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Information technology — Document description and processing languages — DSSSL library for complex compositions

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

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Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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ISO/IEC TR 19758, which is a Technical Report of type 2, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*.

This specification is a translation of a JIS/Technical Report "DSSSL library for complex compositions" (TR X 0010:2000) published by Japanese Standards Association (JSA) in September 01, 2000.

Introduction

This Technical Report is based on the activities taken by Application Standards Committee of JBMA (Japan Business Machine Makers' Association) and Electronic Publishing Committee of INSTAC/JSA for application technology of DSSSL (ISO/IEC 10179, Document Style Semantics and Specification Language).

The DSSSL library specified in this Technical Report encourages interchanging SGML (Standard Generalized Markup Language) or XML (Extensible Markup Language) documents with such a complicated style specification by DSSSL as multilingual composition including Japanese and English texts within a page, clause or paragraph.

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Information technology — Document description and processing languages — DSSSL library for complex compositions

1   Scope

This Technical Report provides a DSSSL library that can specify styles for the documents described by SGML (Standard Generalized Markup Language, ISO 8879) or XML (Extensible Markup Language, W3C REC-xml-980210). The library makes it feasible to describe DSSSL specification for those documents, without any particular knowledge of DSSSL or particular composition rules.

The library deals with some complex compositions described by a number of complicated DSSSL specification statements. They are typically required in fixed-pitch document styles. Some of them can be applied to proportional pitch styles and fixed/proportional mixtures as well. More sophisticated compositions will be dealt with in a future Technical Report to be submitted.

2   Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10179:1996, *Information technology — Processing languages — Document Style Semantics and Specification Language (DSSSL)*

ISO 8879:1986, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*

ISO 8879:1986/Cor.2:1999, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML) TECHNICAL CORRIGENDUM 2*

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

3   Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
bottom edge
the bottom side of a page

3.2
cell
a basic unit in a table composition

3.3
character size
the size of virtual body of a character

3.4
clock numerals
a Roman numerical character designed for a clock face

3.5
column
a separated composition area within a page

3.6
column space
an interval between adjacent columns

3.7
DSSSL library
a set of DSSSL specifications (see ISO/IEC 10179)

3.8
edge
one of the three sides of a page that are not bound

NOTE   The three sides are top edge, bottom edge and front edge.

3.9
emphasizing mark
a symbol located at the side (right side in vertical composition or top side in horizontal composition) of a character to be emphasized

3.10
facing page
a two-page (left page and right page) spread of a book

3.11
group-ruby
a ruby scheme in which ruby characters are aligned at the side of a grouped object characters

3.12
gutter
a binding portion of a book

3.13
head line
description of a book-title, chapter-title or section-title allocated on a margin areas of a page

3.14
image area
an effective page area on which main texts are composed

3.15
indentation
line head shifting along the character progression direction in a line

3.16
interline space (or line space)
an interval between adjacent lines

3.17
line leading
displacement between the corresponding points of adjacent lines

3.18
mono-ruby
a ruby scheme in which ruby characters are aligned with respect to each object character

3.19
number of characters on a line
the number of characters which are included and aligned in a line

3.20
ordering character
a head character of each ordered object (list, clause, etc.), indicating the order of the object

3.21
page number
the number indicating a page sequence

3.22
pre/post-marking of ordering character(s)
character(s) just before/after ordering character(s)

3.23
ruby
a (sequence of) small character(s) located at the side of object character(s), indicating the pronunciation, meaning, etc. of the object character(s)

3.24
single page
a separated page

NOTE   It is employed specifically discriminating a page from a facing page.

3.25
solid matter (or solid)
a composition without space between adjacent characters or lines

3.26
space
an interval between virtual bodies of adjacent characters or lines

3.27
strike-through (or strike-out)
a line overwritten on characters indicating their deletion

3.28
superscript/subscript (or superior/inferior)
small characters allocated at the side (right-top or right-bottom respectively) of an object character

3.29
table caption
a title (and other related description) of a table

NOTE   It is sometimes referred to as table title or table heading.

