

MINUTES

Joint meeting of DICOM WG 01, Cardiac & Vascular & DICOM WG-12, Ultrasound

Date and Time: Monday 20 May 2019
10:00am – 11:30 am US ET

Presiding Officers:

WG-01 User co-chair: Bruce Bray, University of Utah
WG-01 Vendor co-chair: Antje Schroeder, Siemens-Healthineers

WG-12 User co-chair: Bruce Bray, University of Utah
WG-12 Vendor co-chair: Sander Dekker, Cablon Medical

DICOM Secretariat Lisa Spellman, General Secretary, DICOM

WG 1 or 12	Member of both WGs	First Name	Last Name	Organization
WG12		Donald	Peck	AAPM
WG01&12	Present	Bruce	Bray	ACC/University of Utah Health Care
WG12		Terry	Dillon	Agfa HealthCare
WG12		Willy	Rose	Agfa HealthCare
WG01		Paul	Seifert	Agfa HealthCare
WG01&12		Ramona	Shirley	Agfa HealthCare
WG01&12		Paul	Varghese	American College of Cardiology
WG01		Mythreyi Bhargavan	Chatfield	American College of Radiology
WG01		Peter	Tilkemeier	American Society of Nuclear Cardiology (ASNC)
WG12	Present	Emmanuel	Cordonnier	b<>com
WG01		Rami	Barti	Bar-Code Computers Ltd.
WG01		Minoru	Mashimo	Bard Electrophysiology - C.R. Bard
WG01		Mati	Amit	Biosense-Webster (ISRAEL) Ltd.
WG12		Jens	Rasmussen	B-K Medical ApS
WG12		Hugo	Robert	Bracco Diagnostics Inc.
WG12	Present	Kevin	O'Donnell	Canon Medical Research USA, Inc.
WG12		Kazuya	Akaki	Canon Medical Systems USA, Inc.
WG01		Satoshi	Oagawa	Cardiovascular Division, Department of Medicine

WG01		Neil	Weissman	Cardiovascular Research Foundation
WG12		Christy	Adams	Carestream Health, Inc.
WG12		Jay	Na	Carestream Health, Inc.
WG12		Jun	Sun	Carestream Health, Inc.
WG01		Bob	Baumgartner	Change Healthcare
WG12		Elliot	Silver	Change Healthcare
WG12		Edwood	Yiu	Change Healthcare
WG12		James	Rogers	Coastal Consulting Group, Ltd.
WG01		Katsu	Takenaka	Department of Laboratory Medicine
WG01		Kiyoshi	Yoshida	Division of Cardiology
WG01		Mitchell	Krucoff	Duke University Medical Center
WG01		Donald	Van Syckle	DVS Consulting, Inc.
WG12		Masao	Kobayashi	EBM Technologies Japan, Inc.
WG01		Johan	Wallhed	EPIQ Life Science AB
WG12		Marco	Maglione	Esaote
WG12		Stefano	Pedri	Esaote
WG12		Luigi	Pampana-Biancheri	ESAOTE S.p.A.
WG01	Present	Nico	Bruining	European Society of Cardiology
WG01		Robert	Horn	Fairhaven Technologies
WG12		Wojtek	Grabski	Flux Inc.
WG12		John	Freeland	Freeland Systems
WG12		William	Hensen	FUJIFILM Sonosite, Inc.
WG01		Bob	Conway	GE Healthcare
WG12		Karl-Heinz	Fleischer	GE Healthcare
WG01		Brian	Nantz	GE Healthcare
WG01&12	Present	Steven	Nichols	GE Healthcare
WG12		Gopi	Pattaswamy	GE Healthcare
WG01		Francisco	Sureda	GE Healthcare
WG12		Brian	Lenz	GE Healthcare, Ultrasound
WG01		Gary	Tearney	Harvard Medical School
WG12		Bernard	Stumpf	Heartlab
WG01&12		Ravi	Managuli	Hitachi Healthcare Americas
WG01		Yoshikazu	Igeta	Hitachi Medical Corporation
WG12		Dai	Shinohara	Hitachi, Ltd. Healthcare Business Unit
WG12		Michel	Claudon	Hôpital d'Enfants - Hôpital Jeanne d'Arc
WG12		Jean-Yves	Meuwly	Hospices Cantonaux Centre hospitalier universitaire
WG01		Nitesh	Sawner	IGATE
WG01		Bonnie	Weienr	Imaging Core Lab Services
WG12		Karla	Patten	Independent Consultant

