



Introduction to IHE

Who? Why? What? Where?

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Introduction to IHE

Who?

Why?

What?

Where?

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MONTEFIORE



IHE Integration Goals

Improve the efficiency and effectiveness of clinical practice

- Improve Workflow
- Improve Information Accuracy
- Improve Information Availability
- Enable Cross-System Functionality



How is IHE related to Standards?

- Profiles are packaging
- IHE unifies solutions to real world integration problems
 - Initially radiology and now the enterprise

How is IHE related to Standards?

- HL7 and DICOM provide dictionaries
- IHE defines a “phrasebook” that solves real world problems by assembling pieces provided by DICOM/HL7 and other standards
- IHE stipulates the terms of the transactions (leaves nothing to interpretation)

Actor

- A system that performs a major function
- The IHE does not specify to which type of system an Actor belongs
 - Order placer
 - Order filler
 - Image manager
 - Image archive

Transaction

- Any exchange of data between actors
- IHE does not define or classify which actors or transactions belong to what type of system
- IHE is only concerned with transactions between systems
- System internal transaction exempt
- IHE is only concerned with data exchange between different systems

Key IHE Concepts

- Generalized Systems -> Actors
- Interactions between Actors -> Transactions
- Problem/Solution Scenarios -> Integration Profiles
- For each Integration Profile:
 - the context is described (which real-world problem)
 - the actors are defined (what systems are involved)
 - the transactions are defined (what must they do)



IHE Actors & Profiles

IHE
Technical
Framework
Volume I
Integration
Profiles

| Integration Profile | SWF | PIR | PWF | RWF | CHG | CPI | PGP | KIN | ED | SINR | ARI | SEC |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|----|------|-----|-----|
| Actor | | | | | | | | | | | | |
| ADT Patient Reg. | X | X | | | X | | | | | | | X |
| Audit Record Rep | | | | | | | | | | | | X |
| Charge Processor | | | | | X | | | | | | | X |
| DSS/OF | X | X | X | X | X | | X | | | | | X |
| Enterprise Rep. Repository | | | | | | | | | | X | | X |
| Evidence Creator | X | | X | | X | X | | X | X | | | X |
| Ext. Rep. Access | | | | | | | | | | X | X | X |
| Image Archive | X | X | X | X | | X | X | X | X | | X | X |



