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Information technology — Open Document Architecture (ODA) and interchange format: Identification of document fragments

Technologies de l'information — Architecture des documents ouverts (ODA) et format d'échange: Identification de fragments de document



Reference number
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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 8613-12 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 18, *Document processing and related communication*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation T.422.

ISO/IEC 8613 consists of the following part, under the general title *Information technology — Open Document Architecture (ODA) and interchange format*:

— *Part 1: Introduction and general principles*

— *Part 2: Document structures*

— *Part 3: Abstract interface for the manipulation of ODA documents*

— *Part 4: Document profile*

— *Part 5: Open Document Interchange Format*

— *Part 6: Character content architectures*

— *Part 7: Raster graphics content architectures*

— *Part 8: Geometric graphics content architectures*

— *Part 9: Audio content architectures*

— *Part 10: Formal specifications*

— *Part 11: Tabular structures and tabular layout*

— *Part 12: Identification of document fragments*

— *Part 13: Spreadsheet*

— *Part 14: Temporal relationship and non-linear structures*

Annex A forms an integral part of this part of ISO/IEC 8613. Annexes B to D are for information only.

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Introduction

This ITU-T Recommendation | International Standard was prepared as a joint publication by ITU-T Study Group 8 and ISO/IEC Joint Technical Committee 1.

At present, the ITU-T Recommendations in the T.410-Series | International Standard ISO/IEC 8613 consists of:

- Introduction and general principles;
- Document structures;
- Abstract interface for the manipulation of ODA documents;
- Document profile;
- Open document interchange format;
- Character content architectures;
- Raster graphics content architectures;
- Geometric graphics content architectures;
- Audio content architectures;
- Formal specification of the Open Document Architecture (FODA).

  (The formal Specification is applicable to ISO/IEC 8613 only).
- Tabular structures and tabular layout;
- Identification of document fragments;
- Temporal relationships and non-linear structures.

Further Recommendations | International Standards may be added to this series of ITU-T Recommendations | International Standards.

Development of this series of ITU-T Recommendations | International Standards was originally in parallel with ECMA-101 standard: *Open Document Architecture*.

This ITU-T Recommendation | International Standard contains four annexes:

- Annex A (integral) contains changes to other parts of ITU-T Rec. T.410-Series | ISO/IEC 8613;
- Annex B (non-integral) contains examples of location expressions;
- Annex C (non-integral) contains the application class tag assignments;
- Annex D (non-integral) contains a summary of object identifiers.

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INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY — OPEN DOCUMENT ARCHITECTURE (ODA) AND INTERCHANGE FORMAT: IDENTIFICATION OF DOCUMENT FRAGMENTS

1 Scope

The purpose of ITU-T Rec. T.410-Series | ISO/IEC 8613 is to facilitate the interchange and manipulation of documents.

In the context of these Recommendations | International Standards, documents are considered to be items such as memoranda, letters, invoices, forms and reports, which may include pictures and tabular material. The content elements used within the documents may include graphic characters, raster graphics elements and geometric graphics elements, all potentially within one document.

NOTE – These Recommendations | International Standards are designed to allow for extensions, including spreadsheets and additional types of content such as video.

In addition to the content types defined in these Recommendations | International Standards, ODA also provides for arbitrary content types to be included in documents.

These Recommendations | International Standards apply to the interchange of documents by means of data communications or the exchange of storage media.

These Recommendations | International Standards provide for the interchange of documents for either or both of the following purposes:

- to allow presentation as intended by the originator;
- to allow processing, such as editing and reformatting.

The composition of a document in interchange can take several forms:

- formatted form, allowing presentation of the document;
- processable form, allowing processing of the document;
- formatted processable form, allowing both presentation and processing of the document.

These Recommendations | International Standards also provide for the interchange of ODA information structures used for the processing of interchanged documents.

This Recommendation | International Standard provides:

- a mechanism for the identification of document fragments. Location expressions are used for this purpose;
- the specification of external references;
- the specification of subprofiles.

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2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation T.411 (1993) | ISO/IEC 8613-1:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Introduction and general principles.*
- ITU-T Recommendation T.412 (1993) | ISO/IEC 8613-2:1995, *Information technology – Open Document Architecture (ODA) and interchange format: Document structures.*
- ITU-T Recommendation T.413 (1994) | ISO/IEC 8613-3:1995, *Information technology – Open Document Architecture (ODA) and interchange format: Abstract interface for the manipulation of ODA documents.*
- ITU-T Recommendation T.414 (1993) | ISO/IEC 8613-4:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Document profile.*
- ITU-T Recommendation T.415 (1993) | ISO/IEC 8613-5:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Open Document Interchange Format.*
- ITU-T Recommendation T.416 (1993) | ISO/IEC 8613-6:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Character content architectures.*
- ITU-T Recommendation T.417 (1993) | ISO/IEC 8613-7:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Raster graphics content architectures.*
- ITU-T Recommendation T.418 (1993) | ISO/IEC 8613-8:1994, *Information technology – Open Document Architecture (ODA) and interchange format: Geometric graphics content architectures.*
- ITU-T Recommendation T.419[1)] | ISO/IEC 8613-9: ...[1)], *Information technology – Open Document Architecture (ODA) and interchange format: Audio content architectures.*
- ITU-T Recommendation T.421 (1994) | ISO/IEC 8613-11:1995, *Information technology – Open Document Architecture (ODA) and interchange format: Tabular structures and tabular layout.*
- ITU-T Recommendation T.424[1)] | ISO/IEC 8613-14: ...[1)], *Information technology – Open Document Architecture (ODA) and interchange format: Temporal relationships and non-linear structures.*

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1).*

  ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1).*
- ITU-T X.501 (1993), *Information technology – Open Systems Interconnection – The Directory: Models.*

  ISO/IEC 9594-2:1990, *Information technology – Open Systems Interconnection – The Directory – Part 2: Models.*
- ITU-T X.511 (1993), *Information technology – Open Systems Interconnection – The Directory: Abstract service definition.*

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

2.3 Additional references

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

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1) Presently at the stage of draft.

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- ISO 8601:1988, *Data elements and interchange formats – Information interchange – Representation of dates and times.*
- ISO/IEC 8613-10:1995, *Information technology – Open Document Architecture (ODA) and interchange format – Part 10: Formal specifications.*
- ISO/IEC 10031-2:1991, *Information technology – Text and office systems – Distributed-office-applications model – Part 2: Distinguished-object-reference and associated procedures.*

3 Definitions

For the purposes of this Recommendation | International Standard the definitions given in ITU-T Rec. T.411 | ISO/IEC 8613-1 apply.

The following additional definitions are given in this Recommendation | International Standard:

3.1 associated information name: A name which uniquely identifies a set of information being transmitted with the document, the precise semantics being local to the transfer mechanism being used.

3.2 document fragment: A part of a document identified by a location expression.

3.3 external entity: Any amount of structured external ODA information that can be interchanged as a unit.

3.4 external reference: A reference to structured information that is external to the document that references it.

3.5 identifier production function: A function defined for producing identifiers of constituents with given properties, used for the construction of constituent locators.

3.6 location expression: A mechanism to select a document fragment based on values of attributes and other document characteristics.

3.7 locator: Part of a location expression which identifies one or more constituents, a subtree in a specific structure, or a region in a specific structure.

3.8 reference name: A pointer into an external references list in either the document profile or the hypermedia document profile.

3.9 subprofile: A subprofile is a constituent consisting of a set of attributes, taken from a subset of the document profile attributes, that can be specified for a document fragment.

4 Abbreviations

For the purposes of this Recommendation | International Standard the abbreviations given in ITU-T Rec. T.411 | ISO/IEC 8613-1 and ISO/IEC 10031-2 apply.

The following additional abbreviations are given in this Recommendation | International Standard:

DOR Distinguished Object Reference

5 Conventions

For the purposes of this Recommendation | International Standard the conventions given in ITU-T Rec. T.411 | ISO/IEC 8613-1 and ITU-T Rec. T.412 | ISO/IEC 8613-2 apply.

