

IHE

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Roles and Activities of IHE

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= Abstract =

IHE(Integrating the Healthcare Enterprise) began in 1998 as the collaborative effort of HIMSS and RSNA to improve interoperability of computer systems in sharing healthcare information. IHE is a multi-year initiative that creates the framework for passing vital health information seamlessly from application to application, system to system, and setting to setting across the entire healthcare enterprise and promotes coordinated use of established standards (DICOM and HL 7) to address specific clinical needs in support of optimal patient care. IHE defines highly detailed implementations of these standards in a publicly available document called the IHE technical framework. IHE provides a detailed process of interoperability testing called the IHE "connectathon" and "demonstrations" to facilitate adoption of this framework by industries of the imaging and information systems. Standards-based integration solutions like those defined in IHE are flexible, durable, easier to implement and less expensive to maintain than proprietary methods.

Key words: IHE, Technical Framework, Integration Profile, Connectathon, Demonstration

Systems in Medicine), HL7 (Health Level 7)

1.

IHE(Integrating the Healthcare Enterprise) 1998 11 (initiative) (movement) . HIMSS(Healthcare Information and Management Systems Society) RSNA(Radiological Society of North America)가 , IHE , , 가,

IT DICOM(Digital Imaging Communication / (interoperability) (technical framework), (integration profile), (transaction) "EHR" (0412 - MI01 - 0404 - IHE 0001) . /

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IHE

“Connectathon”

“Demonstration”

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2.

2.1. IHE technical frameworks and integration profiles

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(workflow)

IHE actor)

[Fig. 1].

IHE (actors)

(actor) IHE

(HL7 & DICOM)

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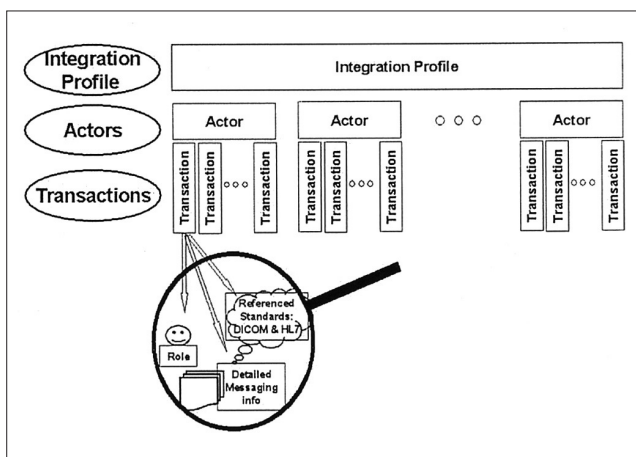


Fig. 1. Organization of information in IHE technical framework.

, IHE Cardiology, IT infrastructure, Laboratory, Radiology 4 , 31 .

[1].

2.2. Integration profiles, actors, and transactions defined in Radiology technical framework

IHE radiology scheduled work-flow, patient information reconciliation, consistent presentation of images, presentation of grouped procedures, access to radiology information, key image note, simple image and numeric reports,

Charge posting, basic security, post-processing workflow

12 , nuclear medicine image potable data for imaging

가 [Fig. 3]. Radiology

acquisition modality, ADT patient registration, audit record repository, charge processor, department system scheduler/order filler, enterprise report repository, evidence creator, external report repository access, image archive, image display, image manger, master patient index (MPI), order placer, performed procedure step manger, post-processing manger, print composer, print server, report creator, report manger, report reader, report repository, secure node, time server 21 , patient registration, placer order management, filler order management, procedure

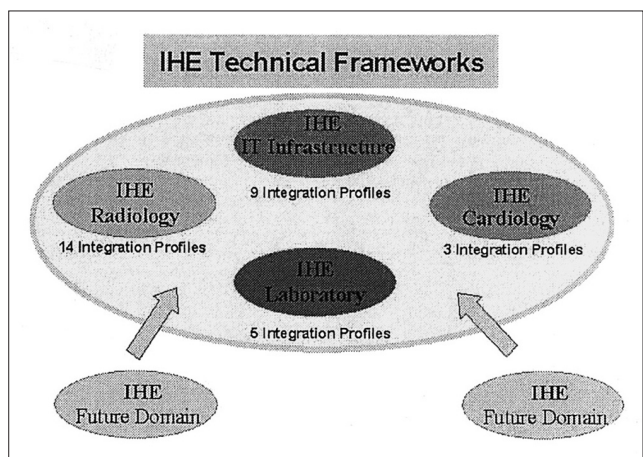


Fig. 2. IHE technical frameworks integration profiles.

scheduled, query modality worklist, modality procedure step in progress, modality procedure step completed, modality images stored, modality presentation state stored, storage commitment, images available query, patient update, procedure update, query images, query presentation states, retrieve images, retrieve presentation states, creator image stored, creator presentation state stored, creator procedure step in progress, creator procedure step completed, intentionally unassigned, print request with presentation LUT, report submission, report issuing, query reports, retrieve reports, structured report export, key image note stored, query key image notes, retrieve key image note, authenticate node, maintain time, record audit event, charge posted, account management, query post-processing worklist, workitem claimed, workitem PPS in progress, workitem PPS completed, workitem completed, performed work status update, evidence document stored, query evidence documents, retrieve evidence documents, query reporting worklist 46 [2].

