

Minutes

MEETING NAME 09-WG33: WG-33 Data Archive and Management

MEETING PLACE/DIAL IN

DATE & TIME Wednesday, February 16, 2022 | 11:00 am – 12:30 pm US ET

PRESIDING OFFICERS Matthew Bishop, UnityPoint Health
Keith Eklund, Healthcare Tech Solutions

VOTING MEMBERS PRESENT

AAPM	Bevins, Nicholas
Argentix Informatics, Inc.	Silver, Elliot
DesAcc EMEA	Lyshkow, Hugh
GE Healthcare	Numan, Jouke
Grafimedia	Georgiadis, Pantelis
Healthcare Tech Solutions	Eklund, Keith
Laitek, Inc.	Solomon, Harry
Society for Imaging Informatics In Medicine	Bishop, Matthew
Society for Imaging Informatics In Medicine	Carey, Cheryl

OTHERS [Click here to enter text.](#)

VOTING MEMBERS ABSENT

ACR	Maldonado, Josh
Ambra Health/Intelerad	Ostrow, Daniel
Canon Medical Research USA	O'Donnell, Kevin
Change Healthcare	Ho, Kinson
European Society of Radiology	Mildenberger, Peter
Mayo Clinic Rochester	Persons, Kenneth
PixelMed Publishing	Clunie, David
Sygehus Lillebaelt	Hansen, Peer Møller

Varian Medical Systems, Inc. Schwere, Thomas
Varian, a Siemens Healthineers Anghelescu, Alex
Company

DICOM Anna Zawacki, SIIM
SECRETARIAT

1 CALL TO ORDER AND REVIEW OF ANTI-TRUST RULES AND DICOM PATENT POLICY (Co-Chairs, Secretariat)

The meeting was called to order. Guidelines for Conducting NEMA Meetings were read and attendance was recorded.

2 REVIEW AND APPROVE AGENDA (Co-Chairs)

The agenda was reviewed and approved.

3 REVIEW MINUTES (Co-Chairs)

The minutes of the previous meeting were reviewed and approved.

4 TOPIC ITEMS TO BE DISCUSSED (All)

- Review the summary of comments:
<ftp://d9-workgrps@medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG33/2022/2022-02-16/Extract%20of%20ES%20comments.docx>
- Review Sup223_DLB3 with all changes incorporated:
ftp://d9-workgrps@medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG33/2022/2022-02-16/Sup223_DLB3_InventoryIODandServices.docx

Extract of comments document:

1. In the Inventory Module Attributes – Accession Number – confusion was cleared up

2. Refactoring to macros - division of opinion in WG-06 so we will leave it the way it is for now.
3. Yes, assumption is SOP Instance file is Pt10 file, which is required – “Required if referenced SOP Instance is in the DICOM File Format” assumption that it is a part 10 file.

One member-this assumption might be incorrect. Not always have the part10 header. Another member- the problem is that we are relying on the definition on DICOM file format from part 10 which requires the header.

Group 2 not there and transfer syntax not available

This is meant as a way around that vendor have worked out. Vendors will have it as blobs. Be able to give some specification – here is a blob and here is some specification about it. Why are we then trying to come up with a blob? File itself stored in the container is not a DICOM file.

This was one of the first issues we discussed 2 years ago and decided to do only Part 10 files. If we want to allow other file formats that’s going to be a significant re-write.

Suggestion to review the document if want to add CP and see the implications.

Suggestion to recognize this as a limitation, we go to Letter Ballot with it, we can make a comment about this during Letter Ballot and that will give us some time to work through this.

4. There is discussion of passwords, tokens, etc. in part 17, but do we need to say something here in Part 2 Access Protocols (or anywhere other than part 17)?

Added link to Part 17 in Part 2.

5. Re: C.6.x4 Repository Query SOP Class

Query specifications always allow the SCU to determine whether a match key is included or not, even if the SCP is required to support it. Just keeping aligned with existing practice.

6. Re: C.6.x4.5.1 Record Key -

While ordered keys are required, only the SCP can know how the ordering is done, as the content of the keys is opaque to the SCU. See additional note text and rewrite of this sentence and note.

Notes

1. UIDs may not have the properties of ordering for record return and/or determinability of validity for use by an SCP as the Record Key.
2. The structure and content of Record Key (00gg,0Fz0) values is totally SCP implementation-specific, and opaque to the SCU. Values may be permanent, or may be constructed dynamically during query processing. **The property of ordering is opaque to the SCU; it only means that the SCP can determine from the value of one Record Key what would be the next appropriate record to return. For example, an SCP may use an encrypted representation of an internal database primary key as the Record Key, and such may appear to the SCU to be random unordered values.**
3. The intention of the ordering and persistence requirements for the Record Key is to allow an SCU to obtain the complete inventory matching the Key Attributes in a sequence of Queries. See [Section XXXX.2.2 "Record Key and Continuation" in PS3.17](#)

C.6.x4.5.1 Record Key

The SCP of the Repository Query SOP Class shall support return of a non-zero length value of Record Key (00gg,0Fz0).

~~The SCP shall order C-FIND Responses by value of Record Key (00gg,0Fz0) if that Attribute is included in the Request Identifier.~~

The SCP shall return C-FIND Responses according to the ordering of the values of the Record Key (00gg,0Fz0), if that Attribute is included in the Request Identifier

Notes

1. If the Record Key (00gg,0Fz0) is not requested, there is no requirement on ordering, and the SCU will not be able to issue a subsequent query request with a Prior Record Key.
2. **The ordering of Record Key (00gg,0Fz0) values is formally SCP implementation specific, and may be opaque to the SCU (see Section C.6.x4.1.1).**

7. Re: ZZ.2.3.1 Event Information –

Not sufficient – and not all systems will be able to give an estimated total of matching study records. This is a total number of study records included so far, not the total # that has been examined, tells you how many have been extracted so far.

