

DICOM Correction Proposal

STATUS	Final Text
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Correction Number	CP-1403
Log Summary: Clarify use of DIMSE service Status codes	
Name of Standard PS 3.4, PS3.7 2017d	
<p>Rationale for Correction</p> <p>DIMSE Service Status codes and requirements for their usage are provided in both Part 7 and Part 4, however, certain aspects of their usage are unclear or inconsistent within and between the parts. This correction proposal provides clarifications and addresses the following inconsistencies:</p> <ul style="list-style-type: none"> - Status code meanings are inconsistent between DIMSE services definitions in Section 10 of Part 7 and the catalogue of valid Status Codes in Annex C of the same part; - Standard status code meanings are inconsistent between Service Class definitions in Part 4 and DIMSE Service definitions in Part 7; - Status code meanings specified in Service Class definition are not listed as allowable in the corresponding DIMSE Service definition; - In some Service class definitions, there is no explicit indication that ALL allowable status meanings for corresponding DIMSE service can be returned by an SCP, or such indication is not clear; - There are no rules for selection of implementation specific status codes by an SCP or rules for interpretation of such codes by an SCU. 	
Correction Wording:	

Amend PS 3.4 Section 5

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5.3 RESPONSE STATUS VALUES

Certain tables in this Part of the DICOM Standard denote an implementation specific response status code by using the symbol: 'xx' or 'xxx' as part of the code.

Note: Each 'x' symbol may be replaced by an implementation with a hexadecimal digit in the range from 0 to F.

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Amend PS 3.4 Annex B

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B.2.3 Statuses

Table B.2-1 defines the specific status code values that might be returned in a C-STORE response. General status code values and fields related to status code values are defined for C-STORE DIMSE Service in PS3.7.

Table B.2-1. C-STORE Status

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A7xx	(0000,0902)
	Error: Data Set does not match SOP Class	A9xx	(0000,0901) (0000,0902)
	Error: Cannot understand	Cxxx	(0000,0901) (0000,0902)
Warning	Coercion of Data Elements	B000	(0000,0901) (0000,0902)
	Data Set does not match SOP Class	B007	(0000,0901) (0000,0902)
	Elements Discarded	B006	(0000,0901) (0000,0902)
Success	<u>Success</u>	0000	None

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes within the same Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table B.2-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table B.2-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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<i>Amend PS 3.4 Annex C</i>

C.4.1.1.4 Status

Table C.4-1 defines the specific status code values that might be returned in a C-FIND response. General status code values and fields related to status code values are defined for C-FIND DIMSE Service in PS3.7.

Table C.4-1. C-FIND Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	Identifier Error: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
Cancel	Matching terminated due to Cancel request	FE00	None
Success	Matching is complete - No final Identifier is supplied.	0000	None
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys.	FF00	Identifier
	Matches are continuing - Warning that one or more Optional Keys were not supported for existence and/or matching for this Identifier.	FF01	Identifier

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each ‘x’ symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of “Failed: Unable to process” Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table C.4-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table C.4-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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C.4.2.1.5 Status

Table C.4-2 defines the specific status code values that might be returned in a C-MOVE response. General status code values and fields related to status code values are defined **for C-MOVE DIMSE Service** in PS3.7.

Table C.4-2. C-MOVE Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources - Unable to calculate number of matches	A701	(0000,0902)
	Refused: Out of Resources - Unable to perform sub-operations	A702	(0000,1021) (0000,1022) (0000,1023)
	Refused: Move Destination unknown	A801	(0000,0902)
	Identifier Error: Data Set does not match SOP Class	A900	(0000,0901)

Service Status	Further Meaning	Status Codes	Related Fields
			(0000,0902)
	Failed: Unable to Process	Cxxx	(0000,0901) (0000,0902)
Cancel	Sub-operations terminated due to Cancel Indication	FE00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Warning	Sub-operations Complete - One or more Failures	B000	(0000,1021) (0000,1022) (0000,1023)
Success	Sub-operations Complete - No Failures	0000	(0000,1021) (0000,1022) (0000,1023)
Pending	Sub-operations are continuing	FF00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table C.4-2.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table C.4-2 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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C.4.3.1.4 Status

Table C.4-3 defines the specific status code values that might be returned in a C-GET response. General status code values and fields related to status code values are defined for C-GET DIMSE Service in PS3.7.

Table C.4-3. C-GET Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources - Unable to calculate number of matches	A701	(0000,0902)
	Refused: Out of Resources - Unable to perform sub-operations	A702	(0000,1021) (0000,1022) (0000,1023)
	Identifier Error: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
Cancel	Sub-operations terminated due to Cancel Indication	FE00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Warning	Sub-operations Complete - One or more Failures or Warnings	B000	(0000,1021) (0000,1022) (0000,1023)
Success	Sub-operations Complete - No Failures or Warnings	0000	(0000,1021) (0000,1022) (0000,1023)
Pending	Sub-operations are continuing	FF00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table C.4-3.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table C.4-3 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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F.7 MODALITY PERFORMED PROCEDURE STEP SOP CLASS

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F.7.2.2.4 Status Codes

There are no specific status codes. The specific **eError eComment and Error ID** that may be returned **aswith** a status code **of Processing Failure** in a N-SET-RSP **isare** defined in Table F.7.2-2. See PS3.7 for additional response status codes.

Table F.7.2-2. N-SET Status

Service Status	Further Meaning	Status Code	Error Comment (0000,0902)	Error ID (0000,0903)
Failure	Processing Failure	0110	Performed Procedure Step Object may no longer be updated	A710

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F.8 MODALITY PERFORMED PROCEDURE STEP RETRIEVE SOP CLASS

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F.8.2.1.4 Status Codes

~~The status values that are specific for this SOP Class and DIMSE Service are defined in~~ Table F.8.2-2 **defines the specific status code values that might be returned in a N-GET response.** See PS3.7 for additional response status codes.

Table F.8.2-2. Response Status

Service Status	Further Meaning	Response Status Code
Warning	Requested optional Attributes are not supported	0001

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H.4 PRINT MANAGEMENT SOP CLASS DEFINITIONS

H.4.1 Basic Film Session SOP Class

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H.4.1.2.1.2 Status

~~The status values that are~~ Table H.4.1.2.1.2-1 **defines the specific status code values that may be returned in a N-CREATE or N-SET response for this SOP Class are defined as follows.** See PS3.7 for additional response status codes of N-CREATE and N-SET DIMSE Services.

Table H.4.1.2.1.2-1. Status Values for Basic Film Session SOP Class

Service Status	Further Meaning	Status Code
Success	Film session successfully created	0000
Warning	Memory allocation not supported	B600

Note

The status code "0106H" (Invalid Attribute Value) indicates that the requested memory allocation can not be provided; the status code "0213H" (Resource limitation) indicates that the requested allocation can temporarily not be provided.

