

Board Report: IHE Radiology Domain

Sponsors:

- Radiological Society of North America (RSNA)

Leadership:

- Secretariat: Chris Carr, RSNA (email: radiology@ihe.net)
- Board Representative: Kevin O'Donnell, Toshiba Medical Research Institute
- Plan Cmte Co-chair: Chris Lindop, GE Healthcare
- Plan Cmte Co-chair: (transitioning to John Carrino, ACR)
- Tech Cmte Co-chair: Antje Schroeder, Siemens
- Tech Cmte Co-chair: David Clunie, Corelab Partners

Membership Rosters:

- Planning & Technical Cmte: (Two tabs, same spreadsheet)
http://spreadsheets.google.com/ccc?key=0At_jYVJ2XnXscFRnSVFzRGZad3M4QXBIRmNQMzQ4V0E

Activity:

- Domain Scope: IHE Radiology addresses information sharing, workflow and patient care in radiology, including mammography and nuclear medicine.
- Current Cycle Timeline/Milestones: <http://wiki.ihe.net/index.php?title=Radiology>
- Background: IHE Radiology was established by RSNA in 1998.

Most Significant Profiles:

Title	# vendors at Cthon	# products in Registry	Description	Significant Because...
Scheduled Workflow (SWF)	234 (+12)	318 (+61)	Integrates ordering, scheduling, imaging acquisition, storage and viewing for Radiology exams.	The most widely implemented Radiology profile. (*1)
Consistent Presentation of Images (CPI)	123 (+4)	181 (+33)	Makes image appearance consistent across different monitors and printers.	(*1)
Portable Data for Imaging (PDI)	119 (+4)	108 (+19)	Improves interoperability of DICOM CDs.	Endorsed by the AMA and AANS. Reviewed/recommended in JACR http://www.jacr.org/article/S1546-1440(10)00387-X/abstract (*1)
X-Enterprise Doc Sharing	71	69	Extends XDS to share images and diagnostic	Proposed U.S. Meaningful Use Stage 2 imaging criteria seem

for Imaging (XDS-I.b)	(+17)	(+17)	reports across a group of care sites.	well aligned with XDS-I.b
Mammography Image (MAMMO)	68 (+3)	82 (+20)	Specifies how Mammo images & evidence objects are created, exchanged, used and displayed.	Most widely implemented radiology content profile. (*1)
Import Reconciliation Workflow (IRWF)	42 (+0)	21 (+4)	Manages importing images from CDs, hardcopy, XDS-I, etc. and reconciling identifiers to match local values.	Importance increasing with increased cross-enterprise exchange of imaging data
Radiation Exposure Monitoring (REM)	32 (+8)	41 (+17)	Specifies how radiation details from imaging procedures are created, exchanged and used.	Adopted by ACR for National Dose Registry; Ships in all new CTs (MITA). (*1)
Patient Information Reconciliation (PIR)	166	262	Coordinates reconciliation of the patient record when images are acquired for unidentified (e.g. trauma), or misidentified patients.	More than 30 products in the product registry.
Key Image Note (KIN)	91	77	Lets users flag images as significant (e.g. for referring, for surgery, etc.) and add notes.	More than 30 products in the product registry.
Evidence Documents (ED)	64	88	Specifies how data objects such as digital measurements are created, exchanged, and used.	More than 30 products in the product registry.
Nuclear Medicine Image (NMI)	37	40	Specifies how NM images and result screens are created, exchanged, used and displayed.	More than 30 products in the product registry.
Simple Image and Numeric Report (SINR)	54	66	Specifies how Diagnostic Radiology Reports (including images and numeric data) are created, exchanged, and used.	More than 30 products in the product registry. But expecting transition to use of CDA.

*1 – Incorporated into the 2012 ACR–AAPM–SIIM TECHNICAL STANDARD FOR ELECTRONIC PRACTICE OF MEDICAL IMAGING

Significant Deployment Activity:

- Getting data on actual field deployment and usage of profiles continues to be difficult. Board insight, support, advice would be welcome.
- SWF ships on most new radiology systems and the corresponding Connectathon pre-testing greases the wheels of integration in the field, but **most sites are not**

aware that IHE is present/helping.

