



Secretariat: MITA

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Agenda-Tcon

DICOM WG 23: Artificial Intelligence / Application Hosting

Ad Hoc Whitepaper Group

Date and Time: 11:00am – 12:00pm US ET

14 April 2020

Presiding Officers: Brian Bialecki, Ad Hoc Chair

DICOM Secretariat Carolyn Hull, MITA

Voting Members Present

AAPM/Univ. of Arkansas for Medical Sciences

ACR

Argentix

Canon

DesAcc EMEA

GE Healthcare

Institute of Cancer Research

Medical Image Standards Association of Taiwan

PixelMed

Sectra

Siemens Healthineers

Lawrence Tarbox

Brian Bialecki

Elliot Silver

Kevin O'Donnell

Graham King

Chris Lindop

Simon Doran

Chung-Yueh Lien

David Clunie

Daniel Forsberg, Observer

Gianluca Paladini

Voting Members Not Present

Carl Zeiss Meditec

NVIDIA

Laitek

Agfa

ACR

Philips

VISUS

Imagebiopsy

Hitachi Healthcare Americas

Fovia

ACR

DaPict

Isomics

AG Regis Deshayes

Brad Genereux

Doug Sluis

Hamid Nashat

James Philbin

Jeroen Medema

Marc Kaemmerer

Michael Egger

Ravi Managuli

Shay Kilby

Steve Horii

Steve Lord

Steve Pieper

Others (Observers, Alt-voting, staff) Present

NEMA/MITA Staff

Carolyn Hull

NEMA/MITA Staff
Microsoft
Bangkok Hospital Phuket
Blackford Analysis
Blackford Analysis
Cerner
Fairhaven Technologies
GE Healthcare
German Cancer Research Center
Nuance
Siemens Healthineers
Siemens Healthineers
Universidad Nacional del Centro de la Prov. B.A.

Zack Hornberger
Neil Tenenholtz, Observer
Sirisak Yaisoongnoen, Observer
Keith Houston, Observer
Keith Houston
John Moore, Observer
Rob Horn, Observer
Steve Nichols, Alt Voting
Marco Nolden, Observer
Sridhar Balasubramanian, Observer
Joerg Illmann, Observer
Srividya Rajamani, Alt Voting
Emanuel Arguinarena

1. Opening

- 1.1. Welcome and roll call – Mr. Bialecki welcomed everyone to the call.
- 1.2. Antitrust and patent rules will be reviewed –Ms. Hull read these according to NEMA guidelines.
- 1.3. Agenda review and approval—The agenda was reviewed and approved.

2. Whitepaper draft: Background and information (Brian Bialecki)

- 2.1. Discussion of a potential whitepaper and background. See also documents/model in FTP folder:

<ftp://d9-workgroups:Private15@medical.nema.org/MEDICAL/Private/Dicom/WORKGRPS/WG23/2020/AI-SERVICE-DISCOVERY-AND-CONTROL-ad-hoc-group/2020-04-14>

- This might be hosted on Windows or Linux machine. Look at standards that exist for getting data in and out. Need to work out API (ingress/egress). Wanted to some way to give them a way to discover service/process, this is how you engage, this is how you get data back. Trying to figure out how to do this—open application model <https://oam.dev/>. Based on yaml And JSON. Can define own hosting mechanisms.
 - Platform could be adapted to be a task performer or task manager.
 - Take idea that the platform is a task performer, or task manager. If a model developer, how would I go about actually doing XYZ.
 - Neil: says natural that could serve as both task manager, and performer. Says platform would be speaking same language, it communicates inside the hospital.
 - Platform could be a combined. Does it appear that application hosting has enough info today to handle discovery that the service/app is out there? E.g. just received UPS message, this is what I need to do. Is that initial discovery in DICOM application hosting good enough. Will it cover all the use cases? May be a bit short sighted. Platform needs to understand, something else, DICOM.
 - The way AIW-I is written now, Chris says can do both. Has multiple sub-tasks that it manages.
 - Lower the barrier. DICOM has application hosting today. Are other ways to cover services? If have a smart task performer that goes out and knows what can be done.
 - This particular algorithm knows I can just do 1 or 0, doesn't understand DICOM of FHIR. This algorithm is the best of the best, how do I get this in?
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- They become shareable across platform if there is an API to the model.
 - Clunie -Makes sense to manage with patients. Also people who manage with PNG-live in different worlds. Merging these two worlds through platforms is something currently vendors have to fill. Model developer brings to platform and that takes care of impedance/mismatch.
 - Do we want to standardize in a healthcare specific way, something in between? Trying to do that or do we leave it at UPS service? Are we saying we should get involved there? Not hc specific really, yet this is something hc platforms will need to interface with.
 - Models should be dealing with data and don't care about how—want them to be minimally aware. Adopted another model. Ideally, developer shouldn't be doing HTTP. It was suggested they should be handed the data.
 - Reason we talk about this-how far should we go beyond healthcare environment? If thinking about task performer, this is a hospital system. Should have an interface on task performer side that does communication that is standard. Maybe it doesn't seem natural to go down this path, but to encourage vendors to build smart task performers. Creating a standard interface for a task performer to understand how is doing the community a service.
 - Agree, one question is: model developer and looking at DWI series from an MR. Whose responsibility? Does platform know responsibility to go get all that, is it a part of the interface? Is platform to manifest that understanding?
 - This is not part of the document as Keith put together.
 - Possibility if don't include, will hamstring developers.
 - Identifying correct data is a practical problem. 2 AI algorithms- diffusion, other is operated on that? How will we orchestrate ID of correct data and perform? Same with body part
 - Niels branching example: Give entire study, alternatively, writes back which series is which, task manager can push to an algorithm only going as DWI. Wants to touch on pull-based solution saying data I need v. this is available, flexibility could be useful. Could go down both paths—create a whitepaper describing both processes.
 - Understand potential workflows, are there gaps today if use app hosting or extended version of OAM? If there are gaps, should we take on as WG-23? Or just note and IHE would want to take over, OAM makes more sense, IHE RAD Cmte should do?
 - Thinks after we go through this, maybe not a work item but that is what the discussion and potential paper flushes out.
 - Try to come up with concept: Start some hackathons potentially to experiment with what we are trying to do. Have to define clearly what you're trying to do. DC- wants more info on what Keith is doing.
 - Keith- try to explain what document is about. Trying about solving a different problem during this meeting. Someone comes to you and says, need DICOM file in this directory. If extensible, lightweight version of DICOM data, of HL7 data, can drop into it. Trying to make it as easy as possible for platform vendors.
 - Next steps, get comments on document.
 - **Action:**
 - o Documents needs an executive summary. About discovery of applications, needs some endpoints about what data sources it can communicate with.
 - o **Brian** to reach out to contacts to build examples to share with the group prior to the next meeting.
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- 3. **Old or New Business Next meeting:** None.
- 4. **Next meetings-F2F:** None scheduled at this time.
- 5. **Next meetings – tcons**

Teleconference (tcons) (Every other Tuesday, usually 11am – 12pm US ET, unless schedule conflicts)

Tuesday, April 28, 11:00AM US ET

Tuesday, May 5, 11:00AM US ET

Tuesday, May 12, 11:00AM US ET

IHE RAD meetings below

2020-04-20-23	All Day	Meeting	IHE Rad Tech Mtg: Preparation for Trial Implementation Publication	Agenda	Minutes
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6. Adjourn

Reviewed by counsel: Clark Silcox, April 27, 2020.

