STANDARDIZATION & INTEGRATION - VIRTUAL MICROSCOPY & IHE

Thomas Schrader & Christel Daniel

Agenda

- Standardization in Pathology
 - Medical viewpoint
 - Viewpoint of medical informatics
- Integrating the Healthcare Enterprise
 - Organization & Integration Process
 - Pathology Workflow & Integration of Automatons

Standardization in Pathology

Medical viewpoint

Domains of Standardization

Specimen handling & description

- Identification
- Macroscopy

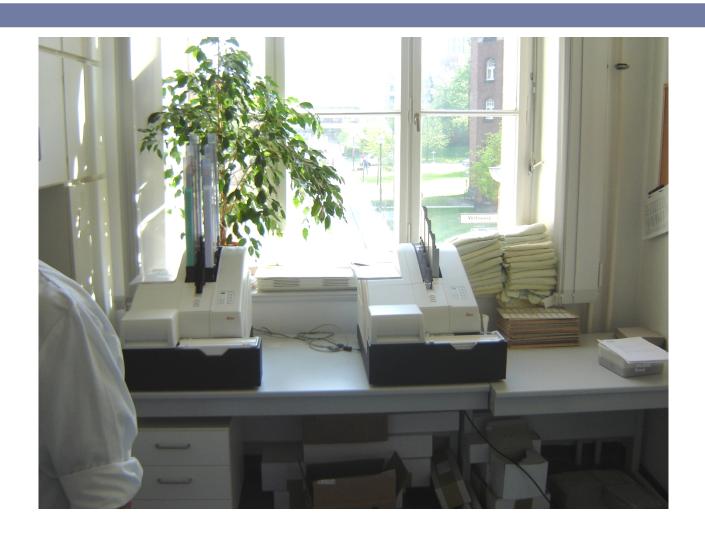
Tissue handling & staining

- Preparation procedures
- Staining procedures

Reporting

Structured reports

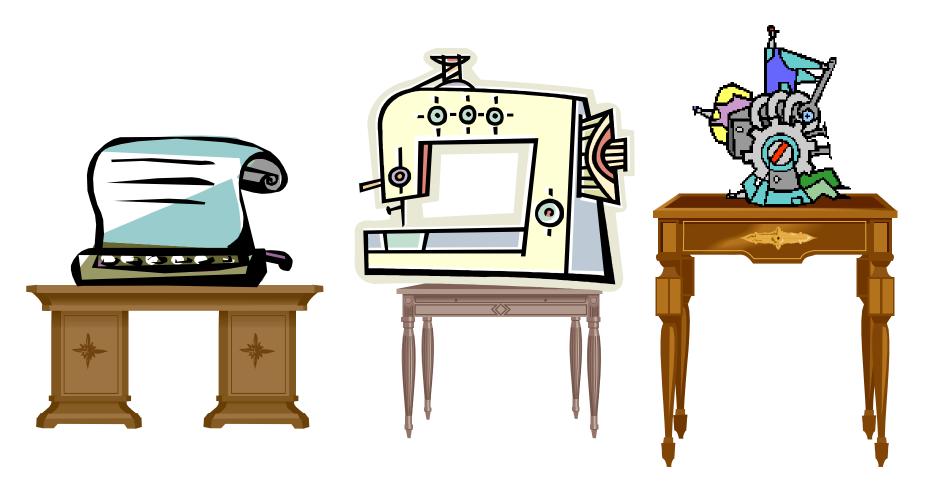
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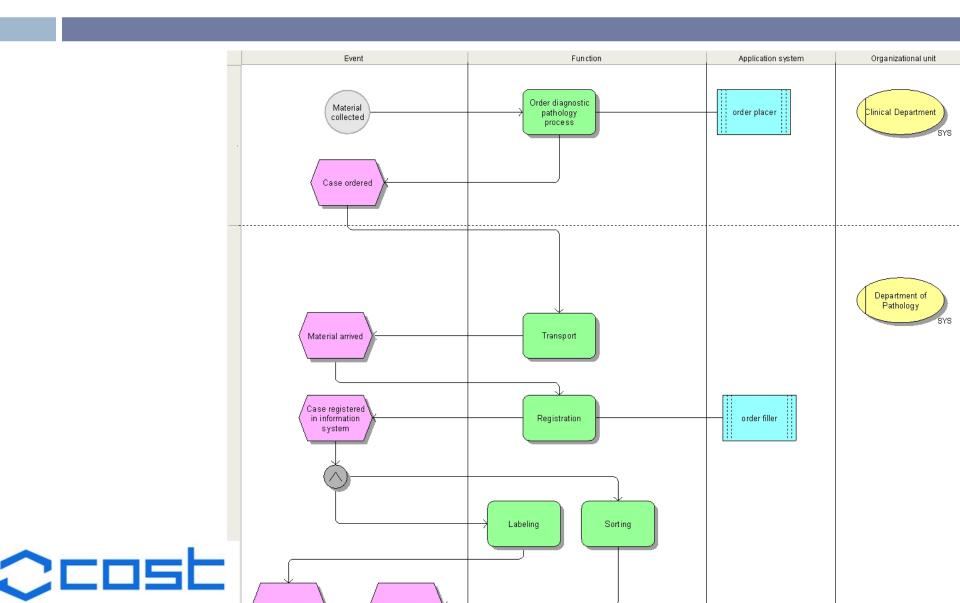
Tissue Handling: Automatisation



