

### DICOM Correction Proposal Form

Correction Number		CP-142
Log Summary: Incorrect value range for IS, SL and SS		
Type of Modification	Name of Standard	
Correction	PS 3.5-1998	
Rationale for Correction		
<p>The valid ranges stated for integer string, signed long and signed short are missing the most negative number, <math>-2^{31}</math> and <math>-2^{15}</math>, respectively. This causes problems when dealing with these value representations, since 80000000H and 8000H are undefined by DICOM, yet are valid 2's compliment signed integers. This proposal would change the valid ranges for signed longs and signed shorts to encompass the above stated missing values and correctly match the definition of 2's complement integers.</p>		
Sections of documents affected		
Table 6.2-1		
Correction Wording:		

**Table 6.2-1**  
**DICOM VALUE REPRESENTATIONS**

VR Name	Definition	Character Repertoire	Length of Value
IS Integer String	A string of characters representing an integer in base-10 (decimal, shall contain only the characters 0 – 9, with an optional leading “+” or “-“. It may be padded with leading and/or trailing spaces. Embedded spaces are not allowed. The integer, n, represented shall be in the range: $-(2^{31}-1) \leq n \leq (2^{31}-1)$	“0”-“9”, “+”, “-“ of the Default Character Repertorie	12 bytes maximum
SL Signed Long	Signed binary integer 32 bits long <b>in 2's complement form</b> . Represents an integer, n, in the range: $-(2^{31}-1) \leq n \leq (2^{31}-1)$	not applicable	4 bytes fixed
SS Signed short	Signed binary integer 16 bits long in 2's complement form. Represents an integer, n, in the range:		

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Date: 1998/09/04  
Status: Letter Ballot

	$-(2^{15}-4) \leq n \leq (2^{15}-1)$		
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