8. Re: ZZ.2.3.2 Service Class Provider Behavior and sentence below:

ZZ.2.3.2 Service Class Provider Behavior

When production of the Inventory reaches a terminal status (COMPLETE, FAILURE, or CANCELED) and ~~Inventory SOP Instances are available~~, the SCP shall send an N-EVENT-REPORT primitive with Event Type "Inventory Terminated with Instances" (Event Type ID = 11). The Event Information shall include Attributes specifying at least one method of accessing the root SOP Instance of the Inventory, i.e., it shall include at least one of the Attributes Retrieve AE Title (0008,0054) or Retrieve URL (0008,1190), and may optionally include File Access URI (00gg,0FxB). If File Access URI is present, then the Stored Instance Transfer Syntax UID (00gg,0Fy0) shall be present. Further, if File Access URI references a container format file, Container File Type (00gg,0FxC) and Filename in Container (00gg,0FxD) shall be present. The Event Information may also include an Expiration ~~DateTime~~ (00gg,0Fy9) Attribute to indicate the expected ~~DateTime~~ until which the Inventory SOP Instance is available for access by the SCU.

Is it possible to end with “partial” instances available, but no “complete” (root) instance? (Consider an inventory that is split across 4 instances, cancelled after completion of 2).

Yes, any instance could be PARTIAL with respect to its Scope of Inventory, and there could indeed be situations for cancellation and failure where there would be no root instance with status COMPLETE. See section ZZ.2.2.3

9. In this section: XXXX.2.3.3 Managed Metadata and Updated Metadata

▲ **XXXX.2.3.3 Managed Metadata and Updated Metadata**

Many repository applications do not update stored SOP Instances with changes to metadata that occur over time (e.g., patient name and ID). Therefore, applications that use non-DICOM direct file access need to obtain the current metadata, which can be retrieved in a query using the Metadata Sequence (00gg,0Fz3) or the Updated Metadata Sequence (00gg,0Fz4) Key Attribute, defined by the Repository Query SOP Class (see [Section C.6.x4.1.4 “Metadata Sequence and Updated Metadata Sequence” in PS3.4](#)). It is the responsibility of the application **using direct file access** to use the metadata in these returned Attributes, **but recognizing that that metadata may also become outdated due to subsequent repository updates** (see [Section XXXX.7.9 “Metadata Updates”](#)).

10. Re: ZZ.2.2.3 Service Class Provider Behavior

Yes, clarification added as per below:

▲ **ZZ.2.2.3 Service Class Provider Behavior**

Upon receipt of the N-ACTION request, the SCP shall return, via the N-ACTION response primitive, the N-ACTION Response Status Code applicable to the associated request. A success status conveys that the SCP has successfully received the request. An error status conveys that the SCP is not processing the request.

For Action Type “Initiate” (Action Type ID = 11), the SCP shall return an error status 0212H (Mistyped argument) if the SCP does not support all of the character sets identified in Specific Character Set (0008,0005), or all of the matching mechanisms identified in Extended Matching Mechanisms (00gg,0Fy1), **or the identified Inventory Level (00gg,0Fx3); additional explanation may be returned in Error Comment (0000,0902)**. The SCP shall return a warning status B010H if one or more of the Key Attributes specified in the Scope of Inventory Sequence (00gg,0Fx0) are not supported for matching (see Table ZZ.2.2.3-1).

ZZ.2.4.2.1 Operations

The SCP shall document in the SCP Operations Statement

- support for Extended Matching Mechanisms (00gg,0Fy1) in the Scope of Inventory Sequence (00gg,0Fx0)

-
- **the values supported for Inventory Level (00gg,0Fx3)**

XXXX.4.2 Inventory Creation Service

Creation of an inventory may be initiated by a transaction of the Inventory Creation SOP Class (see [Section ZZ.2 in PS3.4](#)). The initiation action for the Inventory specifies the requested Scope of Inventory **and Inventory Level. Specific warnings and errors are defined for an SCP that cannot process the requested Scope and Level (see Section ZZ.2.2.3 in PS3.4)**.

11. Not specific to any particular section -

Yes. If there is a Study IE managed in the database, even if it has no Series, it can be inventoried.

12. Re: XXXX 6.6 Encryption of data at rest – T

This is relevant to inventories, especially that will be used for migration, as the possibility of references to encrypted files needs to be considered.

WG-6 asked it to be put here as well.

Review of updated supplement to see the changes.

Section about relational matching for scope of inventory –

Record key section updates

Metadata sequence and updated metadata sequence

Value representation chart – change of text

- We need to figure out what's of interest.

Enterprise storage management?

Exception management quality assurance of repository. Some of it is addressed in this

Sup by being able to query by missing data

As we get this rolled out those use cases may result in tweaks we need to make.

5 OLD BUSINESS

6 NEW BUSINESS

7 DATE AND TIME OF NEXT MEETINGS (Secretariat)

- Continue T-con meetings bi-weekly
- Next call is March 2, 2022 between 11:00 am and 12:30 pm ET

NEMALINK CODE 09-WG33

SUBMITTED BY Hull, Carolyn

SUBMITTED ON

3/4/22

LEGAL APPROVAL

3/14/22

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