

	Steven	Nichols	GE Healthcare	Observer
	Jouke	Numan	GE Healthcare	Observer
	Kjetil	Pedersen	GE Healthcare	
	Francisco	Sureda	GE Healthcare	Observer
	Elliott	Lavy	Harris Computer Corporation	Observer
	Takuro	Ono	Hitachi Medical Corporation	Observer
	Arnaud	De Kelper	Hologic Inc.	Observer
	Jeff	Garrett	Hologic Inc.	Voting
	John	Giese	Innolitics, LLC	Observer
	Ravindran	Padmanabhan	Innowave Healthcare Pvt Ltd.	Observer
	Lutz	Vorwerk	Institut fur Telematik	Observer
	Charles	Pariset	InteropEhealth	Observer
	Jörg	Riesmeier	IT Consultant	Observer
	Gunter	Zeilinger	J4Care GmbH	Observer
Present	Akihiro	Yomoda	JIRA	Voting
	Thomas	Guiot	Jules Bordet Institute	Observer
	Tetsuya	Iwata	Konica Minolta Corporation	Alt. Voting
	Hitoshi	Yoshimura	Konica Minolta Medical & Graphic, Inc.	Alt. Voting
Present	Michael	Laconti	Konica Minolta Medical Imaging USA, Inc.	Voting
	Harry	Solomon	Laitek	Observer
	Douglas	Sluis	Laitek Inc.	Voting
	Bronson	Hokuf	Laurel Bridge Software, Inc.	Observer
	T. Roger	Keane	Laurel Bridge Software, Inc.	Observer
	Peyman	Najmabadi	Leica Biosystems Inc.	Observer
	Aaron	Stearrett	Leica Biosystems Inc.	Observer
Present	Chung-Yueh	Lien	Medical Image Standards Association of Taiwan	Voting
	Zsolt	Hegyí	Mediso Medical Imaging Systems	Observer
	Mark	Halliday	Medtronic, Inc.	Observer
	Guy	Hembroff	Michigan Technological University	Observer
Present	Zack	Hornberger	MITA	Observer
Present	Luiza	Kowalczyk	MITA	Observer
Present	Lisa	Spellman	MITA	Observer
	Peter	Weems	MITA	Observer
	Mariza	Foster	MRI + Radiology Centre	Observer
	Yueh-Hsun	Shih	National Yang Ming University	Observer
	Marco	Eichelberg	OFFIS - Institute for Information Technology	Voting
	Michael	Onken	Open Connections GmbH	Observer
	Katsuya	Watanabe	PHC co.,Ltd	Voting
	Elisabeth	George	Philips	Alt. Voting
	Glen	Hodges	Philips	Observer
	Ben	Kokx	Philips	Voting
	Joe	Luszcz	Philips	Observer
	Jeroen	Medema	Philips	Alt. Voting

Present	Nikhilesh	Sonar	Philips	Observer
	Vinayachandra	Aithala	Philips India	Observer
	David	Clunie	PixelMed Publishing	Voting
	Michael	Owens	RefleXion Medical	Observer
	Masuyoshi	Yachida	Ricoh Corporation	Observer
	Rex	Kerr	rk-logix, inc	Observer
	Pim	Philipse	Rogan-Delft BV	Observer
	Angeline	Cosca	Sdmi	Observer
	Dezheng (Bruce)	Li (Lee)	Shanghai United Imaging Healthcare	Observer
	Andreas	Klingler	Siemens Healthcare GmbH	Alt. Voting
Present	Hans-Martin	von Stockhausen	Siemens Healthcare GmbH	Voting
	Nikolaus	Wirsz	Siemens Healthcare GmbH	Observer
	Mohammed	Aleem	Siemens Healthineers	Alt. Voting
	Corey	Cochran	Stryker Communications	Voting
	Damien	Lerat	SuperSonic Imagine	Alt. Voting
	Keith	Knight	Toshiba Medical Visualisation Systems	Observer
Present	Lawrence	Tarbox	University of Arkansas for Medical Sciences	Voting
	Nathan	Cross	University of Washington Medical Center	Observer
	Sebastian	Korber	VISUS Technology Transfer	Observer
	Jonathan	Whitby	Vital Images, Inc.	Observer
	Nicholas	Pons	VITEC Multimedia	Observer

1. Opening

- 1.1 Open the meeting and roll call.
- 1.2 Review of antitrust and patent rule.
- 1.3 Agenda review and approval.
- 1.4 The Minutes from 15 May 2019 were approved with no changes.

