Synergy between eHR & Authenticated Data from Daily Patient Care

eHR Engagement Initiative (EEI) Networking Session

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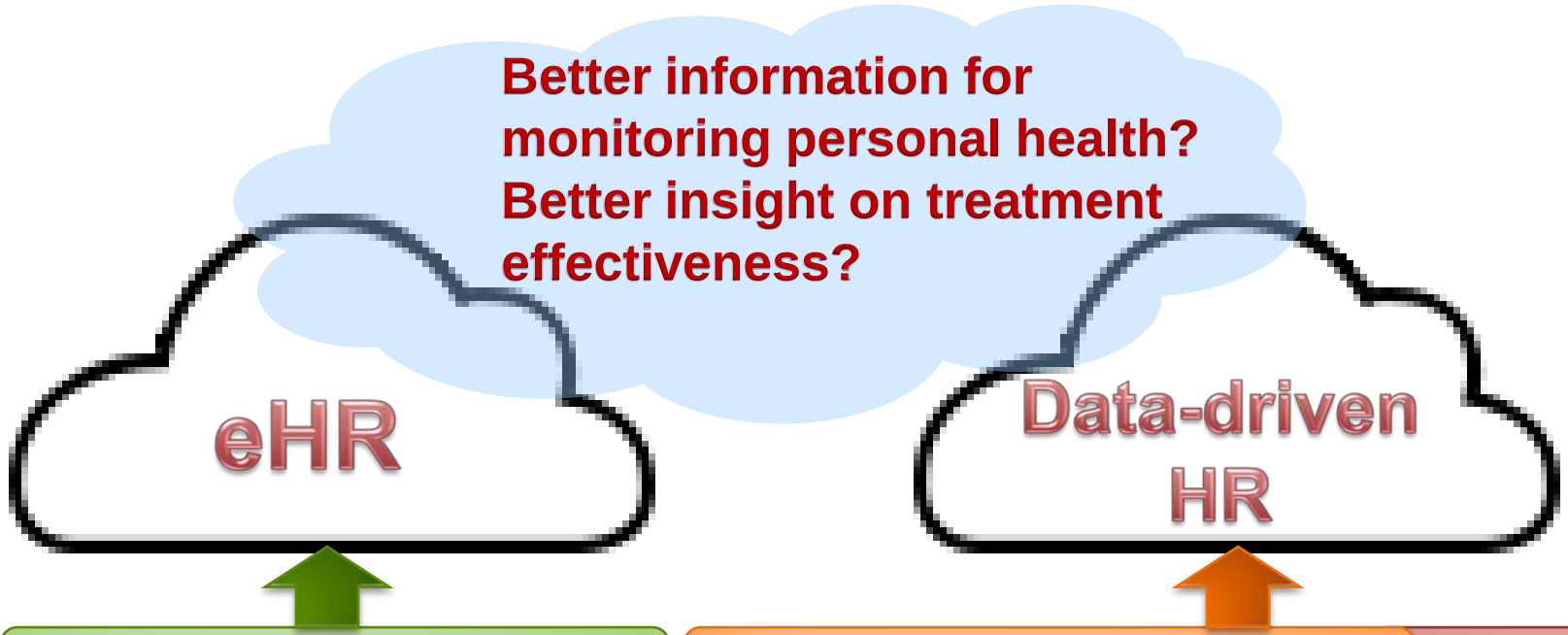
Dorbin Ng, PhD

Dept. of Systems Engineering & Engineering Management

The Chinese University of Hong Kong

More Health-related information
➔ Better Quality of Life?



Traditional health records:
- Diagnoses from clinical visits
- Treatments from hospitalization
- Drug application records
- Manually taken vital signs

Non-traditional health related data:
- Continuous streams of vital signs
- Activity patterns during hospitalization
- Activity levels under different drug applications or treatments

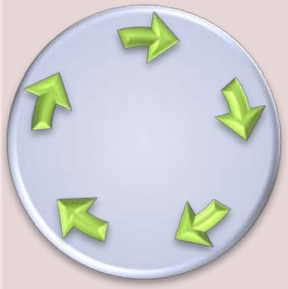
- Too much to keep?
- How to use them?
- How to ensure their authenticity?

