



# IHE Mammography Acquisition Workflow (MAWF)

SIIM 2009 - D. Clunie



# Mammo Acquisition Workflow

- Problems to solve
  - handling procedure & protocol changes
  - rejecting images for quality reasons
  - correcting wrong view information
- Consistency between
  - FFDM (Acquisition Modality)
  - RIS (DSS/OF)
  - PACS (Image Manager/Archive)
  - workstation (Image Display)

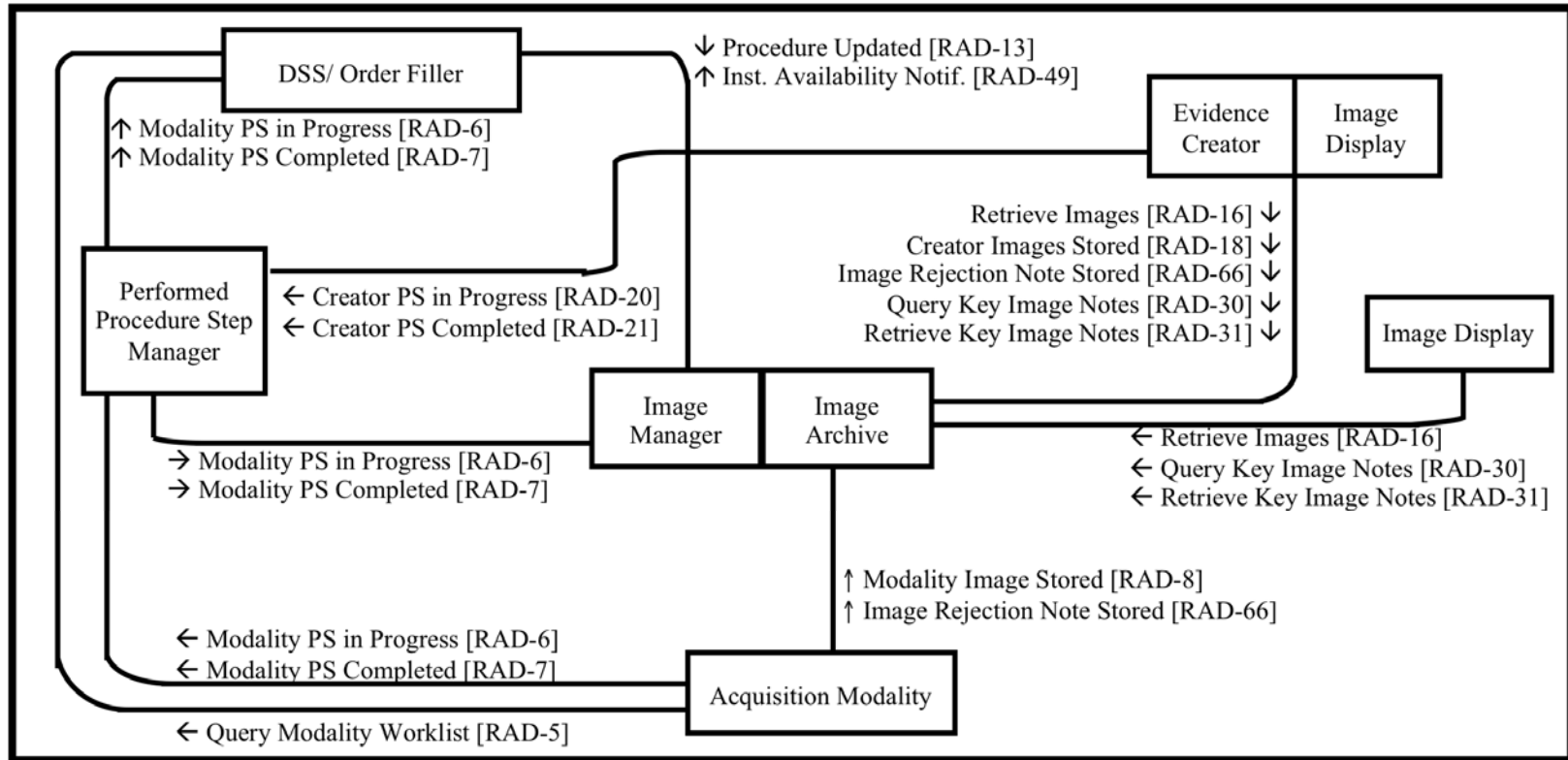
# Mammo Acquisition Workflow

- Procedure and protocol changes
  - screening -> diagnostic
  - supplemental views acquired or requested
  - completion in same or different room
  - reject images for quality and repeat (recall)
  - recall patient for supplemental views
- Specific focus is on FFDM
  - generic mechanisms but codes are for FFDM
  - future work to include breast US, MR

