DICOM Correction Proposal

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| STATUS | Assigned |
| Date of Last Update | 2016/05/30 |
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| Submission Date | 2016/05/28 |

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| --- |
| Correction Number CP1634 |
| Log Summary: QIDO Include Query Parameter |
| Name of Standard  PS3.2, PS3.17, PS3.18 2016b |
| Rationale for Correction:  The query parameters related to QIDO search are being generalized for all search transactions, e.g. in UPS and Non-Patient Objects. The QIDO "includefield" query parameter has two weaknesses:   1. It currently only allows a single value, but it will be more efficient to allow multiple values, similar to other Query Parameters. 2. The Query Parameter name "includefield" would be clearer if it were changed to "include". |
| Correction Wording: |

*Update PS3.18, Section 6.7.1.1 as follows:*

**6.7.1.1 Request**

* …
* include**~~field~~**={attributeID**\***} | all

**~~0-n includefield / {attributeID} pairs allowed, where "all" indicates that all available attributes should be included for each response.~~**

**The "include" Query Parameter has a value that is a comma-separated list of attributeIDs or the keyword "all". A QIDO requests may have zero or more "include" Query Parameters.**

…

*Update PS3.18, Section 6.7.1.1.1 as follows:*

**6.7.1.1.1 {attributeID} encoding rules**

…

If an {attributeID} is passed as the value of an "include**~~field~~**" **~~query~~****~~key~~** **Query Parameter**, **~~this~~** **it** is equivalent to C-FIND Universal matching for the specified attribute (see [Section C.2.2.2.3 in PS3.4](file:///C:\Users\jim\Documents\part04.pdf#sect_C.2.2.2.3)).

{attributeID} can be one of the following:

* {dicomTag}
* {dicomKeyword}
* {dicomTag}.{attributeID}, where {attributeID} is an element of the sequence specified by {dicomTag}
* {dicomKeyword}.{attributeID}, where {attributeID} is an element of the sequence specified by {dicomKeyword}

{dicomTag} is the **~~eight character~~** **eight-character** hexadecimal string corresponding to the Tag of a DICOM Attribute (see [Chapter 6 in PS3.6](file:///C:\Users\jim\Documents\part06.pdf#chapter_6)).

{dicomKeyword} is the Keyword of a DICOM Attribute (see [Chapter 6 in PS3.6](file:///C:\Users\jim\Documents\part06.pdf#chapter_6)).

Note

Examples of valid values for {attributeID}:

* 0020000D
* StudyInstanceUID
* 00101002.00100020
* OtherPatientIDsSequence.PatientID
* 00101002.00100024.00400032
* OtherPatientIDsSequence.IssuerOfPatientIDQualifiersSequence.UniversalEntityID

Note

Examples of valid QIDO-RS URLs:

* http://dicomrs/studies​?PatientID=11235813
* http://dicomrs/studies​?PatientID=11235813​&StudyDate=20130509
* http://dicomrs/studies​?00100010=SMITH\*​&00101002.00100020=11235813​&limit=25
* http://dicomrs/studies​?00100010=SMITH\*​&OtherPatientIDsSequence.00100020=11235813
* http://dicomrs/studies​?PatientID=11235813​&include**~~field~~**=00081048,include**~~field~~**=00081049​&include**~~field~~**=00081060
* http://dicomrs/studies​?PatientID=11235813​&StudyDate=20130509-20130510

* <http://dicomrs/studies​?StudyInstanceUID=1.2.392.200036.9116.2.2.2.2162893313.1029997326.94587​%2c1.2.392.200036.9116.2.2.2.2162893313.1029997326.94583>

*Update PS3.18, Section 6.7.1.2.2 as follows:*

**6.7.1.2.2 Query Result Attributes**

**…**

**Table 6.7.1-2. QIDO-RS STUDY Returned Attributes**

| **Attribute Name** | **Tag** | **Notes** |
| --- | --- | --- |
| … |  |  |
| All other Study Level DICOM Attributes passed as "include**~~field~~**" query values that are supported by the service provider as return attributes | | |
| All available Study Level DICOM Attributes if the "include**~~field~~**" query key is included with a value of "all" | | |

Series Level and Instance Level attributes passed as "include**~~field~~**" query values shall not be returned.

**Update PS3.18, Section 6.7.1.2.2.2 as follows:**

**6.7.1.2.2.2 Series Result Attributes**

For each matching Series, the QIDO-RS provider shall return all attributes listed in [Table 6.7.1-2a](#table_6_7_1_2a):

**Table 6.7.1-2a. QIDO-RS SERIES Returned Attributes**

| **Attribute Name** | **Tag** | **Notes** |
| --- | --- | --- |
| … |  |  |
| All other Study or Series Level DICOM Attributes passed as "include**~~field~~**" query values that are supported by the service provider as return attributes | | |
| All available Instance Level DICOM Attributes if the "include**~~field~~**" query key is included with a value of "all" | | |
| If {StudyInstanceUID} is not specified, all Study-level attributes specified in [Table 6.7.1-2](#table_6_7_1_2) | | |

Instance Level attributes passed as "include**~~field~~**" query values shall not be returned.