6 Overview

The areas covered by this Specification are the following:

- location expressions, for identification of document fragments;
- external references, for identification and handling of information that is external to a given document;
- subprofiles, for the provision of, mainly, management information applying to a document fragment.

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6.1 Location expressions

The purpose of location expressions is to provide a general mechanism for the identification of document fragments. Location expressions may be either basic or composite depending on the structure of the expression.

Location expressions allow the selection of a document fragment based on values of attributes and other document characteristics.

6.2 External references

Document constituents may refer to information external to the document they belong to, by means of the external references mechanism. Reference entities are the referenced information.

6.3 Subprofiles

A subprofile is a constituent consisting of a set of attributes, taken from a subset of the document profile attributes, that can be specified for a document fragment. This document fragment shall be referenced using a location expression.

The attributes of a subprofile provide management information, or other kind of information, applying to a document fragment, in a similar way that document profile attributes apply to whole documents.

6.4 Relationship to application profiles

Application profiles may be defined for applications that need identification of document fragments, to specify (in addition to the rules described in clause 10 of ITU-T Rec. T.411 | ISO/IEC 8613-1):

- permissible ranges of values for location expressions;
- what the value range of the parameter "external entity" shall be;
- rules for external information names;
- rules for associated information names;
- rules for distinguished names;
- values and semantics of ASN.1 object identifiers in external entities.

7 Location expressions

7.1 Introduction

In this clause, productions following the notation described in F.3.2 of ITU-T Rec. T.411 | ISO/IEC 8613-1 are used.

The mechanism for identification of document fragments is based on the use of *location expressions*.

A location expression is either a *basic location expression* or a *composite location expression*, i.e.:

<location-expression> ::= <basic-location-expression>
| <composite-location-expression>

7.2 Basic location expressions

A basic location expression consists of a *locator*, which may identify:

- A single constituent or a set of constituents (*constituent-locator*).
- A subtree in a specific structure, formed by an object description and, if composite, all its subordinates, and also, in certain circumstances, its associated content portions if any (*subtree-locator*).
- A region in a specific structure, formed by all object descriptions comprised, in sequential order (as defined in ITU-T Rec. T.412 | ISO/IEC 8613-2), between a pair of given object descriptions (*region-locator*).

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A basic location expression is defined by the following production:

<basic-location-expression> ::= **<region-locator>**
| <subtree-locator>
| <constituent-locator>

When evaluated, a locator yields a set of zero or more constituents (each represented by its identifier). In the case of subtrees and regions, the constituents form an ordered sequence (following the sequential order); in any other case (e.g. in case of styles), the order of the constituents does not have to follow any rules and has no semantic meaning.

When a location expression that takes a parameter that is defined for a single constituent is evaluated with an argument that is a set of locations, the location expresssion is evaluated for each member (if any) of the argument, and the result of the entire expression is taken to be the union of all individual results (or empty, if the argument set was empty).

7.2.1 Region locators

A region is specified by a region locator, that consists of a pair of object locators (see 7.2.3), each of them with an optional flag indicating if the identified object is to be included or not in the region. If the flag is not provided, then the object locator is not included.

A region locator is defined by the following production:

<region-locator> ::= **'REGION' '(''(' <object-locator> [',' 'not-included'] ')' ','**
'(' <object-locator> [',' 'not-included'] ')' ')'

7.2.2 Subtree locators

A subtree is specified by a subtree locator, that consists of an object locator (see 7.2.3).

A subtree locator is defined by the following production:

<subtree-locator> ::= **'SUBTREE' <object-locator>**

7.2.3 Constituent locators

The construction of constituent locators is based on the use of *identifier production functions* that are defined for producing identifiers of constituents with given properties.

Their use is defined with the following productions:

<constituent-locator> ::= **<document-profile-locator>**
| <subprofile-locator>
| <component-locator>
| <content-portion-locator>
| <style-locator>
| <link-or-link-class-locator>
'CONSTITUENT-WITH' '(' <constituent-type> ')'

<document-profile-locator> ::= -- *Indication that the document profile is to be located* --

<subprofile-locator> ::= **<subprofile-id>**
| 'SUBPROFILE-OF' '(' <constituent-locator> ')'
| 'SUBPROFILE-WITH' '(' <attribute-name> ',' <value-specification> ')'

<subprofile-id> ::= -- *A subprofile identifier, as defined in clause 9* --

<component-locator> ::= **<object-class-locator>**
| <object-locator>

<object-class-locator> ::= **<object-class-id>**
| 'OBJECT-CLASS-OF' '(' <object-locator> ')'
| 'OBJECT-CLASS-WITH' '(' <attribute-name> ',' <value-specification>
[',' 'defaulting'] ')'

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<object-class-id> ::= -- *An object class identifier, as defined in ITU-T Rec. T.412 | ISO/IEC 8613-2* --

<object-locator> ::= **<object-id>**
| **'SUBORD' '(' <object-locator> [',' <counters>] ')'**
| **'OBJECT-WITH' '(' <attribute-name> ',' <value-specification>**
[',' <object-locator>] [',' <counters>] [',' 'not-defaulting'] ')'

<object-id> ::= -- *An object identifier, as defined in ITU-T Rec. T.412 | ISO/IEC 8613-2* --

<content-portion-locator>::= **<content-portion-id>**
| **'ASSOC' '(' <component-locator> [',' <counters>] ')'**
| **'CONTENT-WITH' '(' <attribute-name> ',' <value-specification>**
[',' <component-locator>] [',' <counters>] [',' 'not-defaulting'] ')'

<content-portion-id> ::= -- *A content portion identifier, as defined in ITU-T Rec. T.412 | ISO/IEC 8613-2* --

<style-locator> ::= **<style-id>**
| **'LAYOUT-STYLE-OF' '(' <component-locator> ')'**
| **'PRESENTATION-STYLE-OF' '(' <component-locator> ')'**
| **'LAYOUT-STYLE-WITH' '(' <attribute-name> ',' <value-specification>**
[',' 'not-defaulting'] ')'
| **'PRESENTATION-STYLE-WITH' '(' <attribute-name> ',' <value-specification>**
[',' 'not-defaulting'] ')'

<style-id> ::= -- *A layout style identifier, as defined in ITU-T Rec. T.412 | ISO/IEC 8613-2* --

<link-or-link-class-locator> ::= **<link-class-locator>**
|**<link-locator>**

<link-class-locator> ::= **<link-class-id>**
| **'LINK-CLASS-OF' '(' <link-locator> ')'**
| **'LINK-CLASS-WITH' '(' <attribute-name> ',' <value-specification> ')'**

<link-class-id> ::= -- *A link class identifier, as defined in ITU-T Rec. T.424 | ISO/IEC 8613-14* --

<link-locator> ::= <link-id>
| **'LINK-WITH' '(' <attribute-name> ',' <value-specification> [',' 'not-defaulting'] ')'**

<link-id> ::= -- *A link identifier, as defined in ITU-T Rec. T.424 | ISO/IEC 8613-14* --

<counters> ::= **'(' ['<start-counter>'] [',' '<end-counter>'] ')'**

<start-counter> ::= **<integer-value>**

<end-counter> ::= **<integer-value>**

<integer-value> ::= -- *An integer value, as defined in Annex F of ITU-T Rec. T.411 | ISO/IEC 8613-1* --

<attribute-name> ::= -- *An attribute name, as defined in Annex F of ITU-T Rec. T.411 | ISO/IEC 8613-1* --

<value-specification> ::= **<value>**
| **'(' [-- *start* -- <value>] [',' -- *end* -- <value>] ')'**

<value> ::= **<value-type>**

<value-type> ::= -- *A value type, as defined in Annex F of ITU-T Rec. T.411 | ISO/IEC 8613-1* --

7.2.4 Identifier production functions

For all functions defined in this subclause, any argument which is a value specification can be specified either as a single value or as a value range. Value ranges are only applicable to integer-valued or date and time attributes. A value range shall be specified as a sequence of an optional lower limit and an optional upper limit. If the lower limit is specified, any value which is less than this limit is not included in the range. If the upper limit is specified, any value which is greater than this limit is not included in the range. All other values are included in the range.

