DICOM Correction Proposal

STATUS	Final Text
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Correction Number CP-2041
Log Summary: Add Table Value Type for DICOM SR
Name of Standard PS3.3, PS3.6, PS3.16 2020d
Rationale for Correction: Some data is more naturally represented in a tabular form rather than as a multitude of content items in a tree. The amount of such data may be sufficiently large that reasonably efficient mechanisms are required to represent it at the Attribute level, rather than synthesizing a table from a large number of Content Items. In some cases, rather than encoding the values directly in a table, a tabular layout with cell references to content elsewhere in the SR tree may be useful, e.g., to preserve context for coordinate and image references as well as post-coordinated descriptions. The approach proposed is intended to complement, rather than replace, conventional SR representations.
Correction Wording:

Amend PS3.3:

C.17.3 SR Document Content Module

Table C.17-5. Document Content Macro Attributes

Attribute Name	Tag	Type	Attribute Description
Value Type	(0040,A040)	1	The type of the value encoded in this Content Item. Enumerated Values: **TEXT** **...** **CONTAINER** **TABLE** See Section C.17.3.2.1 for further explanation.

Attribute Name	Tag	Type	Attribute Description
Concept Name Code Sequence	(0040,A043)	1C	Code describing the concept represented by this Content Item. Also conveys the value of Document Title and section headings in documents. Only a single Item shall be included in this Sequence. Required if Value Type (0040,A040) is TEXT, NUM, CODE, DATETIME, DATE, TIME, UIDREF**, <u>TABLE</u>** or PNAME. Required if Value Type (0040,A040) is CONTAINER and a heading is present, or this is the Root Content Item. Note That is, containers without headings do not require Concept Name Code Sequence Required if Value Type (0040,A040) is COMPOSITE, IMAGE, WAVEFORM, SCOORD, SCOORD3D or TCOORD, and the Purpose of Reference is conveyed in the Concept Name. See Section C.17.3.2.2 for further explanation.
>Include Table 8.8-1 "Code Sequence Macro Attributes"			*No Baseline CID is defined.*
...			
Include Table C.18.8-1 "Container Macro Attributes" if and only if Value Type (0040,A040) is CONTAINER.			
<u>Include Table C.18.10-1 "Table Content Item Macro Attributes" if and only if Value Type (0040,A040) is TABLE.</u>			

C.17.3.2 Content Item Attributes

C.17.3.2.1 Content Item Value Type

...

Table C.17.3-7. Value Type Definitions

Value Type	Concept Name	Concept Value	Description
TEXT	Type of text, e.g., "Findings", or name of identifier, e.g., "Lesion ID"	Textual expression of the concept	Free text, narrative description of unlimited length. May also be used to provide a label or identifier value.
...			
TABLE	**Purpose of the tabulated data**	**Two-dimensional tabulation of data**	**Table of text, numeric or datetime values.**

C.18 Content Macros

C.18.10 Table Content Item Macro

Table C.18.10-1 specifies the Attributes that convey a TABLE (two-dimensional tabulated data) Content Item value.

A TABLE consists of a rectangular array of row and column values, which may be of the same or different Value Representation, and be associated with coded row and column descriptions, and units for numeric values when required. Cell values may be specified individually or as complete row or column lists of values in single Attributes. The values may be described completely or sparsely (i.e., empty cells are permitted).

Table C.18.10-1. Table Content Item Macro Attributes

Attribute Name	Tag	Type	Attribute Description
Tabulated Values Sequence	(0040,A801)	1	This is the table that represents the value of the Content Item. Shall consist of a single Item whose Attributes convey the cell value(s), which represent rows and columns consisting of text or integers or real numbers or datetimes. Only a single Item shall be included in this Sequence.
>Number of Table Rows	(0040,A802)	1	The number of rows in this table.
>Number of Table Columns	(0040,A803)	1	The number of columns in this table.
>Table Row Definition Sequence	(0040,A806)	3	The concepts that define the meaning of the rows of the table. One or more Items are permitted in this Sequence. If a single Item is present, then the concept applies to all the rows. Not all rows need to be described. Items of this Sequence shall be sorted by Table Row Number. See Section C.18.10.1.1.

