

# STANDARDIZATION & INTEGRATION - VIRTUAL MICROSCOPY & IHE

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# Agenda

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

# Standardization in Pathology

Medical viewpoint

# Domains of Standardization

Specimen  
handling &  
description

- Identification
- Macroscopy

Tissue  
handling &  
staining

- Preparation procedures
- Staining procedures

Reporting

- Structured reports

# Identification



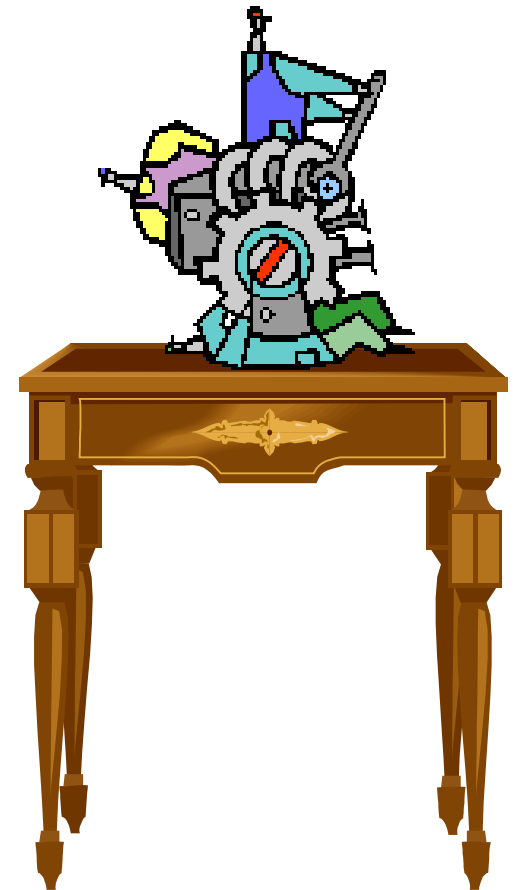
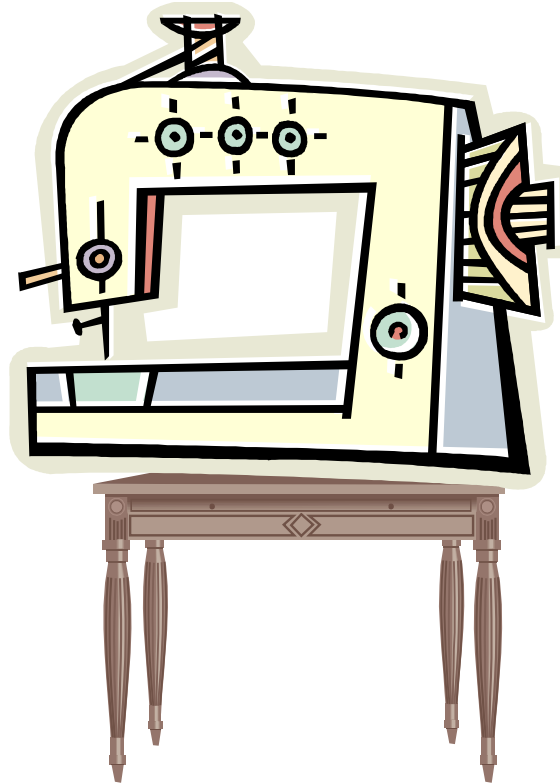
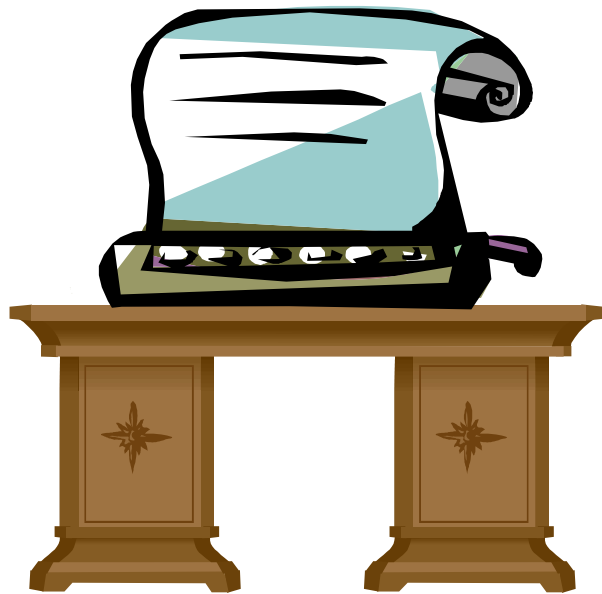
# Tissue Handling