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H.4.1.2.3.1 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.1.2.4.2 Status

~~The status values that are specific for this SOP Class are defined in~~ Table H.4-4 **defines the specific status code values that may be returned in a N-ACTION response. See PS3.7 for additional response status codes.**

Table H.4-4. SOP Class Status Values

Service Status	Further Meaning	Status Code
Success	Film belonging to the film session are accepted for printing; if supported, the Print Job SOP Instance is created	0000
Warning	Film session printing (collation) is not supported	B601
	Film Session SOP Instance hierarchy does not contain Image Box SOP Instances (empty page)	B602
	Image size is larger than image box size, the image has been demagnified.	B604
	Image size is larger than the Image Box size. The Image has been cropped to fit.	B609
	Image size or Combined Print Image size is larger than the Image Box size. Image or Combined Print Image has been decimated to fit.	B60A
Failure	Failed: Film Session SOP Instance hierarchy does not contain Film Box SOP Instances	C600
	Failed: Unable to create Print Job SOP Instance; print queue is full	C601
	Failed: Image size is larger than image box size	C603
	Failed: Combined Print Image size is larger than the Image Box size	C613

Note

Previous versions of the DICOM Standard defined the status code of C604. This code was specified for the case of an image position collision. Since image position collision is not a possible state, the code has been retired.

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H.4.2 Basic Film Box SOP Class

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H.4.2.2.1.2 Status

~~The status values that are~~ **Table H.4.2.2.1.2-1 defines the specific status code values that may be returned in a N-CREATE or N-SET response for this SOP Class** ~~are defined as follows.~~ **See PS3.7 for additional response status codes of N-CREATE and N-SET DIMSE Services.**

Table H.4.2.2.1.2-1. Status Values for Basic Film Box SOP Class

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	Film Box successfully created	0000
Warning	Requested Min Density or Max Density outside of printer's operating range. The printer will use its respective minimum or maximum density value instead.	B605
Failure	Failed: There is an existing Film Box that has not been printed and N-ACTION at the Film Session level is not supported. A new Film Box will not be created when a previous Film Box has not been printed.	C616

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H.4.2.2.3.1 Behavior

The SCU uses the N-DELETE to request the SCP to delete the Basic Film Box SOP Instance hierarchy. The SCU shall specify in the N-DELETE request primitive the SOP Instance UID of the last created Basic Film Box (root).

The SCP shall delete the specified SOP Instance hierarchy and shall remove the UID of the deleted Basic Film Box SOP Instance from the list of SOP Instance UIDs of the Film Box UIDs Attribute of the parent Basic Film Session SOP Instance.

The SCP shall return the status code of the requested SOP Instance hierarchy deletion. The meaning of success, warning, and failure status codes is defined in Section H.2.5.

The SCP shall not delete SOP Instances in the hierarchy as long as there are outstanding references to these SOP Instances

Note

It is beyond the scope of the Standard to specify when the SCP actually deletes the Image SOP Instances with outstanding references.

H.4.2.2.3.2 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.2.2.4.2 Status

~~The status values that are specific for this SOP Class are defined as shown in~~ **Table H.4-9 defines the specific status code values that may be returned in a N-ACTION response. See PS3.7 for additional response status codes.**

Table H.4-9. Status Values

Service Status	Further Meaning	Status Code
Success	Film accepted for printing; if supported, the Print Job SOP Instance is created	0000
Warning	Film Box SOP Instance hierarchy does not contain Image Box SOP Instances (empty page)	B603
	Image size is larger than image box size, the image has been demagnified.	B604
	Image size is larger than the Image Box size. The Image has been cropped to fit.	B609
	Image size or Combined Print Image size is larger than the Image Box size. Image or Combined Print Image has been decimated to fit.	B60A
Failure	Failed: Unable to create Print Job SOP Instance; print queue is full	C602
	Failed: Image size is larger than image box size	C603
	Failed: Combined Print Image size is larger than the Image Box size	C613

Note

Previous versions of the DICOM Standard defined the status code of C604. This code was specified for the case of an image position collision. Since image position collision is not a possible state, the code has been retired.

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H.4.3 Image Box SOP Classes

H.4.3.1 Basic Grayscale Image Box SOP Class

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H.4.3.1.2.1.2 Status

~~The status values that are specific for this SOP Class are defined as follows. Table H.4.3.1.2.1.2-1 defines the specific status code values that may be returned in a N-SET response. See PS3.7 for additional response status codes.~~

Table H.4.3.1.2.1.2-1. Status Values for Basic Grayscale Image Box SOP Class

Service Status	Further Meaning	Status Code
Success	Image successfully stored in Image Box	0000
Warning	Image size larger than image box size, the image has been demagnified.	B604
	Requested Min Density or Max Density outside of printer's operating range. The printer will use its respective minimum or maximum density value instead.	B605
	Image size is larger than the Image Box size. The Image	B609

Service Status	Further Meaning	Status Code
	has been cropped to fit.	
	Image size or Combined Print Image size is larger than the Image Box size. The Image or Combined Print Image has been decimated to fit.	B60A
Failure	Failed: Image size is larger than image box size	C603
	Failed: Insufficient memory in printer to store the image	C605
	Failed: Combined Print Image size is larger than the Image Box size	C613

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H.4.3.2 Basic Color Image Box SOP Class

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H.4.3.2.1.2 Status

~~The status values that are specific for this SOP Class are defined as follows. Table H.4.3.1.2.1.2-1 defines the specific status code values that may be returned in a N-SET response. See PS3.7 for additional response status codes.~~

Table H.4.3.2.1.2-1. Status Values for Basic Color Image Box SOP Class

Service Status	Further Meaning	Status Code
Warning	Image size larger than image box size, the image has been demagnified.	B604
	Image size is larger than the Image Box size. The Image has been cropped to fit.	B609
	Image size or Combined Print Image size is larger than the Image Box size. The Image or Combined Print Image has been decimated to fit.	B60A
Failure	Failed: Image size is larger than image box size	C603
	Failed: Insufficient memory in printer to store the image	C605
	Failed: Combined Print Image size is larger than the Image Box size	C613

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H.4.4 Basic Annotation Box SOP Class

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H.4.4.2.1.2 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.5 Print Job SOP Class

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H.4.5.2.1.3 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.5.2.2.3 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.6 Printer SOP Class

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H.4.6.2.1.3 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.6.2.2.3 Status

There are no specific status codes. See PS3.7 for response status codes.

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H.4.9 Presentation LUT SOP Class

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H.4.9.2.1.2 Status

The status values that are specific for this SOP Class are defined as follows: Table H.4.9.2.1.2-1 defines the specific status code values that may be returned in a N-CREATE response. See PS3.7 for additional response status codes.

Table H.4.9.2.1.2-1. Status Values for Presentation LUT SOP Class

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	Presentation LUT successfully created	0000
Warning	Requested Min Density or Max Density outside of printer's operating range. The printer will use its respective minimum or maximum density value instead.	B605

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H.4.9.2.2.1 Status

There are no specific ~~error~~ status codes. See PS3.7 for response status codes.

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H.4.11 Printer Configuration Retrieval SOP Class

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H.4.11.2.2.3 Status

There are no specific status codes. See PS3.7 for response status codes.

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K.4.1.1.4 Status

Table K.4-1 defines the status code values that might be returned in a C-FIND response. **General status code values and fFields** related to status code values are defined **for C-FIND DIMSE Service** in PS3.7.

