Cancer Data Exchange (caXchange)

Clinical data exchange

The Clinical Data Exchange (caXchange) system is a configurable service and messaging hub for integrating services and exchanging clinical trial information between applications and systems. For instance, caXchange can be used to map and transfer laboratory data from non-standard clinical care systems into a standard format suitable for receipt by clinical trials databases. caXchange also provides a "lab viewer" application that allows users to view and query laboratory data sent to the hub and select subsets of tests to be sent to a clinical trials database.

Features:

- Enables automatic transfer of clinical data from point-of-care systems, such as clinical chemistry laboratory systems

- Enables integration of services from multiple systems using Enterprise Service Bus technology

- Incorporates caXchange Lab Viewer, allowing viewing of clinical laboratory data imported from clinical chemistry and other lab systems

- caXchange Lab Viewer allows search by Medical Record Number (MRN) and date range

- Laboratory results can be selected for loading into clinical trials databases

- Automatically flags laboratory result values that may indicate toxicity

- Incorporates caAdapter mapping and translation tool to enable translation of any non-standard source and destination format

- Health Level Seven (HL7) version 2 and comma separated values (CSV) support

- Generates HL7 version 3 messages

caXchange interface

Categories of Use:

- ☐ Biospecimens
- ■ **Clinical Trials Management**
- ☐ Data Analysis & Statistical Tools
- ☐ Sharing
- ☐ Genome Annotation
- ☐ Infrastructure
- ☐ Imaging
- ☐ Microarrays
- ☐ Pathways
- ☐ Proteomics
- ☐ Translational Research
- ☐ Vocabularies

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Architecture Overview

- **Application type:** Hub client, Web-based Lab Viewer, Enterprise Service Bus
- **System requirements:** Hub client component only requires the Java Runtime Environment (JRE); Lab Viewer is a J2EE Web based application that runs in Tomcat

Installation and Administration:

- **Skill sets needed:** System administration, database administration, Web application administration
- **Infrastructure needed:** Database (Postgres or Oracle), application container (Tomcat), caGrid (optional, needed for multi-site interactions and deployment as part of the caBIG® Clinical Trials Suite)
- **Long-term administration needs:** Standard database, Web, and system administration

Resources

Tool Overview Page	https://cabig.nci.nih.gov/tools/LabIntegrationHub
Primary Workspace	Clinical Trials Management Systems (CTMS) https://cabig.nci.nih.gov/workspaces/CTMS/
CTMS Knowledge Center	https://cabig_kc.nci.nih.gov/CTMS/KC/index.php/Main_Page
CTMS LISTSERVS	https://list.nih.gov/archives/cabig_ctms_cond_sig.html https://list.nih.gov/archives/cabig_ctms-l.html
caBIG® Tool Inventory	https://cabig.nci.nih.gov/inventory
NCI Center for Bioinformatics Applications Support	ncicb@pop.nci.nih.gov

Key Contributors:

- Ekagra Software Technologies
- ScenPro, Inc.

Other Clinical Trials Compatibility Framework Components:

- Cancer Adverse Event Reporting System (caAERS)
- Cancer Central Clinical Participant Registry (C3PR)
- Clinical Trials Object Data System (CTODS)
- Patient Study Calendar (PSC)

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