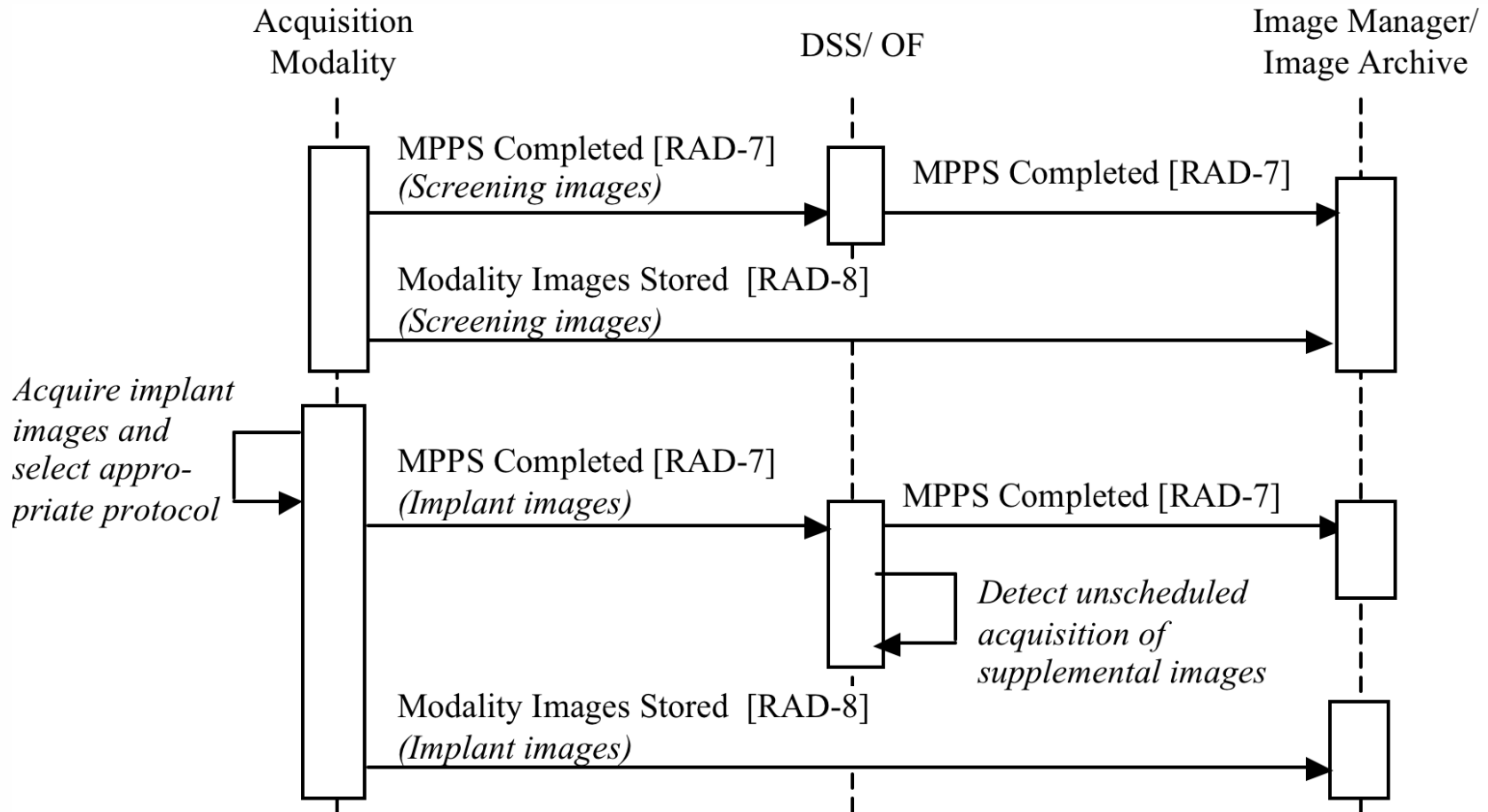
# Mammo Acquisition Workflow

- Builds on existing profiles
  - Scheduled Workflow (SWF)
  - Mammography Image (MAMMO)
- Does NOT address
  - CAD workflow
  - Reporting workflow
  - Radiologist <-> Technologist communication