# Tissue Handling: Automatisatisation



# Tissue Handling: Automatisation

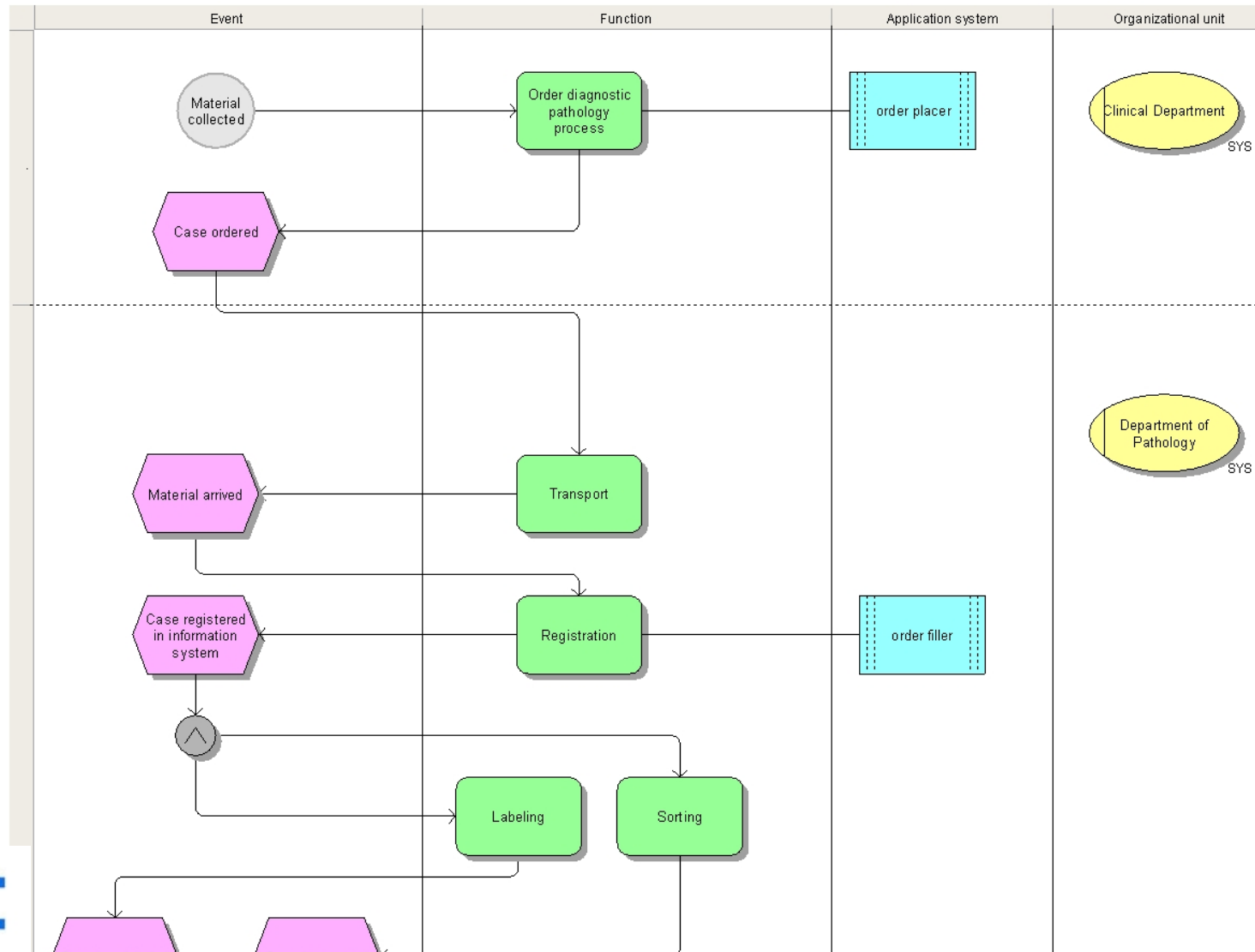




# Standardization in Pathology

Viewpoint of medical informatics

# General Workflow in Pathology



# Specimen model

Patient

Material

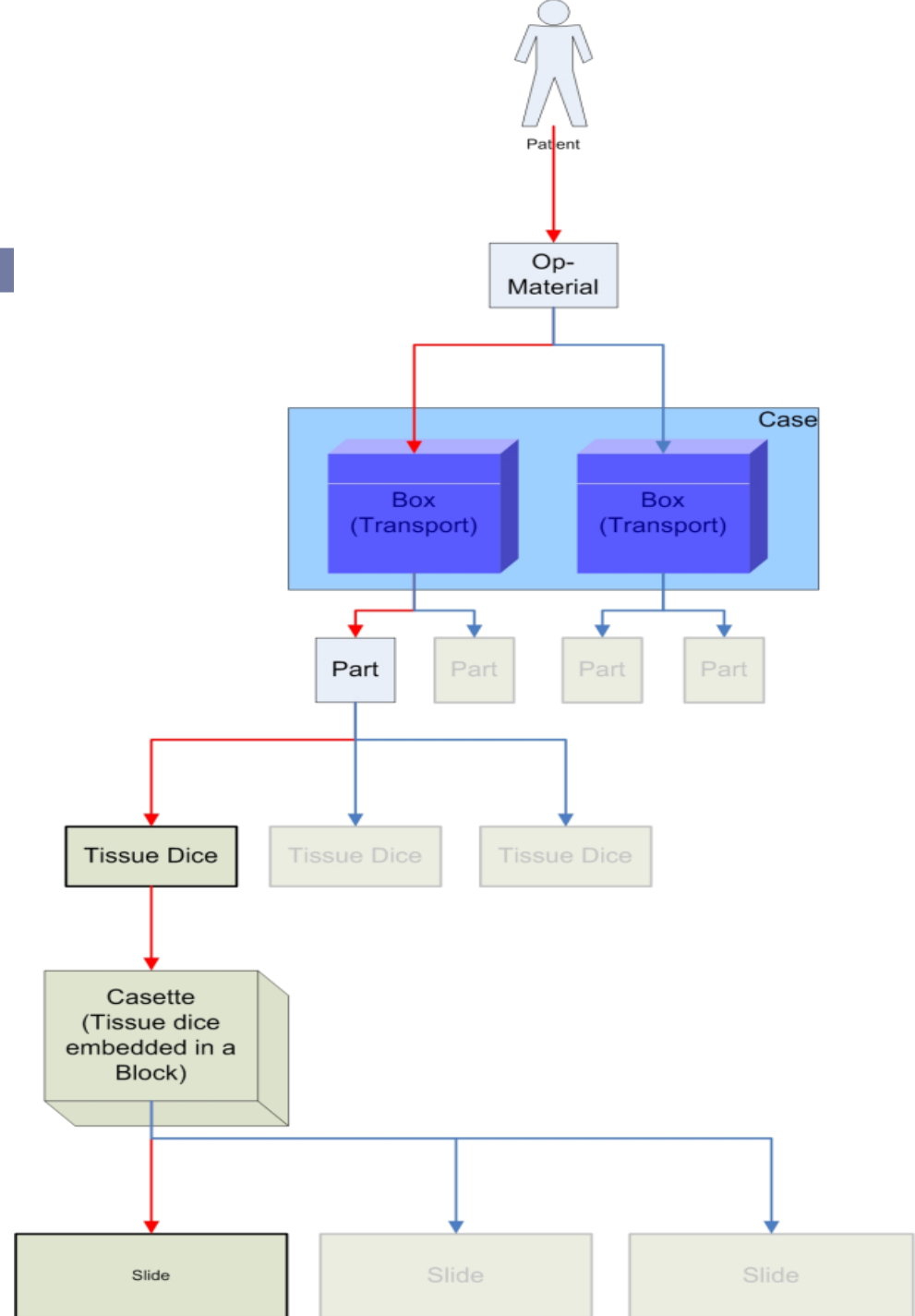
Boxes

Parts

Cassettes

Slides

Images

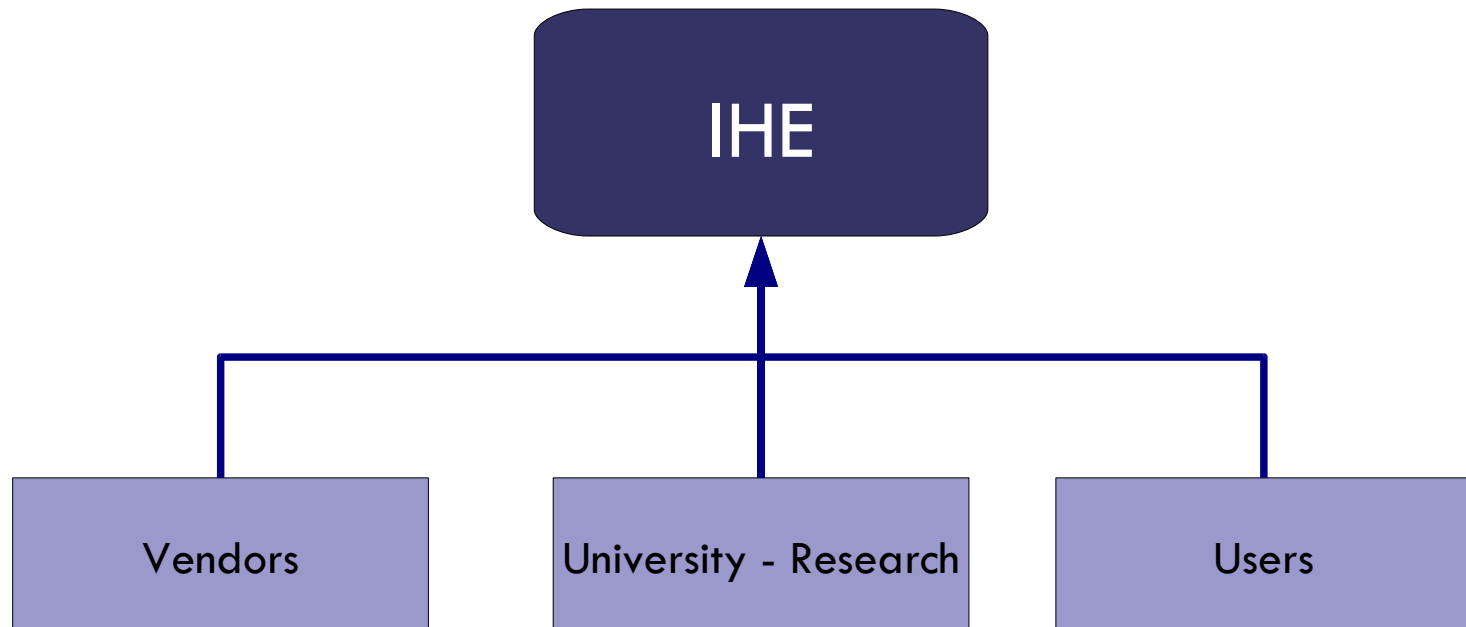


# Integrating the Healthcare Enterprise

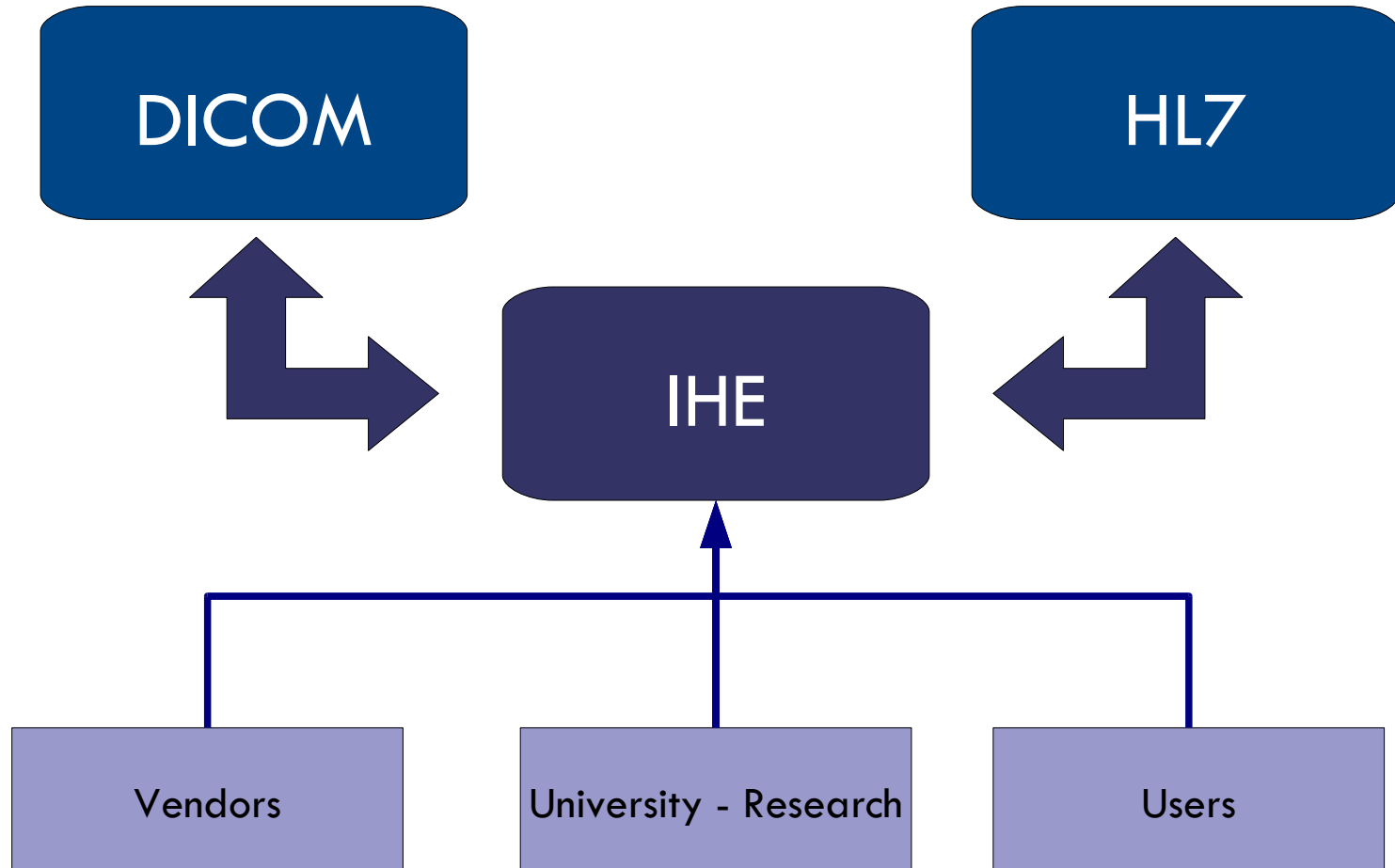
Application & Conditions

Standardization aspects

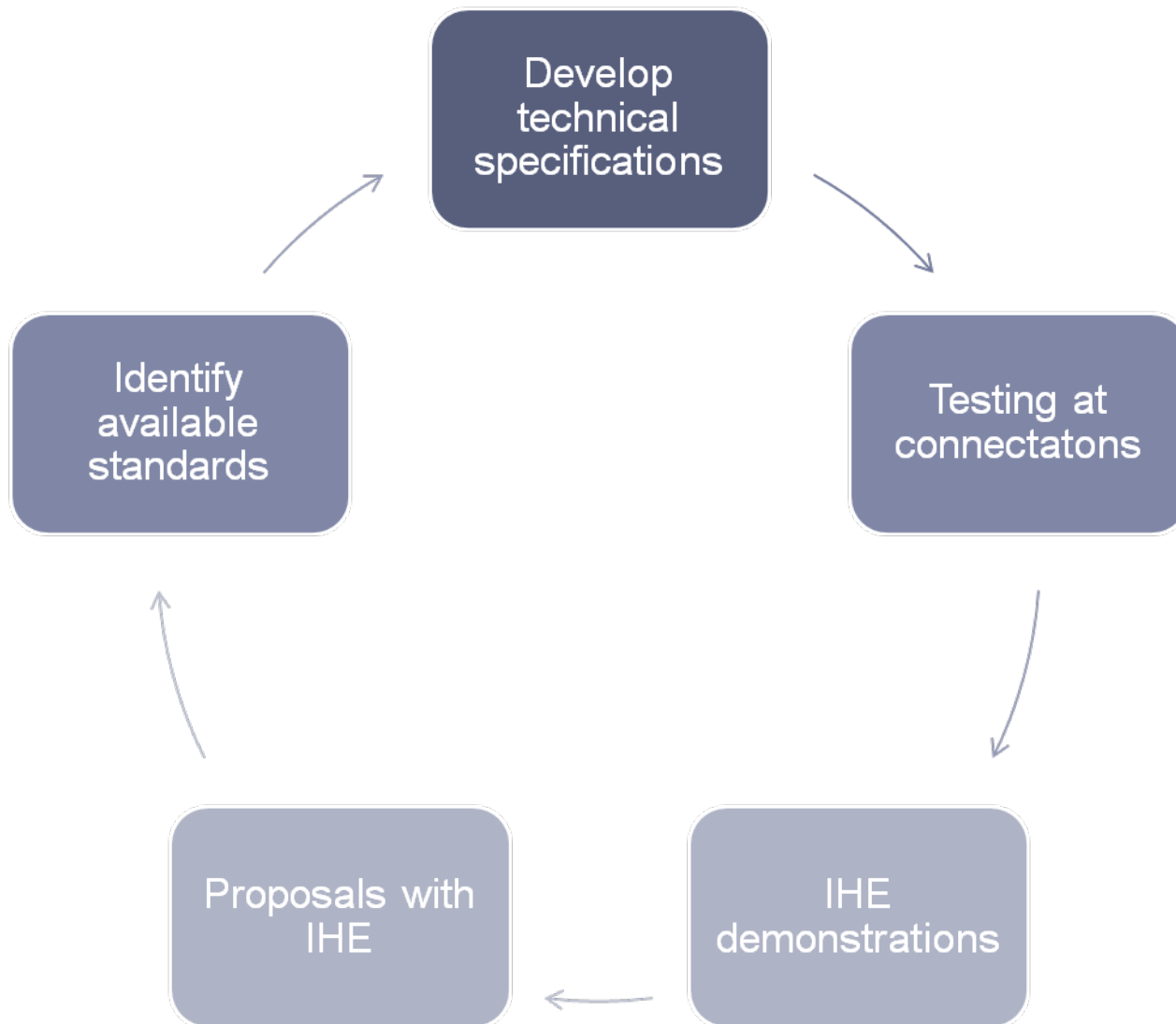
# IHE as organization



# IHE as organization



# The IHE Adoption Process



## Step 3: IHE Connectathon

*Noordwijkerhout 2005: 300 participants, 100 systems, 62 vendors*







# Step 5: IHE Integration Statement

## IHE | Product Evaluation Worksheets

COMPANY: \_\_\_\_\_