Attribute Name	Tag	Type	Attribute Description
>>Table Row Number	(0040,A804)	1C	The row, numbered from 1, of the table that this concept describes. Required if the concept does not apply to all rows.
>>Concept Name Code Sequence	(0040,A043)	1	The concept that describes the meaning of the row(s). Only a single Item shall be included in this Sequence.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"		*No Baseline CID is defined.*	
>>Measurement Units Code Sequence	(0040,08EA)	1C	Units of measurement that apply to all the numeric values in this row. Only a single Item shall be included in this Sequence. Required if all the columns in this row are numeric values (Selector Attribute VR is DS, FD, FL, IS, SL, SS, UL, or US), have units (are not dimensionless), and have the same units.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"		*DCID 82 "Units of Measurement".*	
>Table Column Definition Sequence	(0040,A807)	3	The concepts that define the meaning of the columns of the table. One or more Items are permitted in this Sequence. Not all columns need to be described. If a single Item is present, then the concept applies to all the columns. Items of this Sequence shall be sorted by Table Column Number. See Section C.18.10.1.1.
>>Table Column Number	(0040,A805)	1C	The column, numbered from 1, of the table that this concept describes. Required if the concept does not apply to all columns.
>>Concept Name Code Sequence	(0040,A043)	1	The concept that describes the meaning of the column(s). Only a single Item shall be included in this Sequence.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"		*No Baseline CID is defined.*	
>>Measurement Units Code Sequence	(0040,08EA)	1C	Units of measurement that apply to all the numeric values in this column.

Attribute Name	Tag	Type	Attribute Description
			Only a single Item shall be included in this Sequence. Required if all the rows in this column are numeric values (Selector Attribute VR is DS, FD, FL, IS, SL, SS, UL, or US), have units (are not dimensionless), and have the same units.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"		*DCID 82 "Units of Measurement".*	
>Cell Values Sequence	(0040,A808)	1	The values of each populated cell in the table, identified by row and column. One or more Items shall be included in this Sequence. The table may be sparse (i.e., not every cell is required to be populated). Entire rows may be specified in a single Item if all the columns have the same VR. Entire columns may be specified in a single Item if all the rows have the same VR. Items of this Sequence shall be in row-major order, then sorted by column. See Section C.18.10.1.2.
>>Table Row Number	(0040,A804)	1C	The row, numbered from 1, of the table. Required if Table Column Number is absent, or all the rows for the column specified in Table Column Number are not encoded in a single Attribute (containing multiple values) in this Item (i.e., with a single VR).
>>Table Column Number	(0040,A805)	1C	The column, numbered from 1, of the table. Required if Table Row Number is absent, or all the columns for the row specified in Table Row Number are not encoded in a single Attribute (containing multiple values) in this Item (i.e., with a single VR).
>>Referenced Content Item Identifier	(0040,DB73)	1C	An ordered set of one or more integers that uniquely identifies the Content Item that is the value for this cell. See Section C.18.10.1.3. Required if Selector Attribute VR (0072,0050) is not present.
>>Selector Attribute VR	(0072,0050)	1C	Value Representation of the value(s) of the cell(s) in this Item. Required if Referenced Content Item Identifier (0040,DB73) is not present. Enumerated Values:

Attribute Name	Tag	Type	Attribute Description
			DS DT FD FL IS SL SQ SS SV UC UL US UV Note: 1. Only a subset of the possible VRs (value in the VR column of Table 6-1 in PS3.6) is permitted. 2. The value SQ is a special case, in that it is used to specify that the value is Code Sequence Attribute, rather than any other type of Sequence.
>>Selector DS Value	(0072,0072)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is DS, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector DT Value	(0072,0063)	1C	The DateTime value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is DT.
>>Selector FD Value	(0072,0074)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is FD, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector FL Value	(0072,0076)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is FL, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.

Attribute Name	Tag	Type	Attribute Description
>>Selector IS Value	(0072,0064)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is IS, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector SL Value	(0072,007C)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is SL, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector SS Value	(0072,007E)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is SS, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector SV Value	(0072,0083)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is SV, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector UC Value	(0072,006F)	1C	The text value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is UC.
>>Selector UL Value	(0072,0078)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is UL, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector US Value	(0072,007A)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is US, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Selector UV Value	(0072,0083)	1C	The numeric value(s) of the cell(s) in this Item. Required if Selector Attribute VR (0072,0050) is present and the value is UV, and Numeric Value Qualifier Code Sequence (0040,A301) is not present.
>>Concept Code Sequence	(0040,A168)	1C	The coded value(s) of the cell(s) in this Item. One or more Items shall be included in this Sequence. Required if Selector Attribute VR (0072,0050) is present and the