Standardization in Pathology

Viewpoint of medical informatics

General Workflow in Pathology



Specimen model

Patient

Material

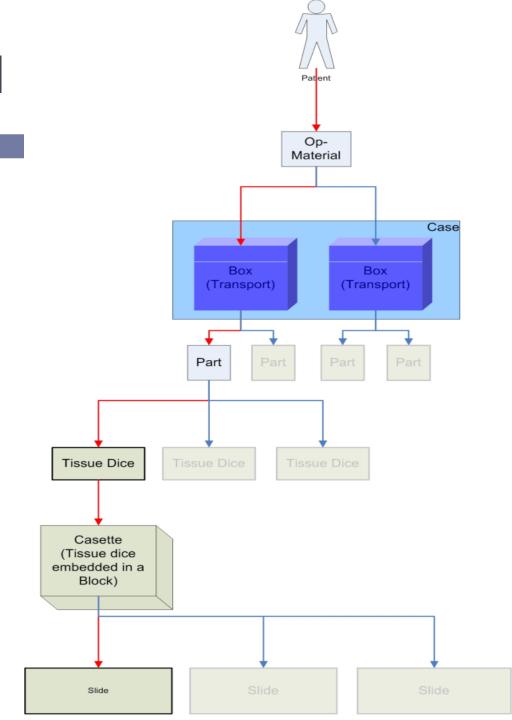
Boxes

Parts

Cassettes

Slides

Images

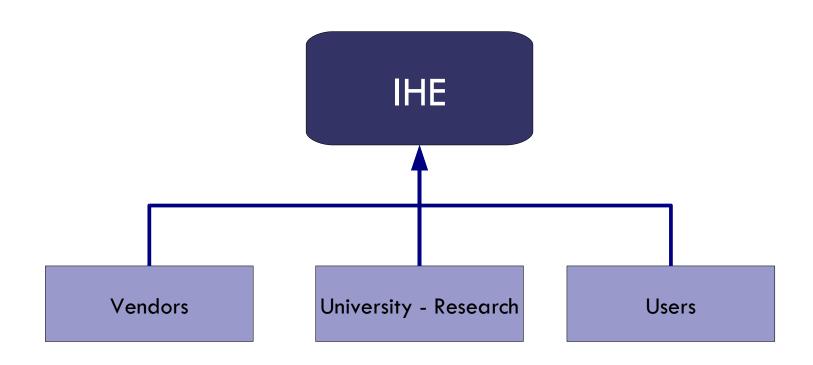


Integrating the Healthcare Enterprise

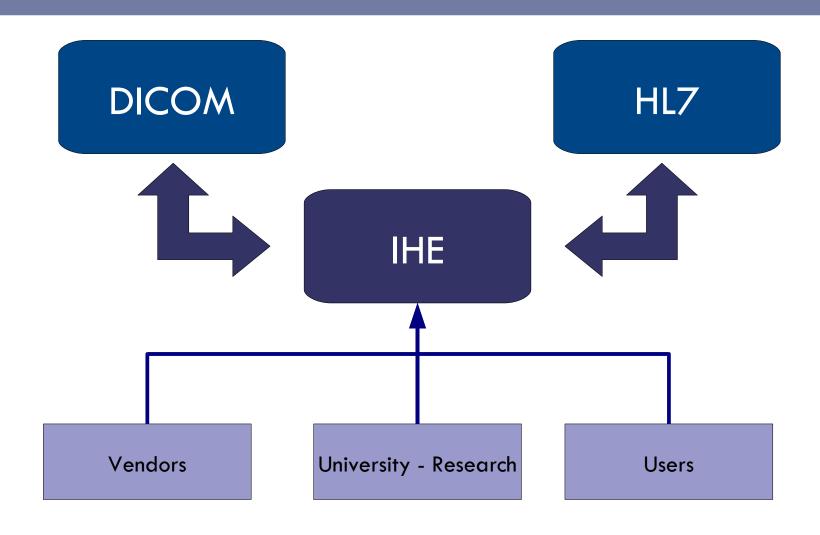
Application & Conditions

Standardization aspects

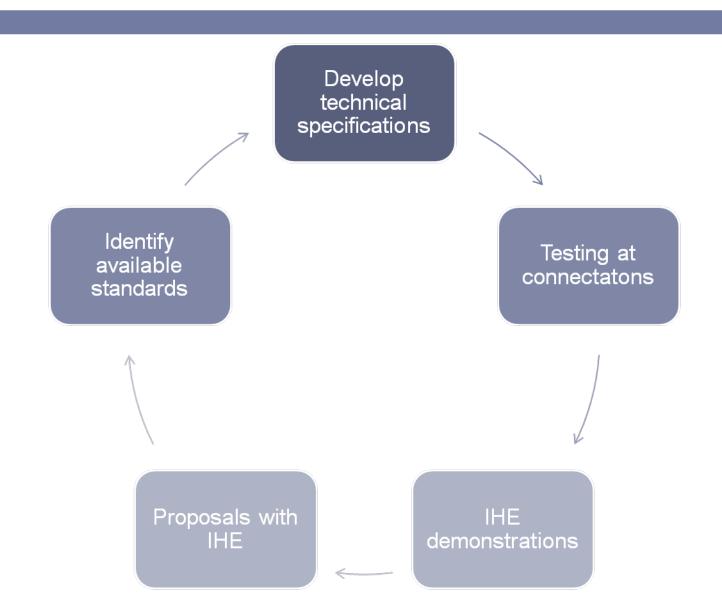
IHE as organization



IHE as organization



The IHE Adoption Process



Step 3: IHE Connectathon

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Noordwijkerhout 2005: 300 participants, 100 systems, 62 vendors



Step 3: IHE Connectathon - Results

IHE North America Connectathon 2002		Screened Workflow						Fallent telemetion Rossektable				Crasioles: Presentation of analysis			- 14	Presentation of Grouped Procedures					Suprefunge and Numeric Appet			24	Access to Bwill stagy Information				Charge Fueling				Easic Security							
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Step 5: IHE Integration Statement

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☐ Order Placer	☐ PPS Manager	☐ Image Archive	☐ Image Creator	
☐ Dept System Scheduler/Ord	ler Filler			
☐ Patient Information Reconcil	iation			
☐ ADT Patient Registration	Acquisition Modality	□ Image Manager	Order Placer	
☐ PPS Manager	☐ Image Archive	☐ Dept System Scheduler	/Order Filler	
Consistent Presentation of Ir	nages			
☐ Print Composer	☐ Acquisition Modality	☐ Image Manager	☐ Image Display	
☐ Print Server	□ PPS Manager	☐ Image Archive	☐ Image Creator	