Traceability for Healthcare Risk Management

Extending to Other Industries & Professional Fields

Exporting to Global Healthcare Risk Management

Standard-compliant Platform to Share Healthcare Risk Management in Hong Kong



Other Hospitals

Sharing

Traceability Database

Risk Analysis

Traceability Platform for Risk Management

Tracking & Monitoring Data

Prevention Model for Better Care

RFID, Sensor, Location

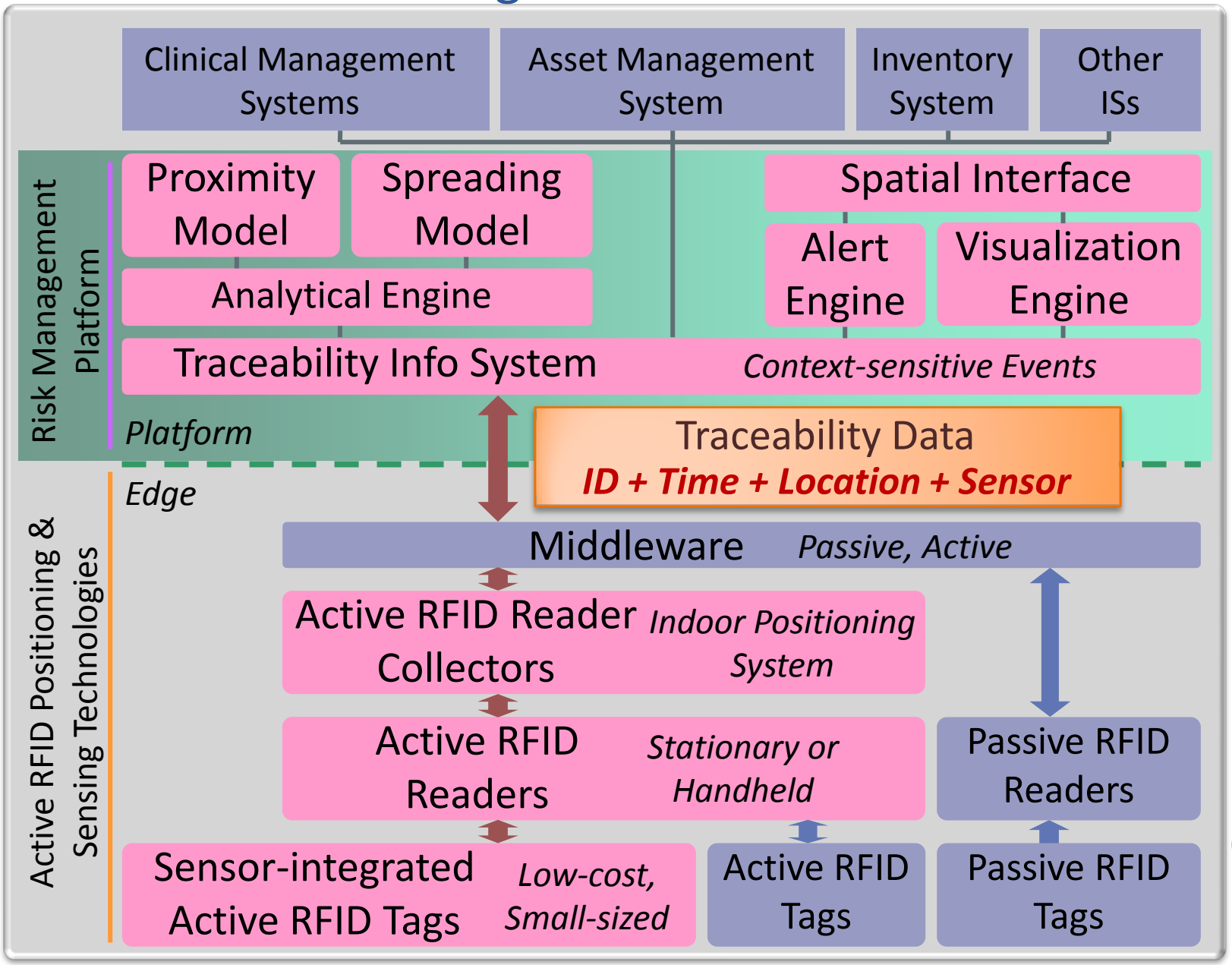
Patients

Real-time Tracking Patients' Whereabouts & Monitoring Their Health Statuses During Inpatient Period

