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Information processing — Text and office systems — Office Document Architecture (ODA) and interchange format —

Part 10:
Formal specifications

AMENDMENT 1: Formal specification of the document profile

Traitement de l'information — Bureautique — Architecture des documents de bureau (ODA) et format d'échange —

Partie 10: Spécifications formelles

AMENDEMENT 1: Spécification formelle du profil de document

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Foreword

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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.

Amendment 1 to International Standard ISO/IEC 8613-10 : 1991 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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Annex B

(normative)

Formal specification of the document profile

B.1 Introduction

This annex gives a formal specification of the document profile as described in part 4 of ISO 8613. This annex is composed of 4 clauses:

Clause B.1 provides a general introduction, including a list of all definitions which are given in clauses B.2 and B.3.

Clauses B.2 and B.3 give all the definitions related to the document profile. Clause B.2 contains the definition for the structure of the document profile; clause B.3 contains the definitions for the attributes which appear in the document profile.

Clause B.4 is an index to the terms (definitions, operators, attribute names) used in clauses B.2 and B.3.

Any time a clause number is specified in the semi-formal descriptions this refers to a clause number in ISO 8613-4.

What follows is the outline of the formula which specifies the document profile. The dots indicate formal text fragments which have been left out for the sake of readability. The full formula can be obtained by replacing each line (apart from the *and*) with the definition which is referenced by the superscript of the predicate symbol or operator symbol, respectively. The variables used in the definition of the predicate have to be replaced by those appearing in the outline (if they are different).

NOTE — A definition is a formula, hence it may never yield an undefined result, whatever value has been inserted for the variable.

... IsDocumentProfile$^{4.1}(cst)$ ...
and ... IsProfileAttributeSet$^{4.2}(as)$ ...
and ... IsSetOfProfCharSeq$^{4.3}(v)$ ...
and ... IsProfCharSeq$^{4.4}(v)$ ...
and ... IsProfileCharacter$^{4.5}(v)$ ...
and ... IsExternalReferenceValue$^{4.6}(v)$ ...
and ... IsASN1ObjectIdentifier$^{4.7}(v)$ ...
and ... IsResourcesValue$^{4.8}(v)$ ...
and ... IsDocumentApplicationProfileValue$^{4.9}(v)$ ...
and ... IsDocumentApplicationProfileDefaultsValue$^{4.10}(v)$ ...
and ... IsProfileDefaultableCharacterContentArchitectureAttribute$^{4.11}(v)$ ...
and ... IsProfileDefaultableRasterGraphicsContentArchitectureAttribute$^{4.12}(v)$ ...
and ... IsProfileDefaultableGeometricGraphicsContentArchitectureAttribute$^{4.13}(v)$ ...
and ... IsContentArchitectureClassesValue$^{4.14}(v)$ ...
and ... IsODAVersionValue$^{4.15}(v)$ ...
and ... IsCharacterSetsValue$^{4.16}(v)$ ...
and ... IsPageDimensionsValue$^{4.17}(v)$ ...
and ... IsMediumTypesValue$^{4.18}(v)$ ...
and ... IsLayoutPathsValue$^{4.19}(v)$ ...
and ... IsProtectionsValue$^{4.20}(v)$ ...
and ... IsBlockAlignmentsValue$^{4.21}(v)$ ...
and ... IsFillOrdersValue$^{4.22}(v)$ ...
and ... IsTransparenciesValue$^{4.23}(v)$ ...
and ... IsColoursValue$^{4.24}(v)$ ...
and ... IsBordersValue$^{4.25}(v)$ ...
and ... IsPagePositionsValue$^{4.26}(v)$ ...
and ... IsTypesOfCodingValue$^{4.27}(v)$ ...

