

## Facts

**Client:**  
Maastricht Universitair Medisch Centrum (MUMC+)

**Background:**  
MUMC+ provides healthcare to children. To ensure the children a safe environment, MUMC+ was looking for a detection application to locate children in the hospital and prevent them to wander off the department.

**Project:**  
MUMC+ implemented together with IBM and MACS the products Real Time Asset Locator (RTAL) and Sonitor Ultrasound Technologies combined with IBM Maximo Asset Management.

**MACS Challenge:**  

- Implement new technology within a healthcare environment
- First installation of IBM RTAL and Sonitor Technologies
- Communicate between client and developer.
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**Solution Provider:**  
MACS, IBM, Sonitor Technologies



## Maastricht Universitair Medisch Centrum (MUMC+) extends asset management with positioning technology to provide complete healthcare

If you ask an average person to describe a hospital they will probably come close to the definition in for example the Cambridge dictionary: "A place where people who are ill or injured are taken care of by doctors and nurses." We also may be stunned by reading in the newspaper about research that delivered a treatment for a disease that seemed for a long time incurable. And to be honest for most people that is probably all they want and, hopefully, need to know about a hospital. Most of us will not consider the important part technology can play in how doctors and nurses take care of people in a hospital.

### Technology supports healthcare and its complex environment

At Maastricht UMC+ (MUMC+) they know that technology can develop the way healthcare is delivered and can give a better grasp of the complex environment healthcare operates. MUMC+ is in The Netherlands the only University Hospital that combines academic research with a regional operating hospital. In 2011 it had 715 beds and more than 6000 employees. It opts for an integrated approach to healthcare and likes to offer a maximum range of services to as many patients as possible. The project roaming detection at the child care department is one of the great examples where new technology increases the service level the hospital provides. Frank Meuwissen and Ger Schrouff (Department of clinical engineering) implemented together with MACS and IBM a solution to locate and position children preventing them to wander to areas where they are not allowed. MUMC+ is the first hospital to use this advanced solution that combines IBM Maximo Asset Management, IBM Real-Time Asset Locator (RTAL) and Sonitor Ultrasound Technology.

### The use of positioning and locating technology

"The positioning and locating technology allows MUMC+ to better grasp 'all that can be on the fly' such as devices, patients and employees," Ger Schrouff explains. It allows the hospital to improve schedules and better utilise resources. Franks Meuwissen clarifies: "A hospital possesses quite a number of devices that are used on a daily basis. A good example is infusion pumps to administer medicines. Our Board of Directors requested to investigate how the use of infusion pumps can be organised more efficiently to enable the MUMC+ to reduce the total number of infusion pumps. A better understanding of where an infusion pump is at a certain time will improve the utilisations of infusion pumps. The positioning and locating technology enables us to do so." Ger Schrouff describes that the hospital has a similar need with certain groups of patients. "When you care for children you like to know that they are in the place they need to be. You don't want to find out that a child wandered through the hospital to take the bus back home. With the roaming detection program we found a solution for unwanted situations like this."

### Roaming detection at childcare department

MUMC+ developed the roaming detection application to offer children that are in their care, a safe and secure environment. It informs the staff as soon as children leave by the hospital defined green area. "It is quite simple how the roaming detection works", Ger Schrouff situates. "As soon as the child registers for their patient number, a photo is taken and the child receives a tag to wear around the wrist. The photo, date of birth and patient number is allocated to the tag. The moment a child moves away from the dedicated 'green' location, it will come into an orange area followed by a red zone. If a child is located in the red zone a sound goes off and a message will appear on a computer screen to warn the nursing staff and security. The message states the details of the child." Schrouff explains that Sonitor's ultrasound accurately establish the location and sends off the details to IBM Real-Time Asset Locator. RTAL and IBM Maximo contain all the different classifications translating the given information into the required events. Meanwhile the staff works with a user-friendly web interface that only gives them the necessary information needed to act on the received warning. Frank Meuwissen: "Although people in general are not easily convinced to change the way they work. The staff at the children's department uses the system with ease and some even comment on how easily it is to use. The system has proven itself to the staff by highlighting that children are more often in potential risk areas than was known before."

### "A system with different types of detection"

MUMC+ has set a clear direction to keep the different software systems to a minimum within the hospital. IBM Maximo asset management, already used within the hospital for maintenance management, combined with IBM Real-Time Asset Locator for Healthcare is the basis for this solution. MUMC+ found in this combination a clear benefit. It works with a wide range of detection methods; ultrasounds, infrared, wifi, barcode, etc. "As a hospital we have a need for different detection methods, we would have limited ourselves by choosing a system that only provided one method of detection. MACS and IBM offered such a solution."

### MACS; a skilled and valuable partner

For the roaming detection project MUMC+ cooperated with IBM and MACS. IBM delivered the standard configured RTAL solution for Healthcare. MUMC+ assigned MACS for delivering and implementing Sonitor, consultancy and support during the process. "During the process MACS was a skilled and valuable partner. RTAL for Healthcare comes with a default configuration. However we had to deal with some exceptions. MACS listened and understood how to translate our requirements into the solution. Further they seemed to be an indispensable link between IBM and us. The MACS team understood what we needed and communicated on our level and the level of IBM.

### This is just the start

Already MUMC+ prepares for another project that utilises the same solution. The roaming project is considered as a pilot project to evaluate if and how technology works. MUMC+ can easily see other future uses to complement the way how healthcare is provided. Frank Meuwissen says: "We needed a system that can be used with more than just one detection technology. In the future we will be using for example Ultra-wideband, passive RFID, barcodes and WIFI. At this moment we are looking into other valuable projects such as the tracking of infusion pumps. Suppliers deliver infusion pumps with WIFI nowadays. It is clear that this is the perfect set up to utilise our pumps more efficiently."

#### About MACS:

Since 1998, MACS implements and delivers software, services, support and licenses from IBM



Maximo. Our team of certified and dedicated employees strives to deliver the maximum quality of service to our customers. IBM has valued this by awarding MACS with IBM Premium Business Partner and gold accreditation. From our five locations in Europe and the US we support our customers with implementations, upgrades and support around the world.