

1	Status	Final Text
2	Date of Last Update	2018/06/05
3	Person Assigned	David Clunie
4		mailto:dclunie@dclunie.com
5	Submitter Name	David Clunie
6		mailto:dclunie@dclunie.com
7	Submission Date	2017/12/05

8	Correction Number CP-1771	
9	Log Summary: Update PS3.16 Context Group Table Conventions	
10	Name of Standard	
11	PS3.16 2018b	
12	Rationale for Correction:	
13	Table conventions have evolved over time in various Supplements, CPs and editorial changes adding preamble information such	
14	as UIDs and resource hyperlinks and columns with specific functions. Update the Conventions section accordingly.	
15	Correction Wording:	

Amend DICOM PS3.16 as follows (changes to existing text are bold and **underlined** for additions and **struckthrough** for removals):

7 DCMR Context Group Specifications

Context Groups specify Value Set restrictions for Code Value (0008,0100) (or Long Code Value (0008,0119) or URN Code Value (0008,0120)) and Code Meaning (0008,0104) of Code Sequence Attributes for given functional or operational contexts. This Section specifies the semantics of DCMR Context Group Tables.

7.1 Context Group Table Field Definition

Context Groups are described using tables of the following form (optional columns are shown with italic column titles):

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)
Type: (Non-) Extensible
Version: <yyyymmdd>
UID: [1.2.840.10008.6.1.uuuu](#)

Table CID <#>. <Context Group Name>

Coding Scheme Designator	<i>Coding Scheme Version</i>	Code Value	Code Meaning	<i><Reference Terminology> Equivalent Value</i>	<u>Units</u>
...
...

A row of a Context Group table specifies one coded concept. Each Context Group table is named by a title and identified by a CID number and version.

The columns of the tables consist of:

- Coding Scheme Designator: the value of Coding Scheme Designator (0008,0102)
- Code Value: the value of Code Value (0008,0100) or Long Code Value (0008,0119) or URN Code Value (0008,0120)
- Coding Meaning: the value of Code Meaning (0008,0104)

In those cases where it is necessary, Coding Scheme Version (the value of Coding Scheme Version (0008,0103)) may also be specified. This column may be absent if Coding Scheme Version is not required for any of the coded concepts in the Context Group.

The value specified in the Code Meaning field is an acceptable value for the specified code value, but does not preclude the use of other synonymous text in the same or other language.

Note

Some coding schemes such as LOINC do not specify the equivalent of a Code Meaning.

If further description of the concept represented by the code is required in the DCMR (rather than referring to an external coding scheme), it is included in a separate table.

An optional column may provide an informative mapping from the coded concepts of the Context Group to a reference terminology specified in the column heading. Typical reference terminologies include SNOMED CT and UMLS.

An optional column may provide a normative baseline or defined set of units to use for numeric measurements using the concept, either as a single term (e.g., DT {ratio}, UCUM, "ratio"), a list of such terms, or a reference to a Context Group (e.g., DCID 7277 "Units of Diffusion Rate Area Over Time").

A Context Group may alternatively be defined by narrative reference to an externally defined coding scheme.

Note

See for instance CID 82 "Units of Measurement".

7.2 Special Conventions for Context Group Tables

7.2.1 Include Context Group

The 'Include Context Group' macro is a concise mechanism for including (by-reference) all of the rows of a specified Context Group in the invoking Context Group, effectively substituting the specified Context Group for the row where the macro is invoked. If an 'Include Context Group' is specified, it shall be specified in the Concept Name column of a Context Group Table. Table 7.2.1-1 specifies the syntax of the 'Include Context Group' macro. Inclusion may be nested, in that included Context Groups may themselves include other Context Groups. This gives rise to the possibility of circular inclusion and multiple inclusion, in which case the Context Group shall consist of the transitive closure of the set of all coded concepts within the included Context Groups.

Note

For example, it is reasonable to have the following definitions for context groups:

- Context ID 1, includes Context IDs 2 and 3
- Context ID 2, includes Context IDs 4 and 5
- Context ID 3, includes Context IDs 5 and 6
- Context ID 4 contains a, b, c
- Context ID 5 contains e, f, g
- Context ID 6 contains a, h, i

The contents of Context ID 1 will be a, b, c, e, f, g, h, i.

Table 7.2.1-1. Include Context Group Macro

Coding Scheme Designator	Code Value	Code Meaning
...
<i>Include CID nnn</i>		
...