Table K.4-1. C-FIND Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	IdentifierError: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
Cancel	Matching terminated due to Cancel request	FE00	None
Success	Matching is complete - No final Identifier is supplied.	0000	None
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys.	FF00	Identifier
	Matches are continuing - Warning that one or more Optional Keys were not supported for existence for this Identifier.	FF01	Identifier

Notes

Status Codes are returned in DIMSE response messages (see PS3.7). The code values stated in column "Status Codes" are returned in Status Command Element (0000,0900).

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table K.4-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table K.4-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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P.2.2.4 Status Codes

The ~~Service Class specific status values defined for the N-ACTION Service are specified in~~ Table P.2-3 **defines the specific status code values that might be returned in a N-ACTION response.** See PS3.7 for additional general response status codes.

Table P.2-3. Response Status

Service Status	Response Status Code	Further Meaning
Success	0000	
Warning	B101	Specified Synchronization Frame of Reference UID does not match SCP Synchronization Frame of Reference
Warning	B102	Study Instance UID coercion; Event logged under a different Study Instance UID
Warning	B104	IDs inconsistent in matching a current study; Event logged
Failure	C101	Procedural Logging not available for specified Study Instance UID
Failure	C102	Event Information does not match Template
Failure	C103	Cannot match event to a current study
Failure	C104	IDs inconsistent in matching a current study; Event not logged

Service Status	Further Meaning	Status Code
<u>Success</u>		<u>0000</u>
<u>Warning</u>	<u>Specified Synchronization Frame of Reference UID does not match SCP Synchronization Frame of Reference</u>	<u>B101</u>
<u>Warning</u>	<u>Study Instance UID coercion; Event logged under a different Study Instance UID</u>	<u>B102</u>
<u>Warning</u>	<u>IDs inconsistent in matching a current study; Event logged</u>	<u>B104</u>
<u>Failure</u>	<u>Failed: Procedural Logging not available for specified Study Instance UID</u>	<u>C101</u>
<u>Failure</u>	<u>Failed: Event Information does not match Template</u>	<u>C102</u>
<u>Failure</u>	<u>Failed: Cannot match event to a current study</u>	<u>C103</u>
<u>Failure</u>	<u>Failed: IDs inconsistent in matching a current study; Event not logged</u>	<u>C104</u>

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P.3.2.4 Status Codes

The ~~Service Class specific status values defined for the N-ACTION Service are specified in~~ Table P.3-3 **defines the specific status code values that might be returned in a N-ACTION response.** See PS3.7 for additional general response status codes.

Table P.3-3. Response Status

Service Status	Response Status Code	Further Meaning
Success	0000	
Failure	C10E	Operator not authorized to add entry to Medication Administration Record
	C110	Patient cannot be identified from Patient ID (0010,0020) or Admission ID (0038,0010)
	C111	Update of Medication Administration Record failed

Service Status	Further Meaning	Status Code
Success		0000
Failure	Failed: Operator not authorized to add entry to Medication Administration Record	C10E
	Failed: Patient cannot be identified from Patient ID (0010,0020) or Admission ID (0038,0010)	C110
	Failed: Update of Medication Administration Record failed	C111

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Amend PS 3.4 Annex Q

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Q.2.1.1.4 Status

Table Q.2-1 defines the status code values that might be returned in a C-FIND response. **General status code values and fields** related to status code values are defined **for C-FIND DIMSE Service** in PS3.7

Table Q.2-1. C-FIND Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	IdentifierError: Data Set Does Not Match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	C000	(0000,0901) (0000,0902)
	Failed: More than one match found	C100	(0000,0901) (0000,0902)
	Failed: Unable to support requested template	C200	(0000,0901)

Service Status	Further Meaning	Status Codes	Related Fields
			(0000,0902)
Cancel	Matching terminated due to Cancel request	FE00	None
Success	Success. Matching is complete - No final Identifier is supplied.	0000	None
Pending	Current Match is supplied.	FF00	Identifier

Note

Status Codes are returned in DIMSE response messages (see PS3.7). The code values stated in column "Status Codes" are returned in Status Command Element (0000,0900).

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Amend PS 3.4 Annex S

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S.3.2.1.4 Status Codes.

~~The status values that are specific for this action are defined in~~ Table S.3.2.2.4-1 defines the specific status code values that might be returned in a N-CREATE response. See PS3.7 for general response status codes.

Table S.3.2.2.4-1. SOP Class Status Values

Service Status	Further Meaning	Status Code
Failure	Refused because Failed: an Initiate Media Creation action has already been received for this SOP Instance.	A510

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S.3.2.3.4 Status Codes

~~The status values that are specific for this SOP Class and DIMSE Service are defined in~~ Table S.3.2.3.4-1 defines the specific status code values that might be returned in a N-ACTION response. See PS3.7 for general response status codes.

Table S.3.2.3.4-1. Response Statuses

Service Status	Further Meaning	Response Status Codes
Failure	Failed: Media creation request already completed.	C201
	Failed: Media creation request already in progress and cannot be interrupted.	C202
	Failed: Cancellation denied for unspecified reason.	C203

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S.3.2.4.4 Status Codes

The status values that are specific for this SOP Class and DIMSE Service are defined in Table S.3.2.4.4-1 defines the specific status code values that might be returned in a N-GET response. See PS3.7 for general response status codes.

Table S.3.2.4.4-1. Response Statuses

Service Status	Further Meaning	Response Status Codes
Warning	Requested optional Attributes are not supported	0001

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Amend PS 3.4 Annex V

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V.4.1.1.4 Status

Table V.4-1 defines the status code values that might be returned in a C-FIND response. **General status code values and fields** related to status code values are defined for C-FIND DIMSE Service in PS3.7.

Table V.4-1. C-FIND Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	Identifier Error: Data Set Does Not Match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx (values C000 through CFFF as assigned by the implementation)	(0000,0901) (0000,0902)
Cancel	Matching terminated due to Cancel request	FE00	None
Success	Matching is complete - No final Identifier is supplied.	0000	None
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys.	FF00	Identifier
	Matches are continuing - Warning that one or more Optional Keys were not supported for existence for this Identifier.	FF01	Identifier

Note

Status Codes are returned in DIMSE response messages (see PS3.7). The code values stated in column "Status Codes" are returned in Status Command Element (0000,0900).

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table V.4-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table V.4-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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Amend PS 3.4 Annex Y

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Y.4.1.1.4 Status

~~The status code values that might be returned in a C-MOVE response shall be as specified in Table Y.4-1~~ defines the status code values that might be returned in a C-MOVE response. General status code values and fields related to status code values are defined for C-MOVE DIMSE Service in PS3.7.

Table Y.4-1. C-MOVE Response Status Values for Instance Root Retrieve

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources - Unable to calculate number of matches	A701	(0000,0902)
	Refused: Out of Resources - Unable to perform sub-operations	A702	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
	Refused: Move Destination unknown	A801	(0000,0902)
	Identifier Error: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
	Failed: None of the frames requested were found in the SOP Instance	AA00	(0000,0902)
	Failed: Unable to create new object for this SOP class	AA01	(0000,0902)
	Failed: Unable to extract frames	AA02	(0000,0902)
	Failed: Time-based request received for a non-time-based original SOP Instance.	AA03	(0000,0902)
	Failed: Invalid Request	AA04	(0000,0901)

Service Status	Further Meaning	Status Codes	Related Fields
			(0000,0902)
Cancel	Sub-operations terminated due to Cancel Indication	FE00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Warning	Sub-operations Complete - One or more Failures or Warnings	B000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Success	Sub-operations Complete - No Failures or Warnings	0000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Pending	Sub-operations are continuing	FF00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table Y.4-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table Y.4-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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Y.4.2.1.4 Status

The status code values that might be returned in a C-GET response shall be as specified in Table Y.4-2 defines the status code values that might be returned in a C-GET response. General status code values and fields related to status code values are defined for C-GET DIMSE Service in PS3.7.