Areas of Standardization

Preparation

- Tissue handling
- Slide processing

Staining

- Marker specification
- Marker application
- Staining procedures

Quantization

- Individual evaluation
- Automatic quantization

IHE - Focus

Integrating automatons

Pathology Reporting Workflow

Pathology Workflow

Inter-departments workflow

Reporting Anatomic pathology to registries or public health repositories

Focus of the PWF

Ordering

- Consistency of ordering information
- Consistency of specimen management

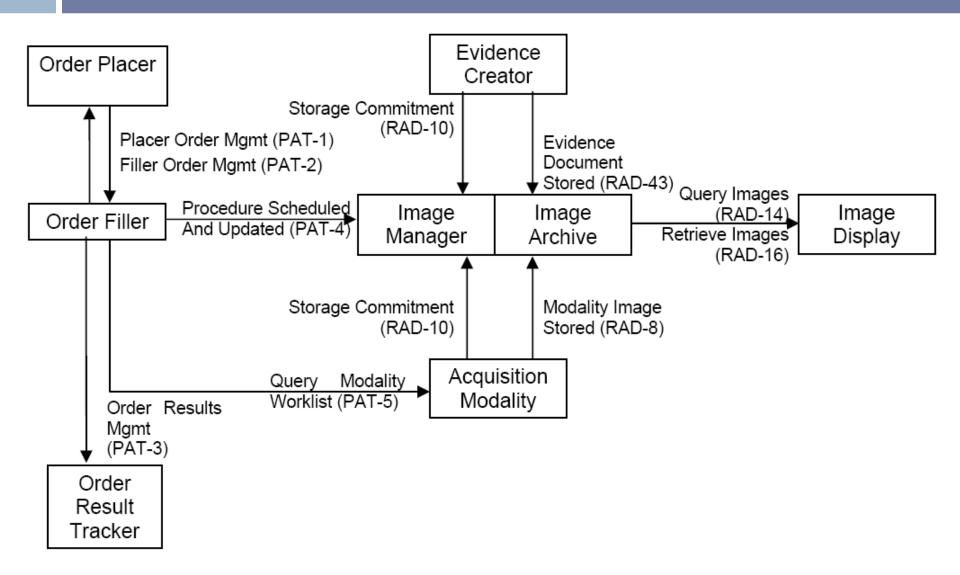
Reporting

- Create & store observations
- Consistency of report management

Imaging

- Create & store images
- Worklist of image aquisition
- Consistency of image management

Actors & Transactions (PWF)



IHE - Focus

Integrating automatons

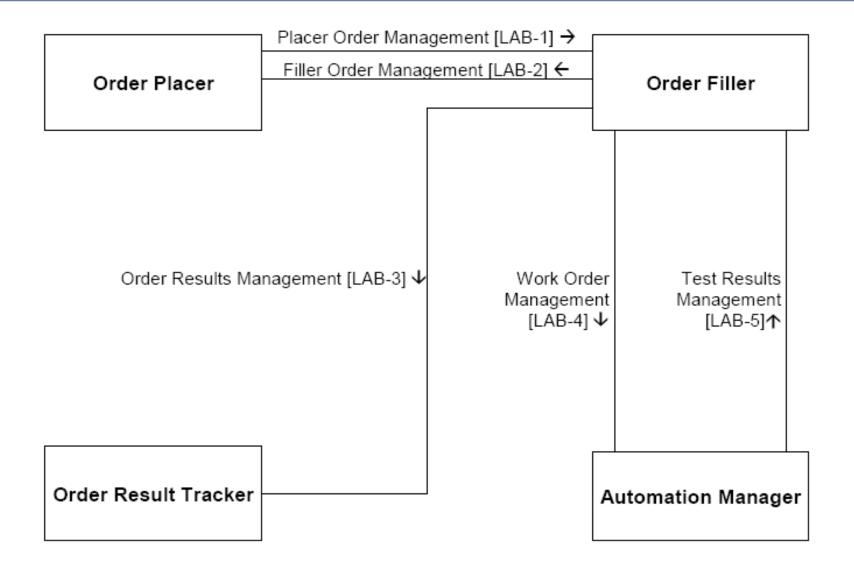
Pathology Reporting Workflow

Pathology Workflow

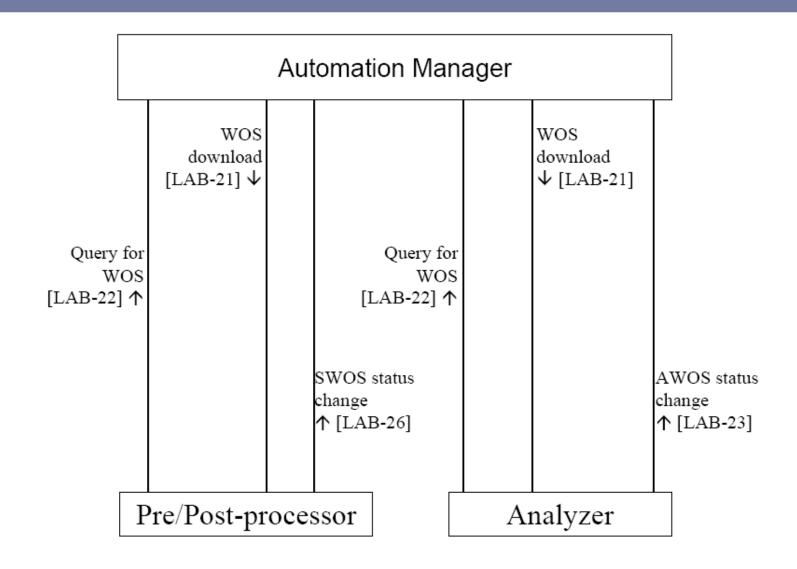
Inter-departments workflow

Reporting Anatomic pathology to registries or public health repositories

Actors & Transactions (LTW)



Actors & Transactions (LDA)



Summary

- Current Situation
 - Digitalization of processes in Pathology
 - Automation in slide digitalization & IHC
- - Standardization of processes, communication and data/image management
 - Open issues (Interaction automatons, Standardization of automatic quantization)
- Participation in IHE



Thank you very much for your attention!

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