

CASE STUDY



NETHERLANDS



HEALTHCARE

UNIFIED ARCHITECTURE DELIVERS PLATFORM FOR HEALTHCARE INNOVATION AT LEADING HOSPITAL IN THE NETHERLANDS

**MAASSTAD
ZIEKENHUIS**

een santeon ziekenhuis



Establish a secure unified network to enable integration of specialist systems and multiplication of connected devices, creating a new digital ecosystem.



Maasstad Hospital is one of the most modern hospitals in the Netherlands and, at 90,000sqm, one of the largest in the Rotterdam area. Its ambitions aren't to be bigger and more reputable; it wants to see fewer citizens needing its services.

"The Netherlands has an increasingly ageing population, is seeing more demand for healthcare services and has limited number of healthcare resources," says Saskia van den Bos, CIO, Maasstad Hospital. "We want to be part of a system that focuses on preventative healthcare and for more healthcare to be managed in the home."

TOWARDS PERSONAL, PREVENTATIVE HEALTHCARE

This doesn't necessarily mean a diminished role for city centre hospitals but it will require hospitals to be smarter, more connected and better integrated. Maasstad is creating a site that will enable mobile working, the intelligent use of IoT and the ability to gather huge amounts of data. This data will inform operational efficiency and help pave the way for more personalised healthcare.

"We are only at the start of digital healthcare journey," says van den Bos. "Today, patients can view their health records or book appointments. In the future, data analytics will create a detailed personal approach to a patient's care. It means we have to access and evolve the digital surface of our business."

EMBRACING OPEN STANDARDS TO ALLOW MEDICAL EXPERTISE

Maasstad's digital ambitions require secure, seamless and scalable connectivity, and an environment which allows robust integration with a host of medical and healthcare platforms and third party solution providers. Open standards and interoperability are of primary importance. Its network architecture is built upon a unified Aruba network. This includes Aruba Wi-Fi 6 access, Aruba CX 8400 core and Aruba-OS access switches. Aruba ClearPass Policy Manager provides role-based

REQUIREMENTS

- Deliver a highly available mission-critical network
- Establish unified management and supervision
- Support healthcare digitisation, including mobility, IoT and IIoT
- Deliver granular role-based security users and usage
- Provide reliable platform for asset tracking and location services

SOLUTION

- Aruba CX Core Switches
- Aruba Distribution and Access Switches
- Aruba Unified Access Points with integrated BLE
- Aruba Remote Access Points (RAP)
- Mobility Controllers
- Mobility Conductor
- ClearPass Policy Manager
- Aruba Location Services
- Aruba AirWave for network management
- Aruba User Experience Insight Sensors
- Voice over Wi-Fi throughout the hospital
- Asset tracking and location services – Blyott integration

OUTCOMES

- Simplifies network management with single view of wired and wireless connections
- Enables flexibility and rapid response with secure remote working and connected, temporary facilities
- Provides a scalable platform to manage anticipated surge in connected devices and use cases
- Gains resilient, open infrastructure with the intelligence, scalability and intuitive tool sets to meet emerging healthcare needs
- Live updates with no service or performance interruptions, avoiding planned maintenance down-time



network access control and automated segmentation for the entire network, while AirWave offers unified management and supervision across the entire architecture. In addition, Aruba User Experience Insight sensors will deliver future continuous monitoring and testing of network health and performance from and user and device perspectives.

"Our previous network vendor solution would have locked us into proprietary tools and implementations," says John Verschoor, IT Operations, Maasstad. "We didn't want to go down that route. It was important for us to adopt open standards. Healthcare requires the exchange of information, with differ-



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CIO, Maasstad Hospital

ent systems talking to one another. We wanted the freedom to use specialised, best-in-class solutions wherever they were needed.”

Working alongside Deltics, a long-time service provider to the hospital, and local Aruba partner, the migration to an Aruba architecture was never considered a disruption, Verschoor adds: “Aruba understands the importance of the network to a hospital environment and that there can be no downtime. An example of the many advantages of the Aruba platform is that we can now initiate upgrades with no interruption to performance or services.”

Bringing Simplicity and Control to a Fast-Moving Environment

In an environment with many moving parts, where downtime could be life-threatening and emergencies are only a moment away, the new network gives Verschoor the thing he values greatly: reliable control.

“I’m a bit of a control freak. This is not a regular office environment. We have 16,000 network connections, from iPads to specialist medical equipment, thin clients to cardiac monitoring. We have 5,000 users, twin data centres and 300 doctors online at any time. It is complex and will only become more so.”

Aruba’s management platform enables Maasstad to monitor the performance of the network, while ClearPass simplifies and automates the orchestration of security and NAC for a very complex network and range of devices and things. “Aruba provides simplicity and control,” he says.

