

## Architecture Narrative (See attached diagram)

**Epic Hyperspace** - The study coordinator (CRC) initiates RFD workflow from the context of a research encounter in Hyperspace. The option to initiate RFD workflow is only available/visible for studies that have been RFD enabled in Epic via RSH record configuration. The first time a CRC requests a REDCap data capture form for a study participant, they must successfully authenticate/log-in to REDCap.

**Epic Interconnect** - This is the Epic interface gateway that brokers all inbound and outbound RFD messages (these are SOAP over HTTPS messages) between the Epic and the RFD REDCap Adapter. In this tier, Epic implements the **RFD Form Filler** component. This component is responsible for requesting a REDCap form for a study participant (i.e. Demographics form) via a SOAP request and rendering it in Hyperspace. The SOAP request contain the Continuity of Care Document (CCD) for a research encounter as part of the message payload, as well as context information (i.e. protocol, MRN, form) that is utilized by the downstream **RFD Form Manager** component.

**RFD REDCap Adapter** - Middleware application developed by the Duke Office of Research Informatics (ORI); this brokers all RFD HTTPS messages between Epic and REDCap. Also serves mashed up REDCap Web forms to the browser contained within Epic Hyperspace. The following RFD components are implemented in this tier:

- **RFD Form Manager** - Responsible for retrieving REDCap form representation for the study participant (i.e. HTML) and pre-populating from the CCD content passed from the Epic **RFD Form Filler**. Once the form is pre-populated, a URL for the form is returned to the **RFD Form Filler** for rendering in the Epic Hyperspace Web browser.
- **RFD Form Receiver** - Responsible for relaying submitted form data to REDCap for storage in the REDCap database.
- **RFD Form Archiver** - Responsible for generating archive log (i.e. audit trail) of all RFD workflow events.

**REDCap for RFD** = Application server that is dedicated to serving REDCap projects that are RFD enabled.

**F5/REDCap Proxy** - Proxy for native (public facing) access to REDCap for RFD Web application.

**MySQL** - Responsible for storage of REDCap study data and RFD Archival data.