Table Y.4-2. C-GET Response Status Values for Instance Root Retrieve

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources - Unable to calculate number of matches	A701	(0000,0902)
	Refused: Out of Resources - Unable to perform sub-operations	A702	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
	IdentifierError: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
	Failed: None of the frames requested were found in the SOP Instance	AA00	(0000,0902)
	Failed: Unable to create new object for this SOP class	AA01	(0000,0902)
	Failed: Unable to extract frames	AA02	(0000,0902)
	Failed: Time-based request received for a non-time-based original SOP Instance.	AA03	(0000,0902)
	Failed: Invalid Request	AA04	(0000,0901) (0000,0902)
Cancel	Sub-operations terminated due to Cancel Indication	FE00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Warning	Sub-operations Complete - One or more Failures or Warnings	B000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Success	Sub-operations Complete - No Failures or Warnings	0000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Pending	Sub-operations are continuing	FF00	(0000,1020) (0000,1021)

Service Status	Further Meaning	Status Codes	Related Fields
			(0000,1022) (0000,1023)

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each ‘x’ symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of “Failed: Unable to process” Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table Y.4-2.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table Y.4-2 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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Amend PS 3.4 Annex Z

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Z.4.2.1.4 Status

~~The status code values that might be returned in a C-GET response shall be as specified in~~ Table Z.4-1 defines the status code values that might be returned in a C-GET response. General status code values and fields related to status code values are defined for C-GET DIMSE Service in PS3.7.

Table Z.4-1. C-GET Response Status Values for Instance Root Retrieve

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources - Unable to calculate number of matches	A701	(0000,0902)
	Refused: Out of Resources - Unable to perform sub-operations	A702	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
	Identifier Error: Data Set does not match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: Unable to process	Cxxx	(0000,0901) (0000,0902)
Cancel	Sub-operations terminated due to Cancel Indication	FE00	(0000,1020) (0000,1021) (0000,1022)

Service Status	Further Meaning	Status Codes	Related Fields
			(0000,1023)
Warning	Sub-operations Complete - One or more Failures or Warnings	B000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Success	Sub-operations Complete - No Failures or Warnings	0000	(0000,1020) (0000,1021) (0000,1022) (0000,1023)
Pending	Sub-operations are continuing	FF00	(0000,1020) (0000,1021) (0000,1022) (0000,1023)

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each 'x' symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of "Failed: Unable to process" Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table Y.4-2.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table Y.4-2 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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<i>Amend PS 3.4 Annex CC</i>

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CC.2.1.4 Status Codes

The status values that are specific for this DIMSE operation are defined in Table CC.2.1-2 defines the status code values that might be returned in a N-ACTION response. General status code values and fields related to status code values are defined for N-ACTION DIMSE Service in PS3.7.

Table CC.2.1-2. Status Values

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	The requested state change was performed	0000
Warning	The UPS is already in the requested state of CANCELED	B304
	The UPS is already in the requested state of COMPLETED	B306
Failure	Refused: Failed: The UPS may no longer be updated	C300
	Refused: Failed: The correct Transaction UID was not provided	C301
	Refused: Failed: The UPS is already IN PROGRESS	C302
	Refused: Failed: The UPS may only become SCHEDULED via N-CREATE, not N-SET or N-ACTION	C303
	Refused: Failed: The UPS has not met final state requirements for the requested state change	C304
	Refused: Failed: Specified SOP Instance UID does not exist or is not a UPS Instance managed by this SCP	C307
	Refused: Failed: The UPS is not yet in the "IN PROGRESS" state	C310

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CC.2.2.4 Status Codes

~~The status values that are specific for this DIMSE operation are defined in~~ Table CC.2.2-2 defines the status code values that might be returned in a N-ACTION response. General status code values and fields related to status code values are defined for N-ACTION DIMSE Service in PS3.7.

Table CC.2.2-2. Status Values

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	The cancel request is acknowledged	0000
Warning	The UPS is already in the requested state of CANCELED	B304
Failure	Refused: Failed: The UPS is already COMPLETED	C311
	Refused: Failed: Performer chooses not to cancel	C313
	Failed: Specified SOP Instance UID does not exist or is not a UPS Instance managed by this SCP	C307
	Refused: Failed: The performer cannot be contacted	C312

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CC.2.3.4 Status Codes

~~The status values that are specific for this DIMSE operation are defined in~~ Table CC.2.3-3 defines the status code values that might be returned in a N-ACTION response. General status code values and fields related to status code values are defined for N-ACTION DIMSE Service in PS3.7.

Table CC.2.3-3. Status Values

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	The requested change of subscription state was performed	0000
Warning	Deletion Lock not granted.	B301
Failure	Failed: Specified SOP Instance UID does not exist or is not a UPS Instance managed by this SCP	C307
	Failed: Receiving AE-TITLE is Unknown to this SCP	C308
	Refused:Failed: Specified action not appropriate for specified instance	C314
	Refused:Failed: SCP does not support Event Reports	C315

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CC.2.5.4 Status Codes

~~The status values that are specific for this DIMSE operation are defined in~~ Table CC.2.5-4 defines the status code values that might be returned in a N-CREATE response. General status code values and fields related to status code values are defined for N-CREATE DIMSE Service in PS3.7.

Table CC.2.5-4. Status Values

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	The UPS was created as requested	0000
Warning	The UPS was created with modifications	B300
Failure	Refused:Failed: The provided value of UPS State was not "SCHEDULED".	C309

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CC.2.6.4 Status Codes

~~The status values that are specific for this DIMSE operation are defined in~~ Table CC.2.6-1 defines the status code values that might be returned in a N-SET response. General status code values and fields related to status code values are defined for N-SET DIMSE Service in PS3.7. See PS3.7 for additional response status codes.

Table CC.2.6-1. Status Values

<u>Service Status</u>	<u>Further Meaning</u>	<u>Status Code</u>
Success	The requested modification of the Attribute values is performed	0000
Warning	Requested optional Attributes are not supported.	0001
	Coerced invalid values to valid values	B305
Failure	Refused:Failed: The UPS is not in the "IN PROGRESS" state	C310
	Refused:Failed: The correct Transaction UID was not provided	C301

Service Status	Further Meaning	Status Code
	Refused: Failed: The UPS may no longer be updated	C300
	Failed: Specified SOP Instance UID does not exist or is not a UPS Instance managed by this SCP	C307

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CC.2.7.4 Status Codes

~~The status values that are specific for this DIMSE operation are defined in~~ Table CC.2.7-1 defines the status code values that might be returned in a N-GET response. General status code values and fields related to status code values are defined for N-GET DIMSE Service in PS3.7. ~~See PS3.7 for additional response status codes.~~

Table CC.2.7-1. Status Values

Service Status	Further Meaning	Status Code
Warning	Requested optional Attributes are not supported	0001
Failure	Failed: Specified SOP Instance UID does not exist or is not a UPS Instance managed by this SCP	C307

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CC.2.8.4 Status Codes

Table CC.2.8-2 defines the status code values that might be returned in a C-FIND response. General status code values and fields related to status code values are defined for C-FIND DIMSE Service in PS3.7.