Some functions take arguments which specify an optional start counter and an optional end counter to select a subset of identifiers from a list of constituents found by the function. However, if the limits specified by these counters are outside the actual range of the list, only those identifiers which are present in the list are returned.

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A counter is a non-zero integer that represents a position within the sequence of identifiers being counted, i.e. within the sequence of identifiers of all constituents satisfying the conditions specified by the other arguments to the function. A positive start counter counts from the start of the sequence being counted. A negative start counter counts back from the end of the sequence being counted, if the end counter is positive, or back from the end counter, otherwise. A positive end counter counts from the start counter. A negative end counter counts from the end of the sequence being counted.

If the start counter is omitted, 1 is assumed. If the end counter is omitted, –1 is assumed.

NOTE – The following is an example of the meaning of start and end counter:

Start	end	Meaning
1	1	means first constituent in the sequence
–1	1	means last constituent in the sequence
1	–1	means entire sequence
1	–2	means all but the last constituent in the sequence
2	–1	means all but the first constituent in the sequence
–2	–2	means the third to last and the second to last constituent in the sequence

7.2.4.1 OBJECT-WITH function

This function takes the following arguments:

- The name of an attribute specified for or applied to objects.
- A value specification for that attribute.
- Optionally, a location expression identifying an object to be used as starting point or origin. The default value is the layout root in case of a formatted document, or the logical root in any other case.
- Optionally, a start counter and/or an end counter.
- Optionally, indication that default values (determined by the defaulting mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are not considered. If this indication is not present, default values are considered.

This function returns a sequence of identifiers of objects taken from all objects found (in sequential order starting from the specified origin) for which the given attribute has the specified value or belongs to the specified range of values.

7.2.4.2 OBJECT-CLASS-WITH function

This function takes two arguments:

- The name of an attribute specified for object classes.
- A value specification for that attribute.
- Optionally, indication that derived values (determined by the defaulting mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are considered when examining attribute values. If this indication is not present, default values are not considered.

It returns the identifiers of all object classes for which the attribute in question has the specified value, or belongs to the specified range of values.

7.2.4.3 LINK-CLASS-WITH function

This function takes two arguments:

- The name of an attribute specified for link classes.
- A value specification for that attribute.

It returns the identifiers of all link classes for which the attribute in question has the specified value.

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7.2.4.4 LINK-WITH function

This function takes two arguments:

- The name of an attribute specified for links.
- A value specification for that attribute.
- Optionally, indication that default values (determined by the defaulting mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are not considered. If this indication is not present, default values are considered.

It returns the identifiers of all links for which the attribute in question has the specified value.

7.2.4.5 LAYOUT-STYLE-WITH function

This function takes three arguments:

- The name of an attribute specified for layout styles.
- A value specification for that attribute.
- Optionally, indication that derived values (determined by the derived styles mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are not considered. If this indication is not present, derived values are considered.

It returns the identifiers of all layout styles for which the attribute in question has the specified value, or belongs to the specified range of values.

7.2.4.6 PRESENTATION-STYLE-WITH function

This function takes three arguments:

- The name of an attribute specified for presentation styles.
- A value specification for that attribute.
- Optionally, indication that derived values (determined by the derived styles mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are not considered. If this indication is not present, derived values are considered.

It returns the identifiers of all presentation styles for which the attribute in question has the specified value, or belongs to the specified range of values.

7.2.4.7 CONTENT-WITH function

This function takes the following arguments:

- The name of an attribute specified for or applied to content portions.
- A value specification for that attribute.
- Optionally, a location expression identifying an object or an object class to be used as origin. The default value is the specific layout root in case of a formatted document, or the specific logical root in any other case.
- Optionally, a start counter and/or an end counter.
- Optionally, indication that default values (determined by the defaulting mechanism, as specified in ITU-T Rec. T.412 | ISO/IEC 8613-2) are not considered. If this indication is not present, default values are considered.

If a layout or logical object class is specified as the origin, this function returns the identifiers of all content portions in the generic layout or logical structure, respectively, for which the given attribute has the specified value or belongs to the specified range of values (in this case, the counters argument is ignored). Otherwise, this function returns a sequence of identifiers of content portions taken from all content portions found (in sequential order starting from the specified origin) for which the given attribute has the specified value or belongs to the specified range of values. If the attribute is "content information", the specified value can be a substring of the actual content information. If the component used as origin is in the layout structure, the identifiers returned are those corresponding to the attribute "content identifier-layout", otherwise the attribute "content identifier-logical" is used.

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7.2.4.8 SUBPROFILE-WITH function

This function takes two arguments:

- The name of an attribute specified for subprofiles.
- A value specification for that attribute. When a date and time attribute is specified, the comparison shall be defined as applying to the date and time represented by the attribute value, and not to the character string used to represent it.

It returns the identifiers of all subprofiles for which the attribute in question has the specified value, or belongs to the specified range of values.

7.2.4.9 OBJECT-CLASS-OF function

This function takes one argument:

- A location expression identifying a set of objects.

It returns the identifiers of the object classes to which the objects belong.

7.2.4.10 LINK-CLASS-OF function

This function takes one argument:

- A location expression identifying a set of links.

It returns the identifiers of the link classes to which the links belong.

7.2.4.11 LAYOUT-STYLE-OF function

This function takes one argument:

- A location expression identifying a set of objects or object classes.

It returns the identifiers of the layout styles associated with the components.

7.2.4.12 PRESENTATION-STYLE-OF function

This function takes one argument:

- A location expression identifying a set of objects or object classes.

It returns the identifiers of the presentation styles associated with the components.

7.2.4.13 SUBPROFILE-OF function

This function takes one argument:

- A location expression identifying a constituent.

It returns the identifier of the subprofile associated with the identified constituent with the highest precedence.

7.2.4.14 SUBORD function

This function takes two arguments:

- A location expression identifying an object.
- Optionally, a start counter and/or an end counter.

This function returns a sequence of identifiers of subordinates to the object, if composite.

7.2.4.15 ASSOC function

This function takes two arguments:

- A component locator identifying a set of objects or object classes.
- Optionally, a start counter and/or an end counter.

This function returns a sequence of identifiers of content portions associated with the object. If the component specified in the first argument is in the layout structure, the identifiers returned are those corresponding to the attribute "content identifier-layout", otherwise the attribute "content identifier-logical" is used.

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7.2.4.16 CONSTITUENT-OF-TYPE function

This function takes one argument:

- A constituent type specification.

It returns the identifiers of all constituents of the specified type.

7.3 Composite location expressions

A composite location expression is based on the nested application of the complement, intersection and union operators to location expressions.

<composite-location-expression> ::= **'COMPLEMENT' <location-expression>**
| 'INTERSECTION' '(' <location-expression> ... ')'
| 'UNION' '(' <location-expression> ... ')'

The 'COMPLEMENT' operator can be applied to a location expression to form another location expression identifying all those constituents of the same type *not* identified by the original expression. The set from which the complement is obtained shall be one of the following: the set of all layout objects, the set of all logical objects, the set of all layout object classes, the set of all logical object classes, the set of all content portions, the set of all layout styles, the set of all presentation styles, the set of all subprofiles, the set of all links, or the set of all link classes. The location expression used as parameter for the 'COMPLEMENT' operator shall be such that it can only result in constituents of the same type.

Two or more location expressions can be combined with the 'INTERSECTION' operator to form another location expression identifying all those constituents identified by the first expression *and* by the second expression *and* by all subsequent expressions. In this case, only those identifiers which satisfy all location expressions are returned.