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and ... IsProfileCodingAttributesValue$^{4.28}(v)$ ...
and ... IsProfileCharacterCodingSpecification$^{4.29}(v)$ ...
and ... IsProfileRasterGraphicsCodingSpecification$^{4.30}(v)$ ...
and ... IsProfileGeometricGraphicsCodingSpecification$^{4.31}(v)$ ...
and ... IsPresentationFeaturesValue$^{4.32}(v)$ ...
and ... IsProfileCharacterPresentationFeature$^{4.33}(v)$ ...
and ... IsProfileRasterGraphicsPresentationFeature$^{4.34}(v)$ ...
and ... IsProfileGeometricGraphicsPresentationFeature$^{4.35}(v)$ ...
and ... IsFontsListValue$^{4.36}(v)$ ...
and ... IsFontReference$^{4.37}(v)$ ...
and ... IsSetOfReferenceProperties$^{4.38}(v)$ ...
and ... IsReferencePropertiesValue$^{4.39}(v)$ ...
and ... IsISO9541Part2AttributeSet$^{4.40}(v)$ ...
and ... IsDateAndTimeValue$^{4.41}(v)$ ...
and ... IsRevisionHistoryValue$^{4.42}(v)$ ...
and ... IsRevisionValue$^{4.43}(v)$ ...
and ... IsPreparersValue$^{4.44}(v)$ ...
and ... IsOwnersValue$^{4.45}(v)$ ...
and ... IsAuthorsValue$^{4.46}(v)$ ...
and ... IsCopyrightValue$^{4.47}(v)$ ...
and ... IsSetOfDatesValue$^{4.48}(v)$ ...
and ... IsDateAndTimeSeq$^{4.49}(v)$ ...
and ... IsDateValue$^{4.50}(v)$ ...
and ... IsDistributionListValue$^{4.51}(v)$ ...
and ... IsAdditionalInformationValue$^{4.52}(v)$ ...
and ... IsSetOfExternalReferences$^{4.53}(v)$ ...
and ... IsLocalFileReferenceValue$^{4.54}(v)$ ...
and ... IsAuthorizationValue$^{4.55}(v)$ ...
and ... IsSetOfPersonalNames$^{4.56}(v)$ ...
and ... IsPersonalName$^{4.57}(v)$ ...
and ... IsAlternativeFeaturesSetsValue$^{4.58}(v)$ ...
and ... IsASN1ObjectIdentifierSet$^{4.59}(v)$ ...
and ... IsEncipheredDocumentProfilesValue$^{4.60}(v)$ ...
and ... IsPrivilegedRecipientInformationValue$^{4.61}(v)$ ...
and ... IsKeyInformationValue$^{4.62}(v)$ ...
and ... IsMethodInformationValue$^{4.63}(v)$ ...
and ... IsKeyAdditionalInformationValue$^{4.64}(v)$ ...
and ... IsKeyMethodValue$^{4.65}(v)$ ...
and ... IsEncipheredDocumentProfileId$^{4.66}(v)$ ...
and ... IsODASecurityLabelValue$^{4.67}(v)$ ...
and ... IsPreEncipheredDocumentBodyPartsValue$^{4.68}(v)$ ...
and ... IsPreEncipheredDocumentBodyPartId$^{4.69}(v)$ ...
and ... IsPostEncipheredDocumentBodyPartsValue$^{4.70}(v)$ ...
and ... IsPostEncipheredDocumentBodyPartId$^{4.71}(v)$ ...
and ... IsSealedDocumentBodyPartsValue$^{4.72}(v)$ ...
and ... IsDocumentSealValue$^{4.73}(v)$ ...
and ... IsSeqOfConstituentIds$^{4.74}(v)$ ...
and ... IsConstituentId$^{4.75}(v)$ ...
and ... IsSealMethodValue$^{4.76}(v)$ ...
and ... IsSealedInformationValue$^{4.77}(v)$ ...
and ... IsLocationValue$^{4.78}(v)$ ...
and ... IsSealedDocumentProfilesValue$^{4.79}(v)$ ...
and ... IsSealedDocumentProfileId$^{4.80}(v)$ ...

NOTE — Other predicates or operators which are used here, but are defined in clause 6, are not listed here.

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B.2 The Document Profile

Semiformal Description 4.1

Predicate "is a document profile"

A document profile is a set of profile attributes. The attributes 'content architecture classes', 'document architecture class', 'document reference', 'interchange format class' and 'ODA version' are mandatory, the other ones are optional.

