

# Care Data Correlation Channel™

## Product Overview

The Care Data Correlation Channel™ (CC) is a generalized probabilistic entity identification service preconfigured for use as a master patient index (MPI) and enterprise master patient index (EMPI, which cross-references identifiers from multiple source domains). While the CC is most commonly used to index patients and providers, it can be readily and easily used to index any “entity” in the Master Data Management (MDM) sense of the word.

### Web-Service Callable Functions

The Correlation channel (CC) implements the OH7/OMG Identity Cross-reference Service (IXS), which provides the following functions via Web Service (SOAP). Corresponding FHIR operations on the Patient resource are also listed. The most common operations are listed first.

IXS Operation	Summary Description	FHIR operations
Register Entity With Identity	Accepts an ID and demographic profile (“trait” values); finds or registers it as appropriate based on matching outcome; adds the entry to the cross-reference	
Create Identity From Entity	Finds or registers the identity into the IXS domain itself. The IXS domain is being used as the native MPI for an application	Post
Update Entity Trait Values	Accepts updates to one or more traits for a specified ID.	Put
Remove Identity	Removes an identity based on the supplied ID	
Get Entity Trait Values	Returns the demographic profile for the specified ID	Get
Find Identities By Traits	Find “candidates” based on supplied trait values. Returns a confidence score for each.	
List Linked Identities	Returns corresponding IDs for a specified ID	
List Unlinked Identities	Returns IDs that are “suspected duplicates” for a specified ID	
Link Entities	Link the supplied entities as the same real-world person	
Unlink Entities	Unlink the supplied entities, marking them as distinct	
Merge Entities	Consolidate the specified entities (deactivating one)	
Unmerge Entities	Undoes a merge operation	
Activate Entity	Logical undelete	
Deactivate Entity	Logical delete	

### Features and benefits

- **Manageable:** The CC supports all MDM caching architectures including the hybrid in which some applications send identity feeds to the EMPI for loose-coupled correlation while others use the EMPI’s master domain itself as their native MPI - a pathway for progressive consolidation.
- **Flexible:** Configurable for any traits of any type of entity (patient, provider, device, etc.), but preconfigured for common person demographic traits. As an example of its flexibility, it has been used in law enforcement applications to match suspects based on identifying characteristics (e.g. marks and tattoos) and mode of operation.
- **Accurate:** Probabilistic, self-calibrating matching engine comparable to IBM initiate™. Can be preconfigured for major U.S. geographic regions or from your own bulk data.
- **Fast:** The CC sustained 80 probabilistic matches per second against an 80-million person population on a 24-processor Sun SureFire™ array.

# Correlation Channel™ Technical Features

## Architectural Patterns

The CC supports all MDM architectural patterns (Virtual Registry, Transactional Hub, and Hybrid), which describe the spectrum of options governing the tradeoffs among integration, coupling, performance, and complexity. A Clinical Data Repository will typically employ a loose-coupled hybrid pattern, applying survivorship rules centrally (maintaining the “golden record” continually from identity feeds).

## Platform Support

- JDBC-supported SQL RDBMS
- Apache Tomcat or J2EE Application servers
- If using portlet mode - JSR 168 compliant portlet servers (WebSphere Portal Server, WPS; LifeRay)

## End User Clients

For Registrars

- Web Portlets for searching (“find-candidates”), registering, and ID Audit. Result areas then function as patient Selector (for Physician Portal) with HL7 CCOW context-setting

For EMPI/MPI Administrators

- Java Application for Administrator and Steward - all functions including configuration, calibration, and ID conflict resolution
- Android application for alerting and resolving identity conflicts
- Windows Application for match QA and data quality profiling

## Supported Interoperability Standards

- IHE Patient Identity Cross-Reference (PIX), Patient Demographic Query (PDQ), and Cross-Community Patient Demographics (XCPD)
- HL7 FHIR for simple identity feeds (query in Q3 2015)
- OMG IXS (SOAP) for accessing all functions (Search, Register, Search or Register, Merge/Unmerge, Update).
- OMG Person Identification Service (PIDS)
- HL7 CCOW Context Manager (HTTP mode) for cross-application synchronization of patient selections. The CC monitors CCOW context change requests and supplies corresponding IDs as needed to participating applications

## Interfacing Support

Care Data provides CC-inbound “identity feed” HL7 2.x ADT interfaces out of the box, and can configure any needed additional protocols at competitive service rates.