

Teaching File and Clinical Trial Export Profile (TCE)

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TCE Profile: Abstract / Scope

Teaching Files are valuable training tools (mandated)

Clinical Trials are essential for research & evidence-based medicine

Assume you recognize a good study for Teaching or a Clinical Trial

- **How do you flag that study data?**
 - And add relevant notes
- **How do you get it properly de-identified?**
 - Teaching files (HIPAA Privacy)
 - Clinical trials (pseudonymization)
- **How do you route the study to the appropriate destination?**
 - Teaching File Authoring System
 - Clinical Trial Repository
- **Use existing DICOM mechanisms & infrastructure**

TCE Profile: Value for Customers

- **Digital Workflow for a traditionally film-based activity**
- **Facilitates clinical research and grant acquisition**
- **Standardizes clinical trial data collection**

- **Improves the efficiency of teaching file production**
- **Supports meeting teaching file requirements**
 - e.g. Accreditation Council on Graduate Medical Education

TCE Profile: Actors

Export Selector

- identifies information to be sent to a teaching file or clinical trial system
- e.g. a user function on a PACS diagnostic workstation
- can include images, reports, evidence documents, presentation states and additional information

Export Manager

- accepts selected objects
- de-identifies and re-identifies with pseudonymous values
- remaps to trial-specific identifiers and populates clinical trial specific attributes (Remap Identifiers option)
- sends pseudonymized DICOM objects and updated manifest to a Receiver.

Receiver

- a local teaching file
- a clinical trial repository
- a clinical trial system that transfers images to the central review facility

TCE Profile: Value for Companies

- **Adding TF and CT capability to your products is easy**
- **RSNA MIRC (Medical Imaging Resource Center)**
- **Implemented Teaching File & Clinical Trial system**
 - Free & open source (mirc.rsna.org)
 - Used by NCI for clinical trial image transport
 - TCE Receiver (MIRC)
 - TCE Export Manager (“Field Center”)
 - Free & open source
- **Dr. Peter Mildenerger (University of Mainz)**
- **Open source TCE Selector recently released**
 - DICOM Store SCP, RadLex codes for findings/anatomy

TCE Profile: Teaching File Example

Part 1: Selection

- Radiologist views images for primary diagnosis on Image Display grouped with Export Selector.
- Export Selector allows images, series and studies to be selected “For Teaching File Export”.
- Export Selector may also provide a UI to:
 - enter text notes
 - select additional items (SR, KIN, GSPS, etc.) for export

TCE Profile: Teaching File Example

Part 2: Export

- **User action triggers Export Selector to send objects and a Key Image Note manifest to Export Manager.**
 - Document Title of the KIN specifies “For Teaching File Export”.
 - Export Manager de-identifies objects.
- **Export Manager collects selected objects and sends to Receiver.**
 - Receiver may be part of a Teaching File system.
- **TF system receives objects and manifest and stores them for later use by radiologist when authoring the teaching file case.**

TCE Profile: Clinical Trial Example

Part 1: Selection

- Same except ...
- ... selected “For Clinical Trial Export”.
- ... administrator identifies the trial.