**6.7.1.2.2.3 Instance Result Attributes**

For each matching instance, the QIDO-RS provider shall return all attributes listed in [Table 6.7.1-2b](#table_6_7_1_2b):

**Table 6.7.1-2b. QIDO-RS Instance Returned Attributes**

| **Attribute Name** | **Tag** | **Notes** |
| --- | --- | --- |
| … |  |  |
| All other Study, Series or Instance Level DICOM Attributes passed as "include**~~field~~**" query values that are supported by the service provider as return attributes | | |
| All available Instance Level DICOM Attributes if the "include**~~field~~**" query key is included with a value of "all" | | |
| If {StudyInstanceUID} is not specified, all Study-level attributes specified in [Table 6.7.1-2](#table_6_7_1_2) | | |
| If {SeriesInstanceUID} is not specified, all Series-level attributes specified in [Table 6.7.1-2a](#table_6_7_1_2a) | | |

*Update PS3.18, Section 6.8.1.2.2.3 as follows:*

**6.8.1.2.2.3 Search Methods**

The Search methods define the capabilities of a QIDO-RS resource (see [6.7](#sect_6_7)) or a SearchForUPS resource (see [6.9.3](#sect_6_9_3)).

The Search methods shall contain the following attributes:

* A "name" attribute with a value of "GET"
* An "id" attribute with a value of "SearchForStudies", "SearchForStudySeries", "SearchForSeries", "SearchForStudySeriesInstances", "SearchForStudyInstances", "SearchForSeriesInstances", "SearchForInstances" or "SearchForUPS"

The Search methods shall contain a "request" element with "param" elements documenting the following:

* supported Accept header values
* support for the Cache-control header
* support of "limit", "offset" and "fuzzymatching" query parameters
* supported search parameters (both tag and keyword variants shall be listed)
* supported options for the "include**~~field~~**" parameter (both tag and keyword variants shall be listed)

The Search methods shall contain one or more "response" elements documenting the following:

* supported Status Codes
* returned "header" parameters, including use of "warning headers"
* Media Types returned for each Status Code (if applicable)

Note

More than one Status Code can be described by a single "response" element.

Example:

<method name="GET" id="SearchForStudies">  
 <request>  
 <param name="Accept" style="header" default="multipart/related; type=application/dicom+xml">  
 <option value="multipart/related; type=application/dicom+xml" />  
 <option value="application/json" />  
 </param>  
 <param name="Cache-control" style="header">  
 <option value="no-cache" />  
 </param>  
 <param name="limit" style="query" />  
 <param name="offset" style="query" />  
 <param name="fuzzymatching" style="query" />  
 <param name="StudyDate" style="query" />  
 <param name="00080020" style="query" />  
 <param name="StudyTime" style="query" />  
 <param name="00080030" style="query" />  
 …  
 <param name="include**~~field~~**" style="query" repeating="true" />  
 <option value="all" />  
 <option value="00081049" />  
 <option value="PhysiciansOfRecordIdentificationSequence" />  
 <option value="00081060" />  
 <option value="NameOfPhysiciansReadingStudy" />  
 …  
 </param>  
</request>  
<response status="200">  
 <representation mediaType="multipart/related; type=application/dicom+xml" />  
 <representation mediaType="application/json" />  
</response>  
<response status="400 401 403 413 503" />  
</method>

*Update PS3.18, Section 6.9.3.1 as follows:*

**6.9.3.1 Request**

…

* include**~~field~~**={attributeID**\***} | all

**~~0-n includefield / {attributeID} pairs allowed, where "all" indicates that all attributes with values should be included for each response.~~**

**The "include" query parameter has a value that is a comma-separated list of attributeIDs or the keyword "all". A QIDO requests may have zero or more "include" Query Parameters.**

Each {attributeID} shall refer to an attribute of the Unified Procedure Step IOD (see [Section B.26.2 in PS3.3](file:///C:\Users\jim\Documents\part03.pdf#sect_B.26.2)).

See [Section 6.7.1.1](#sect_6_7_1_1) for {attributeID} and {value} encoding rules

* fuzzymatching=true | false
* limit={maximumResults}
* offset={skippedResults}

*Update PS3.18, Section 6.9.3.3.2 as follows:*

**6.9.3.3.2 Query Result Attribute**

For each matching UPS Instance, the Origin-Server shall return:

* All Unified Procedure Step Instance Attributes in [Table CC.2.5-3 in PS3.4](file:///C:\Users\jim\Documents\part04.pdf#table_CC.2.5-3) with a Return Key value of 1 and 2.
* All Unified Procedure Step Instance Attributes in [Table CC.2.5-3 in PS3.4](file:///C:\Users\jim\Documents\part04.pdf#table_CC.2.5-3) with a Return Key value of 1C for which the conditional requirements are met.
* All other Unified Procedure Step Instance Attributes passed as {attributeID} query keys that are supported by the Origin-Server as matching or return attributes
* All other Unified Procedure Step Instance Attributes passed as "include**~~field~~**" query values that are supported by the Origin-Server as return attributes.

*Update PS3.18, Section F.4 as follows:*

**F.4 DICOM JSON Model Example**

// The following example is a QIDO-RS SearchForStudies response consisting   
// of two matching studies, corresponding to the example QIDO-RS request:  
// GET http://qido.nema.org/studies?PatientID=12345&include**~~field~~**=all&limit=2