DICOM Correction Proposal

STATUS	Final Text
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Correction Number

CP-2295

Log Summary: KVP attribute in CT Image Module may also be filled in multi-energy case

Name of Standard

PS3.3 2024c

Rationale for Correction:

With introduction of Sup188 a constraint was added to the description of (Type 2) KVP attribute (0018,0060) in CT Image Module: "Shall be empty if this Attribute is present in Multi-energy CT Acquisition Sequence (0018,9362)."

All other (Type 3) attributes in CT Image Module have a similar but more relaxed constraint, adding "and the value of this Attribute is not the same in all Items of the Multi-energy CT Acquisition Sequence (0018,9362)."

So even if the KVP value is identical for all CT Acquisition Sequences within that image it is currently not allowed to have this value also in CT Image Module.

As there are several multi-energy use cases where KVP may be or is the same value (Twin Beam, Photon-Counting, Dual-Layer-Detectors) this CP also relaxes the constraint for KVP, making it consistent with the other ME-relevant attributes on the same level. This change might also re-enable display of the KVP value (at least for above mentioned cases) on viewers which have not yet been updated to Sup188 yet.

The change is seen as non-breaking.

Correction Wording:

Attribute Name	Tag	Туре	Attribute Description
KVP	(0018,0060)	2	 Peak kilo voltage output of the X-Ray generator used. Shall be empty if this Attribute is present in Multi-energy CT Acquisition Sequence (0018,9362) and the value of this Attribute is not the same in all Items of the Multi-energy CT Acquisition Sequence (0018,9362). Note In the context of a Multi-energy acquisition the concerned energy spectrum needs to be considered on multiple layers: 1. Energy spectrum emitted by the source, see KVP (0018,0060) value in this Module and values in Table C.8-125 CT X-Ray Details Macro Attributes. 2. Energy spectrum effectively consumed by the detector, see Table C.8.2.2-3 Multi- energy CT X-Ray Detector Macro Attributes. 3. Nominal energy level associated with the image – if applicable - see Monoenergetic Energy Equivalent (0018,937C) in Table C.8.15.3.12-1 Multi-energy CT Characteristics Macro Attributes. In case there is only one KVP value for a Multi- energy acquisition (for example, Twin Beam, Photon-Counting, Dual-Layer-Detectors), the effective energies contributing to the image might be derived from the information in Table C.8.2.2-3 Multi-energy CT X-Ray Detector Macro Attributes.

Table C.8-3. CT Image Module Attributes