Two or more location expressions can be combined with the 'UNION' operator to form another location expression identifying all those constituents identified by the first expression *or* by the second expression *or* by any of the subsequent expressions. In this case, those identifiers which satisfy any location expression are returned.

7.4 ASN.1 representation

```
MODULE Location-Expressions { 2 8 1 12 0 }

DEFINITIONSIMPLICIT TAGS ::= BEGIN

EXPORTS     Location-Expression, Basic-Location-Expression;

IMPORTS     Object-or-Class-Identifier, Content-Portion-Identifier, Style-Identifier
            FROM Identifiers-and-Expressions { 2 8 1 5 7 }
                -- see ITU-T Rec. T.415 | ISO/IEC 8613-5
            Layout-Class-Descriptor, Layout-Object-Descriptor
            FROM Layout-Descriptors { 2 8 1 5 8 }
                -- see ITU-T Rec. T.415 | ISO/IEC 8613-5
            Logical-Class-Descriptor, Logical-Object-Descriptor
            FROM Logical-Descriptors { 2 8 1 5 9 }
                -- see ITU-T Rec. T.415 | ISO/IEC 8613-5
            Presentation-Style-Descriptor, Layout-Style-Descriptor
            FROM Style-Descriptors { 2 8 1 5 10 }
                -- see ITU-T Rec. T.415 | ISO/IEC 8613-5
            Text-Unit FROM Text-Units { 2 8 1 5 12 }
                -- see ITU-T Rec. T.415 | ISO/IEC 8613-5
            Subprofile-Descriptor, Subprofile-Identifier
            FROM Subprofiles { 2 8 1 12 2 }
                -- see 9.3
            Link-Class-Descriptor, Link-Descriptor, Link-or-Link-Class-Identifier
            FROM Link-Descriptors { 2 8 1 14 3 };
                -- see ITU-T Rec. T.424 | ISO/IEC 8613-14
-- Location expression

Location-Expression ::= CHOICE {
        basic       [0]     Basic-Location-Expression,
        composite   [1]     Composite-Location-Expression }
```


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```
Composite-Location-Expression ::= CHOICE {
        complement      [0]     Location-Expression,
        intersection    [1]     SEQUENCE OF Location-Expression,
        union           [2]     SEQUENCE OF Location-Expression }

Basic-Location-Expression  ::= CHOICE {
        region          [0]     Region-Locator,
        subtree         [1]     Subtree-Locator,
        constituent     [2]     Constituent-Locator }

Region-Locator ::= SEQUENCE {
        start           [0]     Start-End-Object-Locator,
        end             [1]     Start-End-Object-Locator }

Start-End-Object-Locator ::= SEQUENCE {
        object          [0]     Object-Locator,
        not-included    [1]     BOOLEAN DEFAULT TRUE }

Subtree-Locator ::= Object-Locator

Constituent-Locator ::= CHOICE {
        documentProfile         [0] NULL,
        subprofile              [1] Subprofile-Locator,
        component               [2] Component-Locator,
        contentPortion          [3] Content-Portion-Locator,
        style                   [4] Style-Locator,
        link-or-link-class      [5] Link-or-Link-Class-Locator,
        constituent-of-type     [6] Constituent-Type }

Constituent-Type ::= ENUMERATED {   layout-object-class (1), layout-object (2), content-portion (3),
                                    logical-object-class (5), logical-object (6), presentation-style (7),
                                    layout-style (8), sealed-doc-prof-descriptor (9),
                                    enciphered-doc-prof-descriptor (10),
                                    preenciphered-bodypart-descriptor (11),
                                    postenciphered-bodypart-descriptor (12), link-class (13),
                                    link (14), enciphered-link-descriptor (15), subprofile (16) }
-- Subprofile

Subprofile-Locator ::=  CHOICE {
        subprofile      [0]     Subprofile-Identifier,
        subprofile-of   [1]     Subprofile-of-argument,
        subprofile-with [2]     Subprofile-with-argument }

Subprofile-of-argument ::= Constituent-Locator

Subprofile-with-argument ::= AttributeValue-Subprofile-Specification    -- The "attribute" and "value"
                                                                        -- arguments are grouped together
-- Component locator

Component-Locator ::=           CHOICE {
        objectClass     [0]     Object-Class-Locator,
        object          [1]     Object-Locator }

Object-Class-Locator ::= CHOICE {
        objectClass     [0]     Object-or-Class-Identifier,
        object-class-of [1]     Object-Class-of-argument,
        object-class-with [2]   Object-Class-with-argument }

Object-Class-of-argument ::= Object-Locator

Object-Class-with-argument ::= SEQUENCE {
        attributeValueObject [0]    AttributeValue-Class-Specification,      -- The "attribute" and "value"
                                                                             -- arguments are grouped together
        defaulting           [1]    BOOLEAN DEFAULT FALSE }
-- Object locator

Object-Locator ::= CHOICE {
        object          [0]     Object-or-Class-Identifier,
        subord          [1]     Subord-argument,
        object-with     [2]     Object-with-argument }
```


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```
Subord-argument ::= SEQUENCE {
        object          [0]     Object-Locator,
        counters        [1]     CountersType OPTIONAL }

Object-with-argument ::= SEQUENCE {
        attributeValueObject [0]    AttributeValue-Object-Specification,    -- The "attribute" and "value"
                                                                            -- arguments are grouped together
        object               [1]    Object-Locator OPTIONAL,
        counters             [2]    CountersType OPTIONAL,
        not-defaulting       [3]    BOOLEAN DEFAULT FALSE }
-- Links

Link-or-Link-Class-Locator ::= CHOICE {
        linkClass       [0]     Link-Class-Locator,
        link            [1]     Link-Locator }

Link-Class-Locator ::= CHOICE {
        link            [0]     Link-or-Link-Class-Identifier,
        link-class-of   [1]     Link-Class-of-argument,
        link-class-with [2]     Link-class-with-arguments }

Link-Class-of-argument ::= Link-Locator

Link-Class-with-arguments ::= AttributeValue-Link-Class-Specification       -- The "attribute" and "value"
                                                                            -- arguments are grouped together

Link-Locator ::= CHOICE {
        link            [0]     Link-or-Link-Class-Identifier,
        link-with       [1]     Link-with-arguments }

Link-with-arguments ::= SEQUENCE {
        attributeValueLink  [0]     AttributeValue-Link-Specification       -- The "attribute" and "value"
                                                                            -- arguments are grouped together
        not-defaulting      [1]     BOOLEAN DEFAULT FALSE }
-- Content portion locator

Content-Portion-Locator ::= CHOICE {
        contentPortion  [0]     Content-Portion-Identifier,
        assoc           [1]     Assoc-argument,
        content-with    [2]     Content-with-argument }

Assoc-argument ::= SEQUENCE {
        component       [0]     Component-Locator,
        counters        [1]     CountersType OPTIONAL }

Content-with-argument ::= SEQUENCE {
        attributeValueContent [0]   AttributeValue-Content-Specification,   -- The "attribute" and "value"
                                                                            -- arguments are grouped together
        component             [1]   Component-Locator OPTIONAL,
        counters              [2]   CountersType OPTIONAL,
        not-defaulting        [3]   BOOLEAN DEFAULT FALSE }
-- Styles

Style-Locator ::= CHOICE
        style                   [0]     Style-Identifier,
        layout-style-of         [1]     Layout-Style-of-argument,
        presentation-style-of   [2]     Presentation-Style-of-argument,
        layout-style-with       [3]     Layout-Style-with-argument,
        presentation-style-with [4]     Presentation-Style-with-argument }

Layout-Style-of-argument ::= Component-Locator

Presentation-Style-of-argument ::= Component-Locator

Layout-Style-with-argument ::= SEQUENCE {
        attributeValueLayoutStyle   [0] AttributeValue-LayoutStyle-Specification    -- The "attribute" and
                                                                                    -- "value" arguments are grouped together
        not-defaulting              [1] BOOLEAN DEFAULT FALSE }
```


