Meeting Minutes
DICOM WG-26 Monthly Meeting

DICOM WG-26 Minutes
Prepared by: Mustafa Yousif

Meeting Title: DICOM Working Group Meeting
Date/Time: January 21st, 2025 / 09:58 to 11:06 (EST)
Location: Virtual/Online

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1. Attendees (in order of mention or appearance)

- **[Kevin Schap]**
- **[Mustafa Qays Yousif]**
- **[John Groth]**
- **[Johan Doré (Visiopharm)]**
- **[Tamás Sárga (3DHISTECH)]**
- **[Brian Napora (Gestalt)]**
- **[David Clunie (PixelMed)]**
- **[Kenneth Philbrick (Google)]**
- **[Norman Zerbe]**
- **[Markus Herrmann]**
- **[Eric Martin (Proscia)]**
- Other participants (e.g., Gábor Herman (Philips), Christian Marzahl (Gestalt), and others) who joined at various points.

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2. Main Topics

2.1. Annotations Subgroup Discussion

Context

- The group revisited how best to store or display annotations in DICOM, specifically debating whether to embed presentation/styling data in the annotation itself or to separate presentation details into a standalone “presentation state” object.

Key Points

1. **Separation of Presentation and Data**
    - Several participants (e.g., David Clunie) emphasized that in radiology, presentation states are commonly separate objects. This keeps the original annotations ("model data") intact and avoids having to replace large annotation files if only the rendering style changes.
    - The approach aligns with the standard DICOM model–view separation.
2. **Arguments for Embedding vs. Keeping Separate**
    - **Embedding**:
        - Might simplify a "happy path" for developers, bundling annotations and display style in a single file.
        - Could be easier to discover the original author's preferred appearance.
    - **Separate Object**:
        - Avoids storing multiple copies of large annotation data if only styling changes.
        - Ensures a single, interoperable solution aligned with existing DICOM practices.
3. **Impact on Viewer Implementation**
    - If the standard allows both embedded and separate presentation states, some viewers might ignore external presentation states, fragmenting interoperability.
    - Enforcing only a separate presentation state can maintain a uniform approach, even though it may add complexity.
4. **Handling "Holes" and Complex Boolean Geometry**
    - Participants discussed representing complex polygons (e.g., cytoplasm minus nucleus).
    - Current annotation objects do not directly support "holes" or other advanced geometry, so solutions might require Boolean operations or linked segments.

5. **Outcome & Next Steps**
    - Consensus to **form (or reestablish) an Annotations Subgroup** with the following goals:

🗁🖉 Develop a plan for a dedicated presentation state for digital pathology annotations.

🗎🖉 Address complex geometry (e.g., polygons with holes, Boolean combinations).

- Multiple participants volunteered, including:
    - **Kenneth Philbrick (Google)**, **Johan Doré (Visiopharm)**, **Eric Martin (Proscia)**, **David Clunie (PixelMed)**, **Gábor Herman (Philips)**, **Norman Zerbe**, **Tamás Sárga**, **Christian Marzahl**, and others.
- The subgroup will hold dedicated meetings to progress these proposals.

2.2. Connectathon Update

Context

- The group reviewed registration numbers for the upcoming DICOM Connectathon (digital pathology–focused) and outlined next steps.

Key Points

1. **Registration Status**
    - Registration open until late January (28th or 29th).
    - 20+ respondents, including whole-slide scanner vendors, at least one major AP-LIS vendor, archives, viewers, and annotation tool developers.
2. **Logistical Preparations**
    - **Metadata Enrichment Tool**: Expected mid-March for HL7 → DICOM conversions.
    - **Transport Mechanisms**: Commonly C-STORE; some plan DICOMweb (STOW-RS); a few also testing Storage Commitment.
    - **Physical Slides**: Most scanners will use their own slides. Proper metadata (e.g., slide barcodes) must match lab system entries.
3. **Testing Advanced Features**

- Plans include multiple Z-planes, fluorescence, JPEG XL compression, and large-scale annotations (millions of objects).

4. **Timeline**
    - Registration closes soon.
    - Participant network details to be shared in early February.
    - Archives may be preloaded with last year's test data for early validation and viewer testing.
5. **Action Items**
    - **David Clunie**: Finalize participant list, distribute endpoint spreadsheets, and coordinate archive loading.
    - **Scanner Vendors**: Confirm slide identifiers and metadata alignment.
    - **All Participants**: Ready systems for testing, address any naming conventions, IP addresses, and AE titles.

2.3. Digital Pathology Association (DPA) Webinar

Context

- A webinar to promote DICOM usage in digital pathology, referencing the Connectathon and related regulatory initiatives.

Key Points

1. **Webinar Timing and Purpose**
    - Scheduled for a Friday (near the end of the same week).
    - Showcases Connectathon progress and encourages vendor participation.
2. **Presenters**
    - Involvement from Brian, Johan, and others to illustrate Connectathon experiences and ECDP ties.

2.4. ARPA-H "Index" Project Discussion

Context

- ARPA-H and FDA's "Index" (Imaging Data Exchange) aims to assemble large imaging datasets for innovation and regulatory support.

Key Points

1. **DICOM Requirement**
    - By the end of the project's three-year window, all images must be in DICOM, although early submissions might be in other formats.
2. **Potential for Automated Conversion**
    - Participants recommended including lossless format conversion (proprietary → DICOM) to maintain pixel-data fidelity.
    - FDA may require quantitative proof (e.g., checksums or color difference analysis) that no diagnostic detail is lost.

2.5. European Congress on Digital Pathology (ECDP)

Context

- ECDP takes place 25–28 (month/year inferred from the transcript) in Barcelona. WG-26 traditionally holds an in-person session there.

Key Points

1. **Meeting Date**
    - **Confirmed** for Wednesday (the 25th), with a morning WG-26 session and a possible joint session with IGC Palm in the afternoon.
    - Norman will reserve a room for ~20–30 attendees.

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3. Key Outcomes and Action Items

1. **Annotations Subgroup**
    - **Lead**: Kenneth Philbrick, with support from Johan Doré, Eric Martin, David Clunie, and others.

- **Focus**: Separate presentation states for annotations; advanced geometry.
- **Next Step**: Schedule meetings and proceed with proposals.

2. **Connectathon Logistics**
   - **Lead**: David Clunie
   - **Tasks**:
     - Distribute participant details, IP/AE info.
     - Coordinate archive preloading and handle HL7 mapping if applicable.
3. **DPA Webinar**
   - Intended to increase Connectathon involvement and highlight DICOM's role in digital pathology.
4. **ARPA-H Index Coordination**
   - Ongoing discussions about enforcing or facilitating DICOM usage from the outset.
5. **ECDP In-Person Meeting**
   - **Date**: 25th (all day), with a WG-26 meeting in the morning and possible joint sessions later.
   - **Host**: Norman to secure a suitable venue.

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4. Closing Remarks

- Meeting ended around 11:06.

Participants will reconvene via subgroup meetings (Annotations) and broader Connectathon coordination. The next major milestone is the Connectathon preparation and early testing, followed by the ECDP in-person sessions.