PRODUCT NAME AND VERSION: \_\_\_\_\_

PRODUCT AVAILABLE: \_\_\_\_\_

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### → INTEGRATION PROFILES AND ACTORS IMPLEMENTED

#### Scheduled Workflow

- |   |   |  |  |
|---|---|--|--|
| <input type="checkbox"/> ADT Patient Registration           | <input type="checkbox"/> Acquisition Modality | <input type="checkbox"/> Image Manager | <input type="checkbox"/> Image Display |
| <input type="checkbox"/> Order Placer                       | <input type="checkbox"/> PPS Manager          | <input type="checkbox"/> Image Archive | <input type="checkbox"/> Image Creator |
| <input type="checkbox"/> Dept System Scheduler/Order Filler |   |  |  |

#### Patient Information Reconciliation

- |   |   |   |                                       |
|---|---|---|---------------------------------------|
| <input type="checkbox"/> ADT Patient Registration | <input type="checkbox"/> Acquisition Modality | <input type="checkbox"/> Image Manager                      | <input type="checkbox"/> Order Placer |
| <input type="checkbox"/> PPS Manager              | <input type="checkbox"/> Image Archive        | <input type="checkbox"/> Dept System Scheduler/Order Filler |                                       |

#### Consistent Presentation of Images

- |   |   |  |  |
|---|---|--|--|
| <input type="checkbox"/> Print Composer | <input type="checkbox"/> Acquisition Modality | <input type="checkbox"/> Image Manager | <input type="checkbox"/> Image Display |
| <input type="checkbox"/> Print Server   | <input type="checkbox"/> PPS Manager          | <input type="checkbox"/> Image Archive | <input type="checkbox"/> Image Creator |

