CASE STUDY

ALTEN CALSOFT LABS
AN ALTEN GROUP COMPANY

INTEROPERABLE SYSTEM IMPLEMENTATION FOR A LEADING HEALTHCARE SOLUTION PROVIDER

THE CLIENT

The client is a leading healthcare solutions provider.

BUSINESS NEED

The client envisaged to have systems that are interoperable across multiple organizations and locations. The proposed information systems include:

- **EMR**: Serves hospital, long term care, emergency services, rural health clinics and specialty clinics
- **Ancillary Systems**: PACS, Document Management and integrated into MEDITECH
- **Patient Portal**: Single portal to serve four organizations with patient information across the continuum of care

SOLUTION DELIVERED

ALTEN Calsoft Labs team used Mirth to provide standards-based tools to develop, test, and deploy interoperability solutions for healthcare information systems and information exchanges for secure exchange of data across formats.

Using Mirth Connect, ALTEN Calsoft Labs' development team built interfaces which supported successful data exchange. Some of its noteworthy features are:

- Custom message routing architectures
- Lower Layer Protocol (LLP) in message exchange, filtering, transformation, extraction, and routing HL7 messages over the Transport Control Protocol/Internet Protocol (TCP/IP) to and from the Mirth database
- Interoperable software using Mirth for the secure Health Information Exchange (HIE) of biometric data and imagery (DICOM/PACS) for clinical decision support
- Encrypt with Secure Sockets Layer (SSL) supporting HTTPS connector to securely communicate over the TCP/IP networks
- Enable interoperability and interconnectivity with Simple Mail Transfer Protocol (SMTP) using Mirth
- Engineering services towards document and image capture software for paperless medical records and integration with EMR / EHR / PHR
- Custom development of the common language framework to access XML web services using the Mirth framework

Standards Used	➤ ANSI ASC X12 ➤ DICOM ➤ HIPAA Standard Transaction and Code Sets (including 270 through 837 standards) ➤ HI7 ➤ NCPDP

Data Encoding Standards Used	➤ CPT-4 ➤ ICD ➤ LOINC ➤ NDC: National Drug Code ➤ RxNorm ➤ SNOMED-CT
Data Exchanged	➤ ADT (Admission/Discharge/Transfer) ➤ Clinical Patient Notes ➤ Claims/Billing Payment and Reconciliation ➤ Consultations and Referrals ➤ Discharge Summaries ➤ Eligibility Checking with Payer ➤ Emergency Visit Documentation ➤ EMT/First Responders Reporting /Notes ➤ ePrescribing ➤ Lab Results Delivery ➤ Medication Alerts ➤ Medication History ➤ Medication Reconciliation ➤ Patient Engagement ➤ PHR/Patient-Reported Data ➤ Radiology Results Delivery ➤ Radiology Image Delivery/ Viewing ➤ Workflow Services (Referrals, Consults)

BUSINESS BENEFITS

The designed system supported integration within and interoperability with other organizations.

- **INTEGRATION within the organization** - Multiple internal databases were utilized together for in-organization analytics and care coordination.
- **Feasible INTERFACES wherever desired and applicable** - Bidirectional interfaces for immunizations, medication history, doctors and medical devices were designed. Data were pulled in from medical devices into clinician workflow which eliminated key entry.
- **INTEROPERABILITY with other organizations** - Transfer and referral of patients from other organizations like CCDs (Charge Coupled Device) for meds, allergies and problems were made possible.

ABOUT ALTEN CALSOFT LABS

ALTEN Calsoft Labs is a next gen digital transformation, enterprise IT and product engineering services provider. The company enables clients innovate, integrate, and transform their business by leveraging disruptive technologies like mobility, big data, analytics, cloud, IoT and software-defined networking (SDN/NFV). ALTEN Calsoft Labs provides concept to market offerings for industry verticals like education, healthcare, networking & telecom, hi- tech, ISV and retail. Headquartered in Bangalore, India, the company has offices in US, Europe and Singapore. ALTEN Calsoft Labs is a part of ALTEN group, a leader in technology consulting and engineering services.

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