2. Status update and discussion on current security issues

2.1 Discussion: CVE write-up

- The vulnerability of the DICOM file format was reviewed by MITRE and now has a Common Vulnerabilities and Exposures (CVE) number: CVE 2019-11687. It is felt that the majority of the write-up is acceptable, but there is concern over the last two lines.
- Rob reviewed a draft of a proposed response for suggested improvement to the CVE write-up. He shared with a security firm; they honed in on 1.8 exploitability score and Rob thought this was acceptably low.
- Any malware that includes possible code execution, no matter how unlikely, is rated high on severity metrics, raising the base score to 7.8. MITRE is being consistent on the base score, and security firms expect this. Most security researchers focus on overall impact score – 5.9 is a “yes, you should do something about it, but it not something to get overly excited or worried about...”
- Rob’s remaining concern are the sentences about “anti-malware” software being HIPAA problematic.
- There was a discussion about how to re-phrase the two anti-malware sentences, starting after the sentence starting with “.dcm file extension”:
 - Some anti-malware software does recognize the illicit nature of the files and flags them as infected. However, there was a recommendation from the SPC to configure anti-malware software to ignore DICOM files. Anyone following that recommendation could have greater exposure to risk.
 - Simply removing infected files could endanger patient safety, as removal could throw away patient data. Instead of removing the files, they should be sanitized, e.g. by zeroing out the 128 byte preamble.
 - In general, locally run anti-malware tools should not be a problem in complying with HIPAA or other regulations as long as they sanitize instead of remove files.
 - Cloud-based anti-malware tools could violate HIPAA if no business associate agreement is in place. If a BAA is in place, then there should be no violation.

<Action 1> Rob will take these notes and draft a response and send to WG14 for review and comment before the June WG-14 meeting.

2.2 Hackers simulate cancer in images

Question: Does WG14 still want to draft and submit a Letter to the Editor or other?

- While not DICOM specific, it is relevant and has appeared in many posts and re-postings/re-tweets and such. The issue was first reported in the Washington Post. There are steps end users can take to protect such as to use DICOM TLS or digital signatures or other data integrity checks www.theweek.in/news/health/2019/04/04/Researchers-hack-CT-scans-to-create-fake-cancers-in-imaging.html
- Is felt that WG14 should draft a response to “Hackers simulate cancer in images” and collaborate with MITA, MITA PR and legal on response.
- Dr. Benoit Desjardins and Dr. Steve Horii et al have written a short paper describing the problem with the hack of the dual-personality DICOM File (misuse of the 128-bit preamble) and the hack of inserting and removing lesions in an undetectable fashion using AI techniques. They included Rob and Lawrence as

authors and also the people from Cylera and Israel who called out the potential hacks. They submitted to the Academic Radiology, but it was turned down cited as “too technical for academic radiology. “ They are going to re-write the paper addressing the reviewers’ comments, including adding a section on how vendors should respond. Their current plans is to submit the revised paper to the Journal of Digital Imaging

- The article suggests that vendors start to implement Creator Digital Signature Profile and end-users to start asking for software to have the ability to check for CDS and flag if not available or if the signature is invalid.
- The thought is that implementing a check for valid signatures would not be that disruptive
- We cannot circulate the article until it has gone through a review and accepted for publication, due to copyright concerns. (The journals like to hold the copyright and reserve distribution rights.)
- Even if this paper comes out, we could and probably should craft a response, e.g. a Letter to the Editor to the Washington Post, or an opinion piece, or a comment on GitHub or similar. Waiting for the proposed article to go to press might be too long to wait without a response.

<Action 2> Lisa to ask the MITA media relations firm for advice for next steps. The ask: We are considering drafting an opinion piece; write an article that would have multiple uses.

3. Sup/209, Updating DICOM Conformance Template Security topics

3.1 Digital Signature issue: See May minutes

- We are not going to update the security template at this moment; we are going to revamp the profiles. Someone needs to review the profile.
- Dr. Chung-Yueh noted that his dissertation addressed the topic of Digital Signatures, among other things, and he offered to share with the WG for review. The document has been placed in today’s meeting folder as “CYL Dissertation.”
- (Note: For the June agenda, move this away from a subtopic and to its own item.)

<Action 3> Lawrence volunteered to examine the current Digital Signature Profiles, and will report at June meeting about potential revamps.