# Areas of Standardization

## Preparation

- Tissue handling
- Slide processing

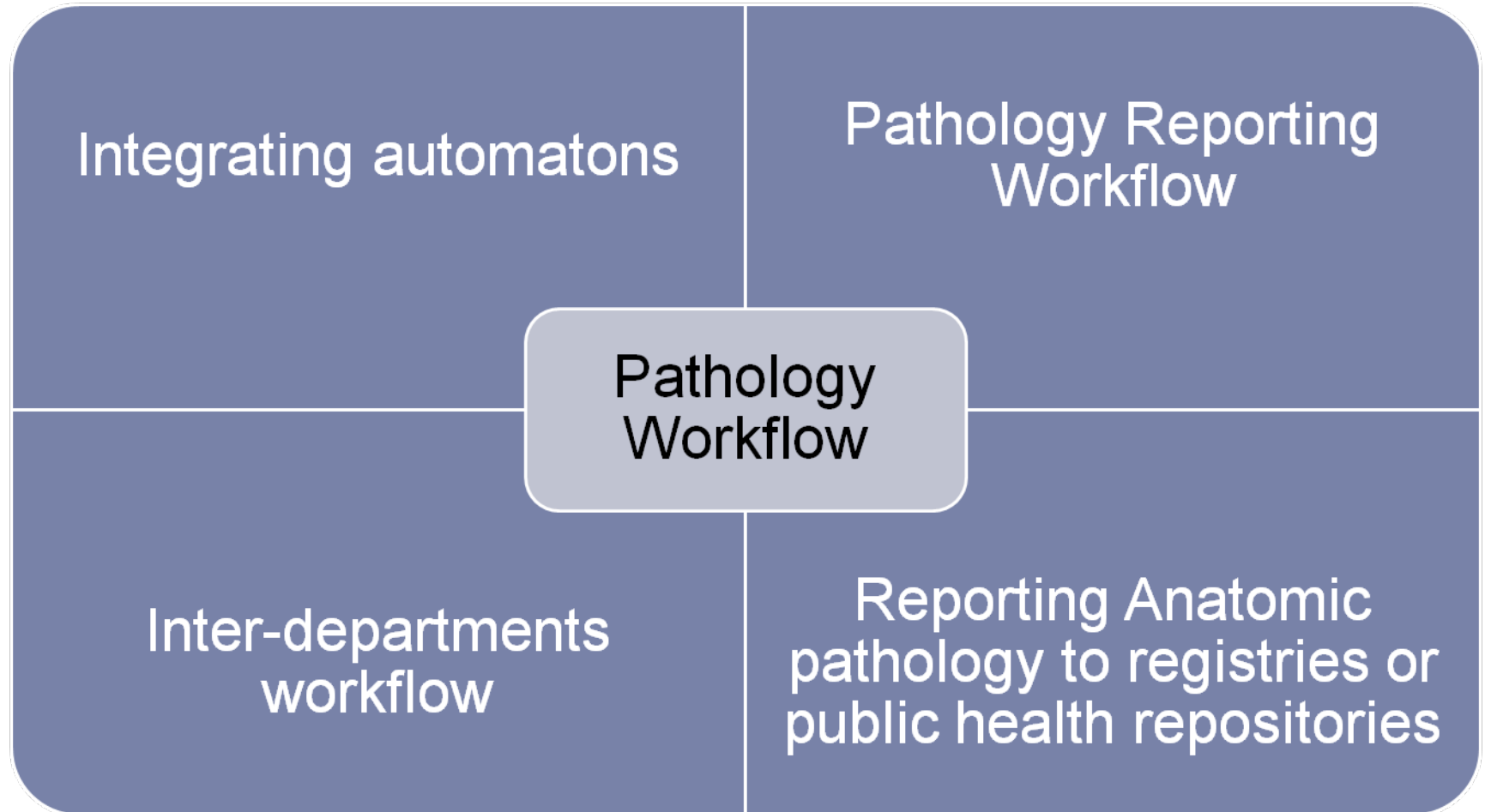
## Staining

- Marker specification
- Marker application
- Staining procedures

## Quantization

- Individual evaluation