Attribute Name	Tag	Type	Attribute Description
			value is SQ.
>>Measurement Units Code Sequence	(0040,08EA)	1C	Units of measurement that apply to all the numeric value in this cell. Only a single Item shall be included in this Sequence. Required if this cell is a numeric value (Selector Attribute VR is DS, FD, FL, IS, SL, SS, SV, UL, US or UV) has a unit (is not dimensionless), and the unit is not specified within the Table Row Definition Sequence for this row or Table Column Definition Sequence for this column.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"			*DCID 82 "Units of Measurement".*
>>Numeric Value Qualifier Code Sequence	(0040,A301)	1C	The reason for the absence of the numeric value. Only a single Item is permitted in this Sequence. Required if this cell is a numeric value (Selector Attribute VR is DS, FD, FL, IS, SL, SS, SV, UL, US or UV), and the numeric value cannot be provided.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"			*DCID 42 "Numeric Value Qualifier".*

C.18.10.1 Table Content Item Macro Attribute Descriptions

C.18.10.1.1 Table Row and Column Definition Sequences

The meaning of the table rows and columns are described in Items of Table Row Definition Sequence (0040,A806) and Table Column Definition Sequence (0040,A807). A coded concept name is provided in Concept Code Sequence (0040,A168) and units, if applicable, in Measurement Units Code Sequence (0040,08EA).

For example:

Example 1. A two-column table, consisting of multiple rows describing forty values of datetime and X-Ray tube current, could be described as follows:

Concept Name Code Sequence (0040,A043) = (113733, DCM, "X-Ray Tube Current")

Tabulated Values Sequence (0040,A801)

Item 1

>Number of Table Rows (0040,A802) = 40

>Number of Table Columns (0040,A803) = 2

>Table Column Definition Sequence (0040,A807)

>Item 1

>>Table Column Number (0040,A805) = 1

>>Concept Name Code Sequence (0040,A043) = (111526, DCM, "DateTime Started")

>Item 2

>>Table Column Number (0040,A805) = 2

>>Concept Name Code Sequence (0040,A043) = (113733, DCM, “X-Ray Tube Current”)

>>Measurement Units Code Sequence (0040,08EA) = (mA, UCUM, "mA")

Note:

1. The same concept (113733, DCM, “X-Ray Tube Current”) can be used to describe the entire table as the column of values that represent the actual values.
2. No Table Row Definition Sequence (0040,A806) is needed, since rows consist of unnamed observations
3. No Measurement Units Code Sequence (0040,08EA) is needed for the first column, since it contains DateTimes, not numeric values

Example 2. A four by four matrix representing an affine transformation between two frames of reference could be described as:

Concept Name Code Sequence (0040,A043) = (eRDSRX16, DCM, “X-Ray Source Transformation Matrix”)

Tabulated Values Sequence (0040,A801)

Item 1

>Number of Table Rows (0040,A802) = 4

>Number of Table Columns (0040,A803) = 4

Note:

1. No Table Row Definition Sequence (0040,A806) or Table Column Definition Sequence (0040,A807) is needed, since the meaning of the rows and columns in a transformation matrix is implicit in the definition of the matrix (for example, the template using this Content Item might reference the behavior defined in Section C.20.2.1.1 Frame of Reference Transformation Matrix).
2. No Measurement Units Code Sequence (0040,08EA) is needed since the numeric values are dimensionless (have no units).

Example 3. A four-column table, consisting of multiple (ten) measurements along an artery, could be described as follows:

Concept Name Code Sequence (0040,A043) = (, , “Arterial Measurements”)

Tabulated Values Sequence (0040,A801)

Item 1

>Number of Table Rows (0040,A802) = 10

>Number of Table Columns (0040,A803) = 4

>Table Column Definition Sequence (0040,A807)

>Item 1

>>Table Column Number (0040,A805) = 1

>>Concept Name Code Sequence (0040,A043) = (, , " Distance from landmark ")

>>Measurement Units Code Sequence (0040,08EA) = (mm, UCUM, "mm")

>Item 2

>>Table Column Number (0040,A805) = 2

>>Concept Name Code Sequence (0040,A043) = (, , “X- Measured lumen diameter”)

>>Measurement Units Code Sequence (0040,08EA) = (mm, UCUM, "mm")