Definition 4.1

1 $\forall cst$
2 $({}_{0}\,\text{IsDocumentProfile}(cst)$ *iff*
3 $\text{IsProfileAttributeSet}^{4.2}(cst)$ *and*
4 $\text{NAMS}^{1.18}(cst) \supseteq$ ['content architecture classes'; 'document architecture class';
5 'document reference'; 'interchange format class';
6 'ODA version'] *and*
7 $\text{NAMS}^{1.18}(cst) \subseteq$ ['abstract'; 'access rights';
8 'additional information'; 'alternative feature sets';
9 'alternative representation character sets'; 'authorization';
10 'authors'; 'block alignments';
11 'borders'; 'coding attributes';
12 'colours'; 'comments character sets';
13 'content architecture classes'; 'copyright';
14 'creation date and time'; 'distribution list';
15 'document application profile'; 'document application profile defaults';
16 'document architecture class'; 'document date and time';
17 'document reference'; 'document size';
18 'document type'; 'enciphered document profiles';
19 'enciphered profiles'; 'expiry date and time';
20 'external-document class'; 'fill orders';
21 'fonts list'; 'generic layout structure';
22 'generic logical structure'; 'interchange format class';
23 'keywords'; 'languages';
24 'layout paths'; 'layout styles';
25 'local file references'; 'local filing date and time';
26 'medium types'; 'number of objects per page';
27 'number of pages'; 'ODA security label';
28 'ODA version'; 'organizations';
29 'owners'; 'page dimensions';
30 'page positions'; 'post-enciphered body parts';
31 'post-enciphered document body parts'; 'post-sealed document body parts';
32 'pre-enciphered body parts'; 'pre-enciphered document body parts';
33 'preparers'; 'pre-sealed document body parts';
34 'presentation features'; 'presentation styles';
35 'profile character sets'; 'protections';
36 'purge date and time'; 'references to other documents';
37 'release date and time'; 'resource-document';
38 'resources'; 'revision history';
39 'sealed document profiles'; 'sealed profiles';
40 'security classification'; 'specific layout structure';
41 'specific logical structure'; 'start date and time';
42 'status'; 'subject';
43 'superseded documents'; 'title';
44 'transparencies'; 'types of coding';

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```
45                    'unit scaling';                    'user-specific codes'] and
46    (1 'document application profile defaults' ∈ NAMS^1.18(cst) impl
47      'document application profile' ∈ NAMS^1.18(cst) 1)0)
```

B.3 Attributes of the document profile

Semiformal Description 4.2

Predicate "is a profile attribute set" (clause 5.2, table B.1)

In this definition the attribute names are linked with the ranges of the attribute values.

Definition 4.2