- Automatic quantization

# IHE – Focus



# Focus of the PWF

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## Ordering

- Consistency of ordering information
- Consistency of specimen management

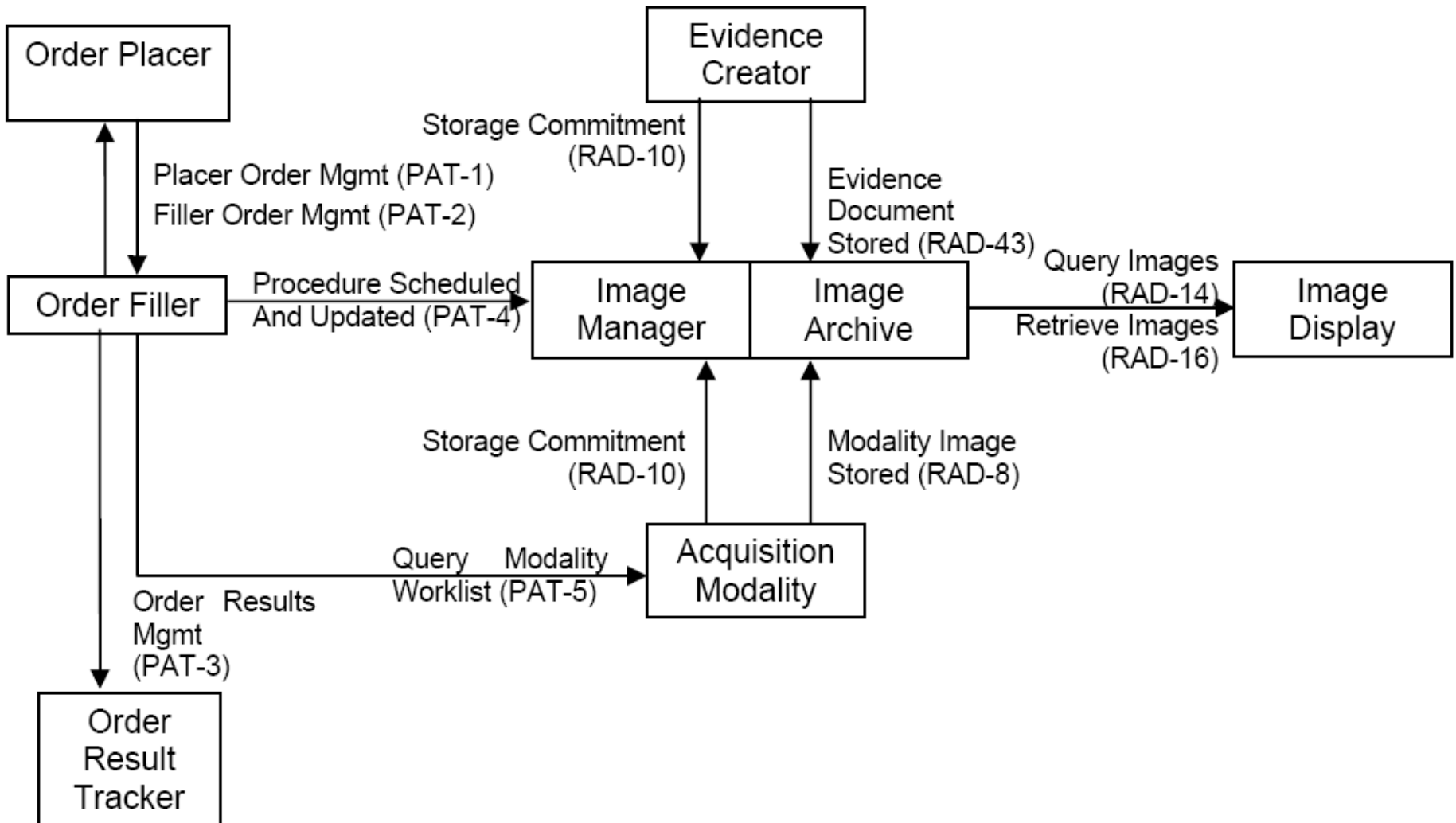
