

A photograph of a hospital ward with several medical beds lined up. The beds are white with blue linens. The ward has a clean, modern look with recessed ceiling lights. A person in blue scrubs is visible in the background, slightly out of focus.

Case Study >> ArjoHuntleigh

Tracking beds with SenseAnyWare[®] and Bluetooth Low Energy saves NHS money, whilst improving operational efficiencies and patient care.

Getinge Group is a leading global provider of equipment and systems that contribute to quality enhancement and cost efficiency within healthcare and life sciences. ArjoHuntleigh, a division of Getinge, offers a wide range of medical equipment and integrated solutions for patient handling and hygiene, medical beds and therapeutic surfaces, wound healing, DVT prevention, disinfection and diagnostics.

The Challenge >>

As part of a recent contract awarded by a major London NHS Foundation Trust, ArjoHuntleigh were required to pilot a real-time, automated tracking system for all the beds they provide within the hospital. There were two main objectives for this request:

- Operational – the ability to locate the right type of bed system for a patient’s particular needs in a timely manner, thereby reducing the amount of time spent by clinical staff searching for equipment, and improving patient care and experience.
- Financial – the majority of beds are on a contract agreement between the hospital and ArjoHuntleigh. The Trust is billed on a monthly cycle for only those beds ‘in use’ (that is, not in storage or being serviced). Real-time tracking will help improve billing accuracy for both parties, and reduce costs and administrative effort in managing the bed systems.

The Solution >>

Acumentive was approached to assist in delivering the bed tracking solution, based on their experience and expertise in using different types of auto-ID locating hardware with their integrated, scalable software, SenseAnyWare. Specifically ArjoHuntleigh needed a platform that could act as a ‘bolt on’ to current IT infrastructure without the need to tap into the Trust’s other systems or network, which made SenseAnyWare the perfect fit-for-purpose application.

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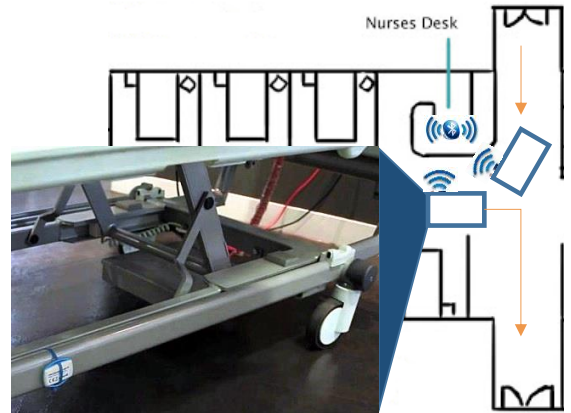
When it came to physical data capture, a combination of active and passive RFID approaches were explored, however it was quickly identified that a more innovative option would be required to meet cost and implementation criteria set by the Trust. Traditional active Wi-Fi solutions proved too costly and would take too long to implement. Furthermore, the roll-out couldn't include physical installation of tag readers due to ongoing cleaning requirements - meaning RFID was not a viable option.

As a result, Acumentive identified Bluetooth Low Energy (BLE) tags as the best hardware choice, both in terms of infrastructure and cost. The use of beacon technology in healthcare is relatively new and few options on the market had appropriate battery life in addition to withstanding the rigors of daily hospital activity, so Acumentive developed Conneq BLE tags.

Ideal for high-value medical assets, the tough long-lasting tags can be discreetly attached without the need to alter or interfere with equipment. Easily configurable and with high-concurrency, they are designed to be individually read without conflict even in areas with many tags. The standards-based Conneq tags are low maintenance and have an extended battery life, all of which reduces the total cost of ownership.

To further minimise additional infrastructure requirements, the tags are read by inserting small Bluetooth dongles into existing PCs on wards/nurses stations, which then create zones to locate beds. Mobile devices with Bluetooth capabilities can also be used, and for any areas where there is limited range, Acumentive have developed stand-alone fixed readers.

The resulting bed location data is then fed into ArjoHuntleigh's eTrack application which utilises an embedded version of SenseAnyWare. Each unique tag is registered in the software against the respective part of the bed system. The eTrack platform also manages location history and other workflow processes.



Outcomes and Future >>

In late 2015 the BLE solution went live, with 900 beds and 50 specialist therapy mattresses being tracked across wards within the hospital. In addition to the original objectives of the pilot, the history and audit functionality of the system has also delivered benefits in assisting the Trust with identifying areas for improving clinical care pathway processes around portering and movement of equipment.

As one of the first of its type initiatives using BLE in a hospital setting, the bed tracking proof-of-concept has paved the way for a wider Trust roll-out in the future, covering a range of medical assets, equipment and devices.

By continuing to harness SenseAnyWare's hardware agnostic capabilities, the Trust can capture data from multiple sources and technologies, including beyond BLE if required. Information can then be aggregated in a way that is interoperable and of meaningful use to a range of applications and departments within a hospital, both clinical and administrative.

Benefits for Trusts >>

- Enhance asset, equipment and item visibility and control
- Minimise duplicate costs and spend on missing or 'lost' equipment
- Improve recall processes and reduce risk
- Optimise whole of life asset costs
- Align asset investment and replacement strategies

Benefits for Staff >>

- Less time searching for equipment and more time caring for patients
- Reduced admin and manual 'stocktakes'

Benefits for Patients >>

- Improved care pathways
- Better patient experience; reduced waiting for specialised equipment and overall length of stay