

## DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2022/10/28
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Submission Date	2022/08/15

Correction Number	CP-2264
Log Summary:	Add Gen 2 Termination Codes to Gen 1 Treatment Records
Name of Standard	PS3.3, PS3.6
Rationale for Correction:	<p>The Gen 1 RT Treatment Session Record, RT Ion Treatment Session Record, and RT Brachy Treatment Session Record IODs all have a Type 3 attribute labeled Treatment Termination Code (3008,002B) which has a VR of SH and has no real meaning.</p> <p>This proposal suggests that this attribute be retired in these IODs and replaced with the existing Gen 2 attributes in order to use the machine readable codes as well as a longer human readable description:</p> <p>Treatment Termination Reason Code Sequence (300A,0715)</p> <p>Machine-Specific Treatment Reason Code Sequence (300A,0716)</p> <p>Treatment Termination Description (300A,0730)</p>
Correction Wording:	

*Modify PS 3.3 Section C.8.8.21 RT Beams Session Record Module*

### C.8.8.21 RT Beams Session Record Module

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**Table C.8-57. RT Beams Session Record Module Attributes**

Attribute Name	Tag	Type	Attribute Description
Referenced Fraction Group Number	(300C,0022)	3	Identifier of Fraction Group within referenced RT Ion Plan.
...			
>Treatment Termination Status	(3008,002A)	1	<p>Conditions under which treatment was terminated.</p> <p>Enumerated Values:</p> <p><b>NORMAL</b> treatment terminated normally</p>

Attribute Name	Tag	Type	Attribute Description
			<b>OPERATOR</b> operator terminated treatment <b>MACHINE</b> machine terminated treatment <b>UNKNOWN</b> status at termination unknown
>Treatment Termination Code	(3008,002B)	3	<del>Treatment machine termination code. This code is dependent upon the particular application and equipment.</del>
>RT Treatment Termination Reason Code Sequence	(300A,0715)	3	<u>Identifies the reason why the current treatment beam has terminated.</u> <u>Expected if the Treatment Termination Status (3008,002A) is not NORMAL.</u> <u>One or more items are permitted in this Sequence.</u> <u>See Note.</u>
>>Include Table 8.8-1, "Code Sequence Macro Attributes"			<u>DCID 9561 "Treatment Termination Reasons"</u>
>Machine-Specific Treatment Termination Code Sequence	(300A,0716)	3	<u>Machine-specific termination codes.</u> <u>Expected if the RT Treatment Termination Reason Code is (110501,DCM,Equipment Failure)</u> <u>One or more Items are permitted in this Sequence.</u> <u>See Note.</u>
>>Include Table 8.8-1, "Code Sequence Macro Attributes"			<u>No Baseline CID is defined.</u>
>Treatment Termination Description	(300A,0730)	3	<u>A user-readable description for an abnormal termination.</u> <u>See Note.</u>
>Treatment Verification Status	(3008,002C)	2	Conditions under which treatment was verified by a verification system. Enumerated Values: <b>VERIFIED</b> treatment verified <b>VERIFIED_OVR</b> treatment verified with at least one out-of-range value overridden <b>NOT_VERIFIED</b> treatment verified manually
...			
>>>Override Reason	(3008,0066)	3	User-defined description of reason for override of parameter specified by Override Parameter Pointer (3008,0062).

### Note

Treatment Termination Code (3008,002B) was previously included in this Module but has been retired. See <immediately previous PS3.3 DICOM revision>. The RT Treatment Termination Reason Code Sequence (300A,0715) and Machine-Specific Treatment Termination Code Sequence (300A,0716) should be used for machine readable codes and Treatment Termination Description (300A,0730) for human readable text respectively.

Modify PS 3.3 Section C.8.8.22 RT Brachy Session Record Module

## C.8.8.22 RT Brachy Session Record Module

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**Table C.8-58. RT Brachy Beams Session Record Module Attributes**

Attribute Name	Tag	Type	Attribute Description
Referenced Fraction Group Number	(300C,0022)	3	Identifier of Fraction Group within referenced RT Ion Plan.
...			
>Referenced Verification Image Sequence	(300C,0040)	3	Sequence of verification images obtained during delivery of current beam.  One or more Items are permitted in this Sequence.  See Note <u>1</u> .
...			
>Treatment Termination Status	(3008,002A)	1	Conditions under which treatment was terminated.  Enumerated Values:  <b>NORMAL</b> treatment terminated normally  <b>OPERATOR</b> operator terminated treatment  <b>MACHINE</b> machine terminated treatment  <b>UNKNOWN</b> status at termination unknown
<del>&gt;Treatment Termination Code</del>	<del>(3008,002B)</del>	<del>3</del>	<del>Treatment machine termination code. This code is dependent upon the particular application and equipment.</del>
<u>&gt;RT Treatment Termination Reason Code Sequence</u>	<u>(300A,0715)</u>	<u>3</u>	<u>Identifies the reason why the current treatment beam has terminated.</u>