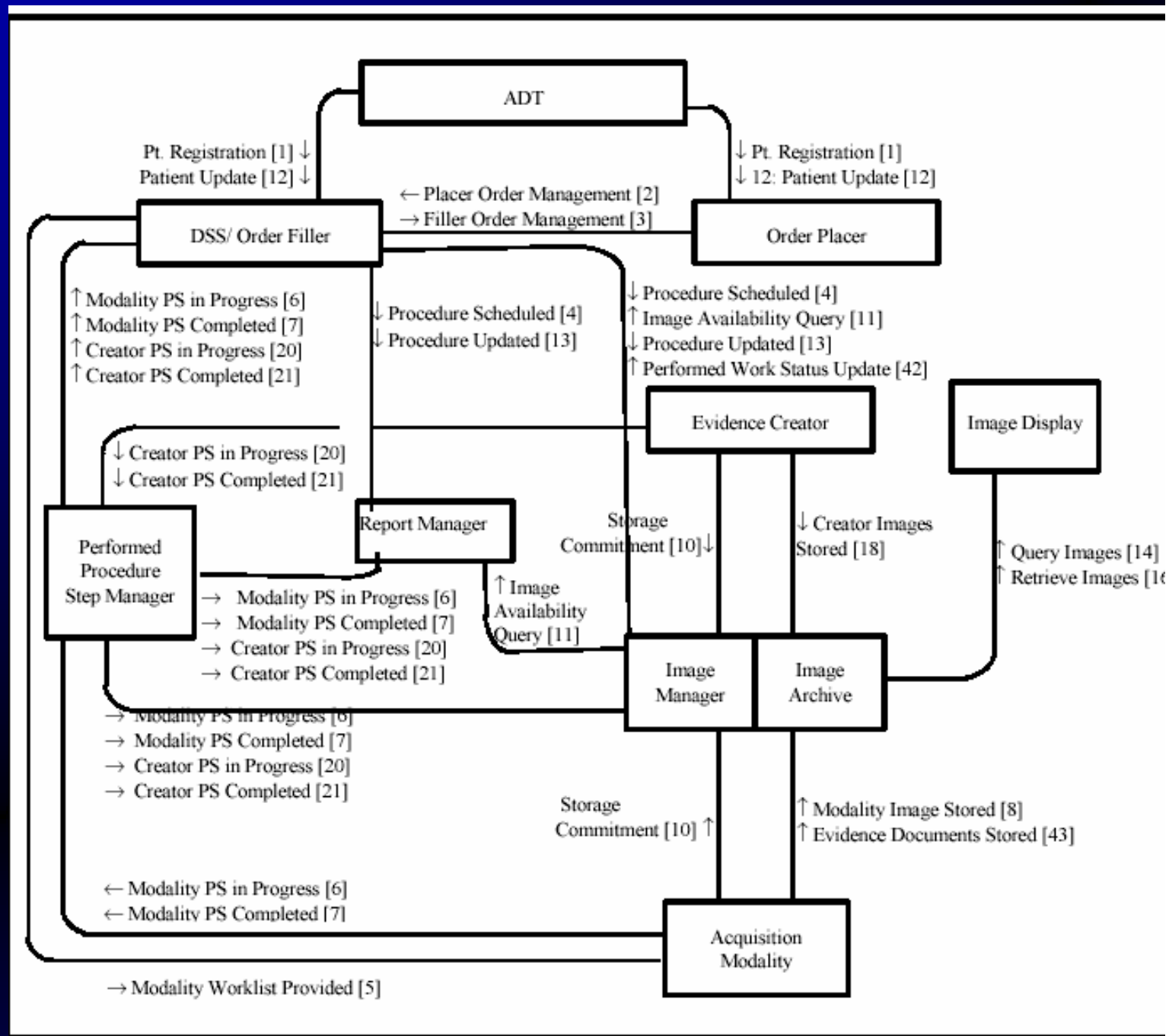
IHE Transactions & Profiles

IHE Technical Framework Volume I Integration Profiles

| Integration Profile Transaction | SWF | PIR | PWF | RWF | CHG | CPI | PGP | KIN | ED | SINR | ARI | SEC |
|--|-----|-----|-----|-----|-----|-----|-----|-----|----|------|-----|-----|
| Placer Order [2] | X | X | | | | | | | | | | |
| Filler Order [3] | X | X | | | | | | | | | | |
| Procedure Scheduled [4] | X | X | | X | | | X | | | | | |
| Modality Worklist Provided [5] | X | X | | | | | X | | | | | |
| Modality Procedure Step In Progress [6] | X | X | | | | | X | | | | | |
| Modality Procedure Step Completed [7] | X | X | | X | X | | X | | | | | |
| Modality Images Stored [8] | X | X | | | | X | X | | | | | |
| Modality Presentation State Stored [9] | | | | | | X | X | | | | | |
| Storage Commitment [10] | X | X | X | | | X | X | X | X | | | |
| Images Availability Query [11] | X | X | X | X | | | X | X | | | | |



IHE Technical Framework Volume I Integration Profiles



IHE Advantages

- IHE profiles are vendor/application neutral
- Each vendor acknowledges the Actors and Transactions supported by any given application
- IHE conformance is a lot easier to determine than DICOM conformance



IHE, Interoperability & Data Exchange

- The IHE is only concerned with INTER-vendor communications
- Each individual vendor can communicate and execute data movements and transactions in ANY manner that best allows them to deliver maximal functionality and features to the users

Why should we want the IHE?

- The importance of the IHE is that it **REQUIRES** that all compliant systems and vendors communicate using **ONLY IHE** transactions when dealing with **OTHER** vendors' actors
- The IHE allows each vendor to concentrate on maximizing the features and functions of that vendor's actors and all other functionality and benefits that are not within the scope of the IHE

Who is driving the IHE effort

- The IHE is a customer driven initiative
- We the customers want to be able to select the Best of Breed in robustness, features, functions, reliability & user friendliness from our vendors
- We do not want to be held hostage to purchasing a certain information system because we already have other actors provided by that vendor

Who wants the IHE?

- The IHE allows customers greater vendor choice than ever before
- The IHE also allows the vendors to concentrate on their own product development and enhancement without being distracted by the connectivity and data integration pieces

Why do customers want the IHE?

- The IHE works for us as customers by bringing additional functionality to existing integration areas
- The IHE brings peace of mind to us as customers and to our vendors by standardizing transactions

Vendors are focused solely on their systems and on the capabilities and limitations of their products and deliverables

However

The IHE deals **ONLY** with **ACTORS** and **TRANSACTIONS**

What is a single vendor environment?

- The IHE ONLY applies to transactions between different vendors.
- Any vendor within their own environment may use any messaging method they choose to allow for the greatest functionality that they can deliver.

A single vendor environment is whatever we say it is!

- We have moved non-IHE devices into the sphere of one or more different vendors so that as a complete environment, IHE workflow and benefits are achieved.
- This is 100% IHE legitimate!
- This required our vendors to understand and agree to this new division of responsibility.

The IHE allows each vendor the potential to soar to new heights in performance and functionality without reducing vendors to a lowest common denominator because of the connectivity pieces

If A is success in life
then $A = x + y + z$

x = Work
y = Play



z is keeping your mouth shut

Albert Einstein