>Item 3

>>Table Column Number (0040,A805) = 3

>>Concept Name Code Sequence (0040,A043) = (, , “Calculated lumen cross-section area”)

>>Measurement Units Code Sequence (0040,08EA) = (mm2, UCUM, " mm2")

>Item 4

>>Table Column Number (0040,A805) = 4

>>Concept Name Code Sequence (0040,A043) = (, , “Stenosis”)

>>Measurement Units Code Sequence (0040,08EA) = ([%], UCUM, " [%]")

Note:

No Table Row Definition Sequence (0040,A806) is needed, since rows consist of unnamed observations

C.18.10.1.2 Cell Values Sequence

The table cell values are encoded in Items of Cell Values Sequence (0040,A808) either:

- in individual Items, one for each cell, as a single valued Attribute (and may be sparse and of different VR per cell)
- in a single Item for entire columns, one for each column, as a multi-valued Attribute (and hence be of the same VR for all the cells in a particular column)
- in a single Item for entire rows, one for each row, as a multi-valued Attribute (and hence be of the same VR for all the cells in a particular row)

For example,

Example 1. A two-column table, consisting of multiple rows describing forty values of datetime and X-Ray tube current, as described in Section C.18.10.1.1 Example 1, could encode its values as follows:

>Cell Values Sequence (0040,A808)

>Item 1

>>Table Column Number (0040,A805) = 1

>>Selector Attribute VR (0072,0050) = DT

>>Selector DT Value (0072,0063) = 20200401163901.01\20200401163901.02\...\20200401163901.40 (forty values)

>Item 2

>>Table Column Number (0040,A805) = 2

>>Selector Attribute VR (0072,0050) = FL

>>Selector FL Value (0072,0076) = 100.1, 90.2, ..., 60.5 (forty 32-bit binary floating-point values)

Example 2. A four by four matrix representing an identity affine transformation between two frames of reference, as described in Section C.18.10.1.1 Example 2, could encode its values as follows:

>Cell Values Sequence (0040,A808)

>Item 1

>>Table Column Number (0040,A805) = 1

>>Selector Attribute VR (0072,0050) = FD

>>Selector FD Value (0072,0074) = 1, 0, 0, 0 (four 64-bit binary floating-point values)

>Item 2

>>Table Column Number (0040,A805) = 2

>>Selector Attribute VR (0072,0050) = FD

>>Selector FD Value (0072,0074) = 0, 1, 0, 0 (four 64-bit binary floating-point values)

>Item 3

>>Table Column Number (0040,A805) = 3

>>Selector Attribute VR (0072,0050) = FD

>>Selector FD Value (0072,0074) = 0, 0, 1, 0 (four 64-bit binary floating-point values)

>Item 4

>>Table Column Number (0040,A805) = 4

>>Selector Attribute VR (0072,0050) = FD

>>Selector FD Value (0072,0074) = 0, 0, 0, 1 (four 64-bit binary floating-point values)

Example 3. A four-column table, consisting of multiple (ten) measurements along an artery, as described in Section C.18.10.1.1 Example 3, could encode its values as follows:

>Cell Values Sequence (0040,A808)

>Item 1

>>Table Column Number (0040,A805) = 1

>>Selector Attribute VR (0072,0050) = DS

>>Selector DS Value (0072,0072) = 0\1\2\3 ...\9 (ten decimal string values)

>Item 2

>>Table Column Number (0040,A805) = 2

>>Selector Attribute VR (0072,0050) = DS

>>Selector DS Value (0072,0072) = 1.4\1.5\1.5\1.4 ...\1.2 (ten decimal string values)

>Item 3

>>Table Column Number (0040,A805) = 3

>>Selector Attribute VR (0072,0050) = DS

>>Selector DS Value (0072,0072) = 1.54\1.77\1.77\1.54 ...\1.13 (ten decimal string values)

>Item 4

>>Table Column Number (0040,A805) = 4

>>Selector Attribute VR (0072,0050) = DS

>>Selector DS Value (0072,0072) = 10\0\0\10 ...\20 (ten decimal string values)

C.18.10.1.3 Referenced Content Item Identifier

Instead of encoding a value for a cell or list of values for a row or column, a reference can be made to another Content Item.

For the structure and encoding of the Referenced Content Item Identifier (0040,DB73) Attribute, see Section C.17.3.2.5 and the definition of Referenced Content Item Identifier in Table C.17-6.