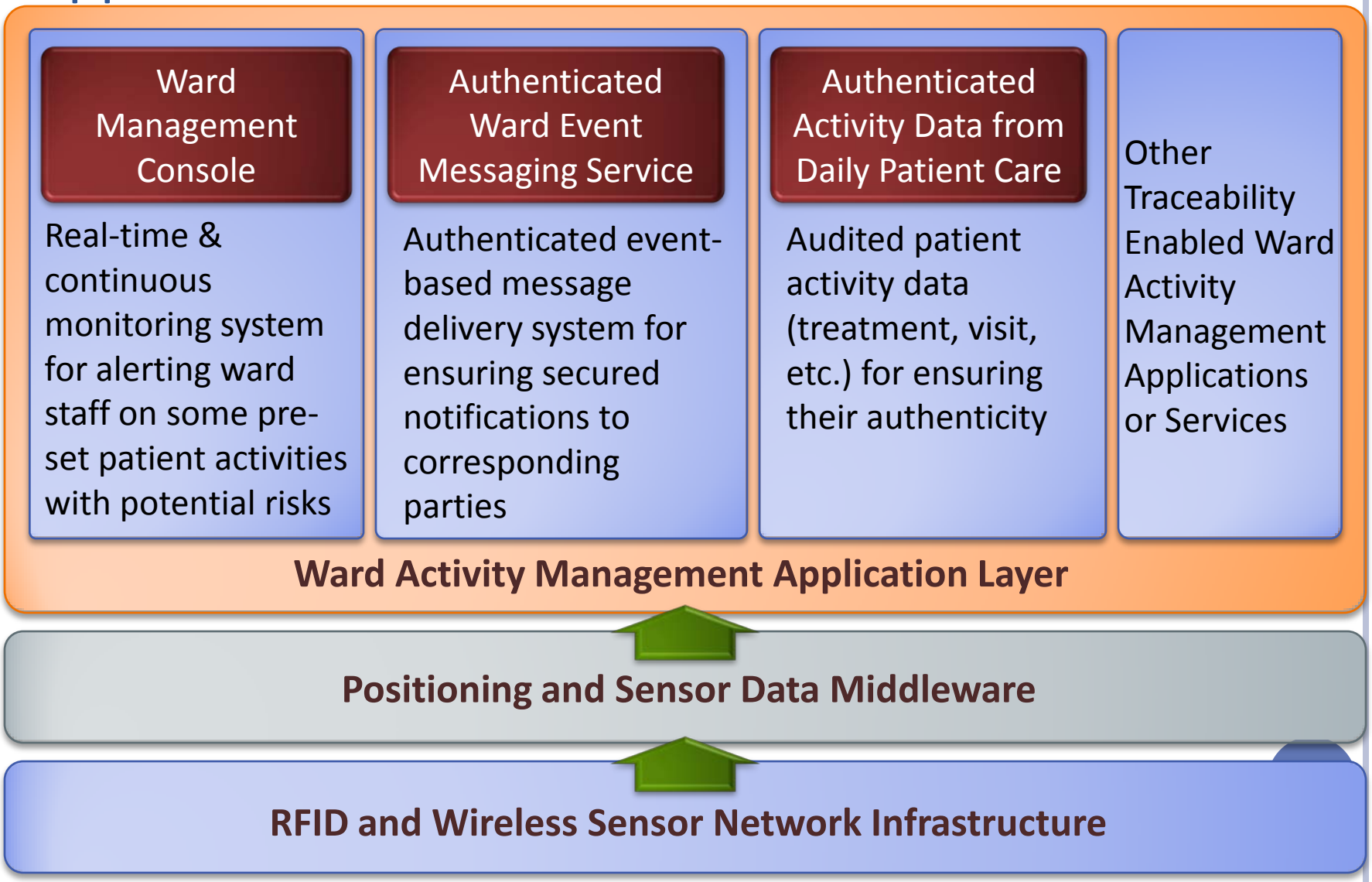
HKSAR ITF-Funded Research Projects

- ***RFID Traceability for Risk Management in Hospital*** [ITP/020/09LP], HK$11M, Sept 2009 – Nov 2011
  - Developing low-cost, positioning-capable, sensor-pluggable active RFID system for tracking people and asset
  - Enhancing hospital risk management such as infectious disease outbreaks & hospital-acquired infections
  - Leveraging RFID traceability technologies for better patient care
- **Pilot Implementation in Prince of Wales Hospital (PWH)**