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```
Presentation-Style-with-argument ::= SEQUENCE {
        attributeValuePresentationStyle  [0]  AttributeValue-PresentationStyle-Specification
                                                    -- The "attribute" and
                                                    -- "value" arguments are grouped together
        not-defaulting                   [1]  BOOLEAN DEFAULT FALSE }
-- Counters

CountersType ::= SEQUENCE {
        start  [0]  INTEGER OPTIONAL,
        end    [1]  INTEGER OPTIONAL }
-- Attribute-Value specifications
        -- Classes

AttributeValue-Class-Specification ::= CHOICE {
        value     [0]  Simple-AttributeValue-Class-Specification,
        range     [1]  SEQUENCE {
        start     [0]  Simple-AttributeValue-Class-Specification OPTIONAL,
        end       [1]  Simple-AttributeValue-Class-Specification OPTIONAL } }

Simple-AttributeValue-Class-Specification ::= CHOICE {
        layout    [0]  Layout-Class-Descriptor,
        logical   [1]  Logical-Class-Descriptor }
        -- Objects

AttributeValue-Object-Specification ::= CHOICE {
        value   [0]  Simple-AttributeValue-Object-Specification,
        range   [1]  SEQUENCE {
                     start    [0]  Simple-AttributeValue-Object-Specification OPTIONAL,
                     end      [1]  Simple-AttributeValue-Object-Specification OPTIONAL } }

Simple-AttributeValue-Object-Specification ::= CHOICE {
        layout    [0]  Layout-Object-Descriptor,
        logical   [1]  Logical-Object-Descriptor }
        -- Link classes

AttributeValue-Link-Class-Specification ::= CHOICE {
        value     [0]  Simple-AttributeValue-Link-Class-Specification,
        range     [1]  SEQUENCE {
                       start  [0]  Simple-AttributeValue-Link-Class-Specification OPTIONAL,
                       end    [1]  Simple-AttributeValue-Link-Class-Specification OPTIONAL } }

Simple-AttributeValue-Link-Class-Specification ::= Link-Class-Descriptor
        -- Links

AttributeValue-Link-Specification ::= CHOICE {
        value     [0]  Simple-Attribute
        range     [1]  SEQUENCE {
                       start  [0]  Simple-AttributeValue-Link-Specification OPTIONAL,
                       end    [1]  Simple-AttributeValue-Link-Specification OPTIONAL } }

Simple-AttributeValue-Link-Specification ::= Link-Descriptor
        -- Contents

AttributeValue-Content-Specification ::= CHOICE {
        value     [0]  Simple-AttributeValue-Content-Specification,
        range     [1]  SEQUENCE {
                       start  [0]  Simple-AttributeValue-Content-Specification OPTIONAL,
                       end    [1]  Simple-AttributeValue-Content-Specification OPTIONAL } }

Simple-AttributeValue-Content-Specification ::= Text-Unit

        -- Layout Styles

AttributeValue-LayoutStyle-Specification ::= CHOICE {
        value     [0]  Simple-AttributeValue-LayoutStyle-Specification,
        range     [1]  SEQUENCE {
                       start  [0]  Simple-AttributeValue-LayoutStyle-Specification OPTIONAL,
                       end    [1]  Simple-AttributeValue-LayoutStyle-Specification OPTIONAL } }

Simple-AttributeValue-LayoutStyle-Specification ::= Layout-Style-Descriptor
```

--`,,```,,,,````-`-`,,`,,`,`,,`---

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```
        -- Presentation Styles

AttributeValue-PresentationStyle-Specification ::= CHOICE {

        value    [0]  Simple-AttributeValue-PresentationStyle-Specification,
        range    [1]  SEQUENCE {
                          start  [0]  Simple-AttributeValue-PresentationStyle-Specification OPTIONAL,
                          end    [1]  Simple-AttributeValue-PresentationStyle-Specification OPTIONAL } }

Simple-AttributeValue-PresentationStyle-Specification ::= Presentation-Style-Descriptor
        -- Subprofiles

AttributeValue-Subprofile-Specification ::= CHOICE {
        value    [0]  Simple-AttributeValue-Subprofile-Specification,
        range    [1]  SEQUENCE {
                          start  [0]  Simple-AttributeValue-Subprofile-Specification OPTIONAL,
                          end    [1]  Simple-AttributeValue-Subprofile-Specification OPTIONAL } }

Simple-AttributeValue-Subprofile-Specification ::= Subprofile-Descriptor

END
```

8 External references

Any constituent in an interchanged document or document fragment may refer to ODA information external to this document or document fragment by means of external references. The external ODA information can be any amount of structured information that can be interchanged as a unit. In the following, this is referred to as a *external entity*.

External references can be used for many different purposes, such as to store a document in a distributed manner, to link a number of independent documents into a hypermedia document or to provide for remote editing. This clause describes the general concept of external references. Rules for resolving external references and processing the reference entities are defined by those parts of ITU-T Rec. T.410-Series | ISO/IEC 8613 which apply this concept.

8.1 Reference name

In order to be able to factorize external references as well as to provide a summary of all external entities, external references are specified indirectly. Rather than identifying the external entity directly in the referring constituent, a reference name shall serve as a pointer into an external references list in either the document profile or the hypermedia document profile. Each entry in the external references list identifies a particular external entity. The representations of reference names as well as the external references list are defined in 8.2.

8.2 Additional document profile and hypermedia document profile attributes-External references list

This attribute provides a mapping between reference names and external entities together with optional location expressions which identify subsets of the external information represented by the external entities.

The value of this attribute consists of a set of entries. Each entry consists of the two parameters "reference name" and "external entity" and the optional parameter "location rule".

The parameter "reference name" is represented by a string of characters from the minimum subrepertoire of ISO 6937-2. This representation shall be used not only for this attribute but by any part of ITU-T Rec. T.410-Series | ISO/IEC 8613 which applies the concept of external references.

The value of the parameter "external entity" is one of the following:

a) A pair comprising an external information name and an optional ASN.1 object identifier, as defined in CCITT Rec. X.208 | ISO/IEC 8824.

   NOTE 1 – The semantics of specific external information names may be specified by means of application profiles.

b) An ASN.1 object identifier.

c) A DOR (Distinguished Object Reference), as defined in ISO/IEC 10031-2.

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d) A distinguished name (directory entry), as defined in ITU-T Rec. X.501 | ISO/IEC 9594-2.

e) A pair comprising an associated information name, which uniquely identifies a set of information transmitted with the document, and an optional ASN.1 object identifier.

NOTE 2 – One example for transfer mechanism specific identification schemes are body part sequence numbers to be used in an X.400 environment. Separate body parts could be used to integrate different documents belonging to a hypermedia document within one X.400 message. Application profiles may specify the precise semantics of transfer mechanism specific identification schemes.

In cases a) and e) of the item list, the ASN.1 object identifier specifies the exact mechanism used for relating the name to an information entity.

NOTE 3 – The semantics of such an ASN.1 identifier may be specified by means of application profiles.

The permissible value of the parameter "location rule" is a location expression as defined in clause 7. By means of the parameter "location rule" a subset of the external entity may be specified.

