

# Perimeter fences are getting more smart

Imagine being able to detect if an intruder is attempting to breach the perimeter of a property in a remote location? Imagine knowing that your fence can detect the intrusion, notifying the authorities and preventing the intruders from getting any closer to their end goal?

In many sectors across South Africa and the world, it has become increasingly difficult to protect and monitor remote areas, preventing unauthorised access to protect both the employee and the intruder.

People break in, sometimes without realising the danger, and the business bears the cost and the risk. But this scenario is starting to change. Low-cost technology, the inventive use of the Internet of Things (IoT), and access to low-bandwidth solutions have meant that fencing isn't just fencing, not anymore. It's a defence.

"The first line of defence for any physical security system is the perimeter," says Phathizwe Malinga, managing director of SqwidNet. "It can be extremely expensive to build extra infrastructure around the perimeter to protect it – a fence to protect a fence if you will. This often means you have to pay for extra services designed to support the security provided by the boundary and it starts to feel like a redundant circle of cost and complexity."

The problem is that often companies don't know that their perimeters have been breached until it is too late. They can remain undetected and put people at risk. This is particularly true in remote, rural locations across South Africa where vast distances and limited communications make it difficult to consistently monitor perimeters and access.

## Addressing the problem

Recently, SqwidNet collaborated with Teqcon, a South African mechanical and electronic design company, to address the problem at the point of origin.



Teqcon specialises in the design and development of perimeter detection devices and they have worked with SquidNet to launch an intelligent, wireless perimeter solution that uses Sigfox to communicate. Called Wi-i, the solution is ideally suited to adding on that extra intelligent layer to sites that need extra security such as prisons, airports, nuclear facilities, military bases, residential estates and industrial complexes.

“The Wi-i Tremoli and the Wi-i Deflexi are battery-powered, wireless, and simple to install,” explains Francois Snyman, Teqcon. “They need zero infrastructure to be installed and their batteries last up to four years, so they are resilient and reliable as well. The Tremoli unit measures the amount of energy that a structure experiences when someone is trying to cut a fence or climb over it. The Deflexi unit is designed to monitor the cutting or spreading of electric fences.”

Both solutions basically sit at intermittent points along the fence and alert the relevant authorities when there is unusual activity along the perimeter. Each one works in a different way, so they are suited to different applications and installations, and each one uses the Sigfox network to communicate across the system.

In the past, they could only connect their devices using Teqcon’s proprietary wireless network, or GSM (when available). Now they can use Sigfox for completely independent communication, especially in remote areas where other networks are not available.

“When Teqcon started work on the project, Sigfox wasn’t available in South Africa,” explains Malinga. “Now, using the Sigfox network, they can completely eliminate the need for base stations out in the field and the need to implement and maintain a GSM network. This means no unnecessary GSM network subscription costs or coverage limitations, and fewer base station installations, significantly reducing the cost of the solution to client and potential use cases.”

The Sigfox network has reduced the operating and installation costs, improved the accessibility and capabilities of the system, and allowed for deeper integration across different sites and applications across the country. The solution helps to address a challenging issue in South Africa – the remote control of rural sites – and helps the business protect their assets against intruders.

Some sites are protected by perimeter fencing because access is dangerous, and this ensures that people are prevented from making a life-threatening mistake. It also allows for the business to minimise investment into extra layers of external infrastructure as it can be simply added onto existing fencing and adapted to suit specific requirements.

“Collaborating with SquidNet in embedding the Sigfox solution into both Wi-i Deflexi and Wi-i Tremoli has ensured that we can provide smart, relevant and absolutely secure solutions to the market,” concludes Snyman.

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