

DICOM Correction Item

Correction Number	CP-546
Log Summary:	Clarify Specific Character Set usage in C-FIND
Type of Modification	Name of Standard
Correction	PS 3.4-2004
Rationale for Correction: Specifications of usage of Specific Character Set (0008,0005) attribute in different queries are inconsistent and do not explicitly state that this character. This CP clarifies usage of this attribute in C-FINDs	
Sections of documents affected PS 3.3 Annex K	
Correction Wording:	

Make the following changes in PS 3.3, Annex K

K.1 Overview

K.1.1 Scope

The Basic Worklist Management Service Class defines an application-level class-of-service which facilitates the access to worklists.

A worklist is the structure to present information related to a particular set of tasks. It specifies particular details for each task. The information supports the selection of the task to be performed first, and supports the performance of that task.

Note: One example is the worklist used to present information about scheduled imaging procedures at an imaging modality and to the operator of that modality. Another example is the worklist presented at a radiological reporting station to indicate which studies have been performed and are waiting to be reported.

This ~~supplement annex~~ defines a service for communicating such worklists. The following are characteristics for this Service Class:

- The worklist has to be queried by the Application Entity (AE) associated with the application on which, or by which, the tasks included in the worklist have to be performed. In this query, a number of search keys can be used, defined for each particular worklist SOP class.
- The worklist consists of worklist items, each item is related to one task. A worklist item contains Attributes from different objects related to the task.

Notes: 1. This Service Class is not intended to provide a comprehensive generalized database query mechanism such as SQL. Instead, the Basic Worklist Management Service Class is focused towards basic queries using a small set of common Key Attributes used as Matching Keys or Return Attributes. Basic Worklist Information Models are not hierarchical.

2. Basic Worklist Information Models always consist of one query level, which may consist of one or more entities. There is no distinction between hierarchical and relational use of C-Find in the Basic Worklist Management Service Class.

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K.2.2.2 Attribute Matching

The following types of matching, which are defined by the Query/Retrieve Service Class in **PS-3.4 Annex C** may be performed on Matching Key Attributes in the Basic Worklist Service Class. Different Matching Key Attributes may be subject for different matching types. The Worklist Information Model defines the type of

matching for each Required Matching Key Attribute. The Conformance Statement of the SCP shall define the type of matching for each Optional Matching Key Attribute. **The types of matching are:**

- Single Value Matching
- List of UID Matching
- Wild Card Matching
- Range Matching
- Sequence Matching

The following type of matching, which is defined by the Query/Retrieve Service Class in Annex C of this Part shall be performed on Return Key Attributes in the Basic Worklist Service Class.

- Universal Matching

See Section C.2.2.2 and subsections for specific rules governing of Matching Key Attribute encoding for and performing of different types of matching.

The Specific Character Set (0008,0005) Attribute may be present in the Identifier but is never matched, i.e., it is not considered a Matching Key Attribute. See Section C.2.2.2 for details.

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K.4 DIMSE-C Service Group

One DIMSE-C Service is used in the construction of SOP Classes of the Basic Worklist Management Service Class. The following DIMSE-C operation is used.

- C-FIND

K.4.1 C-FIND Operation

SCPs of some SOP Classes of the Basic Worklist Management Service Class are capable of processing queries using the C-FIND operation as described in PS 3.7. The C-FIND operation is the mechanism by which queries are performed. Matches against the keys present in the Identifier are returned in C-FIND responses.

K.4.1.1 C-FIND Service Parameters

K.4.1.1.1 SOP Class UID

The SOP Class UID identifies the Worklist Information Model against which the C-FIND is to be performed. Support for the SOP Class UID is implied by the Abstract Syntax UID of the Presentation Context used by this C-FIND operation.

K.4.1.1.2 Priority

The Priority Attribute defines the requested priority of the C-FIND operation with respect to other DIMSE operations being performed by the same SCP. Processing of priority requests is not required of SCPs. Whether or not an SCP supports priority processing and the meaning of the different priority levels shall be stated in the Conformance Statement of the SCP.

K.4.1.1.3 Identifier

Both the C-FIND request and response contain an Identifier encoded as a Data Set (see PS 3.5).