  - Alerting ward staff for certain patient activities that may be at high risk if lack of timely attention
  - Tracking people interactivities for tracing possible spreading paths
- ***Prototype: RFID Traceability for Risk Management in Hospital*** [ITT/006/11LT, HK$3.3M, Oct 2011 – Sept 2012
  - Evaluating the prototype for the usage in other hospital departments
  - Enhancing RFID technologies for different usages with different packaging

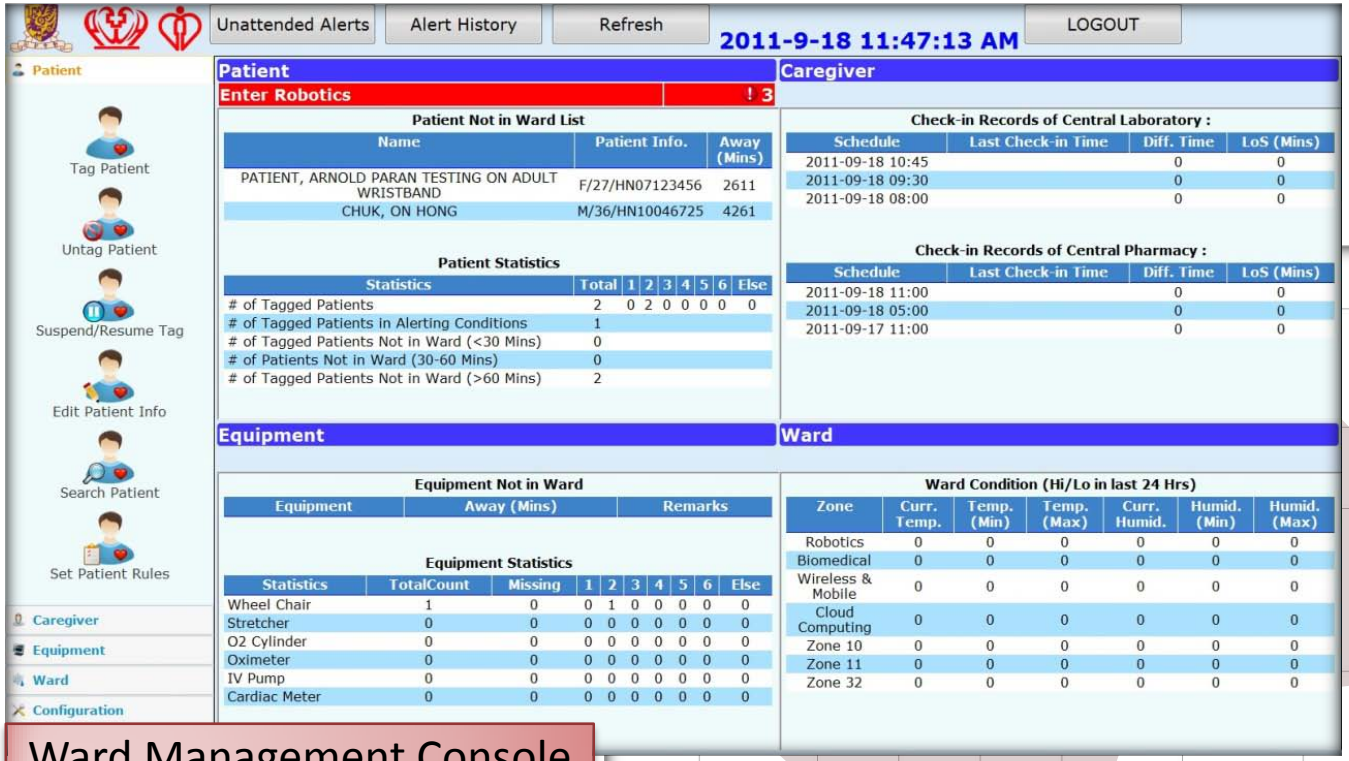
Healthcare Risk Management Architecture Framework



