DICOM Secretariat/MITA
1300 North 17th Street, Suite 900
Arlington, VA 22209, USA
+1-703-475-9217
http://www.dicomstandard.org/
dicom@dicomstandard.org

Minutes

MEETING NAME	09-WG33: WG-33 Data Archive and Management	
MEETING PLACE/DIAL IN		
DATE & TIME	Wednesday, July 21, 2021 | 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	King, Graham
	GE Healthcare	Nichols, Steven
	GE Healthcare	Numan, Jouke
	Grafimedia	Georgiadis, Pantelis
	Healthcare Tech Solutions	Eklund, Keith
	Laitek, Inc.	Brown, Barry
	Laitek, Inc.	Solomon, Harry
	Mayo Clinic Rochester	Persons, Kenneth
	Society for Imaging Informatics In Medicine	Bishop, Matthew
	Society for Imaging Informatics In Medicine	Carey, Cheryl
OTHERS	Laitek, Inc.	Behlen, Fred
VOTING MEMBERS ABSENT	ACR	Maldonado, Josh
	Ambra Health	Ostrow, Daniel
	Canon Medical Research USA	O'Donnell, Kevin
	Canon/Vital Images	Dawson, Tim

Canon/Vital Images	Whitby, Jonathan
Change Healthcare	Ho, Kinson
European Society of Radiology	Mildenberger, Peter
Laitek, Inc.	Costea-Barlutiu, Razvan
Laitek, Inc.	Sluis, Douglas
Mach7 Technologies	Ulanov, Alexey
PixelMed Publishing	Clunie, David
Society for Imaging Informatics In Medicine	Henson, Kyle
Varian Medical Systems, Inc.	Schwere, Thomas
Varian, a Siemens Healthineers Company	Anghelescu, Alex

DICOM SECRETARIAT Anna Zawacki, SIIM

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.

3 REVIEW MINUTES (Co-Chairs)

The minutes of the previous meeting were reviewed.

4 TOPIC ITEMS TO BE DISCUSSED (All)

- Review latest Sup 223 draft & discuss revisions that came out of Public Comment & latest WG-06 meeting

ftp://d9-workgrps@medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG33/2021/2021-07-21/Sup223_PC%2B3_InventoryIODandServices.docx

- In particular:
- Review section XXXX.5.8 - A new section is added to the informative annex (PS3.17 Section XXXX.5.8) describing an inventory of a repository of de-identified Studies.
- Is a C-FIND based mechanism preferable to the SOP Instance mechanism? It was decided to proceed with Sup223 in its current approach, and develop the C-FIND approach in a separate effort – we need an author/editor to volunteer for this effort to proceed
- Study Update DateTime is proposed to be added to the Query/Retrieve - review changes for PS3.4 Annex C (p.49 in Sup223).
- GE Work item (Jouke & Steve): Enhanced C-FIND Proposal

WG-6 went over our public comment and response and asked for some modifications to them.
Asked that the Public Comment that one company submitted be added - Alternate Mechanism would be to use C-FIND rather than creating an Inventory IOD.
WG-6 agreed that it has some merit but there is still also the need for inventory SOP instances for some of the models of use that we have.
we want to make sure all of the necessary semantics are in fact mandatory for implementors.
At this time, we would proceed with Sup 223 in its current scope and develop C-FIND in a separate effort.

Discussion with members of WG-06 – there is an easy change to add Study Update DateTime to C-FIND but the other attributes have some more issues – in order to not delay any further they have been put in a change proposal, to be reviewed as well.

During Public Comment, the following issues were raised, and their resolution is noted.