The reference mechanism allows the context of a cell value to be preserved. For example, if it is necessary to tabulate a list of measurements on regions of interest (ROIs), then each ROI and its associated measurements, descriptive codes, segmentation references, coordinates and image references can be encoded in the Content Tree in the normal manner, and references to the NUM Content Items that encode the measurements can be tabulated in a TABLE Content Item by using the Referenced Content Item Identifier (0040,DB73). Other cells in the table might reference other Content Items associated with the measurements, such as a tracking identifier or target anatomy or time point identifier.

Frequently, the description of the row or column (as described in Section C.18.10.1.1), will match the pre-coordinated concept name and units that describes a referenced Content Item. E.g., the same code can be used for the Concept Name Code Sequence (0040,A043) and Measurement Units Code Sequence (0040,08EA) of the referenced NUM Content Item as for the corresponding Table Row Definition Sequence (0040,A806) or Table Column Definition Sequence (0040,A807). However, it may be that a referenced Content Item has a relatively complex post-coordinated description defined by related parent, sibling or child Content Items, in which case a more specific code may need to be used for the Concept Name Code Sequence (0040,A043) in Table Row Definition Sequence (0040,A806) or Table Column Definition Sequence (0040,A807).

Amend PS3.6 to add new Data Elements:

Table 6-1. Registry of DICOM Data Elements

Tag	Name	Keyword	VR	VM	
(0040,A801)	Tabulated Values Sequence	TabulatedValuesSequence	SQ	1	
(0040,A802)	Number of Table Rows	NumberOfTableRows	UL	1	
(0040,A803)	Number of Table Columns	NumbeOfTableColumns	UL	1	
(0040,A804)	Table Row Number	TableRowNumber	UL	1	
(0040,A805)	Table Column Number	TableColumnNumber	UL	1	
(0040,A806)	Table Row Definition Sequence	TableRowDefinitionSequence	SQ	1	
(0040,A807)	Table Column Definition Sequence	TableColumnDefinitionSequence	SQ	1	
(0040,A808)	Cell Values Sequence	CellValuesSequence	SQ	1	

Amend PS3.16:

6 Form of Template Specifications

6.1.9 Value Set Constraint

Any constraints on the Value Set for a CODE Content Item are specified in this field as defined or enumerated coded entries, or as baseline or defined context groups.

The absence of an entry in the Value Set Constraint field for a CODE Content Item means that any code may be used, from any coding scheme, including codes from private coding schemes.

The Value Set Constraint column may specify a default value for the Content Item if the Content Item is not present, either as a fixed value, or by reference to another Content Item, or by reference to an Attribute from the Data Set other than within the Content Sequence (0040,A730).

6.1.9.1 NUM Units Constraint

Any constraints on units of measurement are specified in the Value Set Constraint field if and only if the Value Type is NUM. The constraints are specified either as defined or enumerated coded entries, or as baseline or defined context groups.

The absence of any constraint on units of measurement means that any code for units may be used, from any coding scheme, including codes from private coding schemes.

6.1.9.2 CONTAINER Continuation Flag Constraint

The value of the Continuity of Content Flag (0040,A050) may be specified in the Value Set Constraint field if and only if the Value Type is CONTAINER.

> Note
>
> The SR Document Content Module specifies "SEPARATE" and "CONTINUOUS" as the Enumerated Values for Continuity of Content Flag (0040,A050).

6.1.9.3 SCOORD Graphic Type Constraint

Constraints on the value of the Graphic Type(0070,0023) may be specified in the Value Set Constraint field if and only if the Value Type is SCOORD. The constraint may specify a set of allowed values, or a set of disallowed values. For example:

- GRAPHIC TYPE = {POINT}
- GRAPHIC TYPE = {CIRCLE, ELLIPSE}
- GRAPHIC TYPE = not {MULTIPOINT}

6.1.9.4 TABLE Row, Column, Units and Coded Content Constraints

Constraints on various aspects of the TABLE Content Item may be specified in the Value Set Constraint field, including the manner of encoding the tabulated values, either by row, by column, by individual cells, or by reference to other Content Items, by specifying:

- **Fixed values, minimums and/or maximums for the number of table rows (NROWS) and/or columns (NCOLUMNS)**
- **Defined or enumerated coded entries, or baseline or defined Context Groups for Concept Name Code Sequence (0040,A043) to use in Table Row Definition Sequence (0040,A806) (ROW n) and/or Table Column Definition Sequence (0040,A807) (COLUMN n)**
- **Defined or enumerated coded entries, or baseline or defined Context Groups for Concept Code Sequence (0040,A168) to use in Cell Values Sequence (0040,A808) (ROW n VALUES) and/or (COLUMN n VALUES) and/or (CELL r, c VALUES)**
- **Defined or enumerated coded entries, or baseline or defined Context Groups for Measurement Units Code Sequence (0040,08EA) to use in Table Row Definition Sequence (0040,A806) (ROW n UNITS) and/or Table**

Column Definition Sequence (0040,A807) (COLUMN n UNITS) and/or Cell Values Sequence (0040,A808) (CELL r, c UNITS)

- Permitted VR to use in Selector Attribute VR (0072,0050) for specified rows (ROW n VR), columns (COLUMN n VR) or cells (CELL r,c VR), when values are encoded literally
- Permitted referenced Content Item target (TID ttt ROW rrr) for specified rows (ROW n REF), columns (COLUMN n REF) or cells (CELL r,c REF), when values are specified by reference

It is also helpful to provide a detailed description of the form of the table in the corresponding Content Item Description.

Example 1:

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
5		CONTAINS	TABLE	EV (113733, DCM, "X-Ray Tube Current")	1	M		NCOLUMNS = 2 COLUMN 1 = EV (111526, DCM, "DateTime Started") COLUMN 2 = EV (113733, DCM, "X-Ray Tube Current") COLUMN 2 UNITS = EV (mA, UCUM, "mA") COLUMN 1 VR = DT COLUMN 2 VR = FL

Content Item Descriptions

Row 5	The table of X-Ray Tube Current is encoded as a two-column table, consisting of multiple rows describing corresponding values of datetime and X-Ray tube current. The number of rows is not constrained.

Example 2:

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
5		CONTAINS	TABLE	EV (, , "X-Ray Source Transformation Matrix")	1	M		NCOLUMNS = 4 NROWS= 4 CELL VR = FD

Content Item Descriptions

Row 5	The X-Ray Source Transformation Matrix is encoded as a 4 by 4 matrix of dimensionless numbers of the form defined in PS3.3 Section C.20.2.1.1 Frame of Reference Transformation Matrix. The table may be encoded as entire rows, entire columns or individual cells of double float numeric values.

Example 3:

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
5		CONTAINS	TABLE	EV (126081, DCM, "RECIST 1.1")	1	M		NCOLUMNS = 4 COLUMN 1 = EV (112039, DCM, " Tracking Identifier") COLUMN 2 = EV (363698007, SCT, "Finding Site") COLUMN 3 = EV (272741003, SCT, "Laterality") COLUMN 4 = EV (103339001, SCT, "Long Axis") COLUMN 4 UNITS = EV (mm, UCUM, "mm") COLUMN 1 REF = TID 1500 ROW 9 > TID 1501 ROW 2 COLUMN 2 REF = TID 1500 ROW 9 > TID 1501 ROW 6 COLUMN 3 REF = TID 1500 ROW 9 > TID 1501 ROW 7 COLUMN 4 REF = TID 1500 ROW 9 > TID 1501 ROW 10 > TID 300 ROW 1

Content Item Descriptions

Row 5	The table of RECIST long axis measurements per target lesion is encoded as a four-column table, consisting of multiple rows describing corresponding values of Tracking Identifier, Finding Site, Laterality

	and Long Axis in mm by reference to other Content Items. The number of rows is not constrained. The Response Criteria is used as the Concept Name of the table.

Example 4:

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
6	>	CONTAINS	TABLE	EV (111632, DCM, "Anode Target Material")	1	UC	XOR ROW 6A	NCOLUMNS = 2 COLUMN 1 = EV (111526, DCM, "DateTime Started") COLUMN 2 = EV (111632, DCM, "Anode Target Material") COLUMN 2 VALUES = DCID 10016 "Anode Target Material" COLUMN 1 VR = DT COLUMN 2 VR = SQ

Content Item Descriptions

Row 6	The table of Anode Target Material values is encoded as a two-column table, consisting of multiple rows describing corresponding values of DateTime Started and Anode Target Material code values. The number of rows is not constrained. The Anode Target Material is encoded using a code selected from a Defined Context Group.