MINUTES-v2
DICOM Standard Committee (DSC)
Wednesday 2 October 2019, 0900 – 1600 (Bangkok local time)
Chatrium Hotel Riverside

Secretary’s note: Attendance roster was updated between v1 and v2. No other changes were made.

Presiding Officers
Lawrence Tarbox, User Co-chair, University of Arkansas for Medical Sciences
Jeroen Medema, Producer Co-Chair, Philips
Lisa Spellman, DICOM General Secretary, MITA

Voting Members Present

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<tr>
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<td>ADA</td>
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<td>Trishul Allareddy</td>
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<td>B&lt;&gt;com</td>
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<td>Emmanuel Cordonnier</td>
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<td>Canon Medical Systems</td>
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<td>Kevin O’Donnell</td>
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<td>Carl Zeiss Meditec AG</td>
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<td>Régis DeShayes</td>
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<td>Hologic</td>
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<td>Janet Keyes (Phone)</td>
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<td>Fairhaven Technologies</td>
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<td>Robert Horn (Phone)</td>
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<td>FUJIFILM</td>
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<td>Masao Murata (Phone)</td>
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<td>JIRA</td>
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<td>Shinichi Nakano (Phone)</td>
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<td>Laitek</td>
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<td>Fred Behlen (Phone)</td>
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<td>Mayo Clinic</td>
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<td>Ken Persons</td>
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<td>Philips</td>
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<td>Wim Corbijn van Willenswaard</td>
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<td>PixelMed</td>
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<td>David Clunie</td>
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<td>Siemens Healthineers</td>
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<td>Antje Schroeder (alt voting)</td>
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<tr>
<td>Univ. of Arkansas for Medical Sciences</td>
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<td>Lawrence Tarbox</td>
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<td>JIRA</td>
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<td>Nakano Shinichi</td>
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Voting Members Not Present

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<tr>
<td>AAPM</td>
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<td>Donald Peck (Voting), Nicholas Bevins (Alt Voting)</td>
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<td>Bruce Curran (Alt Voting)</td>
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<td>ACC</td>
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<td>Bruce Bray (Voting)</td>
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<td>ACR</td>
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<td>Charles Kahn (Voting), James Philbin (Alt Voting)</td>
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<td>ACVR</td>
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<td>Dennis Balance (Voting)</td>
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<td>Accuray</td>
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<td>Bob Pekarek (Voting)</td>
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<td>Agfa Healthcare</td>
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<td>Paul Siefert (Voting), Bruno Laffin (Alt Voting)</td>
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<td>AAO</td>
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<td>Flora Lum (Alt Voting)</td>
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<td>Allan Farman (Voting)</td>
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<td>AAO</td>
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<td>Kirt Simmons (Voting)</td>
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<td>Paul Varghese (Voting)</td>
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<td>John Carrino (Voting)</td>
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<td>Brainlab</td>
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<tr>
<td>Christof Schadt (Voting)</td>
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<tr>
<td>Brazil National Institute Science &amp; Technology</td>
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<td>Brazil College of Radiology</td>
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<td>Alexandra Monteiro (Voting)</td>
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<td>Canada Health Infoway</td>
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<td>Andrea MacLean (Voting)</td>
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<td>Carestream Health</td>
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<td>David Foos (Voting)</td>
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<td>CFDA</td>
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<td>Jia Zheng (Voting)</td>
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Alternate Voting Members, Observers, Guests Present

Mayo Clinic
Mahidol University
Mahidol University
Mahidol University
Philips
Raster Images
SIIM

Fon Ngokkham (Guest)
Pattanasak Mongkolwat
Professor Dr. Peter Haddawy (Guest)
Dr. Wudhichart Sawangphol (Guest)
Arul Patchi Prasath (Observer)
Suresh Viswanathen (Observer)
Kenneth Persons (Observer)

Change Healthcare
CIMICS
College of American Pathologists
Corista
Deutsche Ophthalmologische Gesellschaft
Deutsche Röntgengesellschaft
Elekta Inc.
European Fed of Orgs for Medical Physics
European Society of Cardiology
European Society of Radiology
FDA (US)
GE Healthcare
Hitachi Healthcare
IBA
India Centre Advanced Computing
JAHIS
JSRT
Konica Minolta Americas
Korean PACS Standards Committee
Leica Biosystems
LOINC
Medical Image Stds Association Taiwan
Merge Healthcare
MITA
NCI/CBIT, Leidos Biomedical Research
Pall Corporation
PHC Ltd
Philips
RSNA
Sectra AB
Seno Medical Instruments
SIIM
Sonic Healthcare
Sony Imaging
Spanish Health Informatics Society
SuperSonic Imaging
Varian Medical Systems
Visus Health IT
Web3D Consortium

