DICOM Minor Supplement

Tracking Information - Administration Use Only	
Supplement Number	CP-63
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Log Summary: Rescale Attributes for MR IOD	
Type of Modification Addition of attributes	Name of Standard PS 3.x - 199x

Rationale for Modification:

In MR applications the STORED VALUES (i.e. the binary values of the pixels) are chosen to be technically the most efficient mapping of the reconstructed floating point values to binary integers, using as much of the offered resolution as possible. They may be encoded in different ways. Either signed or unsigned and with different numbers of bits stored.

The EXTERNAL VALUES are the values presented to the users. Depending on the encoding of the stored values, they may be the result of rescaling and are used to hide the physical representation of the stored values. All numerical values are presented as external values to the users. This includes the displayed values of window settings on either film or screen. The displayed external values have some "medical" meaning to the users.

For MR there is not a single, absolute, physical, manufacturer-independent external scale. For some techniques an absolute scale can be defined (e.g. -1000 pi to +1000 pi for phase maps). For other techniques only relative results can be reached that are manufacturer-dependent. Another manufacturers may display other external values for the same techniques and the same tissue. However, in all the cases the users are accustomed to certain external values and are trained to interpret them.

In order to be able to transmit the stored values in <u>any</u> efficient representation and calculate the external values, which are important for the users, DICOM should support the "Rescale Slope" and "Rescale Intercept" attributes for the MR IOD.

Sections of Document Affected:

PS 3.3-1993, Table C.8-4, MR Image Module Attributes

Wording: Add the following two attributes:

		Type	
Rescale Intercept	(0028,1052)	3	The value b in relationship between Stored Values (SV) and External Values (EV). EV=m*SV+b
Rescale Slope	(0028,1053)	3	m in the equation specified in Rescale Intercept (0028,1052).