```
1   ∀ as
2   (0 IsProfileAttributeSet(as) iff
3     (1 IsNeNom^1.2(as) and
4       ∀ a ∈ ^as •
5       (2 N a = 'abstract' impl IsProfCharSeq^4.4(C a) 2) and
6       (3 N a = 'access rights' impl IsSetOfProfCharSeq^4.3(C a) 3) and
7       (4 N a = 'additional information' impl IsAdditionalInformationValue^4.52(C a) 4) and
8       (5 N a = 'alternative feature sets' impl IsAlternativeFeaturesSetsValue^4.58(C a) 5) and
9       (6 N a = 'alternative representation character sets' impl IsCharacterSetsValue^4.16(C a) 6) and
10      (7 N a = 'authorization' impl IsAuthorizationValue^4.55(C a) 7) and
11      (8 N a = 'authors' impl IsAuthorsValue^4.46(C a) 8) and
12      (9 N a = 'block alignments' impl IsBlockAlignmentsValue^4.21(C a) 9) and
13      (10 N a = 'borders' impl IsBordersValue^4.25(C a) 10) and
14      (11 N a = 'coding attributes' impl IsProfileCodingAttributesValue^4.28(C a) 11) and
15      (12 N a = 'colours' impl IsColoursValue^4.24(C a) 12) and
16      (13 N a = 'comments character sets' impl IsCharacterSetsValue^4.16(C a) 13) and
17      (14 N a = 'content architecture classes' impl IsContentArchitectureClassesValue^4.14(C a) 14) and
18      (15 N a = 'copyright' impl IsCopyrightValue^4.47(C a) 15) and
19      (16 N a = 'creation date and time' impl IsDateAndTimeValue^4.41(C a) 16) and
20      (17 N a = 'distribution list' impl IsDistributionListValue^4.51(C a) 17) and
21      (18 N a = 'document application profile' impl IsDocumentApplicationProfileValue^4.9(C a) 18) and
22      (19 N a = 'document application profile defaults' impl
23        IsDocumentApplicationProfileDefaultsValue^4.10(C a) 19) and
24      (20 N a = 'document architecture class' impl
25        C a ∈ ['formatted';'processable';'formatted processable'] 20) and
26      (21 N a = 'document date and time' impl IsDateAndTimeValue^4.41(C a) 21) and
27      (22 N a = 'document reference' impl IsExternalReferenceValue^4.6(C a) 22) and
28      (23 N a = 'document size' impl IsNat(C a) 23) and
29      (24 N a = 'document type' impl IsProfCharSeq^4.4(C a) 24) and
30      (25 N a = 'enciphered document profiles' impl IsEncipheredDocumentProfilesValue^4.60(C a) 25) and
31      (26 N a = 'enciphered profiles' impl C a = 'present' 26) and
32      (27 N a = 'expiry date and time' impl IsDateAndTimeValue^4.41(C a) 27) and
33      (28 N a = 'external-document class' impl IsExternalReferenceValue^4.6(C a) 28) and
34      (29 N a = 'fill orders' impl IsFillOrdersValue^4.22(C a) 29) and
35      (30 N a = 'fonts list' impl IsFontsListValue^4.36(C a) 30) and
36      (31 N a = 'generic layout structure' impl
37        C a ∈ ['factor set';'partial generator set';'complete generator set'] 31) and
38      (32 N a = 'generic logical structure' impl
39        C a ∈ ['factor set';'partial generator set';'complete generator set'] 32) and
40      (33 N a = 'interchange format class' impl C a ∈ ['A';'B'] 33) and
```

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41 $({}_{34}\mathrm{N}\ a = \text{'keywords'}\ \underline{impl}\ \mathrm{IsSetOfProfCharSeq}^{4.3}(\mathrm{C}\ a)\ {}_{34})\ \underline{and}$
42 $({}_{35}\mathrm{N}\ a = \text{'languages'}\ \underline{impl}\ \mathrm{IsSetOfProfCharSeq}^{4.3}(\mathrm{C}\ a)\ {}_{35})\ \underline{and}$
43 $({}_{36}\mathrm{N}\ a = \text{'layout paths'}\ \underline{impl}\ \mathrm{IsLayoutPathsValue}^{4.19}(\mathrm{C}\ a)\ {}_{36})\ \underline{and}$
44 $({}_{37}\mathrm{N}\ a = \text{'layout styles'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{37})\ \underline{and}$
45 $({}_{38}\mathrm{N}\ a = \text{'local file references'}\ \underline{impl}\ \mathrm{IsLocalFileReferenceValue}^{4.54}(\mathrm{C}\ a)\ {}_{38})\ \underline{and}$
46 $({}_{39}\mathrm{N}\ a = \text{'local filing date and time'}\ \underline{impl}\ \mathrm{IsDateAndTimeSeq}^{4.49}(\mathrm{C}\ a)\ {}_{39})\ \underline{and}$
47 $({}_{40}\mathrm{N}\ a = \text{'medium types'}\ \underline{impl}\ \mathrm{IsMediumTypesValue}^{4.18}(\mathrm{C}\ a)\ {}_{40})\ \underline{and}$
48 $({}_{41}\mathrm{N}\ a = \text{'number of objects per page'}\ \underline{impl}\ \mathrm{IsNat}(\mathrm{C}\ a)\ {}_{41})\ \underline{and}$
49 $({}_{42}\mathrm{N}\ a = \text{'number of pages'}\ \underline{impl}\ \mathrm{IsNnInt}^{1.7}(\mathrm{C}\ a)\ {}_{42})\ \underline{and}$
50 $({}_{43}\mathrm{N}\ a = \text{'ODA security label'}\ \underline{impl}\ \mathrm{IsODASecurityLabelValue}^{4.67}(\mathrm{C}\ a)\ {}_{43})\ \underline{and}$
