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**MINUTES**

**DICOM WORKING GROUP 16 fMRI**

(Functional Magnetic Resonance Imaging)

&

**DICOM WORKING GROUP 16**

(Magnetic Resonance)

**Thursday, October 31-Friday, November 1, 2019**

**Times: 9:00-5:00 Pacific Time (2days)**

**San Francisco, CA**

<b><u>Voting Members Present</u></b>	<b><u>Represented by</u></b>	<b><u>10/31</u></b>	<b><u>11/1</u></b>
AAPM	Ken Hwang	P	
GE Healthcare	Steve Nichols For Khaleel Nadaf	P	P
Philips	Wim Corbijn	P	
Siemens Healthcare GmbH	Elmar Seeberger	X	X
<b><u>Voting Members Not Present</u></b>	<b><u>Represented by</u></b>		
ACR	John Carrino		
Brainlab	David Fade		
Canon Medical Systems	Kevin O'Donnell		
FDA/CDRH/OSEL	David Soltysik		
GE Healthcare	Khaleel Nadaf		
US FDA	Wolfgang Kainz		
<b><u>Alternate Voting Members &amp; Observers</u></b>	<b><u>Represented by</u></b>		
Medical Numerics	Michael Fonte	X	X
MITA/DICOM	Luiza Kowalczyk	X	X
Nordic Neurolab	Cathy Elsinger	X	X
Siemens Healthcare GmbH	Thomas Mangold	X	X

**Presiding Officer:**  
**DICOM Secretariat:**

Wim Corbijn, Philips, Vendor Chair  
 Luiza Kowalczyk, MITA/NEMA

## 1. Opening

- Call to order at 9:15 a.m. and review of anti-trust rules and DICOM Disclosure Patent Policy
- The agenda was reviewed and approved.
- The minutes from the previous meeting were approved.

## 2. Supplement 218 MR Protocol Storage [WI 2018-09-B]

- Reviewed and discussed.
- The updated document will be uploaded on the ftp server in the meeting folder.
- **Questions for contrast experts of Sup 164.**
  - There are few open issues in the MR Protocol supplement which couldn't be answered by the group during this meeting.
  - They seemed to be outdated and unclear where they come from.
  - Anyone is welcome to submit any feedback. The group needs some guidance.
- C.34.8 Patient Positioning Module: do we need to extend CID 1010 for MR purpose?  
~~Yes we need to add this and think about how we combine stacks.~~  
No, the Patient Positioning Module is not useful for MR Performed Protocol IOD. The Anatomic Region Module is used to describe the Positioning of the Patient and Anatomy for Examination.
- How we should proceed with Sup 164: Contrast Agent Administration Reporting?  
We can park it for now or come with a proposal on how to make the connection. The control points in the protocol are still needed.
- How to get the proper contrast information for the Enhanced MR Images?  
Might get intermediate reports from the injector.

## 3. Supplement 210 Paradigm Protocol Storage [WI 2014-12-A]

- A model spreadsheet was reviewed and updated:  
Example\_paradigms\_using\_reworked\_model\_clean.xlsx

**Action item:** Mike will update the model sheet and upload it on the ftp server in the meeting folder by the end of next week.

**SECRETARY NOTE:** Sup 210 and Sup 218 will be dropped from the November WG-06 agenda. The documents are not ready for a review for WG-06. Next review is planned for January 2020.

## 4. CP-Add MR Implant Information to MR Enhanced and MR Objects

- Received number: CP1992
- Jim to send an email with questions to co-chair of WG-24 Surgery.
- Wim to send an email with questions to WG-28 Physics.
- This CP will require more discussion with WG-06 Base Standard

## 5. New Business

- RESTful 3D – Steve Nichols, GE Healthcare
- Overall, there might be a potential interest for fMRI group. There is definitely some value in here.
- Members of WG-16 fMRI are available on any follow ups/topics related fMRI.

Input from WG-16 on RESTful 3D:

Would be used for fMRI (esp. surgical planning) in a zero-footprint viewer environment

- WG-16 is interested in extending Volumetric Presentation State (sup 190) for blending and thresholding of RWVs, as in Advanced Blending Presentation State Storage (sup 189)
- Volumetric Presentation State questions:
  - Can Multiple Volume Rendering Volumetric Presentation State Storage SOP Class reference different series (e.g. anatomic, tractography and activation)?
    - Yes, this IOD references 2 or more Volumetric Presentation Input Sets (Jonathan Whitby can confirm)
- Parameters to consider for on-the-fly restFUL rendering
  - Trade-offs for quality vs. size of video media – useful for limited/mobile devices
    - frames / fps
    - quality (P18 - 8.3.5.1.2)
    - scaling (P18 - 8.3.5.1.3)
- Interactivity
  - Adjust cut plane
  - Quality
  - Rotate
  - Adjust bending / thresholding

**Action item:** Jim to send Steve stuff on the fMRI blending/thresholding in Supplement 189.

**Meeting folder:** <ftp://dicom.nema.org/MEDICAL/Private/Dicom/WORKGRPS/Wg16/2019/2019-10-31/>

## 6. Future Meetings

- WG-16 fMRI on Tuesday, December 10, 2019, 10:00-11:00 US ET.
- WG-16 MR on Monday, December 9, 2019, 09:00-11:00 US ET.

## 7. Adjournment

The meeting was adjourned on Friday, November 1<sup>st</sup> at 13:40 US Pacific Time Zone

Reviewed by counsel: CRS, November 4, 2019.