[Fig. 4].

2.3. IHE Connetathon and Demonstration
DICOM HL7

가 (connectathon) 가 () 가 . , 가 MESA tools (developed by the Electronic Radiology Laboratory at the Mallinckrodt Institute of Radiology, Washington University of St. Louis) [3].

IHE “ IHE Integration Statements ” , “ Product Evaluation Worksheets ”

Radiology (SWF) / , , / , , scheduled workflow IHE 가 , 가 , “ Demon-

stration ”

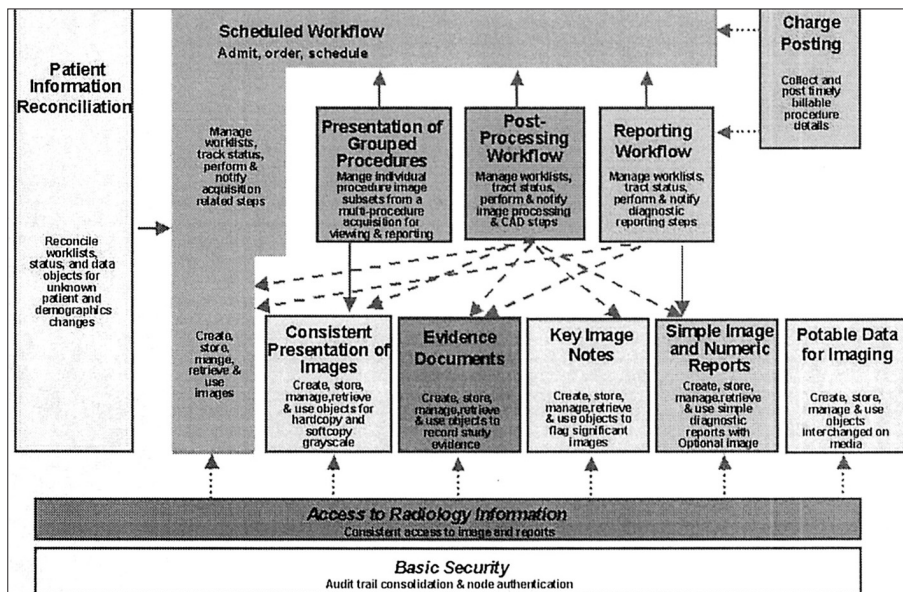


Fig. 3. Schematic diagram of radiology technical framework.

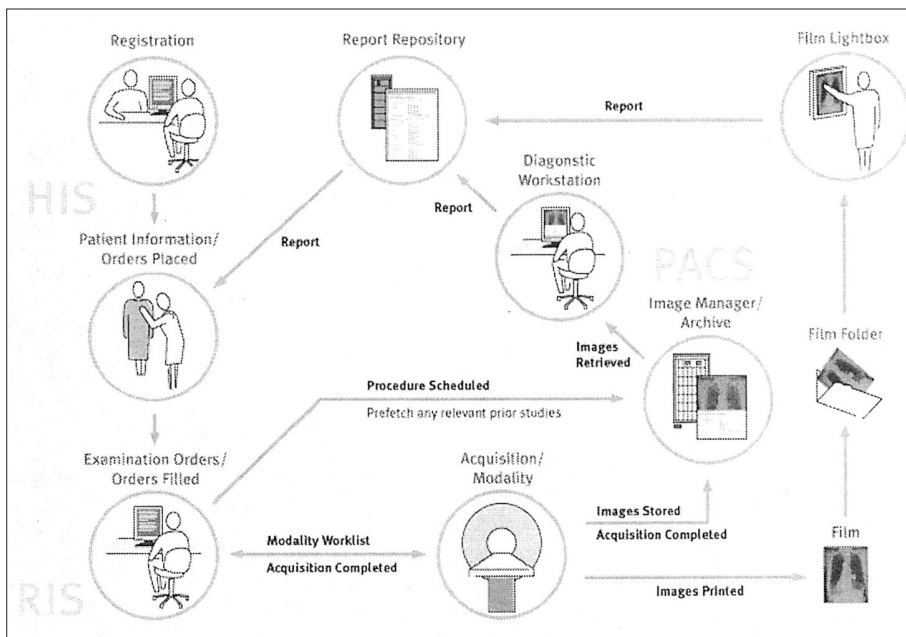


Fig. 4. Scheduled workflow (SWF) in radiology technical framework.

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, OCS (Order
Communication System) PACS (Picture Archiving and
Communication System)

EMR(Electronic Medical Record)/EHR (Electronic
Health Record)

. IHE

“digital hospital”, “e-hospital”,

“u-hospital”

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 ; “ IHE connectathon ; “ IHE
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 “ Scheduled Workflow Integration Profile ;
 “ MESA Tools ” . 10 29
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 Marotech, GE healthcare, LG CNS, Luvantix, CyberMed)
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1. http://www.rsna.org/IHE/tf/ihe_tf_index.shtml, Integrating the Healthcare Enterprise, IHE Technical Frameworks
2. HIMSS and RSNA Integrating the Healthcare Enterprise, IHE technical framework volume 1 Integration Profiles.
3. <http://www.erl.wustl.edu/imesa/index.html>, IHE Medical Enterprise Simulators and Analyzer (MESA) Tools
4. <http://www.ihekorea.org/>

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 (DICOM HL 7) . IHE
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