≡ AUCXIS
RFID SOLUTIONS

> We opted for passive RFID in order to be able to track as many different types of materials in a cost-effective way.

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Mobile RFID equipment, integrated in the existing logistic trolleys

UHF RFID label pain pump

© Jim Van Loo

Localisation of medical assets with ATLAS RFID

The customer

In 2018, AZ Sint-Maarten moved from its three campuses in Mechelen and Duffel to a large new hospital in Mechelen-Noord. With **643 hospital beds** and 96 rooms in the day hospital, AZ Sint-Maarten is now the largest hospital in the region.

The challenge

The move into the new hospital was a unique opportunity for AZ Sint-Maarten to optimise the current logistic processes, including the **localisation of more than 15.000 medical materials**. In principle, all materials - such as beds, wheelchairs and blood pressure devices - have a fixed location, but in practice, goods often ended up at another location or were 'hoarded' due to a lack of time, resulting in longer search times and lost materials.

AZ Sint-Maarten was therefore looking for a system which could localise its medical materials and furniture in real time and then send the data to the ERP system.

Initially, **active RFID technology** has been considered, but it soon became clear that expensive tracing equipment would have to be installed throughout the hospital. Together with the licences for active tags, this would **involve high costs**. Consequently, AZ Sint-Maarten would only be able to trace a limited range of materials, whereas the intention is to trace as many asset types as possible, such as medical devices (beds, pumps, blood pressure devices,...), nursing material (wheelchairs, serum stands...) and even furniture.

The solution

We suggested to implement our **ATLAS Item Identification & Tracking solution with POLARIS Asset Management software**. By using **passive RFID technology**, we meet the requested requirements:
-   No expensive, fixed installations throughout the hospital but limited **mobile RFID equipment which is integrated in the existing logistic trolleys**.
-   **The cost of RFID label tags is only a fraction of the price of active tags**, so there is no limit to the number of goods to be localised.
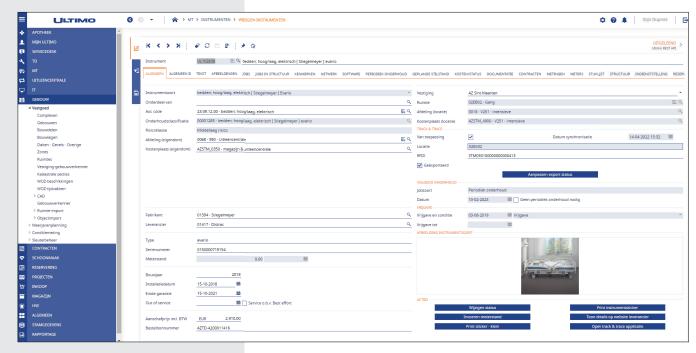
Transport step to detect extra materials

Project integration

We performed a Proof of Concept to map the different types of material (metal, textile etc.) and to select the most **suitable UHF RFID tag** for each type of material. Furthermore, the tags need to **meet the requirements of a medical environment**; they must be resistant to the frequent cleaning of the devices on which they are mounted, they must be dust-resistant etc.

Next, we integrated our **ATLAS hardware kit with mobile RFID readers and antennas in some trolleys for logistic use** (lending and drinks logistics). Our hardware uses the battery which is present on the trolleys. **When following the existing routes, these trolleys pass daily along +/- 90% of the tagged assets**: the staff do not have to perform extra tasks to identify the materials. In order to cover the remaining 10%, we also equipped one of the hospital's **transport steps** with the ATLAS hardware. These steps are used to quickly transport materials; the ATLAS step drives around at fixed times to localise medical materials.

All (6.500) door leaves in the hospital are equipped with RFID tags; **scanning is simply done from the central aisle on each floor**. The ERP system which processes the detections knows - up **to room level - where which materials have been scanned**. It can be concluded that this system yields better and more accurate results than active technology with Wi-Fi.
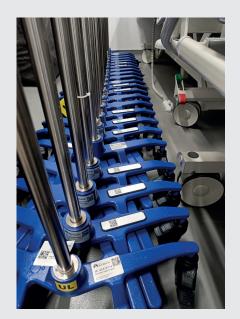
Finally, our POLARIS Asset Management software serves as an **RFID management platform** which collects and manages the data of the trolleys and exports it to the Ultimo ERP package. In order to realise this, our Aucxis middleware HERTZ runs on the ATLAS hardware kit.

Follow-up of materials via ERP package Ultimo

UHF RFID tag infusion holder

UHF RFID tag walking frame

The result

ATLAS is a cost-effective tracing solution which fits perfectly in a hospital environment, making optimum use of the existing logistic processes.

Real-time localisation and inventory of medical devices, nursing material and furniture.

Faster and more efficient functioning: the logistics hospital staff which use the trolleys automatically register the assets during their round.

Tracking of each asset during the entire life span. This history enables a **more correct planning** of the **periodic maintenance** and/or the replacement of high-quality materials.

Lower investment costs: as the materials are no longer lost, the staff get less frustrated and fewer assets need to be purchased.

Passive tags do not require batteries or maintenance.

Future

- If desired, the ATLAS architecture allows to include fixed detection points **at strategic locations**, for example in the operating room.
- In terms of costs, it is interesting to trace non-medical investment goods as well. That is the reason why the furniture was included in the scope. In the future, this can be extended with the PC park, for example.