WG12		Leodan Vega	Izaguirre	Informatics Science University
WG01		Jörg	Riesmeier	IT Consultant
WG12		William	Shepherd	iVu Imaging Corporation
WG12		Varsha	Garg	Jaypee Institute of Information Technology
WG12		Karan	Grover	Jaypee Institute of Information Technology
WG12		Jaspreet	Singh	Jaypee Institute of Information Technology
WG12		Aditya	Jain	JIIT
WG12		Akshay	Sharma	JIIT
WG01		Jon	Elion	Jon Elion
WG01&12	Present	Harry	Solomon	Laitek
WG01&12		Douglas	Sluis	Laitek Inc.
WG01		Joel	Friedman	LightLab Imaging, Inc.
WG01		Robert	Steinbrecher	LightLab Imaging, Inc.
WG01&12		Monica	Mojica	Mark Twain Medical Center Dignity Health
WG01&12		Arvind	Thiagarajan	Matrixview USA Inc.
WG01		Fred	Kusumoto	Mayo Clinic
WG01		Charles	Thomas	Medical Imaging & Informatics Consultant
WG12		Rebecca	Trunnell Hyman	Merge Healthcare an IBM Company
Guest		Holly	Grosholtz	MITA, guest
WG01&12		Luiza	Kowalczyk	MITA
WG01&12	Present	Lisa	Spellman	MITA
WG01		Mariza	Foster	MRI + Radiology Centre
WG01		Brian	Lunt	MyXrayDose Ltd
WG01&12	Present	James	Thomas	Northwestern Memorial Hospital
WG12		Earl	Canfield	Philips
WG12		Haiyuan	Lu	Philips
WG12		Joe	Luszcz	Philips
WG01		Chris	Melo	Philips
WG12		Easwara	Moorthy	Philips
WG01		Ruud	van Silfhout	Philips
WG01&12		Miranda	Jacobson	Philips Volcano
WG01		Folkert	Tijdens	Pie Medical Imaging BV
WG01		Boudewijn	Verstraelen	Pie Medical Imaging BV
WG01&12		David	Clunie	PixelMed Publishing
WG12		Robert	Muratore	Quantum Now LLC
WG01&12		Rex	Kerr	rk-logix, inc
WG12		Angeline	Cosca	Sdmi
WG12		Allison	Bertrand	Seno Medical Instruments, Inc.
WG12		Bryan	Clingman	Seno Medical Instruments, Inc.

WG01		Tat-Jin	Teo	SensorCath Inc.
WG12		Dezheng (Bruce)	Li (Lee)	Shanghai United Imaging Healthcare
WG01		Shigeru	Saito	Shonankamakura General Hospital
WG01		Heinz	Blendinger	Siemens Healthcare GmbH
WG01&12	Present	Antje	Schroeder	Siemens Healthcare GmbH
WG12		Neerja	Baru	Siemens Healthineers
WG12		Bryan	Brook	Siemens Healthineers
WG12		Jim	Chapman	Siemens Healthineers
WG12		Helene	Houle	Siemens Healthineers
WG12		Jan-Ulco	Kluiwstra	Siemens Healthineers
WG12		George	Ku	Siemens Healthineers
WG12		Ernest	Liu	Siemens Healthineers
WG12		Linda	Perez	Siemens Healthineers
WG12		Merv	Smith-Casem	Siemens Healthineers
WG12		Joel	Chabriaix	Société Française de Radiologie
WG01		Byrd	Bryan	St. Jude Medical Inc.
WG01&12		Stephen	Vastagh	Standards Management Company
WG12		Damien	Lerat	SuperSonic Imagine
WG12		Jacques	Souquet	SuperSonic Imagine
WG01		Isao	Mori	Terumo Corporation
WG01&12	Present	Paul	Sovelius	The Advanced Surgical Visualization Consortium
WG12		Jens	Stockhausen	TOMTEC IMAGING SYSTEMS
WG12		Achim	Mayer	TomTec Imaging Systems, GmbH
WG12		Bernhard	Mumm	TomTec Imaging Systems, GmbH
WG12		Michael	Douglas	Toshiba America Medical Systems
WG12		Clare	Anderson	Trillium Technology, Inc.
WG12	Present	Sander	Dekker	Cablon Medical B.V.
WG12		Bill	ZHANG	Ultrasonix Medical Corp
WG12		Andrew	Pokropek	University College London
WG12	Present	Zheng Feng	Lu	University of Chicago
WG12		Paul	Carson	University of Michigan Health System
WG12		Gregory	Ensing	University of Michigan Medical Center
WG01		John	Hirshfeld	University of Pennsylvania
WG01		Raymond	Bond	University of Ulster
WG12		David	Linker	University of Washington
WG12		Craig	Walker	VidiStar, LLC
WG12		Cristina	Suarez Mejias	Virgen del Rocio University Hospital
WG12		Jonathan	Whitby	Vital Images, Inc.
WG12		Joon Koo	Han	

1. Opening

- 1.1. Open and roll call.
- 1.2. Antitrust and DICOM patent policy review.
- 1.3. Agenda review and approval.
- 1.4. Minutes review and approval.
 - **WG-12** minutes from 25 March 19 and 29 April 2019 and WG01 minutes from 26 March 2019 were posted in their respective folders for review. We were tight on time today, so we ask members to review the past minutes and will review and approve at 17 June joint tcon

2. MITA Ultrasound issues update (Lisa)

Holly Grosholz, MITA Government Relations, shared information about initiatives underway in the newly restarted MITA Ultrasound Committee that may be of interest to DICOM stakeholders.