TCE Profile: Clinical Trial Example

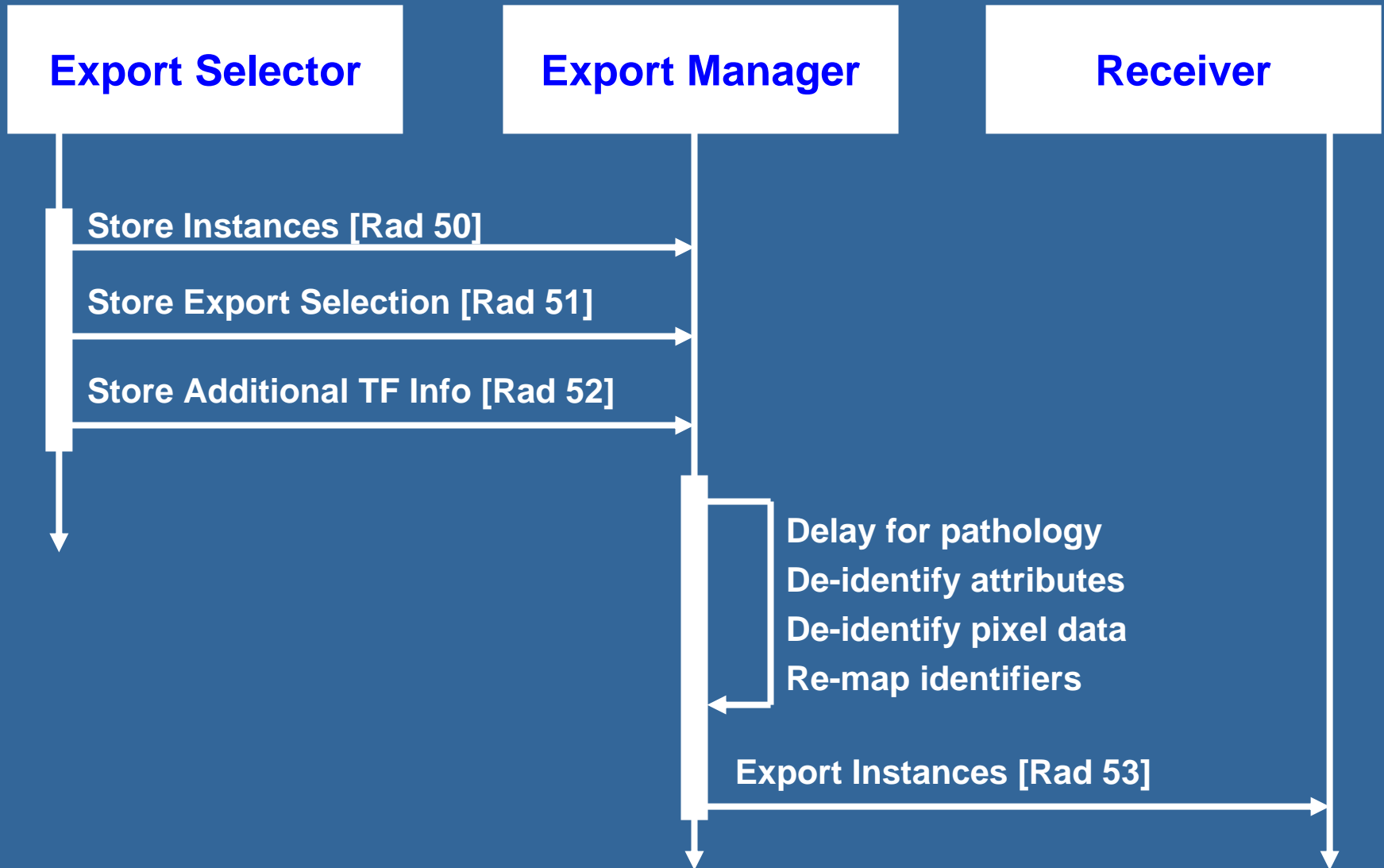
Part 2: Export

- Same except ...
- ... Document Title of the KIN specifies “For Clinical Trial Export”.
- ... Clinical Trial system receives objects & manifest and forwards relevant data to the central facility
- ...other use cases are in the Technical Framework