Kinson Ho (Voting)
Jianming Qu (Voting)
Kevin Schap (Alt Voting)
Eric Wirch (Voting)
Nicole Eter (Voting)
Elmar Kotter (Voting)
Jim Percy (Voting)
Annalisa Trianni (Voting)
Nico Bruinsing (Voting)
Peter Mildenberger (Voting)
Daniel Krainak (Voting)
Steven Nichols (Voting), Francisco Sureda (Alt Voting)
Ravi Managuli (Voting)
Frederic Dessy (Voting)
Navdeep Kooner (Voting)
Maseo Murata (Voting), K Watanabe (Alt Voting)
Hiroshi Sakamoto (Voting)
Michael Laconti (Voting)
Hee-Joong Kim (Voting)
Mandel Mickley (Alt Voting)
Daniel Vreeman (Voting)
Chung-Yueh Lien (Voting)
Ronald Cowen (Voting)
Patrick Hope (Voting)
Ulrike Wagner (Voting)
Julian Burke (Voting)
Katsuya Watanabe (Voting)
Jeroen Medema (Voting)
Chris Carr (Voting)
Krister Valtonon (Voting)
Bryan Clingman (Voting)
Cheryl Kreider Carey (Voting) Paul Nagy (Alt Voting)
Mike Bettenay (Voting)
Michitada Kobayashi (Voting)
Marcial Garcia Rojo (Voting)
Jacques Souquet (Voting)
Kari Jyrkkala (Voting)
Marc Kaemmerer (Voting)
Nicholas Polys (Voting)
1. Opening
   1.1. Open, welcome and roll call.
   1.2. Review of antitrust and patent rules
   1.3. The agenda was approved with no changes.
   1.4. The minutes from Rennes 4 April 2018 were approved with no changes.

2. DSC Vendor Co-chair election status (Lisa)
   - The term for the vendor co-chair position currently held by Jeroen Medema, Philips, ends 31 December 2019. A call for nominations was issued 12 August 2019 as well as reminders sent.
   - Two nominations have been received:
     - Jeroen Medema, Philips
       - Because he did more than 50% of the first term, that counted as a 2nd term
     - Brad Genereaux, NVIDIA
       - Need to be a DSC member first when submitting name. NVIDIA as an organization needs to first submit member application and sign a patent agreement for the RSNA19 DSC membership.
   - Any nominations from the floor?
     - Not at this time.
     - We will hold off on vendor co-chair for this time
     - Do we need a motion that we are going to delay? No.

3. Governance and Procedures Task Group status update (Lisa)
   - The DICOM Governance had not been reviewed and updated for over a decade. A formal Task Group was formed and reviewed the DICOM Governance.
   - A ballot was held, opened 2018-11-19 and closed 2018-12-19.
   - Ballot outcome
     - Affirmative, 28 voted, Negative, 1, Abstain, 3
   - Next steps: Secretariat will
   - Generating a final revision showing the full track-change markup which will be posted. Put the changes accepted version on the website for the 2019 RSNA meeting.

4. Review: Basic Requirements of Communication and Conformance for Medical X-ray Image Equipment issued by China Food and Drug Administration (Andreas)
   - As noted in Rennes minutes, there was a request for these documents to be reviewed by WG-06
   - WG-06 sent back to WG-10 and DSC for review and any considerations as needed
   - WG-10 outcome: The documents as we have published them do not contradict, its essentially profiling and explaining how they plan to review products. These are essentially test requirements. Setting up a national conformity assessment program.
   - The documents have been sent to MITA for review and they will continue to track.
5. Items from WG10 meeting held on Mon 30 September, Bangkok

Topics to include:

5.1. WG-05_NWIP_Enhanced_Directory + Shared_Fileset:
   − Item was withdrawn by submitter with a request to table item for RSNA19. There are additional notes about this item in the minutes of the 30 September 2019 WG-10 meeting.