- In recent years, MITA/NEMA Committees have worked on issues and concerns around medical device servicing and remanufacturing.
- **Medical Device Servicing:** In early 2019, MITA published *NEMA/MITA 2 – Requirements for Servicing of Medical Imaging Equipment, a voluntary Standard outlining the minimum quality management system requirements for medical imaging device servicing*.
Link to document: <https://www.medicalimaging.org/policy/service/>
- **Medical Imaging Remanufacturing:** MITA also published a remanufacturing white paper: <https://www.nema.org/Standards/Pages/Considerations-for-Remanufacturing-of-Medical-Imaging-Devices.aspx>
- **Opportunity for DICOM review & comment:** The MITA Ultrasound Committee is developing a *MITA Ultrasound Remanufacturing Policy Paper* and is seeking review and comment from DICOM. The current draft - **MITA Ultrasound Remanufacturing White Paper dated 2019-04-23** – is available for comment and can be accessed via today's WG1 & WG12 meeting folders.
- **Comment Deadline:** Please send comments to Lisa and Holly – by 2 June 2019
ispellman@dicomstandard.org and hgrosholz@medicalimaging.org
- **Ultrasound Specification Guidelines:** Apparently matters of “spec-man-ship” (companies competing on product specifications - is on the rise (and according to some, is out of control) in the Ultrasound sector. Apparently competitors are using increasing specifications statements to get market advantage and leading to inconsistent specifications throughout the industry.
- The MITA Ultrasound Committee has agreed to try to identify and align on terms, such as transducer frequency, bandwidth, and more and will publish in a white paper or some kind of guideline document. Several DICOM WG members noted that a glossary would be very useful. Lisa and Holly will keep this group apprised
- **NEXT STEPS: DICOM members are welcome to attend the MITA Ultrasound 4 June teleconference where this will be discussed – please contact Lisa and Holly if you would like to attend.**
ispellman@dicomstandard.org and hgrosholz@medicalimaging.org

3. Sup 202 Real-Time Video - DICOM-RTV for Ultrasounds (Emmanuel Cordonnier)

- Emmanuel gave a presentation at the February meeting about **DICOM Supplement 202 Real-Time Video - DICOM-RTV for Ultrasounds**. He joined today's meeting with the hope of getting some specific feedback on the effort in general and specifically on questions a & b below.
- **Sup202, which should go for Letter Ballot in the next weeks, is specifying:**
 - Generic mechanism for transporting real-time video/multi-frame/waveform over IP, along with medical metadata (DICOM Real-Time Video, "DICOM-RTV"). It is based on the SMPTE ST 2110-10 family of standards which are rapidly adopted by Professional Video Industry and enable to synchronize very precisely a video with audio and other videos.
 - Three new IODs for Real-time communication: Endoscopy, Photography and Audio.

Questions for WG1 & WG12 for which Emmanuel is seeking feedback:

Question a: Should WG01 and WG12 consider developing New Work Item Proposals (NWIPs) for extending the mechanism to XA and US modalities, respectively, since some use cases are relevant?

Question b: b-com is available to accompany WGs to develop new supplements on these topics but needs experts on the particular modalities (specificities of image resolution / frequency and list of attributes to be sent with every frame...).

NEXT STEPS: Please review and send your comments by 21 June to lpellman@dicomstandard.org and Emmanuel.CORDONNIER@b-com.com

4. AAPM Quality Assurance elements NWIP status update: (Sander)

A. **Display LUT: Consistent Presentation**

- **Lead:** Dr. Lu and Harry Solomon offered to help.
- **Status update today:** Dr Lu and Harry Solomon reviewed a presentation which is in today's meeting folder titled: "Ultrasound GSDF-2019-05-20"
- Dr. Lu will send to Holly to ask if time can be given on the 4 June MITA Ultrasound meeting to discuss ultrasound image presentation consistency. Please see the attached. Issue requires collaborative effort from both vendors and users to implement the existing DICOM standards. The goal of is to gather feedback, suggestions, and support from MITA.

NEXT STEPS

- Please see presentation in today's meeting folder
- Go to your medical physics group, ask them if they would be interested to implement
- Also, if your organization is involved in ACR accreditation, AIUM for example, please also inquire if this should be an additional criteria for lab accreditation schemes

B. **Pixel Map analysis:** Physicist use case (s) - describe what they are unable to do today, then group, clarify, review existing tools and do a fit / gap analysis see how current tools able to handle.