3.30
top edge
the top side of a page

3.31
two-character ruby
a ruby consisting of the character(s) whose virtual body size (measured in the character progression direction) is a half of the virtual body size of corresponding object character

3.32
writing direction
the direction of a character string composing a line

NOTE   Multilingual texts are composed with a vertical or horizontal direction. Those compositions are called vertical compositions or horizontal compositions respectively.

3.33
writing mode
a character progression direction on a line [the direction to escapement point from position point on a glyph coordinate system (see ISO/IEC 9541-1)]

NOTE   Multilingual texts employ the writing modes of LEFT-TO-RIGHT, TOP-TO-BOTTOM or RIGHT-TO-LEFT.

4   Formatting objects and properties

This clause defines formatting objects and properties dealt with or related to this DSSSL Library.

4.1   Paper size

The following paper sizes are dealt with:

a)   A-size: A6, A5, A4

b)   B-size: B6, B5

The choice of "single page" or "facing page" can be specified. In choice of the facing page, double size of those paper sizes a), b) can be specified.

NOTE   In choice of facing page with A4 left and right pages, A3 is specified.

4.2   Paper placement

The choice of "vertical (portrait)" or "horizontal (landscape)" can be specified. Default specification is vertical.

4.3   Unit

The following units are dealt with:

a)   mm

b)   point (1point = 0.3 514 mm)

c)   Q (1Q = 0.25 mm)

The relationship between Q and points is clarified in Table 1.

Table 1 — Relationship between Q and points

Q	points	Q	points
7	5	15	10.5
8	5.5	16	11
9	6	18	12
10	7	20	14
11	7.5	21	15
12	8	24	16
13	9	26	18.5
14	10	28	20

4.4 Basic composition style

Prior to the basic composition styles, there should be specified the following properties:

a) size of image area

b) margin

c) number of text characters on a line (applicable to a content driven composition)

They have the following relationship with a paper size:

(paper size) − margin = (size of image area)

In a layout driven specification, the values of paper size and margin are given first. In a content driven specification, the values of paper size and image area are given first.

NOTE   In Japanese composition, for example, a content driven specification is usually employed.

Basic composition styles are defined by the following formatting properties:

a) vertical composition or horizontal composition

b) size of text character

c) number of text characters on a line

d) number of lines in a column

e) interline space

f) column space

g) alignment (left, right and center alignments, and justification. Default specification is a left alignment.)

The basic composition styles are specified by one of the following manners:

a) to specify all the values of required formatting properties for the specified image area

b) to specify a model of basic component style, i.e., a set of the property values (see 4.5)

4.5 Model of basic composition style

Typical sets of the property values for book compositions are defined.

4.5.1 Position of image area on a paper

A position of image area on a paper is defined by the following manners:

a) An image area is positioned at the center of the rectangle surrounded by the margins of top edge, bottom edge, front edge and gutter. It is the default positioning of image area.

b) An image area is positioned in accordance with the ratio of top edge, bottom edge, front edge and gutter.

c) An image area is positioned in accordance with each value of top edge, bottom edge, front edge and gutter.

4.5.2 Models of basic composition styles

Typical sets of the property values for book compositions are provided as models of basic composition styles for some combinations of (paper size, paper placement, unit). Seven models are shown in Table 2 through Table 8, where the table captions indicate the values of (paper size, paper placement, unit). Those tables apply to a fixed pitch composition employed, for example, in a Japanese or Chinese text.

