1300 North 17th Street, Suite 900
Arlington, VA 22209, USA
https://www.dicomstandard.org/
dicom@dicomstandard.org

DICOM WORKING GROUP TWENTY-SIX (Pathology)
June 9, 2020 - Minutes

Attendance	Members and Guests	Representing	Member Type
Yes	Dan Hosseinzadeh	Pathcore	DICOM co-Chair
Yes	Kevin Schap	CAP	DICOM WG26 Secretariat
Yes	David Clunie	PixelMed	DICOM
Yes	Markus Herrmann	Mass General Hospital	DICOM
Yes	Wei-Chung Cheng	FDA	DICOM
Yes	Gábor Garanyi	3DHISTECH Ltd.	DICOM
Yes	Erich Bremer	Stony Brook Medicine	DICOM
Yes	Simon Doran	Institute of Cancer Research	DICOM
Yes	Bjorn Lindequist	HTW	DICOM
Yes	Ulli Wagner	NCI/CBIIT, Leidos Biomedical Research	DICOM
Yes	Graham King	DesAcc EMEA Ltd	DICOM
Yes	Matthew Hanna	Memorial Sloan Kettering	DICOM
Yes	Samuel Lam	FDA	DICOM
Yes	Nick Haarselhorst	Phillips	DICOM
Yes	Oliver Turner	Novartis	DICOM
Yes	Alex Andryushikin	Corsita LLC	DICOM
Yes	Andrey Naumenko	SamanTree Medical SA	DICOM
Yes	Tashin Kurc	Stony Brook University	DICOM
Yes	Jan Schutrups	Leica Microsystems Inc	DICOM
Yes	Norman Zerbe	Charitè-Universitätsmedizin Berlin	DICOM

Opening:
David Clunie, called the meeting to order at 9:00 am Central Time. http://dicom.nema.org/Dicom/DICOMWSI/

DICOM Annotations for WSI

Specific deliverables of this group are expected to include:

1. informative guidance (+/- template and code set improvements) to leverage existing DICOM mechanisms (e.g., SEG, SR) for semantically interoperable (i.e., not PS) annotations of relatively small numbers of objects
2. new DICOM IOD for encoding vast numbers (millions) of locations or contours for cellular structures +/- associated measurements and observations (similar perhaps to the MR tractography approach) +/- appropriate compression mechanisms prn.
3. explore the use cases for interactive retrieval of selective annotations or frames +/- define a DICOMweb API extension

This effort will entail:

1. documenting use cases
2. surveying existing proprietary and open source approaches (and the scientific literature)
3. surveying other industry solutions for similar problems (esp., GIS and spatial query databases)
4. exploring options for encouraging adoption in open source commercially reusable implementations (libraries, proprietary converters and viewing and annotation tools)
5. including testing and demonstration of standard annotation creation, storage and visualization in upcoming DICOM WG26 Connectathons
6. liaising with other stakeholder organizations including The Alliance, DPA, API, FDA, IHE, SIIM, NCI, etc
7. liaising with other DICOM WGs, esp. WG 23 AI/ML, WG 27 Web Services

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Call Highlights

Markus Herrmann walked the group through a presentation that covered vector vs raster graphics and various annotation considerations regarding each type. The presentation can be found on the FTP site in the same folder as these minutes.

The discussion at the end of the presentation heavily focused on the use of SCOORD vs SCOORD3D. Comments in the discussion included:

- The core design principle is that the coordinate systems should be potentially interchangeable as long as they both have origins in the image.
    - You should be able to transform one to another
    - If you do not have a base image you have to use SCOOR3D
    - radiology experience is predominantly image-relative SCOORD (3D in SR was added for virtual colonoscopy); Radiotherapy (RTSS) has always been encoded as 3D
- What would make the most sense for creators and consumers of matrices?
    - Annotations at the edge of the field which overlap into the next frame / tile
        - Need to be a part of the total pixel matrix
        - Much work will include things that cross image frames
    - This is purely an external representation issue
    - SCOORD3D is tied to physical space not specific image or frame
        - Good that it can be computed and can go to any layer
        - Bad because it can lead to complication of which layer to apply
        - Computation is needed either way
    - Some members on the call preferred SCOORD3D because it can link to co-ordinate space rather than specific instance. It also provides a way to regionally filter polygons
- The group additionally discussed how Frame of Reference UID would be used (unique per scan of slide, unless registered).

The agenda for the next meeting should include a continued discussion on 2D vs 3D and segmentation.

Documentation

Vendor capabilities form: https://forms.gle/SDqfKoLe849cdsaD9

GoogleDoc for noting the perceived limitations:
https://docs.google.com/document/d/171AddB_Q8Fpg4lG_KxpZDKbCH_xcQ-KL7VPztCy2tms/edit?usp=sharing

GoogleDoc for capturing different system features (request editing permissions inside the document if you need them):

https://docs.google.com/spreadsheets/d/12-sXKFmkOUSbL_J4ETOz-9OqpDBoMOYaFr7WgV1qDxQ/edit#gid=0

Hackathon Proposal:

ftp://medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG26/Annotation-AHG

Meeting Minutes:

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Next Meeting

- June 23rd at 9:00 AM CST via GoToMeeting (Link Below)
- https://global.gotomeeting.com/join/230645597

Adjournment

The meeting was adjourned at 10:00 CST.

Submitted by Kevin Schap, Secretary
Reviewed by Carolyn Hull, 7/10/20
Submitted for legal review 7/26/20
Reviewed by Counsel Peter Tolsdorf on 7/28/20