Traceability Enabled Ward Activity Management Applications

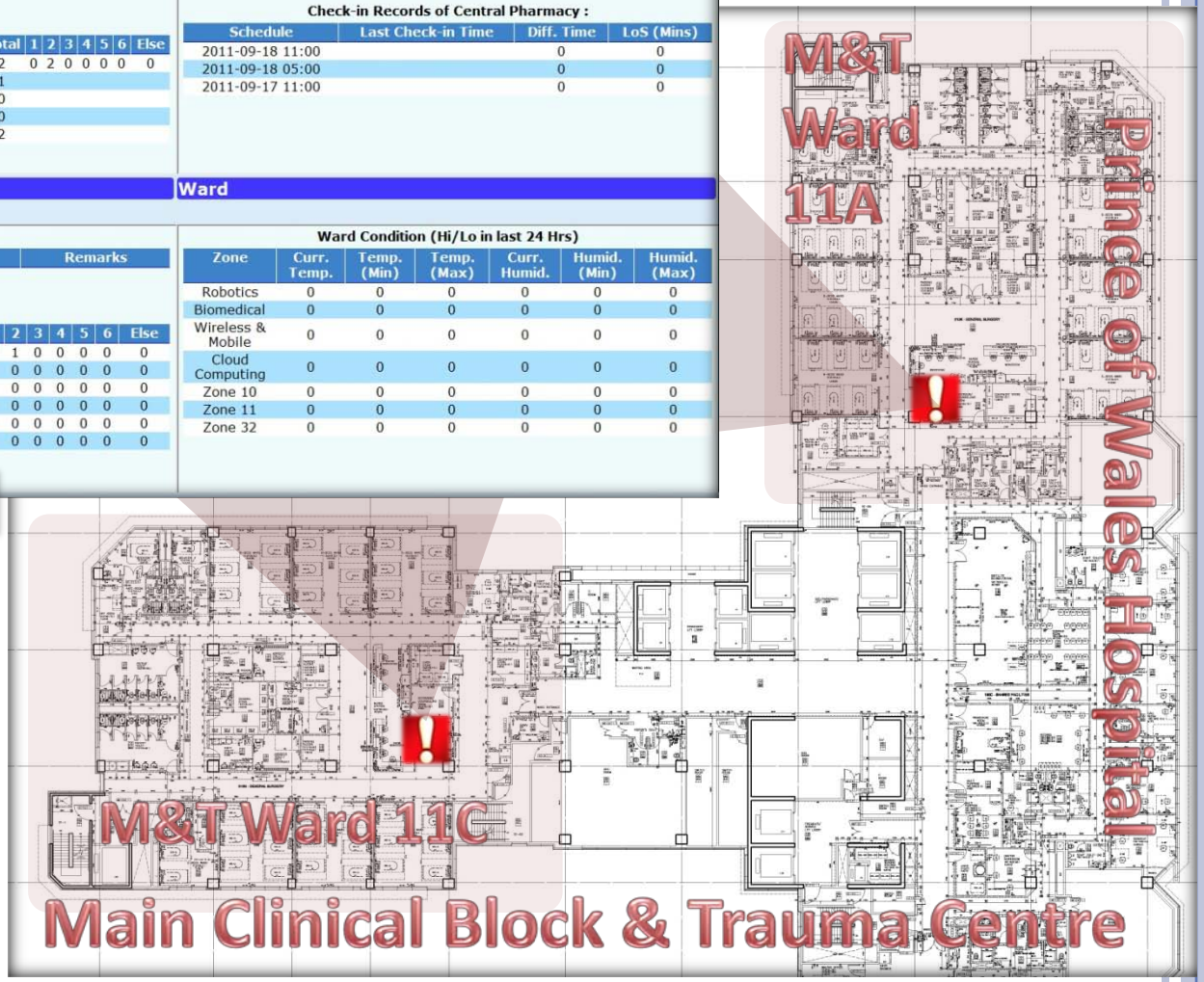


Event Monitoring for Alerting Issues that Require Attention



Ward Management Console

RFID Traceability Pilot Implementation in PWH



Context-sensitive Event Detection & Monitoring In Hospital

- Patient
- Caregiver