## Reporting

- Create & store observations
- Consistency of report management

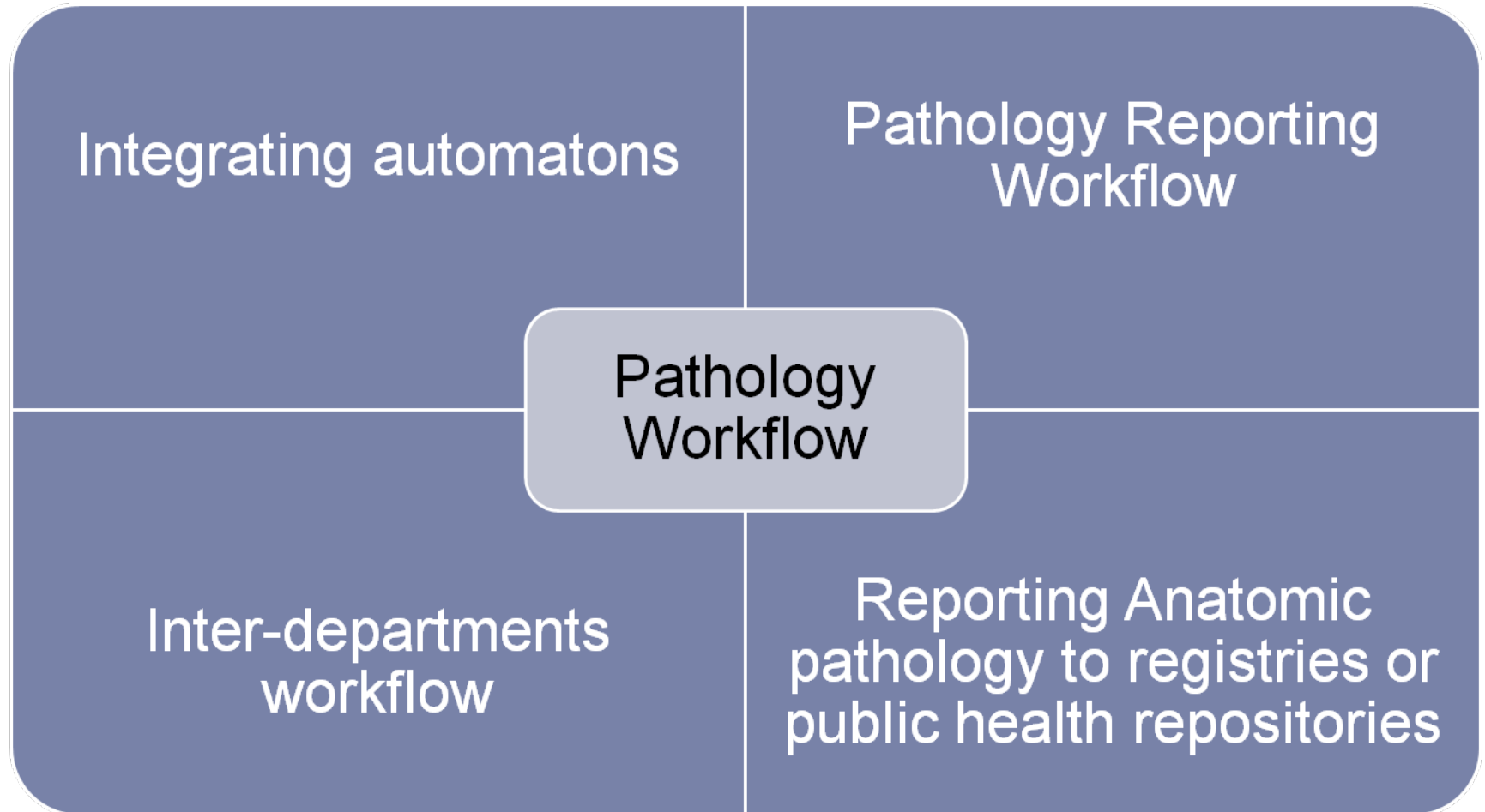
## Imaging

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

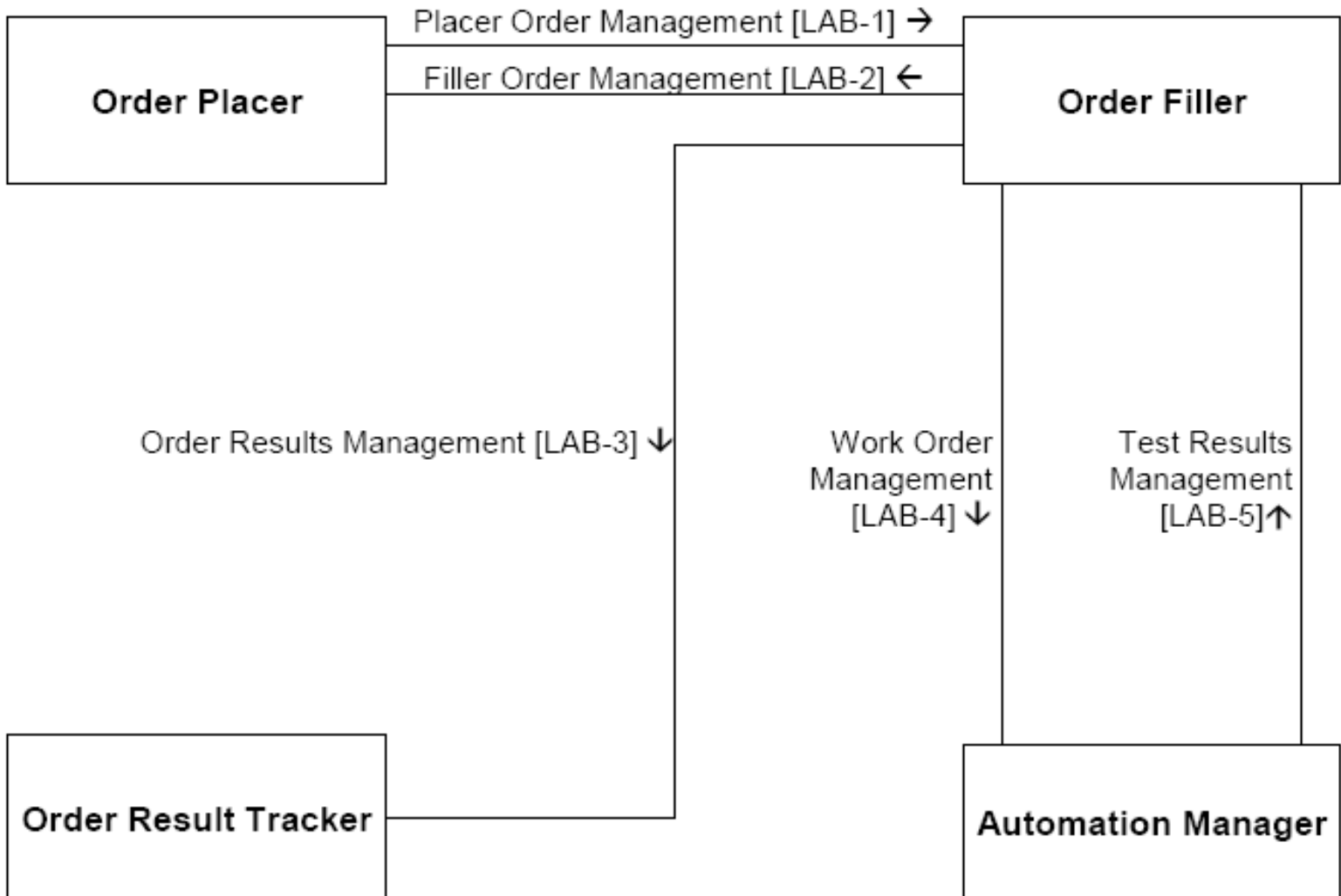
# Actors & Transactions (PWF)