5.A	**Is a C-FIND based mechanism preferable to the SOP Instance mechanism?** The approach of defining persistent Inventory SOP Instances presents technical and business challenges for some repository applications. Those applications don't generate their own SOP Instances – they only store ones they are given, and implementation of production and management of Inventory objects is a substantial technical burden. And if the primary use case is to facilitate migration (i.e., to another vendor's system), there are also substantial business disincentives to implementation. However, such repository applications are designed to support C-FINDs, and a limited extension of C-FIND to be able to incrementally obtain a complete inventory would be a more tractable solution (both technically and from a business perspective). *WG-6 recognized the merit of the argument, but also the need for persistent Inventory SOP Instances for some use cases and models of use. WG-6 also considered that an enhanced C-FIND would probably require a new SOP Class definition to ensure the semantics were clear, and address the specific requirements raised during the development of Sup223 (such as search for attributes missing values). It was decided to proceed with Sup223 in its current approach, and develop the C-FIND approach in a separate effort.*
5.B	**Should new attributes be added to existing C-FIND?** Study Update DateTime, Removed from Operational Use, and Reason for Removal Code Sequence may be useful for broad operational purposes, and could be added to the basic Patient Root and Study Root Queries. *Study Update DateTime is proposed to be added to the Query/Retrieve Information Models at the Study level. The attributes Removed from Operational Use and Reason for Removal Code Sequence have issues that need to be resolved in WG-6, and a Change Proposal has been drafted for consideration in a separate effort.*

What's proposed for this:

DICOM PS3.4: Service Class Specifications

Add attributes to Study Query Information Model and Response Identifier

C.3.4 Additional Query/Retrieve Attributes

965 Some optional Attributes that may be used in Query/Retrieve Information Models that are not Attributes of an Information Object Definition and, therefore, are not defined in PS3.3. These Attributes are defined in Table C.3-1.

Table C.3-1. Additional Query/Retrieve Attributes

Attribute Name	Tag	Attribute Description
…		
Study Update DateTime	**(0020,121x)**	**DateTime of last update to Study SOP Instances or metadata**

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…

C.6.1.1.3 Study Level

Table C.6-2 defines the keys at the Study Information level of the Patient Root Query/Retrieve Information Model.

975 **Table C.6-2. Study Level Keys for the Patient Root Query/Retrieve Information Model**

Attribute Name	Tag	Type
…		
Number of Study Related Instances	(0020,1208)	O
Study Update DateTime	**(0020,121x)**	**O**

Service Class specification DICOM PS3.4.
Changes to basic study query model, adding study update date time to queries.
Straightforward addition, treated like other study level attributes that are not part of SOP instances, attributes managed by PACS or VNA.
Does that include change in demographics? Yes.
Added (Patient Study or Procedure, or Imaging Service Request Attributes)

Table C.3-1. Additional Query/Retrieve Attributes

Attribute Name	Tag	Attribute Description
...		
Study Update DateTime	(0020,121x)	DateTime of last update to Study SOP Instances or metadata (e.g., Patient, Study or Procedure, or Imaging Service Request Attributes)

Normal query retrieve services wouldn't include storage location.
Adding because it is not a migration supplement, it is an Inventory IOD supplement.
We can just pull it out and put it in CP if it's going to be controversial.
Changes to store location - we can be either explicit about that or leave it to implementation as to whether they consider it part of the metadata.

The reason it is there is for purposes of doing a gap.
Added NOTE: this does not include change to storage location

Table C.3-1. Additional Query/Retrieve Attributes

Attribute Name	Tag	Attribute Description
...		
Study Update DateTime	(0020,121x)	DateTime of last update to Study SOP Instances or metadata (e.g., Patient, Study or Procedure, Imaging Service Request, or Series Attributes) Note: This does not include change to storage location of Study SOP Instances.

Other changes requested by WG-6 item 3a for de-identification
Came up with a new informative annex section about the de-identified studies
Reviewed section XXXX5.8 de-identification –no changes from the group.