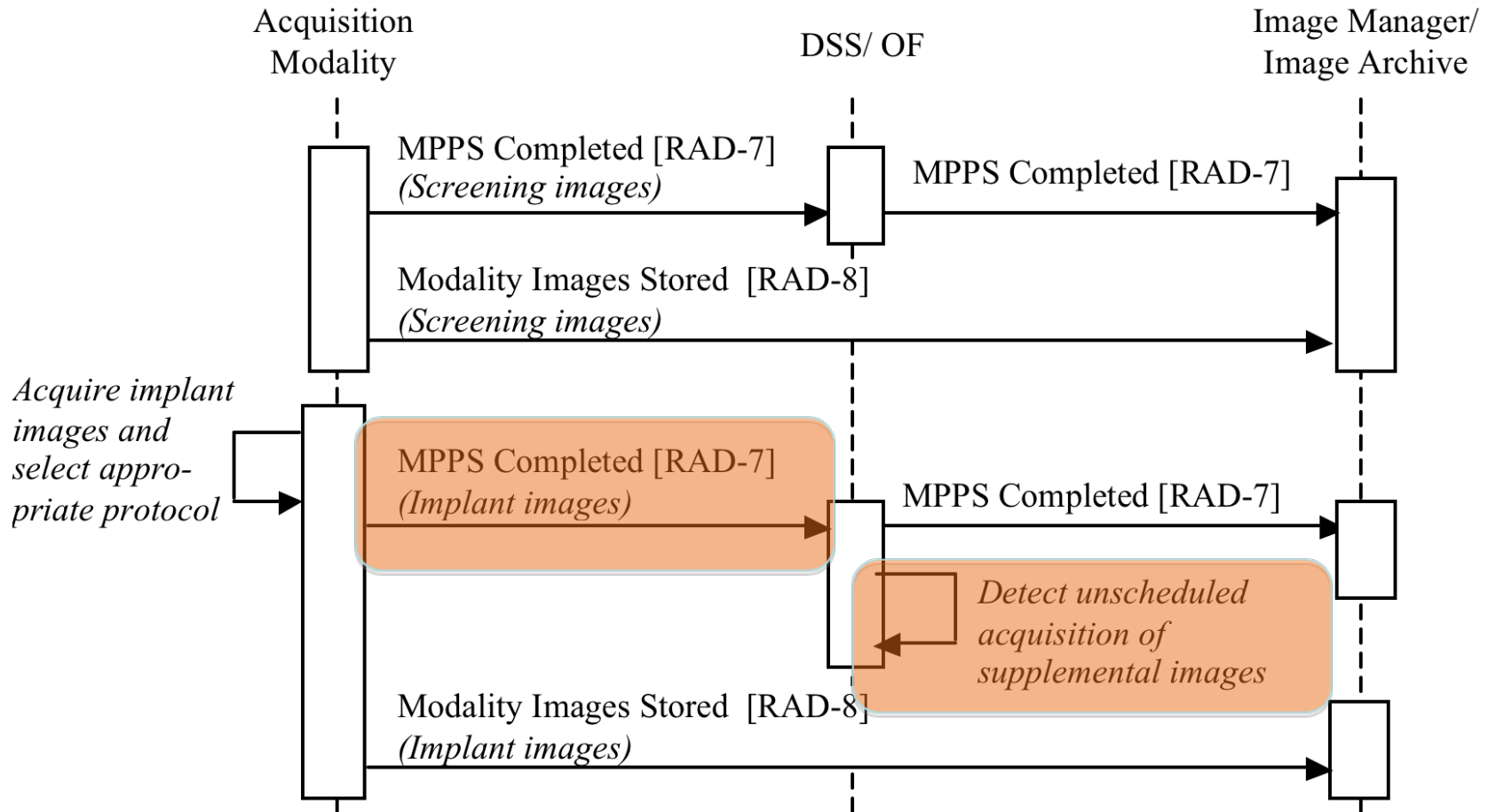
# MAWF Actors & Transactions



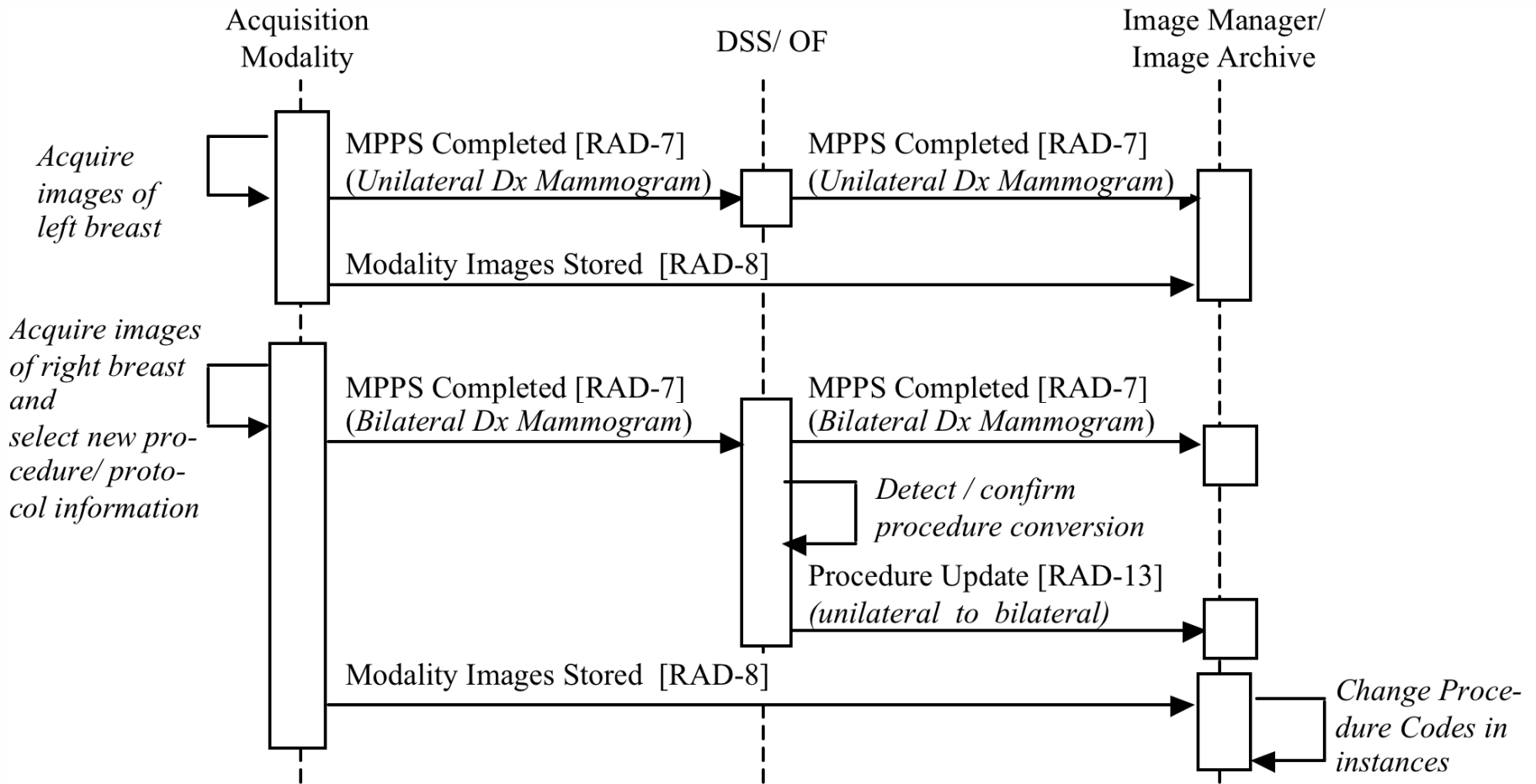
# Supplemental Views



# Supplemental Views

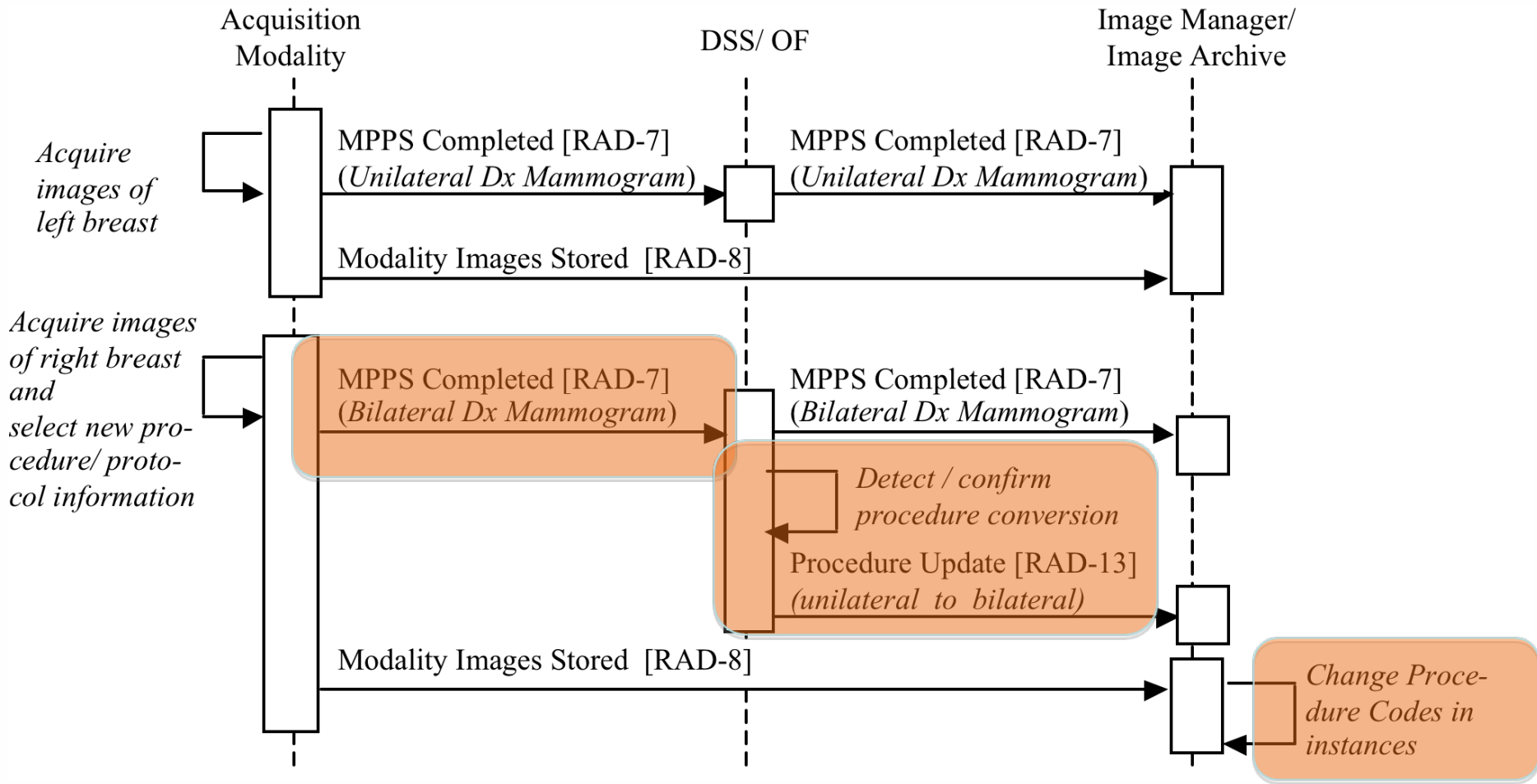


# Convert Unilateral to Bilateral

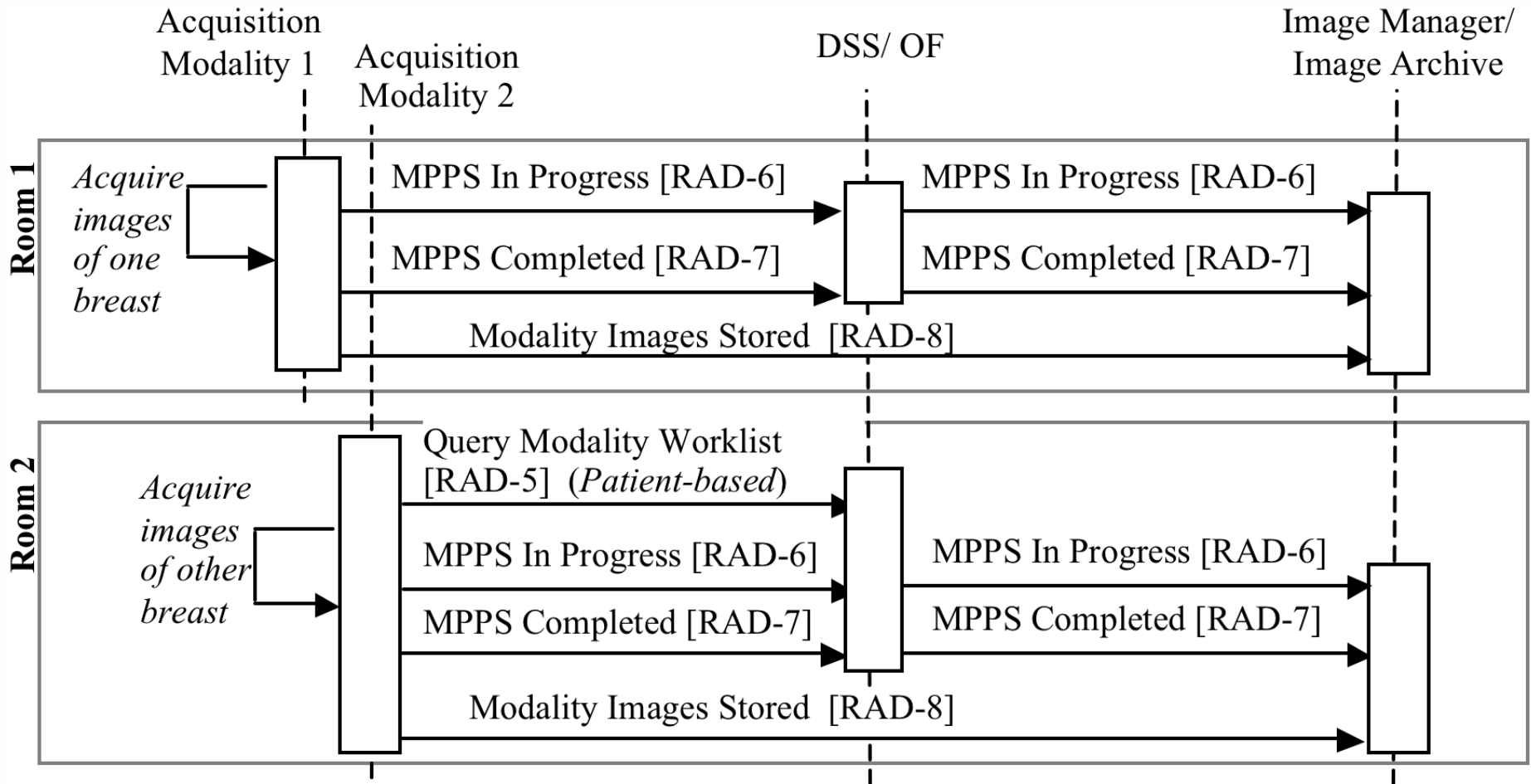




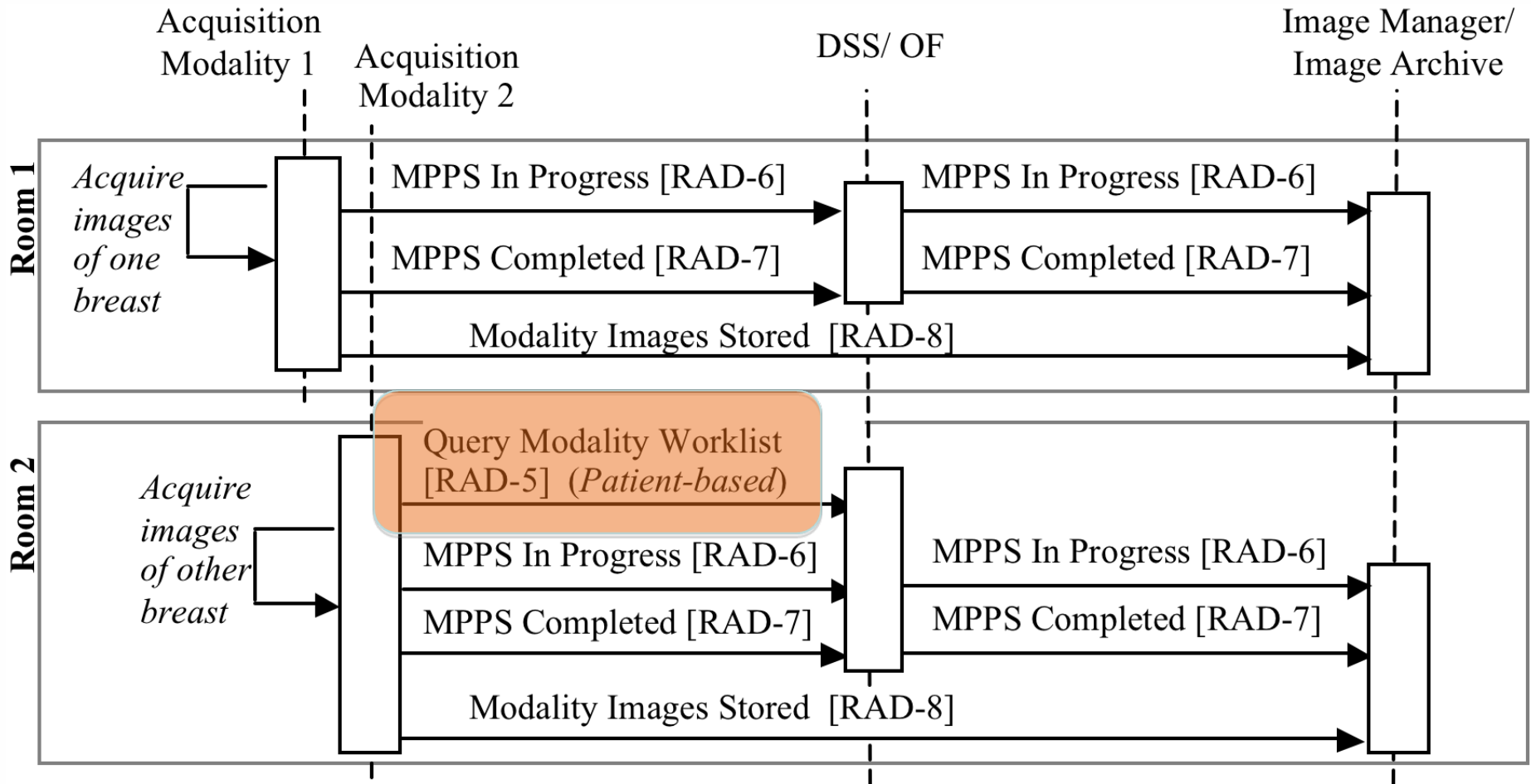
# Convert Unilateral to Bilateral



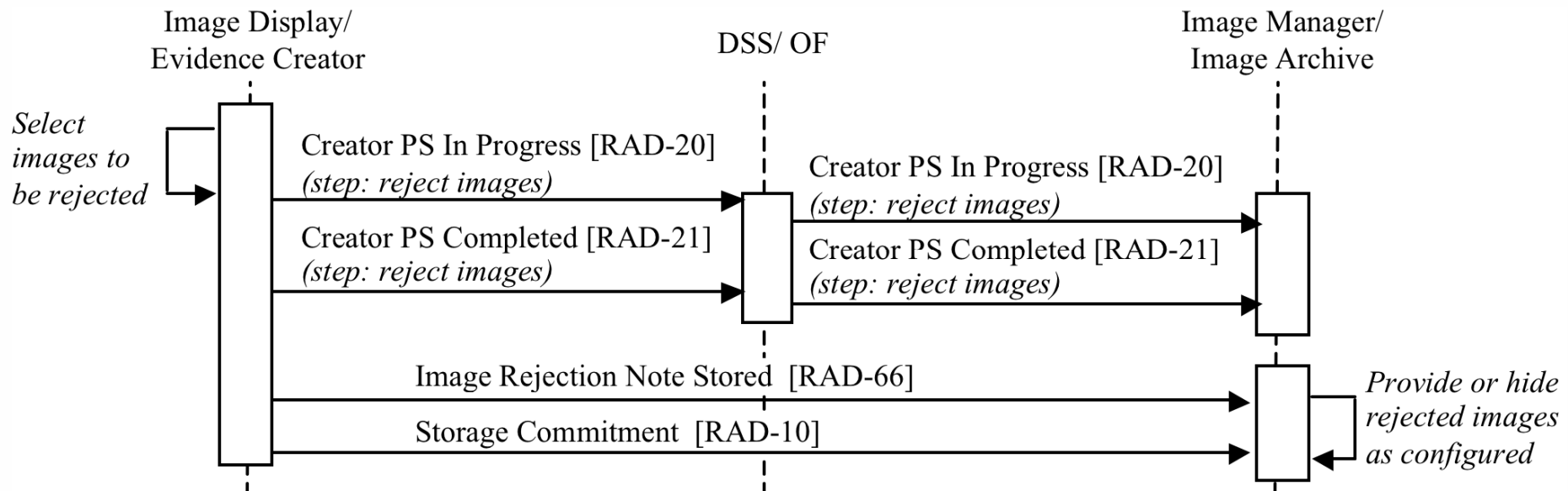
# Finish in Another Room



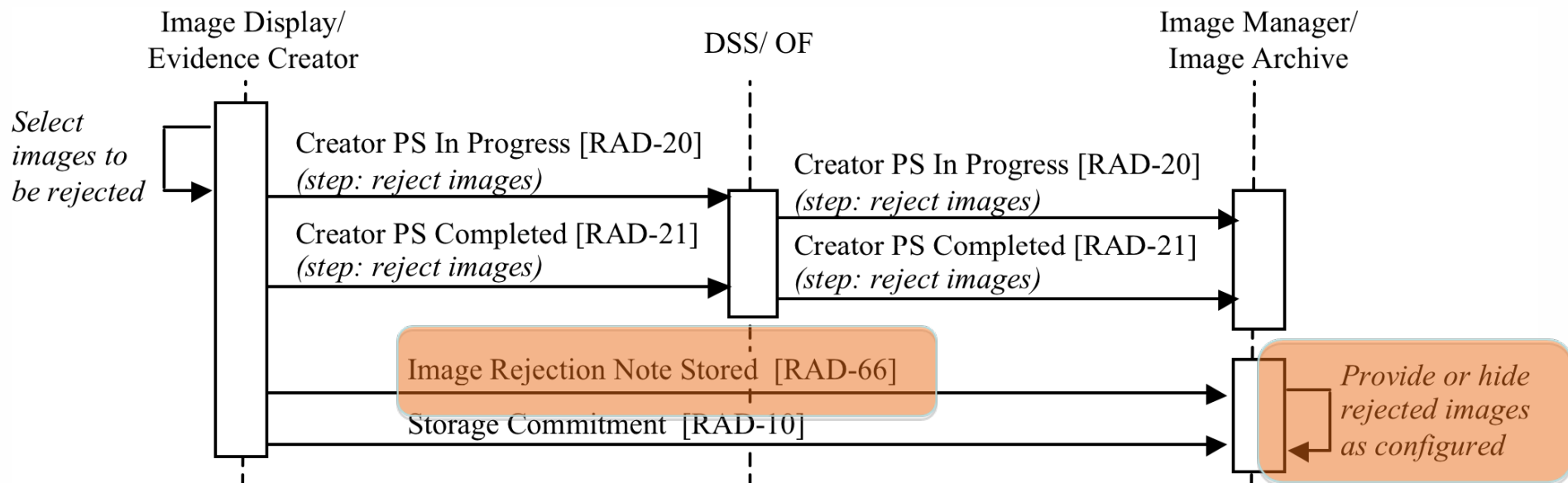