5.2. WG-04 Compression update medical requirement for compression. Rennes minutes action 4 & 5 (David)
   − No update for this meeting. David indicated that there is no further action. Does not need to be put on the agenda for the next meeting as an open action item. He will continue to monitor.

5.3. ISO RSP: ISO standard that references DICOM.
   − Kevin provided a status update and review of document that will be going out for ISO DIS.

   <Action item 3 from WG-10 minutes>
   3a. Lisa will request the current status, including publication schedule, for the RSP
   3b. Kevin requested feedback on the document in today’s meeting folder and to be sure to review the levels in X.3. Please send any comments directly to Kevin.
   3c. Send to specialty WGs to get input: 09-Opthamology WG-26 Pathology , 22 Dentistry

   <Action Item 4 from WG-10 minutes>: Luiza will send email addresses of those WG leadership to Kevin.

6. Items from WG-29 held on Tue 1 Oct.

6.1. DICOM new logo/logo refresh update
   − Status update: The decision was taken to not use any of the proposed logos as WG-29 determined that there is not a need for a new logo but did indicate that a refresh is needed.
   − WG-29 Action Item: Luiza will provide the current logo to the NEMA/MITA web team or PR firm and ask for a general refresh from a professional, not change the character of the logo, but a slight font and color update that it should match the new DICOM website (colors, font etc.)
   − No other topics were presented.

7. New DICOM Membership Applications
   − No new membership applications have been received at the time of this agenda posting.
   − It was noted that WG-29 discussed enhancing outreach to new prospective members.
   − Actions taken thus far include reviewing current member roster for non-DSC members and doing more deliberate outreach in all WGs.
   − Next steps: Suggest Secretariat staff check in two times annually with non-members in all WGs to ask them to consider membership.

8. New DICOM Work Item Proposals (NWIP)

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<th>Discussion</th>
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<td>N/R</td>
<td>5</td>
<td>WG-05_ NWIP_Enhanced_Directory + Shared_Fileset</td>
<td>See minutes from WG-10, 2019-09-30 [<a href="http://dicom.nema.org/Dicom/minutes/WG-10/">http://dicom.nema.org/Dicom/minutes/WG-10/</a>]</td>
<td>Outcome: Based on the feedback from WG-10, the NWIP submitted by Harry Solomon has been withdrawn for this meeting with a request to table for the RSNA19 meeting.</td>
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9. New Workgroup Proposals
   - No new WG applications have been received at the time of this agenda posting.

10. Working Group 6 Report
    - Supplements that have been inactive for more than three years should be revisited with DSC, and possibly considered for cancellation.
    - It was noted that some supplements are taking longer to reach Final Text.
    <Action 1> Luiza to contact editors regarding status of inactive supplements and report at the RSNA19 meeting.

11. Other Working Group Reports
    - It was noted that it would be helpful to have these updated reports posted on DICOM website by about two weeks after the DSC meeting.

**WG-01, Cardiology**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-01/](https://www.dicomstandard.org/wgs/wg-01/)
   - Meets jointly with WG-12, so please refer to the WG-12 report.

**WG-02, Name Projection Radiography and Angiography**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-02/](https://www.dicomstandard.org/wgs/wg-02/)

**WG-03, Nuclear Medicine (Dormant)**
WG info on DICOM website [https://www.dicomstandard.org/wgs/wg-03/](https://www.dicomstandard.org/wgs/wg-03/)

**WG-04, Compression (Dormant)**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-04/](https://www.dicomstandard.org/wgs/wg-04/)

**WG-05, Exchange Media (Dormant)**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-05/](https://www.dicomstandard.org/wgs/wg-05/)

**WG-06, Base Standard**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-06/](https://www.dicomstandard.org/wgs/wg-06/)

**WG-07, Radiotherapy**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-07/](https://www.dicomstandard.org/wgs/wg-07/)
   - Highlighted that there is new leadership as listed in the report
   - There were no questions or discussion.

**WG-08, Structured Reporting and Common Data Elements**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-08/](https://www.dicomstandard.org/wgs/wg-08/)
   - Essentially no activity underway.
   - David indicated some work occurring on prostate reporting, a bit of interest from Siemens
   - Emmanuel indicated that a possible NWIP may be submitted to WG-08 for consideration.
   - WG-08 had a good meeting at RSNA18, they are not meeting at RSNA2019.