Table CC.2.8-2. C-FIND Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	IdentifierError: Data Set Does Not Match SOP Class	A900	(0000,0901) (0000,0902)
	Failed: SOP Class not Supported	0122	
	Failed: Unable to process	Cxxx (values C000 through CFFF as assigned by the implementation)	(0000,0901) (0000,0902)
Cancel	Matching terminated due to Cancel request	FE00	None
Success	Matching is complete - No final Identifier is supplied.	0000	None
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys.	FF00	Identifier

Service Status	Further Meaning	Status Codes	Related Fields
	Matches are continuing - Warning that one or more Optional Keys were not supported for existence for this Identifier.	FF01	Identifier

Note

Status Codes are returned in DIMSE response messages (see PS3.7). The code values stated in column "Status Codes" are returned in Status Command Element (0000,0900).

Some Failure Status Codes are implementation specific.

An SCP implementation shall assign specific failure status codes by replacing each ‘x’ symbol with a hexadecimal digit in the range from 0 to F. An SCP implementation wishing to differentiate between causes of “Failed: Unable to process” Failure Meaning shall assign those causes specific Status Code Values within valid range specified in Table V.4-1.

An SCU implementation shall recognize any Failure Status Code within the value range specified in Table V.4-1 as an indicator of the Failure Meaning stated in the table. There is no requirement for an SCU implementation to differentiate between specific Status Codes within the valid range.

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Amend PS 3.4 Annex DD

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DD.3.2.1.2 Status

~~The status values for N-CREATE that are specific for these SOP Classes are defined as follows: Table DD.3.2.1.2-1 defines the status code values that might be returned in a N-CREATE response. General status code values and fields related to status code values are defined for N-CREATE DIMSE Service in PS3.7.~~

Table DD.3.2.1.2-1. RT Ion Machine Verification SOP Class N-CREATE Status Values

Status	Meaning	Code
Success	Machine Verification successfully created	0000
Failure	No such object instance Failed: Referenced RT Plan not found	C227
	Failed: The Referenced Fraction Group Number does not exist in the referenced plan	C221
	Failed: No beams exist within the referenced fraction group	C222
	Failed: SCU already verifying and cannot currently process this request.	C223

~~The status values for N-SET that are specific for these SOP Classes are defined as follows: Table DD.3.2.1.2-2 defines the status code values that might be returned in a N-SET response. General status code values and fields related to status code values are defined for N-SET DIMSE Service in PS3.7.~~

Table DD.3.2.1.2-2. RT Ion Machine Verification SOP Class N-SET Status Values

Status	Meaning	Code
Success	Machine Verification successfully updated	0000
Failure	Failed: Referenced Beam Number not found within the referenced Fraction Group	C224
	Failed: Referenced device or accessory not supported	C225
	Failed: Referenced device or accessory not found within the referenced beam	C226

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DD.3.2.2.3 Status

~~The status values that are specific for these SOP Classes are defined as follows:~~ Table DD.3.2.2.3-1 defines the status code values that might be returned in a N-GET response. General status code values and fields related to status code values are defined for N-GET DIMSE Service in PS3.7.

Table DD.3.2.2.3-1. RT Conventional Machine and RT Ion Machine Verification SOP Class N-GET Status Values

Status	Meaning	Code
Success	Treatment Verification Status of the applicable Machine Verification instance successfully returned.	0000
Failure	No such object instance Failed: applicable Machine Verification instance not found	C112

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DD.3.2.3.2 Status

~~The status values that are specific for these SOP Classes are defined in~~ Table DD.3.2.3-2 defines the status code values that might be returned in a N-ACTION response. General status code values and fields related to status code values are defined for N-ACTION DIMSE Service in PS3.7.

Table DD.3.2.3-2. RT Conventional Machine and RT Ion Machine Verification SOP Class N-ACTION Status Values

Status	Meaning	Code
Success	Machine Parameter Verification of the applicable Machine Verification instance successfully initiated.	0000
Failure	No such object instance Failed: Machine Verification requested instance not found.	C112

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DD.3.2.4.2 Status

There are no specific status codes. See PS3.7 for response status codes.

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DD.3.2.5.2 Status

There are no specific status codes. See PS3.7 for response status codes.

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GG.4.2 Service Class Provider

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The SCP shall return, via the C-STORE response primitive, the Response Status Code applicable to the associated request. By performing this service successfully, the SCP indicates that the Hanging Protocol SOP Instance has been successfully stored. Table GG.4-1 **shows defines** the **specific** response status **code** values **that might be returned in a C-STORE response**. General status code values and fields related to status code values are defined **for C-STORE DIMSE Service** in PS3.7.

Table GG.4-1. C-STORE Response Status Values

Service Status	Further Meaning	Status Codes	Related Fields
Failure	Refused: Out of Resources	A700	(0000,0902)
	Error: Data Set Does Not Match SOP Class	A900	(0000,0901) (0000,0902)
	Error: Cannot Understand	C000	(0000,0901) (0000,0902)
Success		0000	None

Note

Status Codes are returned in DIMSE response messages (see PS3.7). The code values stated in column "Status Codes" are returned in Status Command Element (0000,0900).

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9 DIMSE-C

9.1 SERVICES

9.1.1 C-STORE Service

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9.1.1.1 C-STORE Parameters

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9.1.1.1.9 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in the response/confirmation. The following types of status may occur in a response/confirmation **(see also Annex C)**:

- a. Refused: Out of Resources (**Status value is Service Class specific**) - This indicates that the peer DIMSE-service-user was unable to store the composite SOP Instance because it was out of resources.
- b. **RefusedFailed**: SOP Class Not Supported (**0112**) - This indicates that the peer DIMSE-service-user was unable to store the composite SOP Instance because the SOP Class is not supported,
- c. Error: Cannot Understand (**Status value is Service Class specific**) - This indicates that the peer DIMSE-service-user was unable to store the composite SOP Instance because it cannot understand certain Data Elements.
- d. Error: Data Set does not match SOP Class (**Status value is Service Class specific**) - This indicates that the peer DIMSE-service-user was unable to store the composite SOP Instance because the Data Set does not match the SOP Class.
- e. Warning (**Status value is Service Class specific**) - This indicates that the peer DIMSE-service-user was able to store the composite SOP Instance, but detected a probable error.
- f. Success (**0000**) - This indicates that the composite SOP Instance - was successfully stored.
- g. **Refused**:Duplicate Invocation (**0210**) - Indicates that the Message ID (0000,0110) specified is allocated to another notification or operation.
- h. **Refused**:Invalid **SOPObject** Instance (**0117**) - Indicates that the SOP Instance UID specified implied a violation of the UID construction rules.
- i. **Refused**:Mistyped **aA**rgument (**0212**) - Indicates that one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- j. **Refused**:Unrecognized Operation (**0211**) - Indicates that the operation is not one of those agreed between the DIMSE-service-users.
- k. Refused: Not Authorized (**0124**) - Indicates that the peer DIMSE-service-user was not authorized to store the composite SOP Instance.