- **Lead: Sander Dekker:** Sander wrote a use case and sent to subject matter experts for review.
- **Discussion/Question:** How to make this compatible for ultrasound?
- **Option 1:** Incorporate this module into the Ultrasound Object Definition setoff attribute.
- **Advantage:** Would be only one object and would be all needed to do these pixel ID tasks and quality measures. The problem with putting into object are the conformance claims, anytime would be optional conformance and might be more difficult to get attention since optional

- **Option 2:** Could be specified as a separate object type
- **Advantage:** Not have to mess with ultrasound object, the way DICOM has evolved, different types of info stored into different objects instead of trying to cram into one.
- Model-wise it fits more into the original object, from a pure modeling point of view, for practicality, it might be best in original object, on the other hand, Harry points to the benefits of being outside the object. Would be beneficial to pull in other end users. Communicate with the MITA Ultrasound Section. Holly is meeting with us today we can update her at that time.

NEXT STEPS

- a. Members are asked to please review Pixel Map Use Case document in today's meeting folder
- b. Harry Solomon will get some additional feedback from others including David Clunie & Kevin O'Donnell and share on the next tcon on Monday 17 June.
- c. Sander sent the spreadsheet and he will join the 4 June MITA Ultrasound Section meeting to share info and get support. Sander will report back on this subject.

C. **CP for Transducer Serial Number:** It was suggested to create a CP as in the next two weeks to submit to the June DICOM WG-06 meeting, get for Transducer S/N TAG.

- Kevin wrote an initial draft and reviewed on today's call with the goal to review use cases.
- Use Case 1: When expect to access, type of analysis - having determined an infection for example, which patients were and were not scanned with probe, this would seem to be an example workflow. Are there others?
- Another possible use case: For additional QA to further automate the process: it is easy to forget which transducer was used if the serial number is not recorded.
- Discussion points:
- The transducer model code ID is not necessarily known to the cart, probes need to be redesigned, typical lifetime for a probe is 5-7 years, when configuring cart, could request that serial number be entered by sonographer for a short-term solution?
- Possible problems:
 - Transducers are often moved between systems and clinical rooms as needed - they do not always stay with the machine brought with,
 - Could put the serial number on a pop-up pick list?
 - Is this even a DICOM issue? Is this more an Electronic Medical Record (EMR) the EMR screen could track the probe ID,
 - Not sure Sonographers would take the time to record a serial number.
 - Do as a future spec for a new probe, Sonographers already overburdened so not seeing this happening with them, think could not get techs to do this.
 - Also human entry leads to error entry, so the serial numbers could very well be entered incorrectly which defeats the purpose of this approach

NEXT STEPS

- Now that have complete use case details, do one more round in DICOM and then come back to the WG for discussion and then Sander will take to MITA Ultrasound.

- D. Other tags on the AAPM proposed attributes list:** This project is on hold until the Display LUT, PixelMap and Transducer S/N projects have been completed. The current status is listed below:

NEXT STEPS

- a. Classify the list of attributes into groups from Low to High Benefit

5. ACC/ASE Key Data Elements for Echo and IAC Accreditation Standards spreadsheet (Antje, Bruce) – make this its own topic and is on hold.

6. Make its own item - Status update: Cardiac Strain Structured Reporting status update

Update review: Kevin O'Donnell and Stefano Pedri

<https://docs.google.com/spreadsheets/d/11QJxEOybHcmb7NDuGjfwfFxS2-0TnHdpK6ypzudZo6s/edit?usp=sharing>

- Kevin reviewed updated worksheet, discussion.

NEXT STEPS

- a. Complete the modeling of this longitudinal strain, present at ASE meeting including Strain task force, look for gaps,
- b. Kevin: Start a CP, circle back with Stefano as well – they expect him to be at the ASE meeting

6. Old or New Business

- No old or new business was presented

7. Next meetings

Mon 17 June 2019: 11:00am – 12:30pm US ET (note later time today)

<https://global.gotomeeting.com/join/216310909>

Mon 29 July 2019: 10:00-11:30am US ET (Note back to regular time)

WG1 & WG12, 2019-07-29, 10:00-11:30am US ET

<https://global.gotomeeting.com/join/883590997>

Mon 26 Aug 2019: 10:00-11:30am US ET (Note back to regular time)

WG1 & WG12, 2019-08-26, 10:00-11:30am US ET

<https://global.gotomeeting.com/join/509788677>

F2F: No F2F meetings scheduled at this time.

8. Adjourn

Today's call adjourned at 11:35 US ET. Minutes prepared by Lisa Spellman, DICOM General Secretary.

Report reviewed by MITA/NEMA General Counsel: CRS, June 3, 2019.