- Equipment
- Ward

Authenticated Ward Event Messaging Service

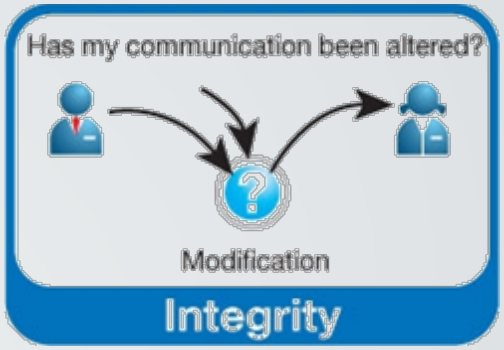
Ward Events

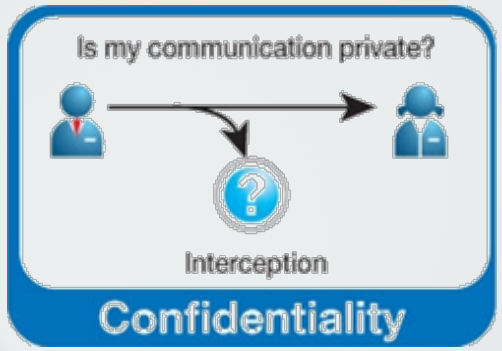
- Critical vital sign change
- Regular periodical measurement
- Unexpected incident
- Scheduled or unscheduled physician visit
- Unexpected change in environment