# Finish in Another Room



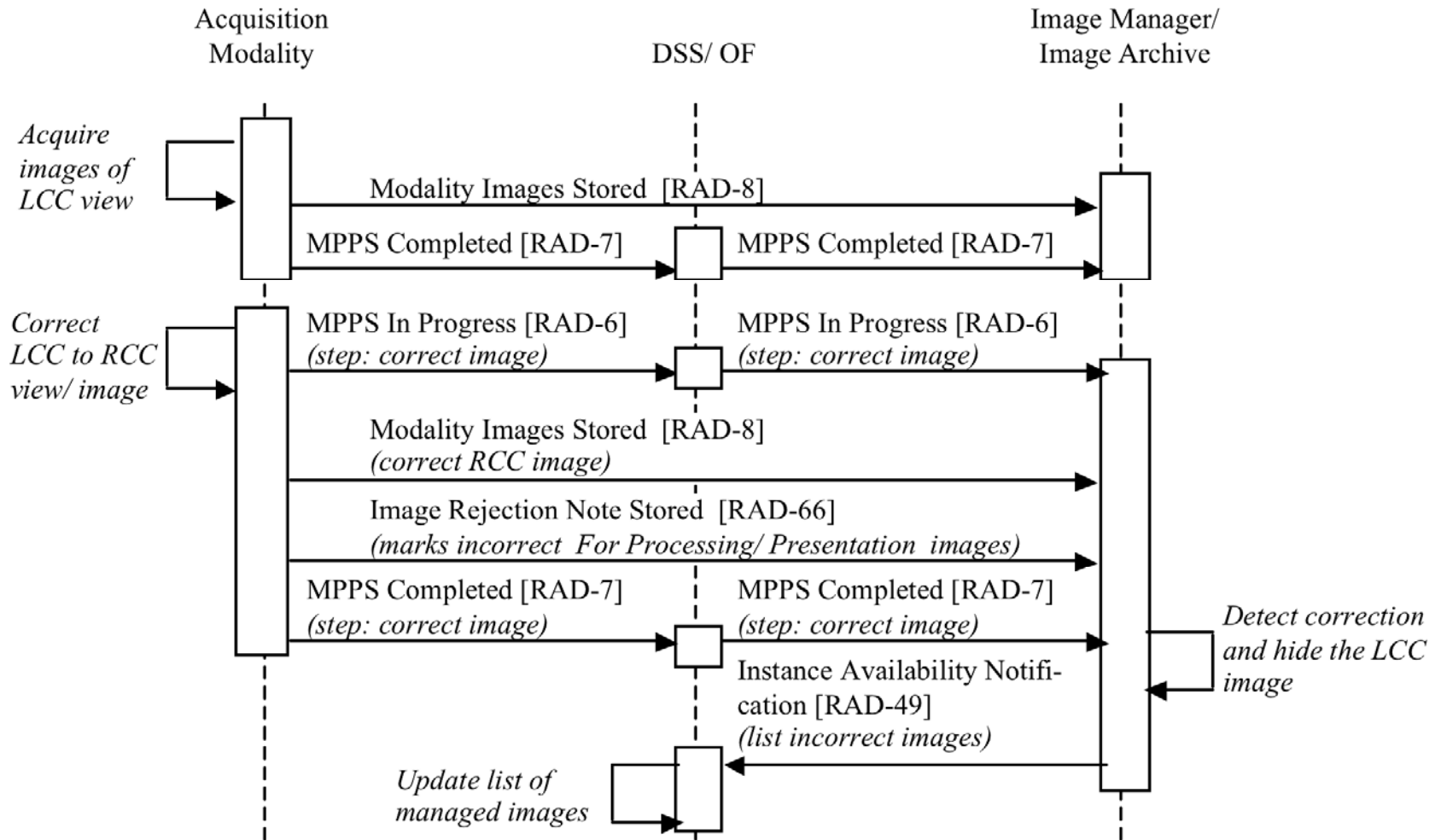
# Reject for Quality Reasons



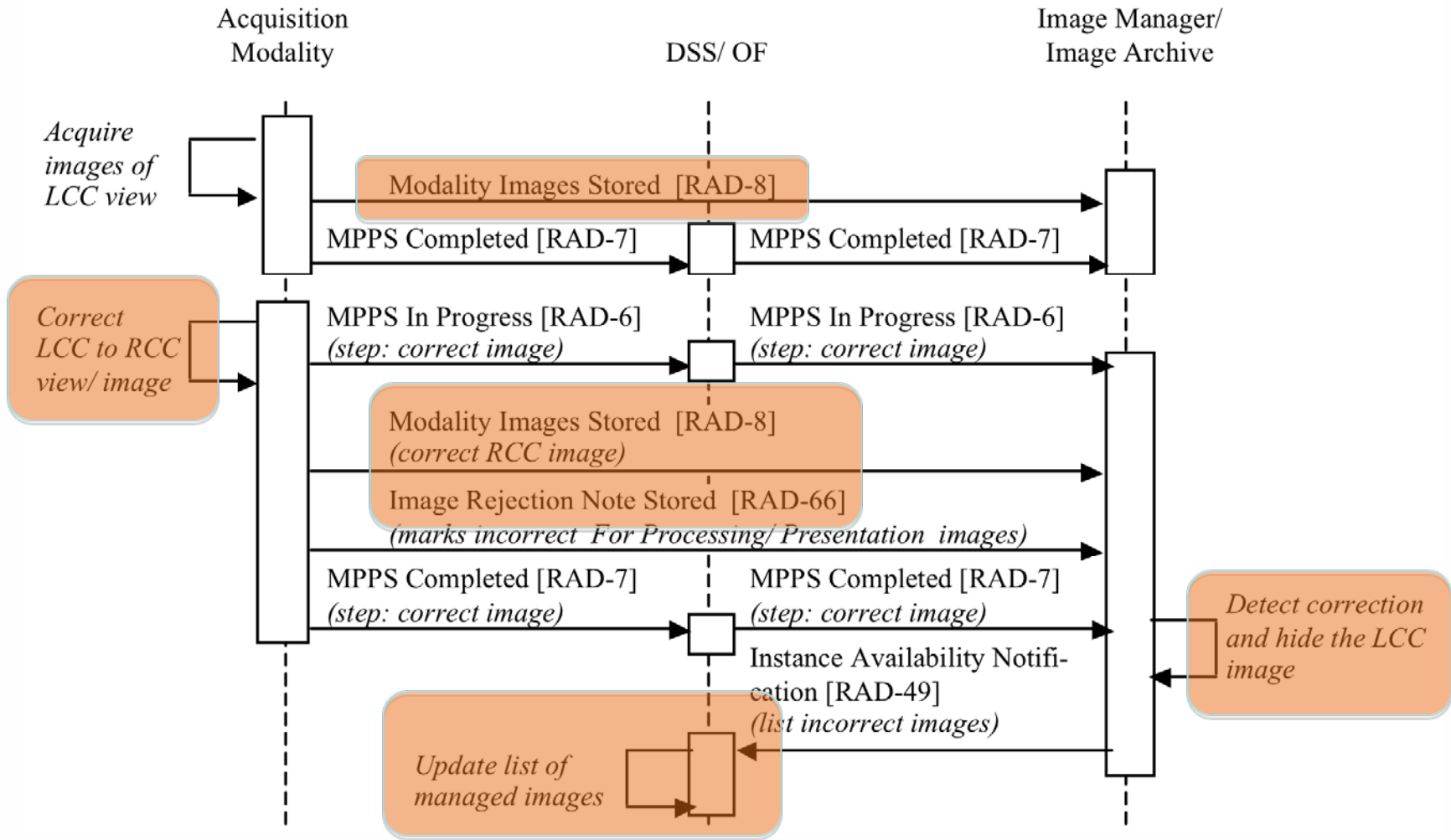
# Reject for Quality Reasons



# Correction of View



# Correction of View



# MAWF – New Standard Codes

- Key Object Selection
  - Reject for Patient Safety Reasons
- Requested Procedure
  - Screening Mammography, bilateral
  - Diagnostic Mammography, left
  - Additional Mammography Views
  - ...
- Reason for Requested Procedure (multiple)
  - Screening