# IHE – Focus

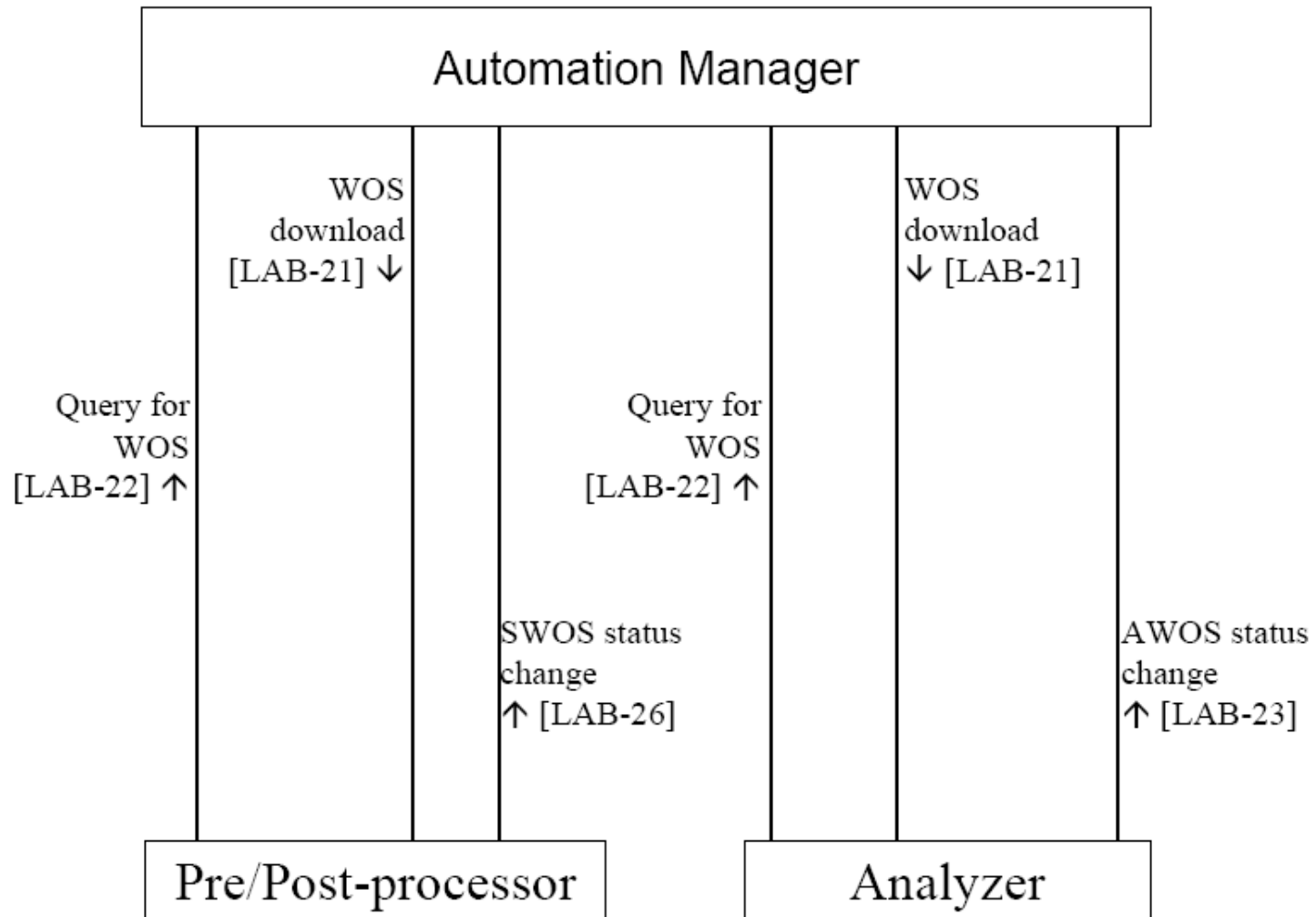


# Actors & Transactions (LTW)





# Actors & Transactions (LDA)



# Summary

- Current Situation
  - ▣ Digitalization of processes in Pathology
  - ▣ Automation in slide digitalization & IHC
- IHE
  - ▣ 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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