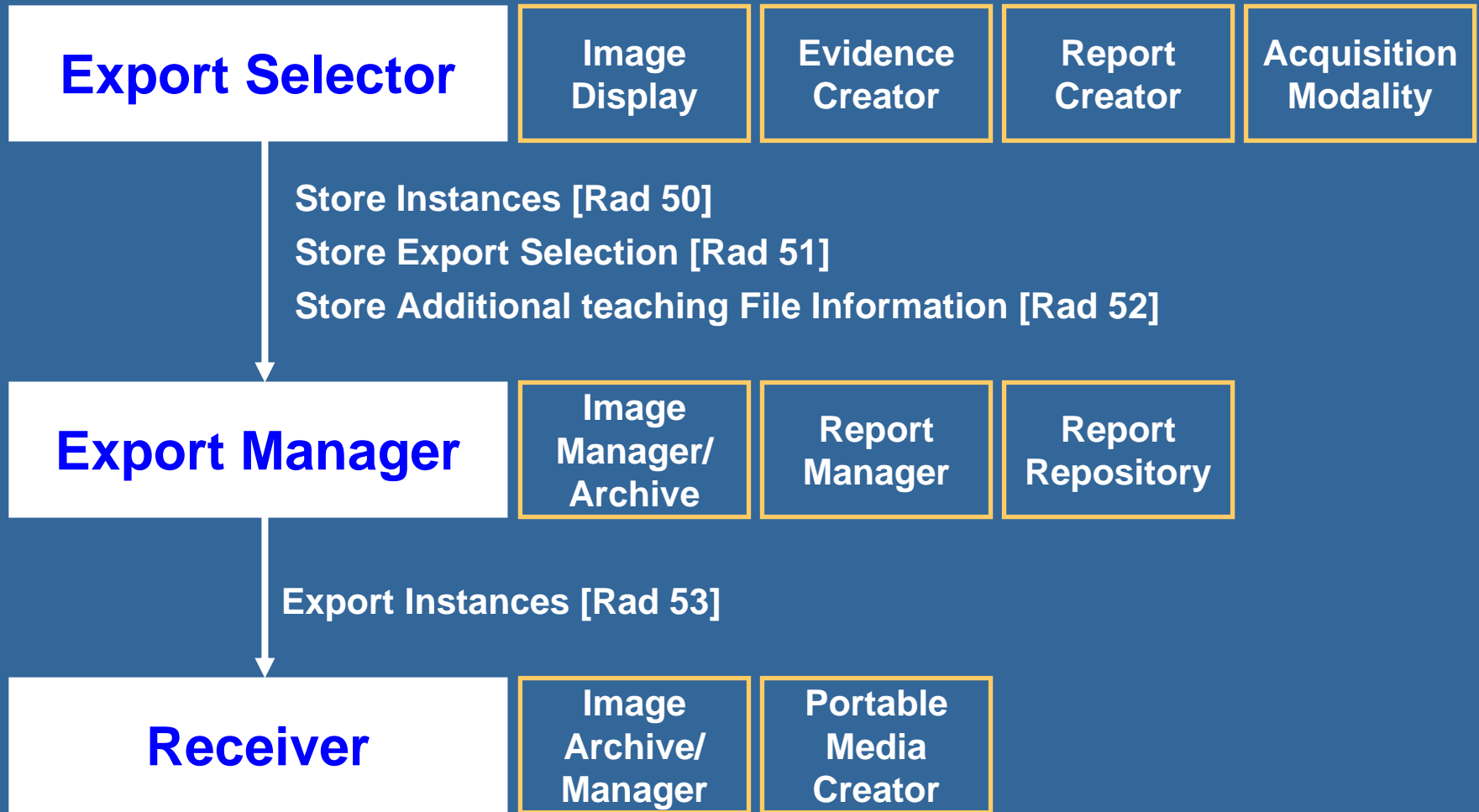
TCE Profile: Mechanisms

- **Key Image Note used as manifest of exported objects:**
 - List of images and other DICOM objects
 - Coded Document Title
 - “For Clinical Trial Export”
 - “For Teaching File Export”
 - Text describes “disposition”
 - Information about requesting user
- **Sent via conventional DICOM C-STORE**
 - Not a new SOP Class
- **Optional “Additional Teaching File Information” KIN**
 - Can contain more information for a teaching file case.

TCE Profile: Transactions



TCE Profile: Actor Grouping



TCE Profile: Demo @ RSNA

- **RSNA 2007 – Nov 25-30, 2007**
- **Showcase booth on Exhibit Floor**
- **Demonstration Planning Meeting**
 - Tues 3:15pm (i.e. right after the break)
 - Room: York 1 & 2
- **ihe@rsna.org**