Notes from Digital Signature discussion

- Is there a general solution? Is it deployed? Is it reasonable for imaging?
- Is there a general medical solution? Is it deployed? Is it recognized by CISOs? Is it reasonable for imaging?
- Is there a need for a solution specifically for DICOM?
- Is the current digital signature solution the right path for DICOM?
- Is there a better alternative, e.g., watermarking?
- Does the current digital signature method in DICOM need improvement?
- Does the current digital signature method in DICOM need only updating?
- For healthcare documents/images (e.g., in EHR, VNA)? is it deployed? is it reasonable for (traditional radiology +/- "enterprise") imaging?
- Is the current digital signature solution the right path for DICOM? Is there a better alternative, e.g., sign entire object in separate object/database, watermarking (need new Transfer Syntaxes)?

3.2 CP on Section F.1 Basic Network Address Management Profile, specifically to clean section F.1.8 Conformance and maybe section F.1.5. **Lead:** Zack Hornberger (MITA)

Status: Zack submitted a draft (thank you, Zack). Rob reviewed and discussion for edits.

- Rob drafted a CP for WG-06 review, it will receive a CP number
- Document is in today's meeting folder should any members wish to review
- Rob will report with feedback from WG-06 at the June tcon

3.3 CP on Section H.2 DNS Service Discovery to finish the section. **Lead :** Bill Jacqmein (Agfa)

Status: Bill sent a draft via email on 15 May (Thank you, Bill).

- Rob drafted a CP for WG-06 review, it will receive a CP number
- Document is in today's meeting folder should any members wish to review
- Rob will report with feedback from WG-06 at the June tcon

3.4 Sup/209, Section 8.6 Expected Process activity, we decided that WG 14 should provide a paragraph about what should be seen in the document.

Leads: Rob and Lawrence will work on section 8.6

- Rob drafted a CP for WG-06 review, it will receive a CP number
- Document is in today's meeting folder should any members wish to review
- Rob will report with feedback from WG-06 at the June tcon

4. White paper based on NSA Manageable Network Plan as a joint project with MITA

- NSA created a high level project plan. We propose to add details about how to use DICOM and MDS2 to help fill in the gaps. MITA will help to produce and promote.
- Target audience: Hospital CISOs
- Link to draft: See Rob Horn draft in today's meeting folder.
- Link to NSA site: <https://apps.nsa.gov/iaarchive/search.cfm?criteria=manageable+network+plan>

<Action 4 >

- a. Zack indicated that the MITA MII and Cyber committees are interested to from a PACs perspective
- b. Bill Jacqmein is working on a draft reply.
- c. Move to the June agendas we ran out of time to discuss this today.

5. Agenda planning discussion:

- Include a discussion of Rob's proposed response to the CVE (Action 1)
- Include a discussion of MITA' suggestions regarding a response or opinion piece to be circulated regarding the reported security vulnerabilities (Action 2)
- Review suggestions for revamping or modernizing the DICOM Digital Signatures Profiles (Action 3)
- Work on the NSA Manageable Network Plan white paper (Action 4)

6. New Business

- No new business was presented.

7. Old Business

7.1 Use of ACME certificates at Connectathons, IHE ITI profile proposal

- A proposal was sent to Eric Poiseau, Technical Manager, European Connectathon and Steve Moore, Technical manager, NA Connectathon. Steve and John Moehrke requested more info and pushed back a bit. They would like to better understand the need and value. Secure communications have not taken off (1) users don't know to ask for it (2) Vendors not pushing it
- There was a discussion on January's call regarding ACME Certificates and other methods.

Next steps:

- Rob and Lawrence will do a bit more thinking and put together additional documentation.
- They might also draft a white paper. Continue discussion later in 2019.
- Lawrence has a presentation at SIIM2019 that will also cover some of this.

7.2 Possible response to Rik Primo article *"Cybersecurity in Medical Imaging-NovDec-2018.p29-32"*

- Security is a site problem that involves policies and procedures and discussed MDS2, it didn't mention DICOM or HL7 FHIR or IEEE11073 or TLS or TCP.
- It was suggested that DICOM WG14 could submit a response or article with the focus: For some of the issues, DICOM solves these 1, 2, 3...

Action/Next steps:

- Tabled to a future meeting

8. Next Meetings – tcons (3rd Wed each month, 9-10amUS_ET)

Wed 19 June 2019, 9-10am US ET

<https://global.gotomeeting.com/join/895299237>

Wed 17 July 2019, 9-10am US ET

<https://global.gotomeeting.com/join/278981725>

Wed 21 August 2019, 9-10am ET

<https://global.gotomeeting.com/join/490836789>

9. Next Meetings - F2F

- None scheduled at this time.

10. Adjournment

The call adjourned at 10:08am US ET. Report prepared by Lisa Spellman, DICOM General Secretary.

Report reviewed by MITA/NEMA legal counsel: Clark Silcox, May 31, 2019.