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9.1.2 C-FIND Service

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9.1.2.1 C-FIND Parameters

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9.1.2.1.5 Status

Indicates the status of the response. It may have any of the following values (**See also Appendix C**):

- a. Success (**0000**) - This indicates that processing of the matches is complete. It shall not contain a matching Identifier.
- b. Pending (**Status value is Service Class specific**) - This indicates that processing of the matches is initiated or continuing. It shall contain a matching Identifier.
- c. Refused: Out of Resources (**Status value is Service Class specific**) - Indicates that processing of the C-FIND has been terminated because it was out of resources. This may be the initial response to the C-FIND, or may be sent after a number of pending C-FIND responses. This response shall not contain a matching Identifier.
- d. Refused: SOP Class Not Supported (**0122**) - Indicates that processing of the C-FIND has been terminated because the SOP Class was not supported. This response shall not contain a matching Identifier.
- e. Cancel (**FE00**) - Indicates that the processing of the C-FIND has been terminated due to a C-FIND Cancel indication primitive. The response shall not contain an Identifier.
- f. Failed (**Status value is Service Class specific**) - Indicates that the C-FIND operation failed at the performing DIMSE-service-user.

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9.1.3 C-GET Service

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9.1.3.1 C-GET Parameters

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9.1.3.1.6 Status

Indicates the status of the response. It may have any of the following values (See also Appendix C):

- a. Success **(0000)** - This indicates that processing of the matches and all sub-operations are complete.
- b. Pending **(Status value is Service Class specific)** - This indicates that processing of the matches and sub-operations is initiated or continuing.
- c. Refused: Out of Resources **(Status value is Service Class specific)** - Indicates that processing of the C-GET has been terminated because it was out of resources. This may be the initial response to the C-GET or may be sent after a number of Pending statuses.
- d. Refused: SOP Class Not Supported **(0122)** - Indicates that processing of the C-GET has been terminated because the SOP Class was not supported.
- e. Cancel **(FE00)** - Indicates that processing of the C-GET has been terminated due to a C-GET Cancel indication primitive.
- f. Failed **(Status value is Service Class specific)** - Indicates that the C-GET operation failed at the performing DIMSE-service-user.
- g. ~~Refused~~: Duplicate Invocation **(0210)** - Indicates that the Message ID (0000,0110) specified is allocated to another notification or operation.
- h. ~~Refused~~: Mistyped ~~a~~Argument **(0212)** - Indicates that one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- i. ~~Refused~~: Unrecognized Operation **(0211)** - Indicates that the operation is not one of those agreed between the DIMSE-service-users.
- j. Refused: Not Authorized **(0124)** - Indicates that the peer DIMSE-service-user was not authorized to invoke the C-FIND operation.
- k. **Warning (Status value is Service Class specific) - This indicates that the peer DIMSE-service-user was able to perform sub-operations but detected a probable error with one or more of them.**

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9.1.4 C-MOVE Service

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9.1.4.1 C-MOVE Parameters

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9.1.4.1.7 Status

Indicates the status of the response. It may have any of the following values (See also Appendix C):

- a. Success **(0000)** - This indicates that processing of the matches and all sub-operations are complete.
- b. Pending **(Status value is Service Class specific)** - This indicates that procession of the matches and sub-operations is initiated or continuing.
- c. Refused: Out of Resources **(Status value is Service Class specific)** - Indicates that processing of the C-MOVE has been terminated because it was out of resources. This may be the initial response to the C-MOVE or may be sent after a number of Pending statuses.
- d. Refused: SOP Class Not Supported **(0122)** - Indicates that processing of the C-MOVE has been terminated because the SOP Class was not supported.

- e. Refused: Move Destination Unknown (**Status value is Service Class specific**) - Indicates that processing of the C-MOVE has been terminated because the Move destination was unknown.
- f. Cancel (**FE00**) - Indicates that processing of the C-MOVE has been terminated due to a C-MOVE Cancel indication primitive.
- g. Failed (**Status value is Service Class specific**) - Indicates that the C-MOVE operation failed at the performing DIMSE-service-user.
- h. **Refused**: Duplicate Invocation (**0210**) - Indicates that the Message ID (0000,0110) specified is allocated to another notification or operation.
- i. **Refused**: Mistyped **a**Argument (**0212**) - Indicates that one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- j. **Refused**: Unrecognized Operation (**0211**) - Indicates that the operation is not one of those agreed between the DIMSE-service-users.
- k. Refused: Not Authorized (**0124**) - Indicates that the peer DIMSE-service-user was not authorized to invoke the C-MOVE operation.
- l. **Warning (Status value is Service Class specific) - This indicates that the peer DIMSE-service-user was able to perform sub-operations but detected a probable error with one or more of them.**

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9.1.5 C-ECHO Service

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9.1.5.1 C-ECHO Parameters

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9.1.5.1.4 Status

Indicates the status of the response. It may have any of the following values (**See also Appendix C**):

- a. Success (**0000**)
- b. Refused: SOP Class Not Supported (**0122**) - Indicates that a different SOP Class than the Verification SOP Class was specified, which was not supported.
- c. **Refused**: Duplicate Invocation (**0210**) - Indicates that the Message ID (0000,0110) specified is allocated to another notification or operation.
- d. **Refused**: Mistyped **a**Argument (**0212**) - Indicates that one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- e. **Refused**: Unrecognized Operation (**0211**) - Indicates that a different SOP Class than the Verification SOP Class was specified, which does not recognize a C-ECHO operation.

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10 DIMSE-N

10.1 SERVICES

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10.1.1 N-EVENT-REPORT Service

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10.1.1.1 N-EVENT-REPORT Parameters

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10.1.1.1.8 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following types of status may occur **(See also Appendix C)**:

- **cClass-iInstance eConflict (0119)**: the specified SOP Instance is not a member of the specified SOP class.
- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation.
- **iInvalid aArgument vValue (0115)**: the event information value specified was out of range or otherwise inappropriate.
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules.
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- **nNo sSuch aArgument (0114)**: the event information specified was not recognized.
- **nNo sSuch eEvent tType (0113)**: the event type specified was not recognized.
- **nNo sSuch SOP eClass (0118)**: the SOP Class was not recognized.
- **nNo sSuch SOP Instance (0112)**: the SOP Instance was not recognized.
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered.
- **rResource iLimitation (0213)**: the operation was not performed due to resource limitation.
- **sSuccess (0000)**: successful notification.
- **uUnrecognized oOperation (0211)**: the operation is not one of those agreed between the DIMSE-service-users.

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10.1.2 N-GET Service

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10.1.2.1 N-GET Parameters

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10.1.2.1.9 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following types of status may occur **(See also Appendix C)**:

- **aAttribute iList eError (0107)**: one or more Attribute Values were not read because the specified Attribute was not recognized. The Attribute Values that could be read are returned.
- **cClass-iInstance eConflict (0119)**: the specified SOP Instance is not a member of the specified SOP Class.
- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation.
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules.
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- **nNo sSuch SOP eClass (0118)**: the SOP Class was not recognized.
- **nNo sSuch SOP Instance (0112)**: the SOP Instance was not recognized.
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered.

