



MEDIZON

Smart AEDs increase the chances of survival in the event of acute heart failure

The customer

Medizon imports and installs AEDs in the Netherlands and continuously works on optimising the use of these life-saving devices.

The requirements

It is vitally important that AEDs work without fail. Medizon went on the hunt for digital opportunities to monitor AED cabinets online and in real time.

The solution

Medizon is working to make AED cabinets smart. By linking sensors installed in the cabinets to the LoRa network, Medizon can monitor the devices 24/7.

The result

Because there is always a functioning AED present, HartveiligWonen's community responders can get to the scene faster and thus save more lives.

Marcus Flipsen, Director of Medizon, explains how the company – in cooperation with HartveiligWonen – is utilising KPN's LoRa technology to make AED cabinets smarter and how taking advantage of the Internet of Things (IoT) increases the chance of survival for people who experience a cardiac arrest.

Every minute counts!

'Each year 17,000 people in the Netherlands suffer a cardiac arrest. In the event of acute heart failure, it is critical to act quickly by attempting resuscitation or defibrillation. The chances of survival decrease by 10% after every minute. After six minutes, the chances of survival are zero. An ambulance takes an average of 10 to 15 minutes to arrive at the scene, which is

too long to save someone in a cardiac arrest. That's why we depend on community responders.'

'After six minutes, the chances of surviving a cardiac arrest are zero'

Automated External Defibrillator (AED)

'The main function of an Automated External Defibrillator (AED) is to deliver an electrical shock to the heart in order to restart it. You've probably seen those television hospital series where someone shouts 'Clear!', everyone steps back and the

patient is given an electroshock using some paddles. In reality, it is a little less dramatic but the principle is the same.'

The role of community responders

'HartveiligWonen has built up a network of community responders, who attend the scene of an incident before the ambulance arrives. HartveiligWonen recruits and supports volunteers with AEDs to deliver resuscitation within 6 minutes across the whole of the Netherlands. When someone nearby experiences a cardiac arrest, community responders receive a notification by text message or via the app and head to the scene with an AED as soon as possible. When the ambulance arrives, the paramedics then take over from the community responders.'

Monitoring the condition of an AED

'An AED's condition is determined by factors such as the battery and electrode status. Temperature and humidity have a major influence on those components and could even result in the AED failing. That's why Medizon monitors these two factors using LoRa technology. Thanks to the technology, we can also check whether an AED is there or not and of course we monitor the AED itself for alarm notifications. It would be terrible to think that a community responder couldn't use the device. So to avoid such a situation, we originally planned to carry out a visual inspection every day. But we wanted to automate the inspection and monitor the device online and in real time 24/7.'

'Thanks to KPN's LoRa technology, we can make our devices smart'

Smart AED cabinets thanks to KPN's LoRa technology

'Thanks to KPN's LoRa technology, we can make our devices smart. Our AED cabinets are equipped with a sensor, which is connected to KPN's LoRa network. And because this network is reliable, fast and economical, we have been able to take advantage of the Internet of Things. We are now able to monitor AEDs accurately and remotely. We can see whether the AED is there or not, whether the battery is fully charged and whether

the air humidity and temperature in the cabinet are at the desired level.'

'Thanks to this innovation in healthcare, community responders can get to the scene faster and we can really save lives'

The result

'This means a community responder never has to wonder whether an AED will be there or whether it will work. Right now there are 1,000 AED cabinets equipped with LoRa technology. Our goal is to connect all 50,000 Defibtech AEDs we have supplied across the Netherlands because, thanks to this innovation in healthcare, community responders can get to the scene faster and we can really save lives!'

What next?

'Currently, responders receive a message with a code that opens the AED cabinet. This wastes valuable time. That's why we are in the process of testing whether the cabinets can be opened temporarily when an incident occurs, so no time is wasted trying to open the cabinet. The technology to make this happen already exists. It's just a matter of optimising and upscaling. We can't say this often enough, but every second counts!'

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