**WG-09 Ophthalmology (Dormant)**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-09/](https://www.dicomstandard.org/wgs/wg-09/)

**WG-10, Strategic Advisory**
WG info on DICOM website: [https://www.dicomstandard.org/wgs/wg-10/](https://www.dicomstandard.org/wgs/wg-10/)
   - See WG-10 minutes
WG-11, Display (Dormant)
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-11/

WG-12, Ultrasound
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-12/
- Meeting jointly with WG-01
- Kevin provided a verbal update on behalf of WG-12.
- There were no questions or discussion.

WG-13, Visible Light
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-13/
- Emmanuel provided a verbal update in addition to the written report and noted that he is retiring November 2019, so a new co-chair will be needed.
- There were no questions or discussion.

WG-14, Security
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-14/
- Lawrence provided a verbal report in addition to the written report, highlighting recent cybersecurity issues managed by WG-14, including the 128-byte preamble issue, the Cylera report and info request from the German Broadcasting/ProPublica request.
- WG-14 would like to be more proactive by creating a set of stories, written in lay terms, ~ 700 words or <, idea is to have these ready responses, turn into multiple stories. In discussion with WG-29, these will go on DICOM website, area TBD whether under security, but as noted, struggling with a lack of volunteers to help with the writing.
- WG-14 is reviewing new NIST Guidance on secure documents
- Would like to create a sample, Secure, RESTful DICOM (similar to what NIST did) in particular, focus on User Authentication (need help from members to write)
- David commented on other hacker attacks and possible remediations that have been in discussion in general HIT community, especially noting the risk is as much for inside staff as outside
- Ken provided a brief overview of security-related special projects underway at Mayo. He noted that strong consistent collaboration between the end user and vendor are necessary. Created a “culture of cooperation” to help bring various stakeholders together.
- WG-14 plans to work closely with WG-29 on education and outreach collaboration.
- Supplement to add examples to Part 17 is underway.
- WG-14 posted the vulnerability report for the CV (Mitre) that manages the CV, is the DSC
- Ad hoc, WG-14 submitted on behalf of DICOM the organization, is the DSC ok with WG-14

Motion
- For cybersecurity and related issues and requests, WG-14 will take the lead to prepare and submit written responses on behalf of the DSC and notify the DSC through regular reporting channels.
- Motion made by Kevin O’Donnell, Canon, 2nd by Wim Corbijn Philips
- WG14 is formally authorized to submit VR on behalf of DICOM and report in regular reports
- All in favor, No discussion, No abstention
- Motion passes
WG-15, Mammography (Dormant)
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-15/
– Still dormant, but she continues to monitor CPs and
– GE sent notification that they are OK with CP_1880
– There was some limited discussion about future possible work.

WG-16, Magnetic Resonance
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-16/
– Wim provided a verbal report in addition to the written report
– There was some limited discussion about future possible work.

WG-17, 3D
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-17/
– Written report was submitted
– They have requested a test object repository. David commented that these files can be put on the ftp.
– Lisa to follow up with David & WG-17

WG-18, Clinical Trials and Research (Dormant)
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-18/

WG-19, Dermatology
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-19/
– A written report was submitted
– Major challenges: (1) Convincing Dermatologists to leverage an enterprise solution as many vendors provide solutions (albeit some dated) and privacy issues – users do not necessarily want others to be able to easily access the images via PACS, viewers – many prefer to keep separate.
– There was some discussion about how to handle this in an enterprise setting. Ken provided a general overview of how Mayo does this. Work is progressing well

WG-20, Integration of Imaging and Information Systems
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-20/
– Submitted a written report
– New WG leadership
– Participation has been a bit low.

WG-21, Computed Tomography
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-21/
– Submitted a written report. There were no questions or discussion.