51 $({}_{44}\mathrm{N}\ a = \text{'ODA version'}\ \underline{impl}\ \mathrm{IsODAVersionValue}^{4.15}(\mathrm{C}\ a)\ {}_{44})\ \underline{and}$
52 $({}_{45}\mathrm{N}\ a = \text{'organizations'}\ \underline{impl}\ \mathrm{IsSetOfProfCharSeq}^{4.3}(\mathrm{C}\ a)\ {}_{45})\ \underline{and}$
53 $({}_{46}\mathrm{N}\ a = \text{'owners'}\ \underline{impl}\ \mathrm{IsOwnersValue}^{4.45}(\mathrm{C}\ a)\ {}_{46})\ \underline{and}$
54 $({}_{47}\mathrm{N}\ a = \text{'page dimensions'}\ \underline{impl}\ \mathrm{IsPageDimensionsValue}^{4.17}(\mathrm{C}\ a)\ {}_{47})\ \underline{and}$
55 $({}_{48}\mathrm{N}\ a = \text{'page positions'}\ \underline{impl}\ \mathrm{IsPagePositionsValue}^{4.26}(\mathrm{C}\ a)\ {}_{48})\ \underline{and}$
56 $({}_{49}\mathrm{N}\ a = \text{'post-enciphered body parts'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{49})\ \underline{and}$
57 $({}_{50}\mathrm{N}\ a = \text{'post-enciphered document body parts'}\ \underline{impl}$
58 $\mathrm{IsPostEncipheredDocumentBodyPartsValue}^{4.70}(\mathrm{C}\ a)\ {}_{50})\ \underline{and}$
59 $({}_{51}\mathrm{N}\ a = \text{'post-sealed document body parts'}\ \underline{impl}\ \mathrm{IsSealedDocumentBodyPartsValue}^{4.72}(\mathrm{C}\ a)\ {}_{51})\ \underline{and}$
60 $({}_{52}\mathrm{N}\ a = \text{'pre-enciphered body parts'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{52})\ \underline{and}$
61 $({}_{53}\mathrm{N}\ a = \text{'pre-enciphered document body parts'}\ \underline{impl}$
62 $\mathrm{IsPreEncipheredDocumentBodyPartsValue}^{4.68}(\mathrm{C}\ a)\ {}_{53})\ \underline{and}$
63 $({}_{54}\mathrm{N}\ a = \text{'preparers'}\ \underline{impl}\ \mathrm{IsPreparersValue}^{4.44}(\mathrm{C}\ a)\ {}_{54})\ \underline{and}$
64 $({}_{55}\mathrm{N}\ a = \text{'pre-sealed document body parts'}\ \underline{impl}\ \mathrm{IsSealedDocumentBodyPartsValue}^{4.72}(\mathrm{C}\ a)\ {}_{55})\ \underline{and}$
65 $({}_{56}\mathrm{N}\ a = \text{'presentation features'}\ \underline{impl}\ \mathrm{IsPresentationFeaturesValue}^{4.32}(\mathrm{C}\ a)\ {}_{56})\ \underline{and}$
66 $({}_{57}\mathrm{N}\ a = \text{'presentation styles'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{57})\ \underline{and}$
67 $({}_{58}\mathrm{N}\ a = \text{'profile character sets'}\ \underline{impl}\ \mathrm{IsCharacterSetsValue}^{4.16}(\mathrm{C}\ a)\ {}_{58})\ \underline{and}$
68 $({}_{59}\mathrm{N}\ a = \text{'protections'}\ \underline{impl}\ \mathrm{IsProtectionsValue}^{4.20}(\mathrm{C}\ a)\ {}_{59})\ \underline{and}$
69 $({}_{60}\mathrm{N}\ a = \text{'purge date and time'}\ \underline{impl}\ \mathrm{IsDateAndTimeValue}^{4.41}(\mathrm{C}\ a)\ {}_{60})\ \underline{and}$
70 $({}_{61}\mathrm{N}\ a = \text{'references to other documents'}\ \underline{impl}\ \mathrm{IsSetOfExternalReferences}^{4.53}(\mathrm{C}\ a)\ {}_{61})\ \underline{and}$
71 $({}_{62}\mathrm{N}\ a = \text{'release date and time'}\ \underline{impl}\ \mathrm{IsDateAndTimeValue}^{4.41}(\mathrm{C}\ a)\ {}_{62})\ \underline{and}$
72 $({}_{63}\mathrm{N}\ a = \text{'resource-document'}\ \underline{impl}\ \mathrm{IsExternalReferenceValue}^{4.6}(\mathrm{C}\ a)\ {}_{63})\ \underline{and}$
73 $({}_{64}\mathrm{N}\ a = \text{'resources'}\ \underline{impl}\ \mathrm{IsResourcesValue}^{4.8}(\mathrm{C}\ a)\ {}_{64})\ \underline{and}$
74 $({}_{65}\mathrm{N}\ a = \text{'revision history'}\ \underline{impl}\ \mathrm{IsRevisionHistoryValue}^{4.42}(\mathrm{C}\ a)\ {}_{65})\ \underline{and}$
75 $({}_{66}\mathrm{N}\ a = \text{'sealed document profiles'}\ \underline{impl}\ \mathrm{IsSealedDocumentProfilesValue}^{4.79}(\mathrm{C}\ a)\ {}_{66})\ \underline{and}$
76 $({}_{67}\mathrm{N}\ a = \text{'sealed profiles'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{67})\ \underline{and}$
77 $({}_{68}\mathrm{N}\ a = \text{'security classification'}\ \underline{impl}\ \mathrm{IsProfCharSeq}^{4.4}(\mathrm{C}\ a)\ {}_{68})\ \underline{and}$
78 $({}_{69}\mathrm{N}\ a = \text{'specific layout structure'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{69})\ \underline{and}$
79 $({}_{70}\mathrm{N}\ a = \text{'specific logical structure'}\ \underline{impl}\ \mathrm{C}\ a = \text{'present'}\ {}_{70})\ \underline{and}$
80 $({}_{71}\mathrm{N}\ a = \text{'start date and time'}\ \underline{impl}\ \mathrm{IsDateAndTimeValue}^{4.41}(\mathrm{C}\ a)\ {}_{71})\ \underline{and}$
81 $({}_{72}\mathrm{N}\ a = \text{'status'}\ \underline{impl}\ \mathrm{IsProfCharSeq}^{4.4}(\mathrm{C}\ a)\ {}_{72})\ \underline{and}$
