Real Time Location Services & Asset Management
Agile organisations will embrace the reality and the possibilities

Our world is becoming **INSTRUMENTED**

Our world is becoming **INTERCONNECTED**

All things becoming **INTELLIGENT**

Leaders today are benefiting from new sensor data when combined with IBM’s operations process management, event processing & process optimisation capabilities.
Hospital Healthcare Objectives

- Reduce medical errors and risk
- Improve responsiveness and consistency of patient care
- Deliver effective care to an ever-increasing number of patients with limited resources
- Enable visibility and accountability for equipment and patients in real-time
- Provide critical information across the clinical ecosystem
- Reduce cost and complexity of multiple, disparate communication systems including WiFi, mobile, paging, nurse call, and telephony
Healthcare Real Time Location Challenges

“Hospitals misplace or lose 10-20% of an estimated $750 million of their valuable medical equipment annually, wasting staff and patient time and incurring costly replacement charges.” (Frost & Sullivan)

“Our clinicians biggest issue is access to clinical resources in a crisis situation. Today, the nurse has to leave the patient to run back to the desk to call the doctor …thereby leaving the patient” (CLIENT)

“Equipment moving from patient to patient without decontamination has become a significant issue in infection control” (JCAHO)

“Patients may experience long delays in care, which can lead to complications and even fatalities” (JCAHO)

“Although much of our focus has been on understanding the “what, why, and when” of medical errors and adverse events, The FDA is now emphasising prevention of medical errors through improved communication.” (FDA)
Gartner View: Real Time Location Services (RTLS) Opportunities in Healthcare

- Too Much Information and Not Knowing What's Important
- Multiple Versions of Truth
- Lack of Visibility & Agility
- Lack of Trusted Information
Healthcare Real Time Location Pain Points

- **Equipment Utilisation and Control**
  - Maintenance compliance
  - Calibration management
  - Equipment recall compliance
  - Regulatory compliance

- **Operational Efficiency**
  - Wasted staff time searching for mobile assets
  - Loss and theft of mobile assets
  - Inventory management
    - Inflated levels of inventory
    - Expired inventory
  - Overcharges for excess rental equipment due to hoarding of equipment

- **Patient Safety/Hospital liability**
  - Meds/Patient care administration
  - Laboratory specimen tracking
  - Patients putting themselves at risk (e.g. wandering patients)
  - Inability to alert staff of patient location for urgent needs
  - Equipment exposure may put patients at risk (e.g. infectious disease)
  - Infections/Contagious Diseases
What to Track and Why?

• **Tracking Mobile Assets/Equipment**
  – Compliance/Maintenance – beds, infusion pumps, Monitors
  – High Value – computer on wheels, laptops, projectors
  – Customer Immediacy – wheelchairs, beds, portable commodes
  – One of a kind/low quantity – bladder scanner, cameras
  – Improve billing consistency for specialty equipment - crutches

• **Tracking Patients**
  – Patient Safety
  – Infection containment
  – Patient Satisfaction - responsiveness
  – Increase throughput in Radiology, OR and ED (workflow)

• **Locating Staff**
  – Staff Safety
  – Infection containment
  – Efficiently optimise scarce critical resources (workflow)
  – Urgent Response – Cardiac Arrest
How to Track?

Tags attached to equipment and/or people transmit a unique identification signal when moving or at preset intervals.

Strategically mounted detectors "hear" the Tag signals and transmit them via an existing LAN or Wi-Fi to a central computer.

The tracking and location information is presented on computers, tablet PCs, PDAs and portable phones that are connected to the network.
Why Sub-Room Location?

Zones Within a Room

- Bed level zones
- Spot accuracy e.g. sink (to help enforce hand washing rules)
- Fall detection zone
- Neutral sub-room zone
IBM RTLS Cross-facility Deployment

Flexible Individual or Enterprise view and queries of all assets/patients/staff locations from all hospitals in real time.
Use Case Example: Equipment Found in Non-Working Order

- Nurse is in need of an IV Pump
- Searches via browser interface to find available pump
- Locates available pump in storage area
- Goes to storage area & locates proper pump but notices it is broken
- Nurse depresses button on RFID tag & moves broken pump to side
- Nurse selects another available pump & takes it for use with patient
- With button press, notification is generated & sent via email & page to appropriate Biomed team member
- At the same time an event is generated a work order is triggered in the EAM system. This alert conveys the time of the request as well as the location of the equipment in need of repair, even if it moves after the button press
- The time of the “broken equipment” notification is tracked as well as how long it takes to pick it up & the time it takes to return it to useful service
How to start an RTLS Discussion

- **Bio-Med – Director of Bio-Med**
  - How much time does your staff spend looking for assets?
  - What amount of preventative maintenance (PM) time is allocated to finding assets?
  - What % of your equipment can pass calibration, PM or other regulatory audits?
  - How is equipment located for equipment recalls?

- **Nursing – DON: Director of Nursing**
  - How much time does your staff spend searching for mobile assets?
  - How much time does your staff spend searching for patients/practioners?
  - Can nursing staff satisfaction be improved if they can find mobile assets easily?

- **CFO**
  - How much of your expense and capital budget is due to loss of mobile assets?
  - Can you account for all your assets and inventory?
  - Are you satisfied with your asset utilisation?
  - Do you have excess assets to compensate for staff inability to find them?
  - How much are you paying for additional rental equipment or rental overcharges?
Getting Started/Next Steps

• Document your as-is and to-be Goals/Metrics/Strategy
  Where can an RTLS solution help you?
• IBM can assist with an ROI tool that will help:
  Develop the Business Case
  Compare best practices
• Technology Assessment/Solution Design/RTLS Strategy Workshop
• Implementation Roadmap
Contact Information

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