheet either as fixed value or conditionally-generated based on the presence or absence of data at rendering time.

3.1.7 Supported coded character sets and encoding schemes

Supported coded character standards and encoding schemes are described. E.g. UTF-8, SHIFT_JIS, KS-5601.

3.1.8 Composition of combined characters

The level of support for the composition of combined syllabic characters, whether the document rendering system supports the stacking of combined characters and environmental glyph alteration are supported, is described. E.g. Thai, Arabic.

3.1.9 Directionality of text

Support for the inherent directions of the progression of text (from left to right, right to left or top to bottom) and lines (from top to bottom, right to left or left to right) is described.

3.1.10 Rendering of white-space characters

The interpretation of white-space characters, e.g. tab, space, carriage return and line feed, is described. A string of white-space characters may be collapsed or may be interpreted literally. Additionally, white-space characters may be removed before or after line breaks.

3.1.11 Font substitution

Support for font substitution mechanism, e.g. font substitution based on ISO/IEC 9541-1, is described.

3.1.12 Font-resource portability

Capability of embedding and retrieving a font resource is described. If the document rendering system supports font-resource portability, it can extract an embedded font resource from the document and use it for rendering.

3.1.13 Embedding of non-standard characters and glyphs

Support for the embedding of non-standard characters and glyphs, e.g. glyphs registered by ISO/IEC 10036, is described.

3.2 Description of pagination and rendering of page layout

3.2.1 Page geometry

3.2.1.1 Simple page layout

The attributes, e.g. page width and height, and margin and padding on top, bottom, left and right, of a page that the document rendering system supports are described.

3.2.1.2 Columnar pagination

The level of support for columnar pagination, i.e. whether columns are supported, and whether the column gap can be specified, etc. is described.

3.2.1.3 Region setting and positioning

Basic attributes, e.g. width, height, margin and padding on top, bottom, left and right, and positions in the page, of the regions that the document rendering system can specify are described.

3.2.2 Page-geometry sequencing

Support for different types of page-geometry sequencing is described. Example types for page-geometry sequencing are single page ordering, repeatable page ordering, and conditional page ordering. Example types for conditional page ordering are page parity and page position.