

HTIC Conducts Assessment of BioFire FilmArray

TATRC's Health Technology Innovation Center (HTIC) recently assisted the Next Generation Diagnostics System (NGDS) Program of the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) to conduct an independent assessment of the BioFire Defense's FilmArray (Figure 1) Laboratory Results Interface (LRI) for Health Level (HL) 7 compliance.

BioFire FilmArray (FA), part of NGDS Increment 1 Deployable Component, is a Food and Drug Administration-cleared diagnostic system capable of detecting and identifying the presence of nucleic acids of biological warfare (BW) agents and infectious diseases. This system provides military healthcare providers with timely and accurate information to guide individual patient treatment, as well as provides battlefield commanders with BW threat information for situational awareness to support Force Protection.

HTIC's software developers assisted JPEO-CBD in defining appropriate requirements for an HL7 LRI Module that will allow the BioFire FA to easily integrate with DoD Military Health Systems, a primary objective of NGDS Increment 1, and align with DoD Healthcare Management System Modernization interoperability and sharing health information efforts using HL7 standards.

The HTIC team set up a secured HL7 Integration Server platform, (Figure 2) in its Early Stage Platform (ESP) Laboratory. HTIC's ESP is a high-tech Cloud based platform that supports a variety of services for advanced health information technology (HIT) research and development software initiatives, and provides BioFire with an HL7 integration testing environment to support Johns Hopkins University Applied Physics Laboratory (JHU/APL) with its efforts in developing test cases to verify BioFire FA HL7 electronic reporting capabilities.

This platform consisted of an open source Mirth Connect to relay all incoming HL7 messages from BioFire FA, to a replica of Composite Healthcare System (CHCS) located

at the Joint Information Technology Center network in Hawaii, and vice versa relaying all outgoing messages from that CHCS, back to BioFire FA and a Secure Sockets Layer (SSL) / Transport Layer Security (TLS) proxy tunnel with mutual authentication providing the security for non-TLS backend applications.

BioFire, JHU/APL and TATRC successfully demonstrated the HL7 capabilities of the FA to JPEO-CBD at a Dry Run Test Event in Salt Lake City, Utah and a formal Scored Test Event at Laurel, Maryland using the aforementioned ESP secured platform.


HTIC Lab Director, Ms. Ollie Gray, stated "the successful testing of the FA among multiple partners, highlights the capabilities of the ESP and the opportunities for potential collaborative partnerships." 



Figure 1: FilmArray System

