Realizing Effective End-to-End Quality Management within the Health Domain - Case Studies Using OMG Standards

Monday, June 18, 2018 - 1:00 pm – 5:30 pm
Hyatt Regency Boston Harbor, Boston, MA

OMG SPECIAL EVENT

OBJECT MANAGEMENT GROUP®

CO-PRODUCED BY: industrial internet CONSORTIUM

1:00 pm – 1:10 pm   Opening Remarks - Welcome
Ken Rubin – Director, Standards and Interoperability, VHA Office of Knowledge-based Systems; OMG Healthcare Domain Task Force Co-Chair

1:10 pm – 1:55 pm   KEYNOTE: The Incredible Value to Healthcare of Service Based Interoperability
Dr. Stanley Huff, Chief Medical Informatics Officer, Intermountain Healthcare

Description: Healthcare today has serious issues with accuracy, safety, cost, patient satisfaction, and provider satisfaction. True semantic interoperability provided by standards based services has the potential to dramatically improve all of these aspects of healthcare. The improvement will be made possible not only by advances in standards and technology, but will also need to be driven and guided by expert front line clinicians. This session will describe the essential steps we must take to realize an optimal future healthcare system.

1:55 pm – 2:25 pm   The Medical Device Digital Thread – Use Case: Dialysis Machine
Matthew Hause, PTC Engineering Fellow, MBSE Specialist, co-chair OMG UAF Revision Task Force

- The Digital Engineering Journey
- End to End Traceability from Requirements to Models to Implementation
- Systems Engineering Tool Eco-System
- Executable Models
- The future of MBSE
- Augmented Reality

2:25 pm – 2:40 pm   Refreshment Break

2:40 pm – 3:40 pm   Developing a Healthcare IIoT Application - Ideas are Easy. Execution is Hard
David Niewolny, IOT Solutions Leader, Real Time Innovations, Inc.
Dr. Julian Goldman, Mass General Hospital, Medical Director Partners Biomedical Engineering, MD PnP Medical Device Interoperability and Cybersecurity Program
Tracy Rausch, Co-Founder of DocBox, Inc.

Preventable medical errors in hospitals are the third leading cause of death behind cancer and heart disease in the United States, leading to 200,000-400,000 deaths every year. We have an aging population growing at an unprecedented rate, a predicted shortage of physicians, and healthcare costs continually increasing. Complete, accurate, and timely data is necessary to leverage the necessary technology transformation to improve safety, quality, and reduce the cost of care. Electronic Health Record (EHR) data is a critical part of the modern patient-care environment, but medical devices must become better citizens of the medical technology ecosystem to enable truly Integrated Clinical Environments.

Integrated healthcare experts, Julian Goldman, MD (Partners Healthcare and Massachusetts General Hospital Medical Device Interoperability & Cybersecurity Program - MD PnP), David Niewolny (RTI) and Tracy Rausch (DocBox), will describe the challenges of developing a Medical IoT platform and applications, discuss the benefits of using an open data centric architecture and illustrate how to best leverage the Industrial Internet Consortium™ (IIC™) guidelines and testbed program. This presentation will take you on a multi-year journey from problem identification, proof of concept, commercial product, and lessons learned from deploying such a system.

Specific detail will be placed on the following topics:

- Address the quality and safety needs of healthcare system today
- Outline the types of data necessary to achieve quality and safety goals
- How to address a wide range of demanding data-connectivity requirements to meet the clinical requirements
- What is needed to facilitate plug-and-play interoperability
- How to meet security requirements

And answer the following questions:

- What are the biggest challenges moving from proof of concept to production?
- What standards organizations are helping shape Healthcare IIoT solutions?
- How can you leverage the IIC to speed time to market?

3:40 pm – 4:30 pm   Field Guide to Shareable Clinical Pathways Using BPMN, CMMN and DMN in Healthcare

Robert Lario, Enterprise Architect, VHA Office of Knowledge-based Systems, OMG Healthcare Domain Task Force co-chair
Denis Gagné, Partner, CEO & CTO at Trisotech, OMG Model Interchange AB Special Interest Group co-chair

Abstract: A field guide for how to develop and use BPMN, CMMN & DMN in Healthcare has been in development for 12+ months by the OMG HDTF. This Field Guide to Shareable Clinical Pathways focuses on a model-based approach to define the workflow of care and decision-making at the level of granularity that reveals information needs. The approach of this Field Guide is to apply standard techniques for business process modeling and for decision modeling that are proven for other industries and apply them to the distinct aspects of the workflow of care and decision-making.

There are many reasons to develop a clear understanding of clinical care and decision making. In the most general terms, if we do not have a model-based understanding of how care is performed currently, then we cannot analyze and design cost effective improvements. Without cost-effective improvements, we cannot address the US and international critical need to improve efficiency, control the growth of health care expense, or continue to improve quality. This Field Guide is offered as a practical step towards realizing the great potential of HIT's role for accessible, efficient, and high quality health care.

4:30 pm - 4:50 pm   Cybersecurity and Resilience of Healthcare IT and Medical Devices

Lev Lesokhin, Governing Board member, Consortium for IT Software Quality (CISQ); EVP Strategy and Analytics, CAST

The demand for medical software, mobile apps and connected devices in the Healthcare industry is growing. The volume of EHR (Electronic Healthcare Record) data has grown rapidly over the last few years, increasing system complexity. The Consortium for IT Software Quality™ (CISQ™) is an IT leadership group co-founded by the OMG and Software Engineering Institute at Carnegie Mellon University that is chartered to develop

automatable standards for measuring software code – its size, quality, and technical debt. Standards from CISQ/OMG can now be written into requirements for healthcare software projects to help ensure the system is free from critical vulnerabilities that are known to impact the system's security, reliability, performance efficiency and maintainability. These standards were developed with input from major stakeholders representing government, academia and industry. The Security measure, for example, encapsulates the most exploited security weaknesses in software – CWE/Sans Institute Top 25 Most Dangerous Security Errors and OWASP Top 10. This presentation from CISQ introduces these new standards and explains how to use them internally for software development projects or with software suppliers. Standards are critical for effectively evaluating applications and workflows to ensure system dependability and to get to the level of automation required for the future of healthcare delivery.

4:50 pm – 5:30 pm   Speaker Panel and Wrap up
Moderator: Ken Rubin – Director, Standards and Interoperability, VHA Office of Knowledge-based Systems; OMG Healthcare Domain Task Force Co-Chair

5:30 pm – 7:30 pm   RECEPTION: You are cordially invited to networking and light refreshments at our Monday Meet & Greet event : Addressing Privacy and Security Issues in Healthcare IT with demonstration of Computer-Aided Cybersecurity using Code Analysis Web Portal (CAWP). More information and registration here:
https://www.omg.org/events/ma-18/special-events/CAWP-Meet-Greet

June 15, 2018. Agenda and speakers subject to change with or without notice.