  - Recall for Technical Reasons
  - Personal history of breast cancer
  - Lymphadenopathy
  - ...



# MAWF – DSS/OF Requirements

- Required codes in specific transactions
  - “The DSS/OF shall be able to fill one or more codes from Table 4.5-6 into the Reason for Requested Procedure Code Sequence (0040,100A) of the Modality Worklist Response”
  - “In case of a recall Scheduled Procedure Step, the DSS/OF shall fill into the Modality Worklist Response ... one appropriate recall code ...”
- Also requires reference to related priors
  - “Referenced Study Sequence (0008,1110) with ... the Study Instance UID (0008,1155) from the Study for which the recall is being done”
- Shall detect updates in codes from MPPS

# MAWF – Modality Requirements

- Assisted Acquisition Protocol Setting required
- Required to populate performed attributes *in images and MPPS*, which may have different values than what was requested/scheduled:
  - Procedure Code Sequence
  - Performed Protocol Code Sequence, Protocol Name, Performed Procedure Step Description
  - Reason for Performed Procedure Code Sequence (new)
- If changed during study, sent in *next* MPPS
- Shall allow view correction and shall send a rejection KOS and a new image

# MAWF – Display Requirements

- Specific presentation layouts
  - shall be able to display different procedures or additional views
- Shall use specific attributes for this
  - Procedure Code Sequence
  - Performed Protocol Code Sequence
  - Reason for Performed Procedure Code Sequence
- Shall be able to detect the recall-related codes

# MAWF – Display Requirements

- Requires support of KOS
- Images rejected for *quality* reasons - shall be *configurable* to either
  - suppress images and KOS from presentation
  - present the rejected images and the KOS
  - ignore this KOS and present the rejected images
- Images rejected for *patient safety* reasons
  - shall suppress images and KOS from presentation