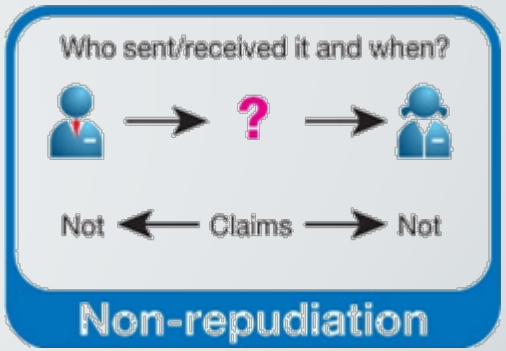
Authenticated Messaging Service

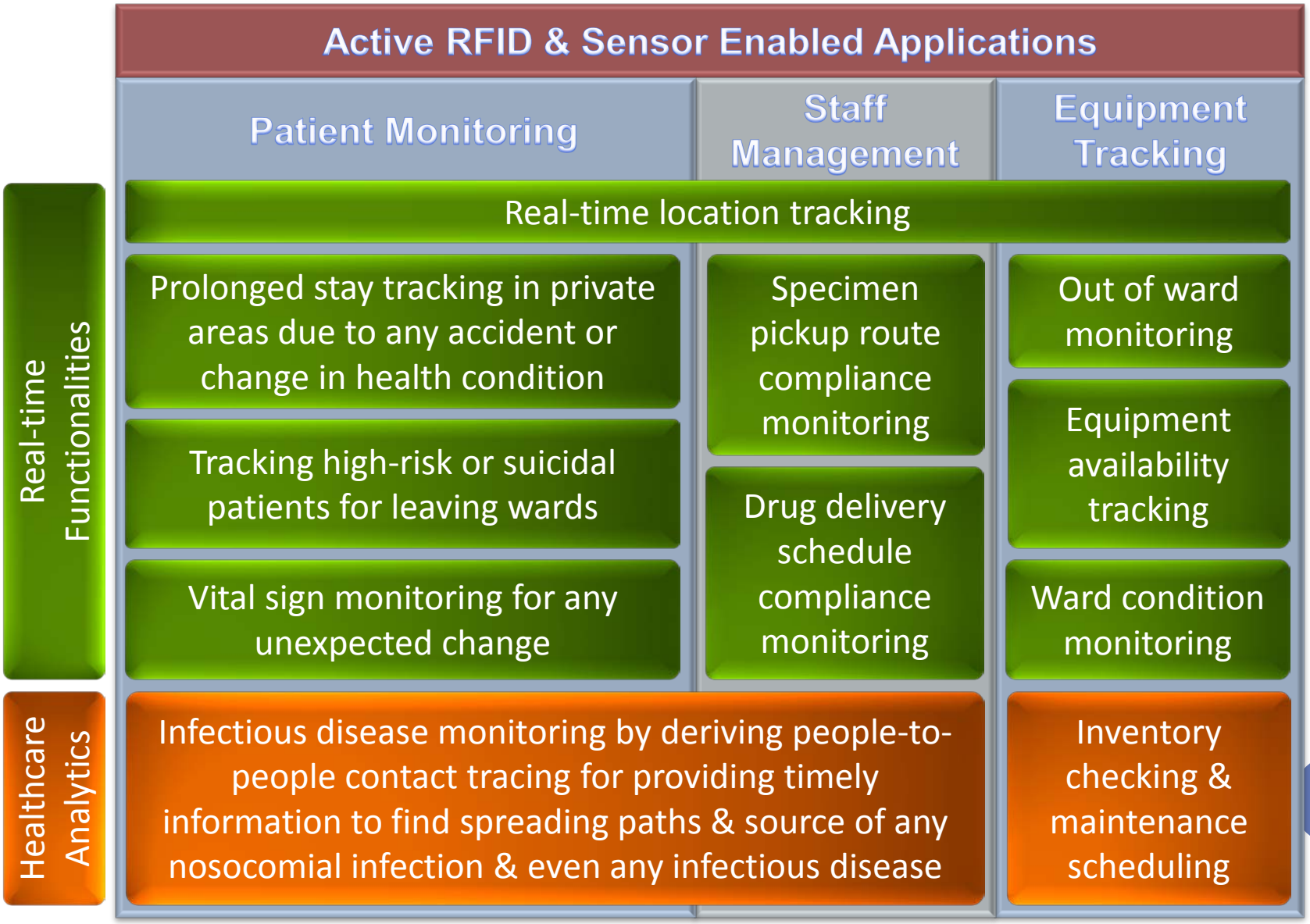
PKI: Public Key Infrastructure

Using public key cryptography & digital certificates to ensure the integrity of the content & message communications







Message Compliance to Electronic Transactions Ordinance (Chapter 553)

Context-Sensitive Event Detection & Monitoring for Enhancing Patient Care in Ward