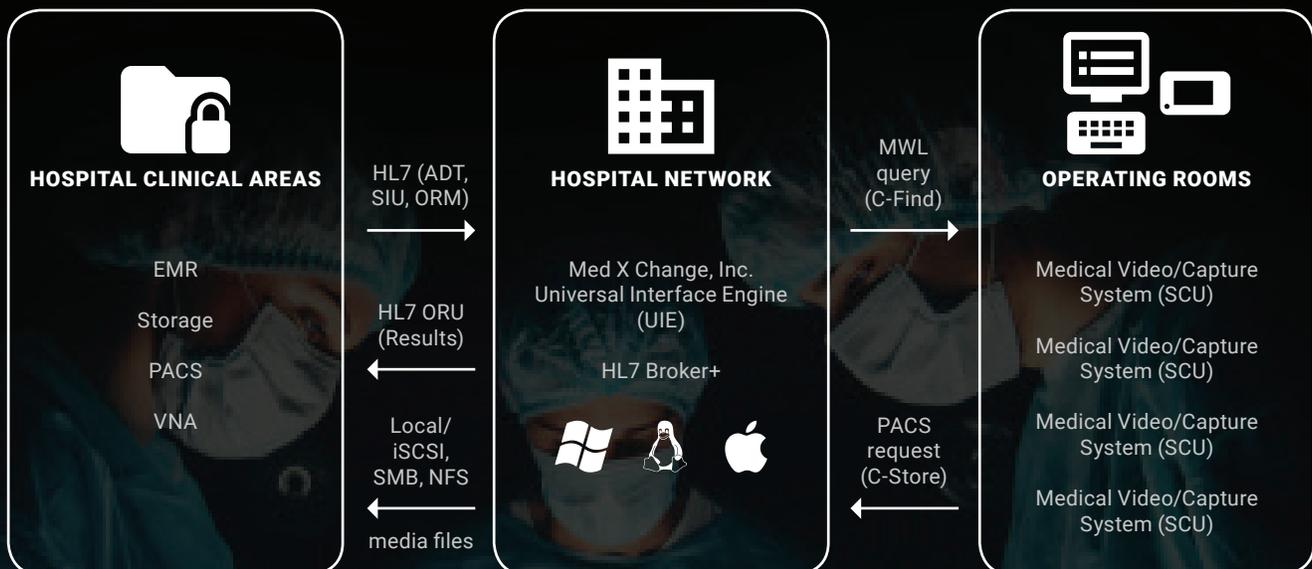# Universal Interface Engine (UIE)

The gateway between a hospital's EMR, PACS, VNA systems and any Medical Video Capture System

Med X Change, Inc.'s Universal Interface Engine (UIE) is a software application designed to operate on a facility's network which will act as a gateway between the hospital's EMR, PACS, VNA systems and any Medical Video Capture System (via DICOM and other standards). The UIE will receive and store HL7 messages from a hospital's EMR system and make EMR data available for Medical Video Capture Systems to exchange via DICOM protocols. Then produce HL7 ORU result messages with media items for integration/linking back into the EMR.

The UIE will also be able to optionally send DICOM media files to hospital PACS systems or VNA systems.

HOSPITAL CLINICAL AREAS

EMR

Storage

PACS

VNA

HL7 (ADT, SIU, ORM)

HL7 ORU (Results)

Local/ iSCSI, SMB, NFS

media files

HOSPITAL NETWORK

Med X Change, Inc. Universal Interface Engine (UIE)

HL7 Broker+

MWL query (C-Find)

PACS request (C-Store)

OPERATING ROOMS

Medical Video/Capture System (SCU)

Medical Video/Capture System (SCU)

Medical Video/Capture System (SCU)

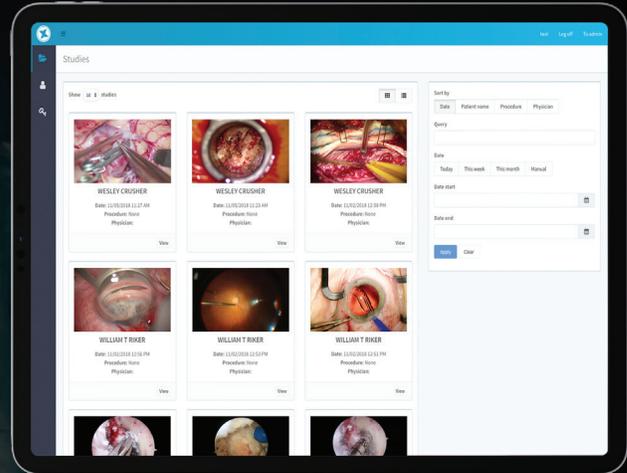Medical Video/Capture System (SCU)

SAMPLE WORKFLOW

- EMR send HL7 ADT, SIU or ORM message to the UIE
- UIE translates and converts that to Modality Work list
- The Medical Video Capture System query's UIE via MWL and imports patient data
- The Medical Video Capture System during or post case send back images/video via c-store to UIE
- UIE converts to HL7 results messages and content via hyperlink

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FEATURES

- Uni-directional (Orders only, Results only) or Bi-Directional (Orders and Results)
- Supported HL7message types:
  - S12 Notification of New Appointment
  - S13 Notification of Appointment Rescheduling
  - S14 Notification of Appointment Modification
  - S15 Notification of Appointment Cancellation
  - S17 Notification of Appointment Deletion
  - ORU Observation Result
  - Can easily be configured to receive/send other message types
- Can be configured to accept other types of HL7/HL7v2 messages

- Ability to encapsulate pdf's within outbound HL7 messages
- Can be configured to accept WorkLists as XML, JSON, or delimited text
- Provides WorkList API for custom integrations
- Process DICOM C-store request from recorders and other devices and generate HL7 ORU messages
- Email and web admin notifications for various events including messages processed and errors
- Powerful web-based administration portal
- DICOM TLS supported via automatic configuration or custom SSL certificates
- HIPAA compliant cyber security

REQUIREMENTS

- Linux e.g. Ubuntu 18.04 (Preferred) or Windows 10 Professional with Hyper-v
- Network access (internet connectivity for automatic updates)
- 8GB of memory
- 32GB SSD for O/S and Software, Additional disks for storage

UIE & MEDXSTORAGE SERVER
(CONTENT MANAGEMENT SYSTEM)

Next step for UIE is adding a optional Content Management Module for Storage which will complement the Brokering portion and allow storage of case data, linkable HL7 ORU results, Physician and patient access all encrypted and authenticated.

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