- **rResource lLimitation (0213)**: the operation was not performed due to resource limitation.
- **sSuccess (0000)**: successful operation.
- **uUnrecognized oOperation (0211)**: the operation is not one of those agreed between the DIMSE-service-users.
- **Refused: nNot aAuthorized (0124)**: the DIMSE-service-user was not authorized to invoke the operation
- **Warning (Status value is Service Class specific): not all optional attributes were returned by DIMSE-service-user**
- **Failed (Status value is Service Class specific): DIMSE-service-user failed to complete the operation**

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10.1.3 N-SET Service

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10.1.3.1 N-SET Parameters

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10.1.3.1.9 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following types of status may occur **(See also Appendix C)**:

- **cClass-iInstance eConflict (0119)**: the specified SOP Instance is not a member of the specified SOP Class.
- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation.
- **iInvalid Attribute Value (0106)**: the Attribute Value specified was out of range or otherwise inappropriate.
- **Attribute Value eOut eOf rRange (0116)**: the Attribute Value specified was out of range or otherwise inappropriate. The Attribute Values that could be modified were modified.
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules.
- **mMissing Attribute Value (0121)**: a required Attribute Value was not supplied.
- **nNo sSuch Attribute (0105)**: the Tag for the specified Attribute was not recognized.
- **Attribute lList eError (0107)**: one or more Attribute Values were not modified because the specified Attributes were not recognized. The Attribute Values that could be modified were modified.
- **nNo sSuch SOP eClass (0118)**: the SOP Class was not recognized.
- **nNo sSuch SOP Instance (0112)**: the SOP Instance was not recognized.
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered.
- **rResource lLimitation (0213)**: the operation was not performed due to resource limitation.
- **sSuccess (0000)**: successful operation.
- **uUnrecognized oOperation (0211)**: the operation is not one of those agreed between the DIMSE-service-users.
- **Refused: nNot aAuthorized (0124)**: the DIMSE-service-user was not authorized to invoke the operation.
- **Failed (Status value is Service Class specific): the operation was not performed as certain conditions for operation were not met**
- **Warning (Status value is Service Class specific): the operation was performed partially or with modified conditions**

...

10.1.4 N-ACTION Service

The N-ACTION service is used by a DIMSE-service-user to request an action by a peer DIMSE-service-user. It is a confirmed service.

10.1.4.1 N-ACTION Parameters

Table 10.1-4 lists the parameters for this service.

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10.1.4.1.10 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following type of status may occur (**See also Appendix C**):

- **cClass-iInstance eConflict (0119)**: the specified SOP Instance is not a member of the specified SOP Class.
- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation.
- **iInvalid aArgument vValue (0115)**: the action information value specified was out of range or otherwise inappropriate.
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules.
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- **nNo sSuch aAction Type (0123)**: the action type specified was not supported.
- **nNo sSuch aArgument (0114)**: the action information specified was not supported.
- **nNo sSuch SOP eClass (0118)**: the SOP Class was not recognized.
- **nNo sSuch SOP Instance (0112)**: the SOP Instance was not recognized.
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered.
- **rResource iLimitation (0213)**: the operation was not performed due to resource limitation.
- **sSuccess (0000)**: successful operation.
- **uUnrecognized oOperation (0211)**: the operation is not one of those agreed between the DIMSE-service-users.
- **Refused: nNot aAuthorized (0124)**: the DIMSE-service-user was not authorized to invoke the operation.
- **Warning (Status value is Service Class specific): the operation was performed partially or with modified conditions**
- **Failed (Status value is Service Class specific): the operation was not performed as certain conditions for operation were not met**

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10.1.5 N-CREATE Service

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10.1.5.1 N-CREATE Parameters

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10.1.5.1.6 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following type of status may occur (**See also Appendix C**):

- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation.

- **dDuplicate SOP Instance (0111)**: the new managed SOP Instance Value supplied by the invoking DIMSE-service-user was already registered for a managed SOP Instance of the specified SOP Class.
- **iInvalid Attribute Value (0106)**: the Attribute Value specified was out of range or otherwise inappropriate.
- **Attribute Value eOut eOf rRange (0116)**: the Attribute Value specified was out of range or otherwise inappropriate. The SCP will apply a default value or will not include the attribute in the created instance.
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules.
- **mMissing Attribute (0120)**: a required Attribute was not supplied.
- **mMissing Attribute Value (0121)**: a required Attribute Value was not supplied and a default value was not available.
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users.
- **nNo sSuch Attribute (0105)**: the Tag for the specified Attribute was not recognized.
- **Attribute lList eError (0107)**: one or more specified Attributes were not recognized and not included in the created instance.
- **nNo sSuch SOP class (0118)**: the SOP Class was not recognized.
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered.
- **rResource lLimitation (0213)**: the operation was not performed due to resource limitation.
- **sSuccess (0000)**: successful operation.
- **uUnrecognized oOperation**: the operation is not one of those agreed between the DIMSE-service-users.
- **Refused: nNot aAuthorized (0124)**: the DIMSE-service-user was not authorized to invoke the operation.
- **Warning (Status value is Service Class specific): the DIMSE-service-user created an Instance but did not perform all specified operations**
- **Failed (Status value is Service Class specific): no instance was created by the DIMSE-service-user**

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10.1.6 N-DELETE Service

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10.1.6.1 N-DELETE Parameters

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10.1.6.1.7 Status

This parameter contains the error or success notification for the operation. It shall be included by the performing DIMSE-service-user in any response/confirmation. The following types of status may occur **(See also Appendix C)**

- **cClass-iInstance eConflict (0119)**: the specified SOP Instance is not a member of the specified SOP Class
- **dDuplicate iInvocation (0210)**: the Message ID (0000,0110) specified is allocated to another notification or operation
- **iInvalid SOPObject Instance (0117)**: the SOP Instance UID specified implied a violation of the UID construction rules
- **mMistyped aArgument (0212)**: one of the parameters supplied has not been agreed for use on the Association between the DIMSE-service-users
- **nNo sSuch SOP eClass (0118)**: the SOP Class was not recognized
- **nNo sSuch SOP Instance (0112)**: the SOP Instance was not recognized
- **pProcessing fFailure (0110)**: a general failure in processing the operation was encountered

- **rResource ILimitation (0213)**: the operation was not performed due to resource limitation
- **sSuccess (0000)**: successful operation
- **uUnrecognized oOperation (0211)**: the operation is not one of those agreed between the DIMSE-service-users
- **Refused: nNot aAuthorized (0124)**: the DIMSE-service-user was not authorized to invoke the operation.
- ...

C Status Type Encoding (Normative)

The following sections define the encoding for the Status Types supported by the DIMSE services. The **applicability and semantics** for each Status Type (i.e., Attribute List Error, etc.) are defined in the DIMSE Services. Each Status Type is categorized in a Status Class **and represents certain Status Meaning within the Status Class**.

Note

The Status (0000,0900) Command Element is required for all Status Types.