XXXX.5.8 De-identification

While some research use cases may involve de-identification of protected health information (PHI), where that de-identification occurs in the data processing pipeline may vary with the specific research objective and the capabilities of the systems involved. DICOM specifies a profile with many options for de-identification of SOP Instances, the Basic Application Level Confidentiality Profile (see Annex E in PS3.15). That specification is designed for patient-related SOP Instances with PHI attributes in the top-level data set, and there would be substantial technical challenges to applying that profile to an Inventory SOP Instance.

However, an Inventory may be produced for a repository of de-identified Studies. That is, the SOP Instances in the repository are first de-identified in accordance with a confidentiality profile and options appropriate to the specific research use case, and then an Inventory is produced for the repository, or for a subset thereof in accordance with the Scope of Inventory. There are no specific PHI de-identification requirements on the Inventory itself.

DICOM correction proposal

- Remove from operational use flag
- Made a whole bunch of editorial minor changes (links, etc.)
- Week of Aug 30 WG-6 will do their final read through prior to release for Letter Ballot
- Currently scheduled for 4 hours, but there is an additional 2-hour slot open that we may be able to use.

Presentation from GE (Steve & Jouke) - **Enhanced C-FIND for Data Migration**

Introduction

Implementation of a persistent Inventory SOP Instances as introduced in Supplement 223 presents technical and business challenges for repository applications .

Technical burdens :

- Inventory IOD complexity
- New, additional services to support the coordination and reporting of the Inventory IOD creation
- System resources that are otherwise dedicated to clinical operations must be be allocated to generate the Inventory IOD (300GB per 1 billion instances, as estimated by WG-33)

Business burdens:

- Repositories do not generate SOP Instances; vendors lack proficiency in creating IODs.
- Greatest burden is on the outgoing (displaced repository) to implement the Inventory IOD. Considering all actors involved this actor is least incentivized to implement.

Back and forth whether or not this would be a new work item.
Reason being – attributes that could be added to C-FIND are fairly discrete.
Create a model for depository migration without too big of an impact on existing systems and w/o a lot of changes/disruptions to the standard.

Includes section on technical burdens – for a vendor to create a really complex IOD poses tech and business burden in terms of resources to do that.
Also looked at potential size of Inventory IOD, could take days or weeks to create.
Think it can be supported with C-FIND support.

Proposal

Enhanced C-FIND

- Query/Retrieve Attributes (e.g. last updated timestamp, file location, pending updates, offset and count mechanism to window across database), and
- SCP Conformance requirements to limit variation in C-FIND transfer syntaxes, matching attributes and types for predictable archive service support.

Fred B - improved C-FIND would be a great advantage for a host of other applications in addition to migration.

This Enables

- Live, up-to-date data, with limited or no delay for initial/delta passes, and
- Full access to the filtering capabilities present for partial migration, and
- Complementary C-MOVE for repositories that store in non-DICOM formats, or do not support a direct access mechanism, and
- A lower barrier for applications to support the migration use case.

This enhancement can be built on the existing hierarchical/relational C-FIND implementation.

- Question to DSC – does this warrant a new Work Item or could it be added to this one?
- Want to make sure that this is compelling as a complementary service; otherwise it may be a concern from DSC's point of view on two conflicting approaches.
- Formal resources and timeline for this- need input on that.
- This will require 4 trips to WG-06:

First read, read before release for Public Comment, the read for release for Letter Ballot and then for final text – request 4 hours for each of those mtngs with WG-06.
Could likely review in a few Wg-33 mtngs
Steve & Jouke to work on a draft and share with WG-33 by next meeting on Aug 4

5 OLD BUSINESS

6 NEW BUSINESS

7 DATE AND TIME OF NEXT MEETINGS (Secretariat)

- Continue T-con meetings bi-weekly
- Next call is August 4, 2021 between 11:00 am and 12:30 pm ET

Submitted: 9/7/21

NEMALINK CODE	09-WG33
SUBMITTED BY	Hull, Carolyn
SUBMITTED ON	9/7/21
LEGAL APPROVAL	10/7/21
UPLOAD LOCATION	Enter upload location.