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Abstract Details:

Breakout Session: Technologies and Approaches to Support Specialty Virtual Health in Denied, Intermittent, or Low-Bandwidth Communications Environments

Submission Category: Oral Presentation

Title: Biometric identification and access management system for medical personnel and patients

Abstract:

The US Army needs a biometric identification and access management system for medical personnel and patients for Android-based platforms for operation in situations with intermittent network access. Rapid access by authorized personnel to patient electronic health records (EHR), as the patient is rapidly transitioned through the medical support system, is needed to ensure proper treatment while maintaining the security of medical personal identifiable information (PII) per the Health Insurance Portability and Accountability Act (HIPAA). High quality documentation of care from the battlefield to the hospital is critically needed. For example, in 2012, only 14.7% of patients entered into the DoD Trauma Registry had any documentation from the point of injury (POI). Currently, there are no systems that meet the Army's need for rapid, secure, biometric access to medical records. Current use access management solutions for medical personnel require the use of an access card and passcode, which are inconvenient and potentially dangerous for use with mobile devices on the battlefield. In order to address this urgent, unmet

Army need, ChromoLogic LLC (CL) has developed a Biometric Authentication and IDentification (BAID) system. BAID consisting of an Android Operating System application and biometric collection hardware leveraging existing biometric identification techniques to gate access to existing Army EHR databases. BAID combines biometric scanning hardware with an easy-to-use mobile application and associated SDK, providing gate access to existing Army EHR databases. BAID performs two key actions: (1) generates biometric hashes to enroll individuals and (2) performs hash matching to allow identification of enrolled individuals. The BAID graphic interface guides the user through the biometric scanning process. In areas lacking internet connectivity, BAID allows users to intermittently sync with a central server. CL has completed development of a TRL6 system that fits into a small (3x 4x 6) cm^3 package and includes a fingerprint reader and an iris scanner for patient identification or non-primary medic authorization. CL is also exploring the use of biopotential biomarker (EEG, ECG) for pseudo-pervasive medic authorization as these are difficult to compromise and can provide additional health monitoring for their users. CL has shown that neural networks can extract identifying information from these potential traces using artificial neural networks. In addition to serving Warfighter, BAID is also designed to be used in the civilian emergency response system and hospitals to enable streamlined login process for EHR users. In this presentation we will present our progress to date.

Disclaimer:

Learning Objectives

1. Discuss current solutions of biometric identification and electronic record access management for U.S. Army medical personnel.
2. Discuss emerging technology features that enable secure biometric authentication using biopotential (EEG and ECG)
3. Describe how the BAID hardware and software allows biometric identification of patients.

Submit for Young Investigators Competition? No

May We Publish Abstract on the MHSRS website? Yes

Curriculum Vitae: View CV File *(uploaded: 3/30/2021 12:54 PM)*

Conflict of Interest (COI) Disclosure: View COI Disclosure File *(uploaded: 3/30/2021 5:28 PM)*