All Status Codes are assigned **to the Status Types** according to the following Status Class convention:

Status Class	Status Codes
Success	0000
Warning	0001 or Bxxx or 0107 or 0116
Failure	Axxx or Cxxx or 01xx (except 0107 and 0116) or 02xx
Cancel	FE00
Pending	FF00 and FF01
PS3.7 Annex C assigned Warning and Failure	01xx and 02xx

Status Codes with values 01xx and 02xx are reserved for assignment by DICOM Standard. These Status codes have standard status meanings for DIMSE Services that shall not be modified by a Service Class definition or an implementation.

Status Codes with values Axxx, Bxxx, and Cxxx may be assigned by the DICOM Standard or by an implementation according to the definition of a Service Class in PS3.4.

Implementations shall not use Status Codes with values not listed in the table above.

C.1 SUCCESS STATUS CLASS

Statuses in this Status Class convey that the operation/notification completed successfully.

C.1.1 Success

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0000H.

C.2 PENDING STATUS CLASS

Statuses in this Status Class convey that the operation/notification is continuing and additional Statuses are expected.

C.2.1 Pending

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.

C.3 CANCEL STATUS CLASS

Statuses in this Status Class convey that the operation/notification has been canceled.

C.3.1 CANCEL

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to FE00H.

C.4 WARNING STATUS CLASS

Statuses in this Status Class convey that the operation/notification has completed but an error was detected. The semantics and behavior of these Statuses are defined in PS3.4.

C.4.1 Warning

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.
Offending Element	(0000,0901)	AT	1-n	This optional field contains a list of the elements in which the error was detected.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.4.2 Attribute List Error

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID for which Attributes were not recognized.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0107H.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the UID of the SOP Instance for which Attributes were not recognized.
Attribute Identifier List	(0000,1005)	AT	1-n	This optional field contains an Attribute Tag for each Attribute that was not recognized.

C.4.3 Attribute Value Out of Range

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0116H.
Modification List/Attribute List	(no tag)	-	-	Optionally contains the application specific Data Set to only encode the invalid Attribute Values conveyed in the Modification List of the N-SET-RQ or the Attribute List of the N-CREATE-RQ.

C.5 FAILURE STATUS CLASS

Statuses in this Status Class convey that the operation/notification failed and was not performed.

C.5.1 Error: Cannot Understand

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.
Offending Element	(0000,0901)	AT	1-n	This optional field contains a list of the elements in which the error was detected.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.2 Error: Data Set Does Not Match SOP Class

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service

Status Field	Tag	VR	VM	Description of Field
				Class specific and defined in PS3.4.
Offending Element	(0000,0901)	AT	1-n	This optional field contains a list of the elements in which the error was detected.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.3 Failed

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.
Offending Element	(0000,0901)	AT	1-n	This optional field contains a list of the elements in which the error was detected.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.4 Refused: Move Destination Unknown

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.5 Refused: Out of Resources

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field is Service Class specific and defined in PS3.4.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.6 Refused: SOP Class Not Supported

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0122H.

Status Field	Tag	VR	VM	Description of Field
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

C.5.7 Class-Instance Conflict

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID for which the SOP Instance was not a member.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0119H.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the SOP Instance that was not a member of the specified SOP Class.

C.5.8 Duplicate SOP Instance

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0111H.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the SOP Instance UID that was already allocated to another SOP Instance.

C.5.9 Duplicate Invocation

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0210H.

C.5.10 Invalid Argument Value

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0115H.
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID for which an argument value was in error.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the ID of the SOP Instance for which an argument value was in error.

Status Field	Tag	VR	VM	Description of Field
Event Type ID	(0000,1002)	US	1	This optional field contains the UID of the Event Type that was not recognized. Permitted only in the N-EVENT-RSP.
Event Information	(no tag)	-	-	Optionally contains the application specific Data Set to only encode the invalid argument values conveyed in the Event Information of the request. Permitted only in the N-EVENT-REPORT-RSP.
Action Type ID	(0000,1008)	US	1	This optional field contains the ID of the Action Type that was not recognized. Permitted only in the N-ACTION-RSP.
Action Information	(no tag)	-	-	Optionally contains the application specific Data Set to only encode the invalid argument values conveyed in the N-ACTION-RQ. Permitted only in the N-ACTION-RSP.

C.5.11 Invalid Attribute Value

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0106H.
Modification List/Attribute List	(no tag)	-	-	Optionally contains the application specific Data Set to only encode the invalid Attribute Values conveyed in the Modification List of the N-SET - RQ or the Attribute List of the N-CREATE-RQ.

C.5.12 Invalid Object Instance

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0117H.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the SOP Instance UID that violated the UID construction rules.

C.5.13 Missing Attribute

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0120H.
Attribute Identifier List	(0000,1005)	AT	1-n	This optional field contains an Attribute Tag for each Attribute that was not recognized.

C.5.14 Missing Attribute Value

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0121H.
Modification List/Attribute List	(no tag)	-	-	Optionally contains the application specific Data Set to only encode missing Attribute Values conveyed Modification List of the N-SET -RQ or the Attribute List of the N-CREATE-RQ..

C.5.15 Mistyped Argument

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0212H.

C.5.16 No Such Argument

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field shall optionally contain the SOP Class UID for which the argument does not exist.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0114H.
Event Type ID	(0000,1002)	US	1	This optional field contains the ID of the Event Type for which the argument does not exist. Permitted only in the N-EVENT-REPORT-RSP.
Action Type ID	(0000,1008)	US	1	This optional field contains the ID of the Action Type for which the argument does not exist. Permitted only in the N-ACTION-RSP.

C.5.17 No Such Attribute

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0105H.
Attribute Identifier List	(0000,1005)	AT	1-n	This optional field contains an Attribute Tag for each Attribute that was not recognized.

C.5.18 No Such Event Type

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID for which the event type does not exist.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0113H.
Event Type ID	(0000,1002)	US	1	This optional field contains the ID of the Event Type that does not exist.

C.5.19 No Such SOP Instance

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0112H.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field contains the SOP Instance UID that did not exist.

C.5.20 No Such SOP Class

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID that does not exist.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0118H.

C.5.21 Processing Failure

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID on which the processing failure occurred.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0110H.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.
Error ID	(0000,0903)	US	1	This optional field contains an application-specific error code.
Affected SOP Instance UID	(0000,1000)	UI	1	This optional field shall optionally contain the UID of the SOP Instance on which the processing failure occurred.

C.5.22 Resource Limitation

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0213H.

C.5.23 Unrecognized Operation

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0211H.

C.5.24 No Such Action Type

Status Field	Tag	VR	VM	Description of Field
Affected SOP Class UID	(0000,0002)	UI	1	This optional field contains the SOP Class UID for which the action type does not exist.
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0123H.
Action Type ID	(0000,1008)	US	1	This optional field contains the ID of the Action Type that does not exist.

C.5.25 Refused: Not Authorized

Status Field	Tag	VR	VM	Description of Field
Status	(0000,0900)	US	1	Confirmation status of the operation. The value of this required field shall be set to 0124H.
Error Comment	(0000,0902)	LO	1	This optional field contains an application-specific text description of the error detected.