Table 2 — B6, Vertical, Point

Vertical/Horizontal composition	Size of text character (points)	Number of characters on a line	Number of lines in a column	Line leading (points)	Number of columns	Column space (characters)
vertical	9	43	14	18	1	none
vertical	9	43	15	18	1	none
vertical	9	43	16	17	1	none
vertical	9	44	17	16	1	none
vertical	8	50	18	15	1	none
vertical	8	50	19	14	1	none
vertical	8	25	20	14	2	2
vertical	8	26	20	14	2	2
vertical	9	30	23	17	1	none
vertical	9	33	25	16	1	none
vertical	8	33	27	15	1	none
vertical	8	34	27	15	1	none

Table 3 — B5, Vertical, Point

Vertical/Horizontal composition	Size of text character (points)	Number of characters on a line	Number of lines in a column	Line leading (points)	Number of columns	Column space (characters)
vertical	8	24	31	13	1	none
horizontal	9	43	32	18	1	none
horizontal	9	23	44	14	2	2
horizontal	9	22	41	15	2	2
horizontal	8	25	51	12	2	2
horizontal	13	42	31	26	1	none
horizontal	13	22	43	20	2	2
horizontal	13	21	39	22	2	2
horizontal	12	23	48	18	2	2

Table 4 — B5, Vertical, Q

Vertical/Horizontal composition	Size of text character (Q)	Number of characters on a line	Number of lines in a column	Line leading (Q)	Number of columns	Column space (characters)
horizontal	13	42	31	26	1	none
horizontal	13	22	43	20	2	2
horizontal	13	21	39	22	2	2
horizontal	12	23	48	18	2	2

Table 5 — A6, Vertical, Point

Vertical/Horizontal composition	Size of text character (points)	Number of characters on a line	Number of lines in a column	Line leading (points)	Number of columns	Column space (characters)
vertical	8	41	13	17	1	none
vertical	8	41	14	16	1	none
vertical	8	42	15	15	1	none
vertical	8	42	13	16	1	none
vertical	8	42	14	16	1	none
vertical	8	43	15	15	1	none
vertical	8	43	15	15	1	none
vertical	8	43	16	14	1	none
vertical	8	43	18	13	1	none
vertical	8	43	19	13	1	none

Table 6 — A5, Vertical, Point

Vertical/Horizontal composition	Size of text character (points)	Number of characters on a line	Number of lines in a column	Line leading (points)	Number of columns	Column space (characters)
vertical	9	51	16	18	1	none
vertical	9	52	16	18	1	none
vertical	9	52	17	18	1	none
vertical	9	52	18	17	1	none
vertical	9	52	19	17	1	none
vertical	9	25	20	15	2	2
vertical	8	30	24	13	2	2
vertical	8	29	23	14	2	2
horizontal	9	35	26	18	1	none
horizontal	9	35	28	17	1	none
horizontal	9	35	30	16	1	none
horizontal	8	40	30	16	1	none
horizontal	8	38	33	14	1	none

Table 7 — A5, Vertical, Q

Vertical/Horizontal composition	Size of text character (Q)	Number of characters on a line	Number of lines in a column	Line leading (Q)	Number of columns	Column space (characters)
horizontal	13	34	27	25	1	none
horizontal	13	34	29	23	1	none
horizontal	12	37	28	24	1	none
horizontal	12	36	31	21	1	none

Table 8 — A4, Vertical, Q

Vertical/Horizontal composition	Size of text character (Q)	Number of characters on a line	Number of lines in a column	Line leading (Q)	Number of columns	Column space (characters)
horizontal	13	51	41	24	1	none
horizontal	14	48	39	25	1	none
horizontal	14	24	42	23	2	2
horizontal	14	16	42	23	3	2

4.6 Font

Fonts should be specified by their font family names and weights.

NOTE   Such variations as "horizontal condensed", "vertical condensed" or "slant" are not dealt with.

4.7 Unit of character size

Character sizes should be specified by using a unit of point or Q.

4.8 Headline

4.8.1 Number of headlines

As the number of headlines, no or one should be specified.

4.8.2 Position of headline

The following positions of headlines are dealt with:

a)   at the front side on the top edge of odd page

b)   at the front side on the top edges of odd and even pages

c)   at the front side on the bottom edge of odd page

d)   at the front side on the bottom edges of odd and even pages

e)   at the center on the top edge (for horizontal composition)

The writing direction of headlines is horizontal. If a headline and page number are located on the same edge, the headline should be located inside and apart from the page number by a space of 1 em or 1.5 em.