Region	Organization Name	Profiles	Status (planning, installation, operational)	Contact
Holland	Amphia Hospital	SWF	Operational since 2008. Radiology Dept has fully deployed.	Brian Sanderse
Holland	Dutch National Institute for Public Health	SWF, PDI, Mammo, XDS-I.b	Operational 2008, Fully digital 2010. Breast cancer screening images for Netherlands (1M women/yr) acquired in 65 mobile units uploaded centrally and positive findings sent to one of 100 hospitals.	http://www.ihe-nl.org/uploaded/FILES/GB-succes-borstonderzoek.jpg
Holland	Cardiology Network Friesland	XDS-I.b, XDS.b, XUA, PDQ, PIX	Operational since 2009. 990-bed Medical Centre Leeuwarden & 4 referring hospitals exchange images, etc. for referred cath lab and open-heart surgery patients	http://www.ihe-europe.net/drupal/sites/default/files/IHE-Europe-Success-Story-FRIESLAND_Final.pdf
China	Zhabei District (Shanghai)	XDS-I.b	Operational since 2009. 50 exams per day between a primary hospital & three community hospitals via an image-enabled EHR.	http://www.ncbi.nlm.nih.gov/pubmed/20694521
USA	MD Anderson	PDI	Operational since 2009. As of early 2013, importing >450 studies per day, a large number of which are PDI compliant.	Kevin McEney
Canada	Ontario HDIRS	XDS-I.b	Operational. By late 2010 all 38 partner health facilities were connected to the shared digital imaging repository. By late 2012, 10,000,000 exams archived.	http://www.hdirs.com/
Holland	Albert Schweitzer Hospital & Erasmus Medical Center	XDS-I.b & related ITI Profiles	Operational 2011. Sending images/referral notes and receiving therapy result report.	http://www.ihe-nl.org/uploaded/FILES/DEFTransmuraalIHE-XDS-platform-RijnmondNet-.jpg

Demonstrations and Other Events:

- RSNA 2012 had an IHE booth on the vendor floor focused on Image Sharing and Radiation Exposure Monitoring, including live demonstrations.
- Annual classroom series at RSNA 2013. Ad hoc topic-focused presentations at SIIM 2013 (PAWF), AHRA, AAPM (REM), MIIT (XDS-I, SWF, PDI, REM, MAMMO), ECR.
- Regular (Monthly 2013) seminars in Japan by IHE-J

(<http://www.ihe-j.org/events/index.html>)

New Profiles:

Continued use of designated reviewers for Public Comment. That and reviews by Connectathon staff are very helpful. Need to do a faster job of posting comments/resolutions. Other domains need to start doing so.

- Management of Radiology Report Templates (MRRT) – provides a format and transfer mechanism for templates used to author diagnostic imaging reports. 92 public comments. TI published 2013.06
- Invoke Image Display (IID) – URL-based transaction to request a server provide interactive display of patient imaging studies. 140 public comments. TI published 2013.06
- Stereotactic Mammography Imaging (SMI) – content profile specifies how DICOM stereotactic breast projection x-ray images are created, exchanged and used. 18 public comments. TI published 2012.06
- Scheduled Workflow (SWF.b) – updated SWF profile based on HL7 2.5.1 and incorporating Patient Information Reconciliation (PIR). HL7 version options are removed. 40 comments TI published 2013.06
- Mapping Whitepaper – illustrate how to apply standard coding schemes (RadLex Playbook, etc) in Scheduled Workflow. 37 public comments. Expected 2013.08.

Summary of Future Plans:

- Continue to try limiting new development to at most 2-3 profiles a year. Years with more than that tended to have quality problems (limited review bandwidth) and it was difficult for vendors to keep up (limited implementation bandwidth) and for users to keep up (limited communication and adoption bandwidth).