7.2.2 Units of Measurement

Context Group 82 is defined to include all units of measurement relevant to DICOM IODs. In the past it was envisaged that an extensible list of pre-coordinated codes would be included in the mapping resource.

DICOM has now adopted the Unified Codes for Units of Measurement (UCUM) standard for all units of measurement. This coding scheme allows for the "construction" of pre-coordinated codes from atomic components.

The specialization of the UCUM standard as it is used in DICOM involves the following rules:

- the Coding Scheme Designator is specified as "UCUM"
- the version of UCUM from which a code is constructed is not required, as it is not needed to resolve ambiguity in the Code Value or Code Meaning; however, there is no restriction on the version being specified in Coding Scheme Version
- the Code Value will be constructed from UCUM and make use of the "case-sensitive" form of UCUM code (e.g., "ml/s")
- the Code Meaning for other than UCUM unity may be one of the following:
 - the "print" value specified in UCUM (e.g., "mmHg" for Code Value mm[Hg])
 - the same string as sent in the Code Value (e.g., "ml/s")
 - constructed from the "names" of individual components using the Americanized form of name (e.g., "milliliters/second")

- 1 • constructed from the "names" of individual components using the European form of name (e.g., "millilitres/second")
- 2 • In the case of UCUM unity ("1", or curly braces expression) it is forbidden to use "1" as a Code Meaning. Annex G provides Code
- 3 Meanings for a Code Value (0008,0100) of 1. A Template or Context Group may constrain the Code Meaning according to the fol-
- 4 lowing rules:
- 5 • UCUM default unit 1 shall use one of the Code Meaning synonyms specified in Annex G
- 6 • ratios of identically dimensioned values may use ({ratio}, UCUM, "ratio")
- 7 • unitless numeric scores may use ({M:N}, UCUM, "range: M:N") to specify the minimum and maximum value, for example, ({0:10},
- 8 UCUM, "range: 0:10")
- 9 • counts using UCUM annotation shall always use the text within the curly braces as the Code Meaning, for example, ({masses},
- 10 UCUM, "masses")
- 11 • compositions of a curly braces expression with other UCUM values may use a conventional clinical representation, for example,
- 12 ({H.B.}/min, UCUM, "BPM")

13 The UCUM standard states that the preferred display values for codes deg (degrees of plane angle) and Cel (degrees Celsius) are
 14 "" and "°C". However, the character ° does not have a representation in the DICOM default character set (ASCII, ISO-IR 6). The
 15 Code Meaning specified in this Part therefore uses "deg" and "C". SOP Instances that specify a Specific Character Set that allows
 16 the character ° may use Code Meanings "" and "°C".

17 **Note**

- 18 1. Code Meaning "C" formally conflicts with the Code Meaning for Coulomb. In the context of DICOM use, the possibility
- 19 of confusion to a user based on the display of the Code Meaning is considered remote, as there is little use of Coulomb
- 20 in imaging, and the context of the displayed item Concept Name would resolve between temperature and electric charge.
- 21 Automated processing based on the Code Values should not face an issue as the Code Values differ.
- 22 2. The character ° has Unicode code point U+00B0, and is represented as 0xB0 in ISO-IR 100 (Latin-1), ISO-IR 101
- 23 (Latin-2), ISO-IR 109 (Latin-3), ISO-IR 110 (Latin-4), ISO-IR 126 (Greek), ISO-IR 138 (Hebrew), and ISO-IR 148 (Latin-
- 24 5). It is not encodable in ISO-IR 13 (Katakana), ISO-IR 144 (Cyrillic), ISO-IR 127 (Arabic), or ISO-IR 166 (Thai).

25 **7.2.3 Extension of Context Groups**

26 An Application may extend an Extensible Context Group by adding terms for new concepts. Applications may not substitute other
 27 terms of the same concept in the Context Group. Applications may not add a term that means "unspecified" or "missing" or "unknown"
 28 similar; if such a concept is intended to be permitted then the Standard will include it in the Context Group already. Such extension
 29 may be made without a change in Context Group Identifier, but with the specification of Context Group Extensions (see ???).

30 Non-extensible Context Groups shall not be modified in an Application.

31 **Note**

32 The set of concepts in either an Extensible or a Non-extensible Context Group may be changed in subsequent editions of
 33 the Standard, in accordance with the procedures of the DICOM Standards Committee.