A division of words in a headline should follow the rule in 4.15.

4.8.3 Contents of headline

When the contents of headlines on odd and even pages are different from each other, the headlines should be positioned in accordance with 4.8.2 b), d) or e).

If a headline shows a clause title (or a node of logical structure of the text), the headline should be located on a page opposite to the page where the clause begins. On the page where a clause begins, there should be no headline.

4.9 Page Number

The following positions and styles of page numbers are dealt with:

a)   at the front side on the top edge, using Arabic numerals

b)   at the front side on the bottom edge, using Arabic numerals

Characters for a page number should have the same size as characters for texts on the page or one size smaller than those. A page number should be located apart from the image area having a space of the same size as the characters for texts or one size larger than those.

4.10 Note

4.10.1 Type of note

The following five types of notes are dealt with:

4.10.1.1 Interlinenote

A interlinenote is composed within a line space and at the side (upper side in horizontal composition, or right side in vertical composition) of words or phrases to be noted. Character locations in a line and interlinenote in horizontal composition are illustrated in Figure 1.
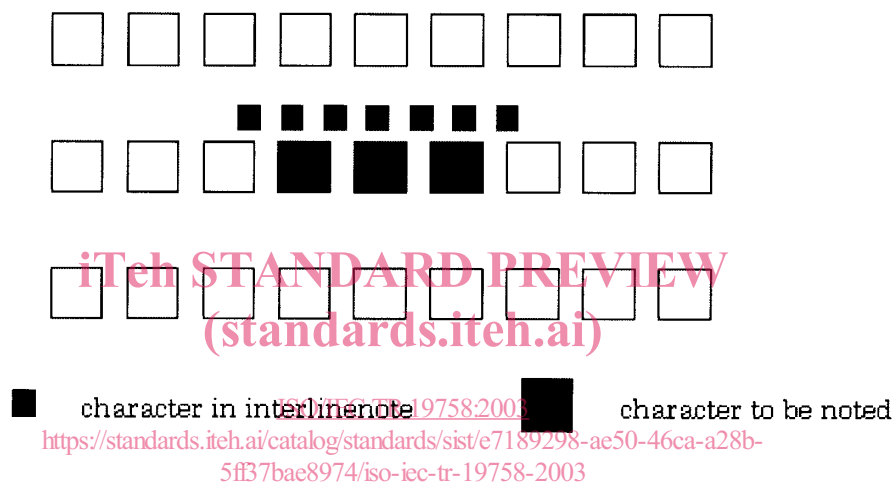

■ character in interlinenote   ■ character to be noted

Figure 1 — Interlinenote in horizontal composition

4.10.1.2 Sidenote

A sidenote is used in horizontal composition and located on a note area which is reserved at the front side of a page as shown in Figure 2.
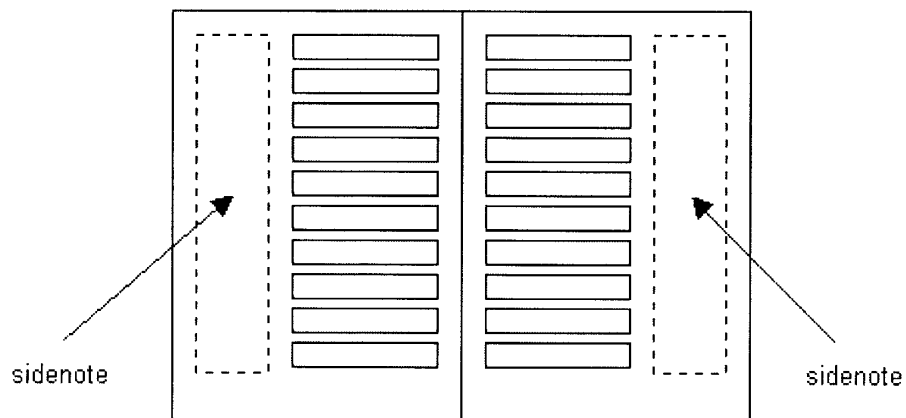

Figure 2 — Sidenote