For John Verschoor and his team, simplified and automated segmentation of a very complex network is critical. They can now, reliably and securely onboard mission-critical systems such as an Ascom nurse call and management platform for their intensive care unit, while confidently profiling and assigning approved virtual reality glasses use for comforting dialysis patients during their treatment.

Medical equipment are increasingly network connected and we need to allow them on our network. But they can potentially pose a threat to the network if not properly managed and monitored. “Manually profiling and assigning such a diverse range of equipment to specific network segments is impossible,” says Verschoor. “We’re extremely pleased with how we can now define our security policies, apply them to easily profiled devices and assign them to their appropriate network domain.”

Open and Secure Integration with Third Parties

The platform will also enable another feature, crucial to the efficiency of any large-scale hospital: asset tracking. Integrating the Blyott Real-time Location Services (RTLS) with the Aruba architecture, Maasstad plans to be better able to track valuable healthcare assets, be they beds, monitoring equipment or medication dispensers. When implemented this will result in less time spent searching for equipment, and faster treatment for patients. It will also help prevent equipment loss and keep track of regular maintenance.

The project involves Maasstad using the RTLS solution to log every asset online; the Aruba controller is then configured to send BLE packets to the Blyott cloud. The asset’s location is then tracked via the Bluetooth beacons in the Aruba access points, and marked on a map viewed via the Blyott app. Users can search for a specific asset or asset type.

Open, secure integration with third party solutions providers is key to helping Maasstad adapt and evolve. The adoption of Voice and Calling over Wi-Fi replaces an old DECT system a decade ago. The hospital had invested and put a lot of human effort in this new environment and it was important that it integrated seamlessly with their new Aruba Wi-Fi. Again, this saves costs and increases the ROI on a new network.





USING THE NETWORK TO ENABLE NEW WAYS OF WORKING

Like every healthcare provider, Covid-19 has placed unprecedented strain on Maasstad's resources. Within days the hospital had to create 'clean' zones, set up temporary facilities and enable many staff to work remotely for their safety and to ensure business continuity.

"This wasn't just admin staff, we enabled our radiologists to work remotely by setting up Aruba Remote Access Points at their homes," says Verschoor. "We turned Porta Cabins into vaccination centre and moved the IT service desk to remote working, all connected to the network, all with the correct security policies applied and the required administrator visibility."

At a moment of national crisis this has helped limit the number of staff needed on site and allowed up to 30% of consultations to be conducted remotely. Verschoor says many of these changes could be long-term, particularly as Microsoft Office365 becomes a workplace standard.

"Anything that helps reduce the need for patients to travel to the hospital is a good thing. And the more patients and doctors experience online consultations the more commonplace it becomes," he says.

For Saskia van den Bos the possibility of remote working also opens up the recruitment market. It will be easier for Maasstad to offer more flexibility to its workforce and working conditions. This makes you an attractive employer for scarce highly skilled technical staff.

ENCOURAGING INNOVATION TO MOVE HEALTHCARE FORWARD

The priority for any hospital is business continuity but this should not mean Maasstad avoids risk-taking, says van den Bos. "There will always be a friction between running a business and changing a business – and when those changes are dependent on your infrastructure there will be risks involved.

In this instance, 'innovation' can apply to new medical technology, resource scheduling, asset tracking or building management. "We have an ambitious medical team that is always thinking of new ideas," says van den Bos. "No is not an answer, only how."



The open Aruba architecture enables Maasstad to integrate new medical start-ups or test new approaches in-house. Access to the network is tightly governed, the hospital is clear on its GDPR data privacy requirements, she adds: "We have the frameworks in place. It's up to us to assess the risks. The Aruba network provides a platform to mitigate those risks."

REIMAGINING THE HEALTH ECOSYSTEM

"Our future will involve more connections to the network and a greater use of cloud-based applications. We won't need to build our own systems if there are specialist providers. So our network has to be fast, reliable and safe," says van den Bos. "What I then need is a solid, strategic partner. I need a partner that understands that when something goes wrong with the network, they need to jump in and do what it takes to ensure business continuity. We have that with Aruba."

For Verschoor, the immediate focus is on bedding in the Aruba network. Longer term, he wants to explore broader use of Aruba UXI to optimise the device and user experiences. Conversations around Aruba Central are likely. "As we move to the cloud-based applications, the ability to manage the network from anywhere is certainly attractive."

This is an exciting moment for healthcare, van den Bos adds, an opportunity to reimagine the way health is managed for all of us: "You cannot build a hospital on every street corner and no one hospital can treat everyone. We have to work together."