8.3 ASN.1 representation

```
MODULE External-References { 2 8 1 12 1 }

DEFINITIONSIMPLICIT TAGS ::= BEGIN

EXPORTS     External-References-List, Reference-Name;
IMPORTS     Location-Expression
            FROM Location-Expressions { 2 8 1 12 0 }
                -- see 7.4
            DOR
            FROM DOR-definition { 2 11 0 }
                -- see ISO/IEC 10031-2
            DistinguishedName
            FROM InformationFramework {2 5 1 1};
                -- see ITU-T Rec. X.501 ¦ ISO/IEC 9594-2

External-References-List ::= SET OF SET {
        reference-name    [1]    Reference-Name,
        external-entity   [2]    External-Entity,
        location-rule     [3]    Location-Expression OPTIONAL }

Reference-Name    ::= PrintableString

External-Entity    ::=  CHOICE {
        external-info     [0]    External-Information-Name,
        object-id         [1]    OBJECT IDENTIFIER,
        dor               [2]    DOR,
        distinguished     [3]    DistinguishedName,
        associated-info   [4]    Associated-Information-Name }

External-Information-Name    ::=          SEQUENCE {
        string          [0]  PrintableString,
        object-id       [1]  OBJECT IDENTIFIER OPTIONAL }

Associated-Information-Name ::=    SEQUENCE {
        string    [0]  PrintableString,
        object-id [1]  OBJECT IDENTIFIER OPTIONAL }

END
```

9 Subprofiles

9.1 Definition of subprofile

A subprofile is a constituent consisting of a set of attributes, taken from a subset of the document profile attributes, that can be specified for a document fragment. This document fragment shall be referenced using a location expression (see clause 7) specified in the attribute "document fragment reference" (see 9.2.4).

It is possible to have more than one subprofile specified for a constituent, if it belongs to several of the document fragments associated with the subprofiles. In this case, the attributes that apply are those of the subprofile with higher precedence, as indicated in the attribute "subprofile precedence" (see 9.2.3).

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Figure 1 illustrates an example of constituents being within the scope of two subprofiles. In the figure, DF means document fragment associated to a subprofile, while O means object. In the example, O14 belongs to DF3 and DF4 at the same time.

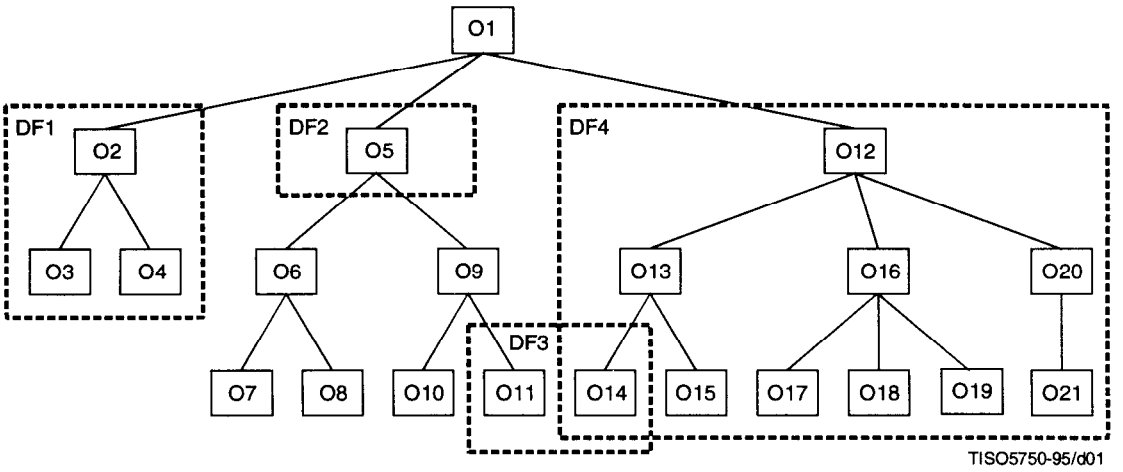

Figure 1 – Example of scope of subprofiles

9.2 Content of the subprofiles

The following are the attributes that may occur in a subprofile. The attributes are analogous to those defined in clause 7 of ITU-T Rec. T.414 | ISO/IEC 8613-4 (although subprofile attributes refer to document fragments instead of documents), except the attributes "subprofile identifier", "subprofile reference" and "subprofile precedence".

9.2.1 Subprofile identifier

The attribute "subprofile identifier" uniquely identifies a subprofile within a document. It is intended for identification inside the document.

The value of this attribute is a sequence of two non-negative integers. The value assigned to the first integer is "12".

This attribute is represented by a character string consisting of two decimal-coded characters with a space character as a separator between the numerals.

This attribute shall always be specified.

9.2.2 Subprofile reference

The attribute "subprofile reference" identifies a subprofile associated to a document fragment. It is intended for external identification.

The value of this attribute is either an ASN.1 object identifier or a string of characters from the document profile character set.

9.2.3 Subprofile precedence

The attribute "subprofile precedence" gives the precedence assigned to the subprofile.

The value of this attribute is an integer, where higher value indicates less precedence.

If a constituent belongs to more that one of the document fragments associated with the subprofiles of the document, only the subprofile with highest precedence is applicable to the constituent. All subprofiles associated with document fragments which have one or more constituents in common shall have differente precedence values.

9.2.4 Document fragment reference

The attribute "document fragment reference" identifies the document fragment with which the subprofile is associated.

The value of this attribute is a location expression, as specified in clause 7.

This attribute shall always be specified.

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9.2.5 Document characteristics-Content architecture classes

The attribute "content architecture classes" specifies the content architecture classes used in the document fragment.

The value of this attribute consists of zero or more ASN.1 object identifiers referring to content architecture classes, as specified for the attribute "content architecture classes" of the document profile (see 7.3.4 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

This attribute shall always be specified.

9.2.6 Document fragment management attributes

9.2.6.1 Document fragment description

9.2.6.1.1 Title

This attribute gives the name of the document fragment as specified by the author.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.1.2 Subject

This attribute contains information to indicate the subject of the document fragment.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.1.3 Document fragment type

This attribute specifies the type of document fragment. This attribute specifies only an informal name.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.1.4 Abstract

This attribute contains information to summarize the document fragment.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.1.5 Keywords

This attribute specifies one or more character strings that permit logical associations to be made about the content of the document fragment.

The value of this attribute consists of string(s) of characters from the document profile character set.

9.2.6.2 Dates and times

9.2.6.2.1 Document fragment date and time

This attribute specifies the date and, optionally, the time of day that the originators associate with the document fragment.

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.2 Creation date and time

This attribute specifies the date and, optionally, the time of day when the document fragment was initially created.

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.3 Local filing date and time

This attribute specifies the date and, optionally, the time of day when the document fragment was filed. When more than one entry occurs, the last entry indicates the most recent local filing date and time.

The value of this attribute consists of a sequence of parameters. Each parameter consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

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9.2.6.2.4 Expiry date and time

This attribute specifies the date and, optionally, the time of day after which the document fragment is considered to be invalid.

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.5 Start date and time

This attribute specifies the date and, optionally, the time of day after which the document fragment is considered to be valid.

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.6 Purge date and time

This attribute specifies the date and, optionally, the time of day after which the document fragment can be purged from wherever it is stored.

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.7 Release date and time

This attribute specifies the date and, optionally, the time of day after which the document fragment can be released from any restrictions specified in the subprofile attribute "security classification".

The value of this attribute consists of a date character string and, optionally, a time of day character string, in accordance with ISO 8601.

9.2.6.2.8 Revision history

This attribute specifies the history of the document fragment, indicating when, where and by whom the document fragment was created and revised.

The value of this attribute consists of a sequence of groups of parameters, as specified for the attribute "revision history" of the document profile (see 7.4.2.8 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

9.2.6.3 Originators

9.2.6.3.1 Organizations

This attribute identifies the originating organization(s) associated with the document fragment.

The value of this attribute consists of string(s) of characters from the document profile character set.

9.2.6.3.2 Preparers

This attribute identifies the name(s) of the person(s) and/or organization(s) responsible for the physical preparation of the document fragment.

The value of this attribute consists of one or more entries, as specified for the attribute "preparers" of the document profile (see 7.4.3.2 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

9.2.6.3.3 Owners

This attribute identifies the name(s) of the person(s) and/or organization(s) responsible for the content of the document fragment.

The value of this attribute consists of one or more entries, as specified for the attribute "owners" of the document profile (see 7.4.3.3 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

9.2.6.3.4 Authors

This attribute identifies the name(s) of the person(s) and/or organization(s) responsible for the preparation of the intellectual content of the document fragment.