K.4.1.1.3.1 Request Identifier Structure

An Identifier in a C-FIND request shall contain

- Key Attributes values to be matched against the values of Attributes specified in that SOP Class.
- **Conditionally, the Attribute Specific Character Set (0008,0005). This Attribute shall be included if expanded or replacement character sets may be used in any of the Attributes in the Request Identifier. It shall not be included otherwise.**

Note: This means that Specific Character Set (0008,0005) is included if the SCU supports expanded or replacement character sets in the context of this service. It will not be included if expanded or replacement character sets are not supported by the SCU.

The Key Attributes and values allowable for the query shall be defined in the SOP Class definition for the corresponding Worklist Information Model.

K.4.1.1.3.2 Response Identifier Structure

The C-FIND response shall not contain Attributes that were not in the request or specified in this section. An Identifier in a C-FIND response shall contain:

- Key Attributes with values corresponding to Key Attributes contained in the Identifier of the request (Key Attributes as defined in K.2.2.1.)
- **Conditionally, the Attribute Specific Character Set (0008,0005). This Attribute shall be included if expanded or replacement character sets may be used in any of the Attributes in the Request Identifier. It shall not be included otherwise. The C-FIND SCP is not required to return responses in the Specific Character Set used by the SCU in the request; the SCP may return responses with a different Specific Character Set.**

Note: This means that Specific Character Set (0008,0005) is included if the SCP supports expanded or replacement character sets in the context of this service. It will not be included if expanded or replacement character sets are not supported by the SCP.

K.6 SOP Class Definitions

K.6.1 Modality Worklist SOP Class

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K.6.1.2.2 Modality Worklist Attributes

Table K.6-1 defines the Attributes of the Modality Worklist Information Model:

**Table K.6-1
 ATTRIBUTES FOR THE MODALITY WORKLIST INFORMATION MODEL**

Description / Module	Tag	Match- ing Key Type	Return Key Type	Remark/Matching Type
SOP Common				
Specific Character Set	(0008,0005)	0	1C	This attribute is required if expanded or replacement character sets are used. See C.2.2.2 and C.4.1.1.
Scheduled Procedure Step				
Scheduled Procedure Step Sequence	(0040,0100)	R	1	The Attributes of the Scheduled Procedure Step shall only be retrieved with Sequence Matching. The Scheduled Procedure Step Sequence shall contain only a single Item.
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- Notes:
1. Just like Series and Image Entities specified in the Query/Retrieve Service Class either an SCU or an SCP may support optional Matching Key Attributes and/or Type 3 Return Key Attributes which are not included in the Worklist Information Model (i.e. standard or private attributes). This is considered a Standard Extended SOP Class (see PS 3.2).
 2. Each Module contains a Comment Attribute. This may be used to transmit non-structured information, which may be displayed to the operator of the Modality.

3. The reason for this exclusion is to assure that the attributes that may be present in multiple modules are included only once with the meaning pertaining to only one module (for example, Referenced Study Sequence (0008,1110) shall be included once with the meaning as defined in the Requested Procedure Module).

4. The use of Specific Character Set is discussed in section K.4.1.1.3.1 and K.4.1.1.3.2.

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K.6.2 General Purpose Worklist SOP Class

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K.6.2.2 General Purpose Worklist Information Model

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K.6.2.2.2 General Purpose Worklist Attributes

Table K.6-2 defines the Attributes of the General Purpose Worklist Information Model:

Table K.6-2 Attributes for the General Purpose Worklist Information Model

Description / Module	Tag	Match- ing Key Type	Return Key Type	Remark / Matching Type
SOP Common				
Specific Character Set	(0008,0005)	O	1C	This attribute is required if expanded or replacement character sets are used. See C.2.2.2 and C.4.1.1.
SOP Class UID	(0008,0016)	O	1	Uniquely identifies the SOP Class of the General Purpose Scheduled Procedure Step. See Section K.6.2.2.3 for further explanation.
SOP Instance UID	(0008,0018)	U	1	Uniquely identifies the SOP Instance of the General Purpose Scheduled Procedure Step. See Section K.6.2.2.3 for further explanation. SOP Instance UID shall be retrieved with Single Value Matching.
General Purpose Scheduled Procedure Step Information				
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Notes: 1. The reason for this exclusion is to assure that the attributes that may be present in multiple modules are included only once with the meaning pertaining to only one module (for example, Referenced Study Sequence (0008,1110) shall be included once with the meaning as defined in the Requested Procedure Module).

2. The use of Specific Character Set is discussed in section K.4.1.1.3.1 and K.4.1.1.3.2.