82 $({}_{73}\mathrm{N}\ a = \text{'subject'}\ \underline{impl}\ \mathrm{IsProfCharSeq}^{4.4}(\mathrm{C}\ a)\ {}_{73})\ \underline{and}$
83 $({}_{74}\mathrm{N}\ a = \text{'superseded documents'}\ \underline{impl}\ \mathrm{IsSetOfExternalReferences}^{4.53}(\mathrm{C}\ a)\ {}_{74})\ \underline{and}$
84 $({}_{75}\mathrm{N}\ a = \text{'title'}\ \underline{impl}\ \mathrm{IsProfCharSeq}^{4.4}(\mathrm{C}\ a)\ {}_{75})\ \underline{and}$
85 $({}_{76}\mathrm{N}\ a = \text{'transparencies'}\ \underline{impl}\ \mathrm{IsTransparenciesValue}^{4.23}(\mathrm{C}\ a)\ {}_{76})\ \underline{and}$
86 $({}_{77}\mathrm{N}\ a = \text{'types of coding'}\ \underline{impl}\ \mathrm{IsTypesOfCodingValue}^{4.27}(\mathrm{C}\ a)\ {}_{77})\ \underline{and}$
87 $({}_{78}\mathrm{N}\ a = \text{'unit scaling'}\ \underline{impl}\ \mathrm{IsPairOfPosInt}^{1.9}(\mathrm{C}\ a)\ {}_{78})\ \underline{and}$
88 $({}_{79}\mathrm{N}\ a = \text{'user-specific codes'}\ \underline{impl}\ \mathrm{IsSetOfProfCharSeq}^{4.3}(\mathrm{C}\ a)\ {}_{79})_1)_0)$

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Semiformal Description 4.3

Predicate "is a set of profile character sequences"

A set of profile character sequences is a set where each element is a profile character sequence.

Definition 4.3

1 $\forall v$
2 $({}_{0}\,\text{IsSetOfProfCharSeq}(v)$ *iff*
3 $\text{IsNeCol}^{1.1}(v)$ *and* $\forall m \in v\ (\text{IsProfCharSeq}^{4.4}(m))\ {}_{0})$

Semiformal Description 4.4

Predicate "is a profile character sequence" (e.g., clause 5.2.7)

A profile character sequence is a catenation of characters from the document profile character set.

Definition 4.4

1 $\forall v$
2 $({}_{0}\,\text{IsProfCharSeq}(v)$ *iff*
3 $\text{IsNeCat}^{1.3}(v)$ *and* $\forall m \hat{\in} \hat{}v \bullet\ (\text{IsProfileCharacter}^{4.5}(\text{C}\ m))\ {}_{0})$

Semiformal Description 4.5

Predicate "is a profile character" (e.g., clause 5.2.7)

A profile character is considered an atomic construct in the formal specification.

Definition 4.5

1 $\forall v$
2 $({}_{0}\,\text{IsProfileCharacter}(v)$ *iff*
3 $\text{IsAtom}(v)_{0})$

Semiformal Description 4.6

Predicate "is an external reference value" (e.g., clause 5.2.7)

An external reference value is either an ASN.1 object identifier or a sequence of characters from the document profile character set.

Definition 4.6

1 $\forall v$
2 $({}_{0}\,\text{IsExternalReferenceValue}(v)$ *iff*
3 $({}_{1}\,\text{IsASN1ObjectIdentifier}^{4.7}(v)$ *or* $\text{IsProfCharSeq}^{4.4}(v)\ {}_{1})_{0})$

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Semiformal Description 4.7

Predicate "is an ASN.1 object identifier" (e.g., clause 5.2.7)

An ASN.1 object identifier is considered an atomic construct in the formal specification.

Definition 4.7

1 $\forall v$
2 $(_0$ IsASN1ObjectIdentifier(v) *iff*
3 IsAtom$(v)_0)$

Semiformal Description 4.8

Predicate "is a resources value" (clause 5.2.9)

The value of the attribute **'resources'** is a set where each element consists of a pair, the first part being a sequence of characters from the minimum subrepertoire of ISO 6937-2, the second part being an object class identifier.

Definition 4.8

1 $\forall v$
2 $(_0$ IsResourcesValue(v) *iff*
3 IsNeCol$^{1.1}(v)$ *and*
4 $\forall a \in v \; \exists l, r$
5 $(_1 a = [\rightarrow l \rightarrow r \rightarrow]$ *and*
6 IsISO6937MSString$^{1.20}(l)$ *and* IsObjectClassId$^{2.83}(r)$ $_1)_0)$

Semiformal Description 4.9

Predicate "is a document application profile value" (clause 5.3.1)

The value of the attribute **'document application profile'** is either an ASN.1 object identifier or the integer 2.

Definition 4.9

1 $\forall v$
2 $(_0$ IsDocumentApplicationProfileValue(v) *iff*
3 $(_1$ IsASN1ObjectIdentifier$^{4.7}(v)$ *or* $v = 2_1)_0)$

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Semiformal Description 4.10

Predicate "is a document application profile defaults value" (clause 5.3.2)

A document application profile defaults value is either a non-empty nomination, where the names are 'content architecture class', 'dimensions', 'transparency', 'colour', 'border', 'layout path', 'page position', 'medium type', 'block alignment' and/or 'type of coding' and the component is a value of the corresponding attribute as defined in ISO 8613-2, or it is a defaultable attribute from the character content architecture, the raster graphics architecture or the geometric graphics architecture.

Definition 4.10