Attribute Name	Tag	Type	Attribute Description
			<u>Expected if the Treatment Termination Status (3008,002A) is not NORMAL.</u> <u>One or more items are permitted in this Sequence.</u> <u>See Note 2.</u>
<u>&gt;&gt;Include Table 8.8-1, "Code Sequence Macro Attributes"</u>			<u>DCID 9561 "Treatment Termination Reasons"</u>
<u>&gt;Machine-Specific Treatment Termination Code Sequence</u>	<u>(300A,0716)</u>	<u>3</u>	<u>Machine-specific termination codes.</u> <u>Expected if the RT Treatment Termination Reason Code is (110501,DCM,Equipment Failure)</u> <u>One or more Items are permitted in this Sequence.</u> <u>See Note 2.</u>
<u>&gt;&gt;Include Table 8.8-1, "Code Sequence Macro Attributes"</u>			<u>No Baseline CID is defined.</u>
<u>&gt;Treatment Termination Description</u>	<u>(300A,0730)</u>	<u>3</u>	<u>A user-readable description for an abnormal termination.</u> <u>See Note 2.</u>
>Treatment Verification Status	(3008,002C)	2	Conditions under which treatment was verified by a verification system.  Enumerated Values:  <b>VERIFIED</b> treatment verified  <b>VERIFIED_OVR</b> treatment verified with at least one out-of-range value overridden  <b>NOT_VERIFIED</b> treatment verified manually
...			
>>>Override Reason	(3008,0066)	3	User-defined description of reason for override of parameter specified by Override Parameter Pointer (3008,0062).

#### Note

1. The Referenced Verification Image Sequence (300C,0040) may contain either images taken specifically for verification of the brachy application setup or reference images used in place of verification images, as might be done in HDR treatment planning.

2. Treatment Termination Code (3008,002B) was previously included in this Module but has been retired. See <<immediately previous PS3.3 DICOM revision>>. The RT Treatment Termination Reason Code Sequence (300A,0715) and Machine-Specific Treatment Termination Code Sequence (300A,0716) should be used for machine readable codes and Treatment Termination Description (300A,0730) for human readable text respectively.

## C.8.8.26 RT Ion Beams Session Record Module

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**Table C.8.8.26-1 RT Ion Beams Session Record Module Attributes**

Attribute Name	Tag	Type	Attribute Description
Referenced Fraction Group Number	(300C,0022)	3	Identifier of Fraction Group within referenced RT Plan.
...			
>Treatment Termination Status	(3008,002A)	1	Conditions under which treatment was terminated. Enumerated Values: <b>NORMAL</b> treatment terminated normally <b>OPERATOR</b> operator terminated treatment <b>MACHINE</b> machine terminated treatment <b>UNKNOWN</b> status at termination unknown
>Treatment Termination Code	(3008,002B)	3	<del>Treatment machine termination code. This code is dependent upon the particular application and equipment.</del>
>RT Treatment Termination Reason Code Sequence	(300A,0715)	3	<u>Identifies the reason why the current treatment beam has terminated.</u> <u>Expected if the Treatment Termination Status (3008,002A) is not NORMAL.</u> <u>One or more items are permitted in this Sequence.</u> <u>See Note 2.</u>
>>Include Table 8.8-1, "Code Sequence Macro Attributes"			DCID 9561 "Treatment Termination Reasons"
>Machine-Specific Treatment Termination Code Sequence	(300A,0716)	3	<u>Machine-specific termination codes.</u> <u>Expected if the RT Treatment Termination Reason Code is (110501,DCM,Equipment Failure)</u> <u>One or more Items are permitted in this Sequence.</u> <u>See Note 2.</u>

Attribute Name	Tag	Type	Attribute Description
<b>&gt;&gt;Include Table 8.8-1, "Code Sequence Macro Attributes"</b>			<b><u>No Baseline CID is defined.</u></b>
<b><u>&gt;Treatment Termination Description</u></b>	<b><u>(300A,0730)</u></b>	<b><u>3</u></b>	<b><u>A user-readable description for an abnormal termination.</u></b> <b><u>See Note 2.</u></b>
>Treatment Verification Status	(3008,002C)	2	Conditions under which treatment was verified by a verification system.  Enumerated Values:  <b>VERIFIED</b> treatment verified  <b>VERIFIED_OVR</b> treatment verified with at least one out-of-range value overridden  <b>NOT_VERIFIED</b> treatment verified manually
...			
>Ion Control Point Delivery Sequence	(3008,0041)	1	Sequence of beam control points for current ion treatment beam.  One or more Items shall be included in this Sequence.  The number of Items shall be identical to the value of Number of Control Points (300A,0110).  See Section C.8.8.21.1.
...			
>>Scan Spot Reordered	(300A,0393)	3	Indicates that the spots were delivered in a different order than in the plan.  Enumerated Values:  YES  The delivery machine changed the spot order  NO  The delivery machine delivered the spots in the order as planned  When absent it is not known if the treatment delivery device delivered or reported in the order as planned. See Note 1.
...			

*The number 1 in "See Note 1." in the attribute description of Scan Spot Reordered (300A,0393) is already present in the Standard.*

Note

**1.** Recording an extra tuning spot is considered reordering, even if the spots were delivered in the prescribed order. If re-painted spots (i.e., Number of Paintings (300A,039A) > 1) are recorded separately, then this is also considered reordering.

**2. Treatment Termination Code (3008,002B) was previously included in this Module but has been retired. See <<immediately previous PS3.3 DICOM revision>>. The RT Treatment Termination Reason Code Sequence (300A,0715) and Machine-Specific Treatment Termination Code Sequence (300A,0716) should be used for machine readable codes and Treatment Termination Description (300A,0730) for human readable text respectively.**

Update section 6 in PS3.6

Tag	Name	Keyword	VR	VM	
(3008,002B)	Treatment Termination Code	TreatmentTerminationCode	SH	1	<b><u>RET</u></b> <b><u>(2022)</u></b>