The value of this attribute consists of one or more entries, as specified for the attribute "authors" of the document profile (see 7.4.3.4 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

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9.2.6.4 Other user information

9.2.6.4.1 Copyright

The value of this attribute consists of one or more entries. Each entry specifies one or both of the following parameters:

- "*copyright information*", identifying the name(s) of the legal party (parties) in whom the copyright of the document fragment is vested; the value of this parameter consists of string(s) of characters from the document profile character set;
- "*copyright dates*", specifying the date(s) associated with the copyright by the holders(s) identified by the parameter "copyright information"; the value of this parameter consists of string(s) of characters representing date(s) in accordance with ISO 8601.

9.2.6.4.2 Status

This attribute specifies the document fragment status.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.4.3 User-specific codes

This attribute specifies additional user-specific code(s), e.g. contract number, project number, budget code.

The value of this attribute consists of string(s) of characters from the document profile character set.

9.2.6.4.4 Distribution list

This attribute specifies a list of the intended recipients of the document fragment.

The value of this attribute consists of one or more entries, as specified for the attribute "distribution list" of the document profile (see 7.4.4.4 in ITU-T Rec. T.414 | ISO/IEC 8613-4).

9.2.6.4.5 Additional information

This attribute may be used for information that cannot be specified by any other attribute of the subprofile.

This attribute can have any value.

9.2.6.5 External references

9.2.6.5.1 References to other documents or document fragments

This attribute specifies reference(s) to any other associated document(s) or document fragment(s). It consists of one or more entries.

The value of each entry is either an ASN.1 object identifier or a string of characters from the document profile character set.

If the reference is to an external document, this value is equal to the value of the document profile attribute "document reference" of the document referred to. If the reference is to an external document fragment, this value is equal to the value of the subprofile attribute "subprofile reference" of the document fragment referred to.

9.2.6.5.2 Superseded documents or document fragments

This attribute specifies reference(s) to document(s) or document fragment(s) superseded by the current document. It consists of one or more entries.

The value of each entry is either an ASN.1 object identifier or a string of characters from the document profile character set.

If the reference is to an external document, this value is equal to the value of the document profile attribute "document reference" of the document referred to. If the reference is to an external document fragment, this value is equal to the value of the subprofile attribute "subprofile reference" of the document fragment referred to.

9.2.6.6 Local file references

This attribute specifies where a copy (copies) of the document fragment may be found. It consists of one or more entries, one for each location where a copy (copies) of the document fragment may be found.

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Each entry consists of one or more of the three parameters:

- file name;
- location of the document fragment;
- user comments.

The value of the parameter "file name" is a string of characters that can be used to identify the document fragment uniquely in a filing system. The parameter "location of the document fragment" specifies the location of the document fragment in a filing system, for example the name of the filing system, the name of the directory and folder in which the document fragment is contained. The parameter "user comments" is used to provide user-readable comments.

The value of each parameter is a string of characters from the document profile character set.

9.2.6.7 Languages

This attribute specifies the primary language(s) in which the content of the document fragment is written.

The value of this attribute consists of one or more entries, each entry is a string of characters from the document profile character set.

9.2.6.8 Security information

These attributes provide security information only and are not intended to ensure security measures.

9.2.6.8.1 Authorization

This attribute identifies the person or organization approving or authorizing the document fragment.

The value of this attribute consists either of a personal name with the format specified in Annex A of ITU-T Rec. T.414 | ISO/IEC 8613-4, or the name of an organization consisting of a string of characters from the document profile character set.

9.2.6.8.2 Security classification

This attribute specifies the security classification assigned by the document fragment owner(s) relating to such aspects as its visibility, reproduction, storage, audit and destruction requirements.

The value of this attribute consists of a string of characters from the document profile character set.

9.2.6.8.3 Access rights

This attribute specifies the access right(s) to the document fragment relating to its privacy, as defined by the current owner(s) of the document.

The value of this attribute consists of string(s) of characters from the document profile character set.

9.3 ASN.1 representation

```
MODULE Subprofiles { 2 8 1 12 2 }

DEFINITIONSIMPLICIT TAGS ::= BEGIN

EXPORTS     Subprofile-Descriptor, Subprofile-Identifier;

IMPORTS     Character-Data, Date-and-Time, Document-Reference, Personal-Name, Originators,
            Other-User-Information, Local-File-References, Security-Information
            FROM Document-Profile-Descriptor { 2 8 1 5 6 };
                    -- see ITU-T Rec. T.415 | ISO/IEC 8613-5

            Location-Expression
            FROM Location-Expressions {2 8 1 12 0};

Subprofile-Descriptor ::= SET {
        subprofile-identifier               [0]   Subprofile-Identifier,
        subprofile-reference                [1]   Subprofile-Reference OPTIONAL,
        subprofile-precedence               [2]   INTEGER OPTIONAL,
        document-fragment-reference         [3]   Location-Expression,
        content-architecture-classes        [4]   SET OF OBJECT IDENTIFIER OPTIONAL, -- shall always
                                                  -- be present, except when used in a location expression
        document-fragment-management-attributes
                                            [5]   Document-Fragment-Management-Attributes OPTIONAL }
```


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```
Subprofile-Identifier ::= [APPLICATION 8] PrintableString
                          -- only digits and spaces are used in the present version of this Specification;
                          -- other characters are reserved for extensions

Subprofile-Reference ::= CHOICE {
        unique-reference          [0]     OBJECT IDENTIFIER,
        descriptive-reference     [1]     Character-Data }

Document-Fragment-Management-Attributes ::= SET {
        document-fragment-description   [0]     Document-Fragment-Description OPTIONAL,
        dates-and-times                 [1]     Dates-and-Times OPTIONAL,
        originators                     [2]     Originators OPTIONAL,
        other-user-information          [3]     Other-User-Information OPTIONAL,
        external-references             [4]     External-References OPTIONAL,
        local-file-references           [5]     Local-File-References OPTIONAL,
        languages                       [6]     SET OF Character-Data OPTIONAL,
        security-information            [7]     Security-Information OPTIONAL }

Document-Fragment-Description ::= SET     {
        title                           [0]     Character-Data OPTIONAL,
        subject                         [1]     Character-Data OPTIONAL,
        document-fragment-type          [2]     Character-Data OPTIONAL,
        abstract                        [3]     Character-Data OPTIONAL,
        keywords                        [4]     SET OF Character-Data OPTIONAL }

Dates-and-Times ::= SET{
        document-fragment-date-and-time [0]     Date-and-Time OPTIONAL,
        creation-date-and-time          [1]     Date-and-Time OPTIONAL,
        local-filing-date-and-time      [2]     SEQUENCE OF Date-and-Time OPTIONAL,
        expiry-date-and-time            [3]     Date-and-Time OPTIONAL,
        start-date-and-time             [4]     Date-and-Time OPTIONAL,
        purge-date-and-time             [5]     Date-and-Time OPTIONAL,
        release-date-and-time           [6]     Date-and-Time OPTIONAL,
        revision-history                [7]     SEQUENCE OF    SET {
            revision-date-and-time                      [0]  Date-and-Time OPTIONAL,
            version-identifier                          [1]  Character-Data OPTIONAL,
            revisers                                    [2]  SET OF       SET {
                names                                   [0]  SET OF Personal-Name OPTIONAL,
                position                                [1]  Character-Data OPTIONAL,
                organization                            [2]  Character-Data OPTIONAL } OPTIONAL,
            version-reference                           [3]  Document-or-Document-Fragment-Reference
                                                                 OPTIONAL,
            user-comments                               [4]  Character-Data OPTIONAL } OPTIONAL}

External-References ::= SET          {
        references-to-other-documents-or-document-fragments     [0]         SET OF
                        Document-or-Document-Fragment-Reference OPTIONAL,
        superseded-documents-or-document-fragments              [1]         SET OF
                        Document-or-Document-Fragment-Reference OPTIONAL }

