Leveraging DDS for a Medical IoT-Based Critical Care Ecosystem

PRESENTED BY
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GE Healthcare – Life Care Solution
Wherever there is a patient

PATIENT MONITORING

ANESTHESIA

RESPIRATORY

DIAGNOSTIC CARDIOLOGY

MATERNAL / INFANT CARE
Patient Monitoring as Medical IoT

Patient-Centered Monitoring

Flexible & Scalable Infrastructure

Provider-Centered Insights

Wearables

Edge Compute

AI / Analytics

A safer and faster care pathway

Edison

- Unobtrusive
- Patient mobility
- Clinical flexibility

- High fidelity data
- Cyber security
- Interoperability

- Personalized
- Workflow oriented
- GE & Partner analytics
It’s not that patients suddenly deteriorate. It’s that caregivers suddenly notice.
Patient monitoring is more than a device connected to a patient that acquires physiological information and then processes that information to generate an alarm. A Patient Monitoring system includes many (often hundreds and sometimes thousands of) devices connected to patients who are geographically dispersed across a hospital campus. Data and processed information from each of these devices are communicated across the hospital ecosystem and are delivered to a variety of data sinks.
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Patient Monitoring

Viewing of Physiological Data

Alarming and Event Management

Patient Management

Device and System Management

Analytical Processing

Availability, Fault Tolerance, State Consistency
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**Why is inconsistency expected?**
Consider an **average** hospital with 200 patient monitors, 10 clinical units, and 40 central stations.

It is **expected** that if a 1) Monitor becomes disconnected during transport 2) An entire Unit disconnects from the rest of the hospital 3) A building is cut off from the Edge Platform 4) The Edge Platform fails;

The state of the device, the unit, the building can be **safely** changed while **disconnected**.

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**Safe and expected state reconciliation:**
Allowing disconnected state changes is simple, but as the elements of the system reconnect, the patient monitoring ecosystem must **reconcile** state safely, and reflect the clinical users’ intentions based on their practice of caregiving.

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PACU
Edge Compute
The Grand Challenge
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DDS in Patient Monitoring

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- Software defined domains and topics