```
1   ∀v
2   (0 IsDocumentApplicationProfileDefaultsValue(v) iff
3     (1 (2 IsNeNom^1.2(v) and
4         NAMS^1.18(v) ⊆ ['content architecture class'; 'dimensions'; 'colour'; 'border'; 'layout path';
5                         'page position'; 'transparency'; 'medium type'; 'block alignment';
6                         'type of coding'] and
7         ∀a ∈̂ ^v •
8         (3 N a = 'content architecture class' impl IsContentArchitectureClassValue^2.88(C a) 3) and
9         (4 N a = 'dimensions' impl IsDimensionsValue^2.99(C a) 4) and
10        (5 N a = 'transparency' impl IsTransparencyValue^2.103(C a) 5) and
11        (6 N a = 'colour' impl IsColourValue^2.104(C a) 6) and
12        (7 N a = 'border' impl IsBorderValue^2.100(C a) 7) and
13        (8 N a = 'layout path' impl IsLayoutPathValue^2.102(C a) 8) and
14        (9 N a = 'page position' impl IsPairOfNnInt^1.8(C a) 9) and
15        (10 N a = 'medium type' impl IsMediumTypeValue^2.105(C a) 10) and
16        (11 N a = 'block alignment' impl IsBlockAlignmentValue^2.108(C a) 11) and
17        (12 N a = 'type of coding' impl IsTypeOfCodingValue^2.120(C a) 12)2) or
18      IsProfileDefaultableCharacterContentArchitectureAttribute^4.11(v) or
19      IsProfileDefaultableRasterGraphicsContentArchitectureAttribute^4.12(v) or
20      IsProfileDefaultableGeometricGraphicsContentArchitectureAttribute^4.13(v) 1)0)
```

Semiformal Description 4.11

Predicate "is a profile defaultable character content architecture value" (clause 5.3.2)

A profile defaultable character content architecture value is one of the attributes (name and value) which is classified as defaultable in ISO 8613-6. It is considered an atomic construct in the formal specification of the document profile. This predicate is formally defined in annex C, definition 6.1.

Definition 4.11