Document-or-Document-Fragment-Reference ::= CHOICE       {
        document                [0]     Document-Reference,
        document-fragment       [1]     Subprofile-Reference }

END
```


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Annex A

Changes to other Parts of ITU-T Rec. T.410-Series | ISO/IEC 8613

(This annex forms an integral part of this Recommendation | International Standard)

The specifications contained in this annex are intended to be included into the other parts of ITU-T Rec. T.410 Series | ISO/IEC 8613 with the next republication.

A.1 Additions to ITU-T Rec. T.411 | ISO/IEC 8613-1

Add "subprofile" to 3.38 Constituent as follows: add "or a subprofile" at the end; delete "or" after "content portion descriptions".

A.2 Additions to ITU-T Rec. T.412 | ISO/IEC 8613-2

In the item list of clause 6.3.1, add:

- subprofile

In the last sentence of 6.3.1, add "and subprofiles".

Add a sentence after item list:

Subprofiles are defined in ITU-T Rec. T.422 | ISO/IEC 8613-12.

Extend Figure 2 to add subprofiles as a group of overlapping squares immediately to the right of "document profile" constituent square.

A.3 Additions to ITU-T Rec. T.414 | ISO/IEC 8613-4

Add a new subclause 7.3.10.x (under "Additional document characteristics") for the attribute "external references list", by adding the subclause 8.2 of this Specification (without the subclause heading of 8.2).

A.4 Changes to ITU-T Recommendation T.415 | ISO/IEC 8613-5

Add "Subprofile-Descriptor" in all lists of descriptors in 7.1 to 7.3.

Modify in 7.2 and 7.3 the order of the Interchange Data Elements in the data stream:

Document-Profile-Descriptor, Subprofile-Descriptor, Link-Class-Descriptor, Link-Descriptor, Layout-Object-Class-Descriptor, ...

Add in 7.6 Interchange-Data-Element:

```
IMPORTS     Subprofile-Descriptor
            FROM     Subprofiles { 2 8 1 12 2 }
```

Add in 7.6 Interchange-Data-Element:

```
subprofile      [16]    Subprofile-Descriptor,
```

Add in 7.7 Document-Profile-Descriptor:

```
IMPORTS     External-References-List
            FROM  External-References {2 8 1 12 1}
              -- see ITU-T Rec. T.422 | ISO/IEC 8613-12
```

Add in 7.7 Document-Profile-Descriptor to "Additional document characteristics":

```
external-references-list     [5] IMPLICIT External-References-List OPTIONAL,
```

Add in 7.7 Document-Profile-Descriptor, EXPORTS paragraph:

Date-and-Time, Document-Reference, Personal-Name, Originators, Other-User-Information,

Local-File-References, Security-Information

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Make all fields optional in the following definitions: Layout-Class-Descriptor, Layout-Class-Descriptor-Body, Logical-Class-Descriptor, Logical-Class-Descriptor-Body, Presentation-Style-Descriptor, Layout-Style-Descriptor, Binding-Pair, Same-Layout-Object, Floatability-Range, Colour-Table, Enciphered, Sealed, Sealed-Document-Profile-Descriptor, Enciphered-Document-Profile-Descriptor, Preenciphered-Bodypart-Descriptor and Postenciphered-Bodypart-Descriptor.

Add the following comment after all the fields that are currently not optional:

"-- shall always be present, except when used in a location expression as defined in ITU-T Rec. T.422 | ISO/IEC 8613-12".

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Annex B

Examples of location expressions

(This annex does not form an integral part of this Recommendation | International Standard)

The following conventions are used in the ad-hoc notation for the location expressions below:

- the arguments to functions are formed by a keyword identifying the argument, the symbol "=", and the value of the argument;
- the symbol "$" is prefixed to a name to denote macro substitution (the symbol "=" is used to assign a piece of text to a macro name).

The examples below assume that the document where the constituents are to be located is conformant to the FOD26 DAP, as specified in ISO/IEC ISP 11181-1. Macros are used for referring to the values of the attribute "application comments" specified in FOD26.

Example 1

```
Ex-1 = SUBORD     (object-locator = "3",
                   (start-counter = 4) )
```

This locator identifies the fourth object subordinate to the object with object identifier "3" (i.e. the document logical root). According to FOD26, this will be the root of the fourth passage in the document.

Example 2

```
Ex-2 = SUBTREE SUBORD     (object-locator = "3",
                           (start-counter = 4) )
```

The function in this locator identifies the same object as in example 1, but the locator returns a list of all constituents in its subtree (i.e. all composite and basic objects, belonging to the fourth passage of the document).

Example 3

```
Ex-3 = OBJECT-WITH  (attribute-name = application-comments,
                     value-specification = $FootnoteBody,
                     object-locator = $Ex-1,
                     (start-counter = 2, )
                     not-defaulting)
```

This locator identifies the second object, starting from the object identified in example 1, for which the value of the attribute "application comments" is (directly or by reference to an object class) the value assigned in FOD26 to "FootnoteBody" constituents. This object may or may not belong to the subtree whose root is the object in example 1 (depending on how many footnotes are present in the fourth passage).

Example 4

```
Ex-4 = SUBORD     (object-locator = $Ex-3,
                   (start-counter = 3) )
```

This locator identifies the third object subordinate to the footnote body of example 3. Since, according to FOD26, the first subordinate to a footnote body is a footnote number, this example locates the second "FootnoteText" constituent in the footnote.

Example 5

```
Ex-5 = SUBORD     (object-locator = OBJECT-WITH     (attribute-name = application-comments,
                                                     value-specification = $Passage,
                                                     object-locator = "3",
                                                     (start-counter = 4)
                                                     not-defaulting),
                                                     (start-counter = 2) )
```


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This locator identifies the second subordinate to the fourth passage of the document.

Example 6

```
Ex-6 = SUBORD    (object-locator = OBJECT-WITH    (attribute-name = application-comments,
                                                   value-specification = $Passage,
                                                   object-locator = "3",
                                                   (start-counter = 5)
                                                   not-defaulting),
                                                   (start-counter = -1, end-counter = 1) )
```

This locator identifies the last subordinate to the fifth passage of the document.

Example 7

```
Ex-7 = REGION ( ($Ex-5), ($Ex-6) )
```

This locator identifies all objects in the specific logical structure comprised (in sequential order) between the second subordinate to the fourth passage and the last subordinate to the fifth passage, both included.

Example 8

```
Ex-8 = LAYOUT-STYLE-WITH    (attribute-name = indivisibility,
                             value-specification = page)
```

This locator identifies all layout styles which specify the value 'page' for the attribute "indivisibility".

Example 9

```
Ex-9 = ASSOC    (object = OBJECT-WITH    (attribute-name = application-comments,
                value-specification = $FootnoteBody,
                object-locator = SUBORD  (object-locator = "3",
                                          (start-counter = 4) ) ),
                                          (start-counter = 3) )
```

This locator identifies the content portion with the second portion of text (after the number) of the first footnote in (or after) the fourth passage of a document.

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Annex C

Application class tag assignments

(This annex does not form an integral part of this Recommendation | International Standard)

The application class tag assignments made in this Specification are summarized in Table C.1.

Table C.1 – Application class tags

Tag	Data type	Reference
APPLICATION 8	Subprofile-Identifier	9.3

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Annex D

Summary of object identifiers

(This annex does not form an integral part of this Recommendation I International Standard)

Values of ASN.1 object identifiers are assigned in various clauses in this Specification. These are summarized in Table D.1.

Table D.1 – Summary of ASN.1 object identifiers

Object identifier value	Meaning	Reference
{ 2 8 1 12 0 }	Identifies module Location-Expressions	7.4
{ 2 8 1 12 1 }	Identifies module External-References	8.3
{ 2 8 1 12 2 }	Identifies module Subprofiles	9.3

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