



## EICON MULTIMODAL

**EICON MULTIMODAL** is a versatile, extensible solution designed explicitly to facilitate Multimodal AI (MAI) by presenting a unified view into multimodal clinical data and facilitating search across all modalities. Search results are used to create data cohorts, which in turn are exported to AI and MAI teams to facilitate the development of multimodal AI algorithms.

Four major components of the **EICON** platform make up **EICON MULTIMODAL**:

- **EICON SEARCH FABRIC** consists of a set of OpenSearch repositories, one each per modality. The FABRIC is designed to facilitate extensibility – any number of parallel repositories may be included.
- **EICON MESH (UI)** provides a powerful Search capability across all modalities, facilitating the creation of multimodal data cohorts with very specific levels of granularity.
- **EICON REACH EXPORT** provides the ability to deliver multimodal data cohorts to internal teams or external third parties for downstream processing.
- **EICON REACH AI** may be used for model development, testing and validation and may also be used as the platform for production-ready AI algorithm operationalization.

All components of the EICON platform are fully interoperable.

Additionally, if there is an unmet need to collect or integrate source data from third-party or external sources, this can be managed by **EICON REACH COLLECT**.

### Key Features:

- Integrates, unifies, harmonizes metadata from multiple modalities, applying FAIR principles.
- Provides powerful, intuitive Search, Review and Visualize capabilities enabling the user to find data cohorts by matching common Search attributes (e.g., Study, Subject, Visit, etc.) and/or domain-specific Search attributes (e.g., DICOM Modality, ECG QTcB, etc.) or any combination of these Search criteria.
- Facilitates multimodal data cohort creation/management for all integrated modalities, supporting AI enablement, and, more broadly, data review, sharing, collaboration and downstream data processing.
- Domain-specific image data viewers for all integrated 'ologies
- Fully interoperable with **EICON EXPLORER** for graphics-based data presentation layer in single modality or multimodal dashboards
- Fully compatible with **EICON REACH COLLECT** for automated indexing of data sources, both local and remote, as part of the data collection process. For

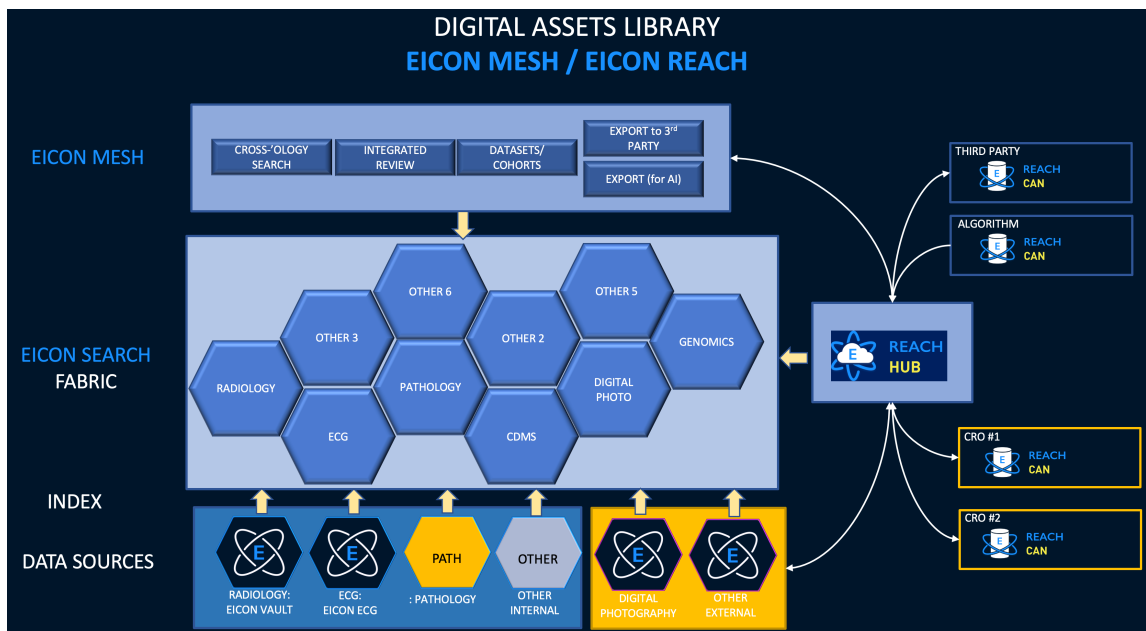
remote data, this can mean either Upload-Store-Index the data or simply Index with external references.

- Fully interoperable with **EICON REACH AI** for automated AI algorithm management and operationalization.
- (As necessary, IBIS can provide services to complete legacy data collection and indexing for existing data, for both data stored in local repositories and data managed externally by third party partners.)

**Model For the Future:** A multimodal clinical data platform that provides all the components necessary to facilitate comprehensive AI enablement, management, and operationalization.

**USE CASE:**

Use **EICON MESH** with **EICON REACH COLLECT**, **EICON REACH EXPORT** and **EICON REACH AI** to create a fully integrated ecosystem for all your medical image data and metadata, both in-house and remote, and to facilitate AI enablement and operationalization.



**Use Case Overview:**

1. Index internal data sources into the EICON SEARCH Fabric.
  - a. Radiology (DICOM), Pathology (WSI) and ECG data are indexed from EICON VAULT, EICON ECG VAULT and a third-party Pathology data management

- system. (Integration of 3<sup>rd</sup> party systems may either use their APIs or similar methods or may optionally use EICON REACH COLLECT).
2. Index external data and metadata sources using EICON REACH COLLECT.
    - a. Configure data sources and integration points on EICON REACH HUB
    - b. Deploy EICON REACH CANS (Clinical Access Nodes) from HUB to data sources.
    - c. Automatically perform one of the following
      - i. Upload data/metadata from external 3<sup>rd</sup> party, store on file system, parse, and index metadata into EICON SEARCH fabric, or,
      - ii. Read metadata on external store, parse, and index into EICON SEARCH fabric. (Assumes persistent repository at external 3<sup>rd</sup> party)
  3. In all cases, EICON SEARCH retains a link to all source data.
  4. Use EICON MESH UI to:
    - a. Search across all indexed metadata, including cross-domain, multimodal search.
    - b. Review across all indexed metadata, including cross-domain review, with integrated domain-specific data viewers.
    - c. Create and manage datasets/cohorts.
    - d. Export data cohorts to data science teams, internal teams, external third parties, etc., using **EICON REACH EXPORT**, for AI algorithm development, test, and validation.
    - e. Use **EICON REACH AI** for production-ready algorithm operationalization.