```
1   ∀v
2   (0 IsProfileDefaultableCharacterContentArchitectureAttribute(v) iff
3     IsAtom(v)0)
```


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Semiformal Description 4.12

Predicate "is a profile defaultable raster graphics content architecture value" (clause 5.3.2)

A profile defaultable raster graphics content architecture value is one of the attributes (name and value) which is classified as defaultable in ISO 8613-7. It is considered an atomic construct in the formal specification of the document profile. This predicate is formally defined in annex D, definition 7.1.

Definition 4.12

1 $\forall v$
2 $(_0$ IsProfileDefaultableRasterGraphicsContentArchitectureAttribute(v) *iff*
3 IsAtom(v)$_0)$

Semiformal Description 4.13

Predicate "is a profile defaultable geometric graphics content architecture value" (clause 5.3.2)

A profile defaultable geometric graphics content architecture value is one of the attributes (name and value) which is classified as defaultable in ISO 8613-8. It is considered an atomic construct in the formal specification of the document profile. This predicate is formally defined in annex E, definition 8.1.

Definition 4.13

1 $\forall v$
2 $(_0$ IsProfileDefaultableGeometricGraphicsContentArchitectureAttribute(v) *iff*
3 IsAtom(v)$_0)$

Semiformal Description 4.14

Predicate "is a content architecture classes value" (clause 5.3.4)

The value of the attribute 'content architecture classes' is a non-empty set where each element is a content architecture class value.

Definition 4.14

1 $\forall v$
2 $(_0$ IsContentArchitectureClassesValue(v) *iff*
3 IsNeCol$^{1.1}$(v) *and*
4 $\forall a \in v$ (IsContentArchitectureClassValue$^{2.88}$(a)) $_0)$

Semiformal Description 4.15

Predicate "is an ODA version value" (clause 5.3.6)

An ODA version value is a catenation of two elements. The first element is a sequence of characters from the document profile character set, the second element is a date value in accordance with ISO 8601.

Definition 4.15

1 $\forall v$
2 $(_0$ IsODAVersionValue(v) *iff*
3 $\exists l, r$
4 $(_1 v = [\rightarrow l \rightarrow r \rightarrow]$ *and*
5 IsProfCharSeq$^{4.4}$(l) *and* IsDateValue$^{4.50}$(r) $_1)_0)$

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