WG-22, Dentistry
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-22/
– Submitted a written report
– Trishul Allareddy, ADA, co-chair of WG-22 presented a verbal report
– There were no questions or discussion.
WG-23, Artificial Intelligence and Application Hosting
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-23/
- Submitted a written report and Lawrence provided a verbal update.
- Lawrence reviewed the two pending work items which include performing a gap analysis in use cases
- One of the projects has been merged with IHE project, if IHE publishes, do we still need an informative annex? To be determined.
- The offer was made that WG-23 would be willing to do some of the work for the IHE Profile because there will only be two IHE meetings. Allow them time in WG-23 tcons to deal with the IHE Profile with high degree of WG-23 collaboration.
- Simplified Reporting of AI Results which is not well covered in DICOM Standard. IHE has launched a similar profile for AI Results Reporting.
- Kevin working on a project: Here are the sample kinds of results AI might generate, how put into a report, here is what would appear in JSON Format that David is spearheading.
- Lawrence noted the spreadsheet tool has been useful – might put some of the sample use cases into an informative annex.
- Role of machine learning in modalities – ML usage within a modality is pre-standRD.
- They have people bringing additional ideas.
  - Example: someone that wants to discuss NLP.
  - Example: Training data sets – there currently is not a good way to pull training data sets out of a DICOM archive.
- These projects have been keeping WG-23 busy.
- Other topics have been discussed but tabled for a later time.
- Interesting data point, the SIIM Pneumothorax issued via DICOMweb

WG-24, Surgery (Dormant)
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-24/

WG-25 Veterinary Medicine (Dormant)
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-25/

WG-26, Pathology
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-26/
- Submitted a written report and David gave a brief verbal report.
- They are doing their 6th Connectathon in October, many vendors participating (11) seems to be taking off. Hoped someday that these Connectathons will move into IHE, but no IHE Profile yet.
- Annotations are a big deal in this space. Hard to know if DP will ever take off, VP is weak until ML takes on more mundane tasks – killer application is enabling ML - not just simply replacing microscope.
- These are not Radiology vendors; these are smaller more low-cost devices.
- Question was asked – what’s keeping the vendors participating? There is high end user interest but are there enough potential customers. There are competing standards.

WG-27, Web Services for DICOM
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-27/
- Submitted a written report.
- They are focused on CPs and other cleanup. They have a new co-chair and are following WG-23 work.
- Other discussion about DICOMweb uptake
- Emmanuel reported that uptake in France might accelerate use of DICOMweb through some of their national projects.
WG-28, Physics
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-28/
  – Submitted a written report.

WG-29, Education, Training and Outreach
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-29/
  – Met yesterday, see note.

WG-30, Small Animal
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-30/
  – No written report submitted

WG-31, Conformance
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-31/
  – No written report filed.
  – They were reviewing Sup209 drafts with WG-31

WG-32, Neurophysiology Data
WG info on DICOM website: https://www.dicomstandard.org/wgs/wg-32/
  – Filed a written report.
  – Work is going well.

12. Stakeholder Reports
  12.1 Report presented from JIRA which was provided as a written and verbal report.
  12.2 Report presented from MISAT which was provided as a written and verbal report.

13. DICOM documents recently updated
  – There were no updated documents to review.

14. DICOM website update
  – Report was covered in WG-29 and will be noted in WG-29 minutes.

15. New Business
  – No new business was presented.

16. Old Business
  – No old business was presented.

17. Next Meetings – tcons

18. Next meetings – in person
  18.1. RSNA 2019, Chicago, IL USA, 1-6 December 2019
  – THUR 5 December 2019, 9am - the decision was made to end at 4pmUS CT.
18.2 Discuss 2020 DSC possible meeting schedule
- April/May 2020
  - Sometime after 27 April 2020
  - **Aim for this window:** 1st two weeks of May 2020
  - Note that week of 4 May several IHE groups may be meeting in Europe
    - Perhaps Porto, Portugal
    - Tallinn, Estonia
    - Prague
    - Poland
  - Two days of meetings for April/May

- India, Bangalore or Chennai - Sept/Oct 2020, try for mid-late Sept or early Oct
- Taiwan: Work with Chung-Yueh Lien - Sept/Oct 2021
- Also check with the person from Brazil from DSC meeting 2018
- Joint Colinista Republica Colinsta Radiology Conference: Regional Society ACR/JPR/RSNA: RAD meeting in Sao Paulo in May 2020 – John Carrino is the contact.
- **RSNA 2020,** 29 November - 04 December 2020

18.3 Discuss 2021 DSC possible meeting schedule
- April/May 2021: See what comes of the 2020 schedule.
- **RSNA 2021,** 28 November - 03 December 2021

19. Adjournment