



Meerkat Securi-Cable

PROTECTING SOUTH AFRICA'S UNDERGROUND ASSETS



SECTION 01

Overview





COMPANY BACKGROUND

Who we are

Seed Africa Innovations was established in 2017 to design anti-cable-theft systems. This was then expanded to offer pipeline companies the same protection. It is now only involved in research and development.

It is important to note that Meerkat, specifically, is a standalone product that requires a dedicated back-end support system. This system consists of a monitoring and support platform that can integrate with a number of armed reaction companies.

The company's primary assets are its intellectual property in these technologies.



MARKET CONTEXT

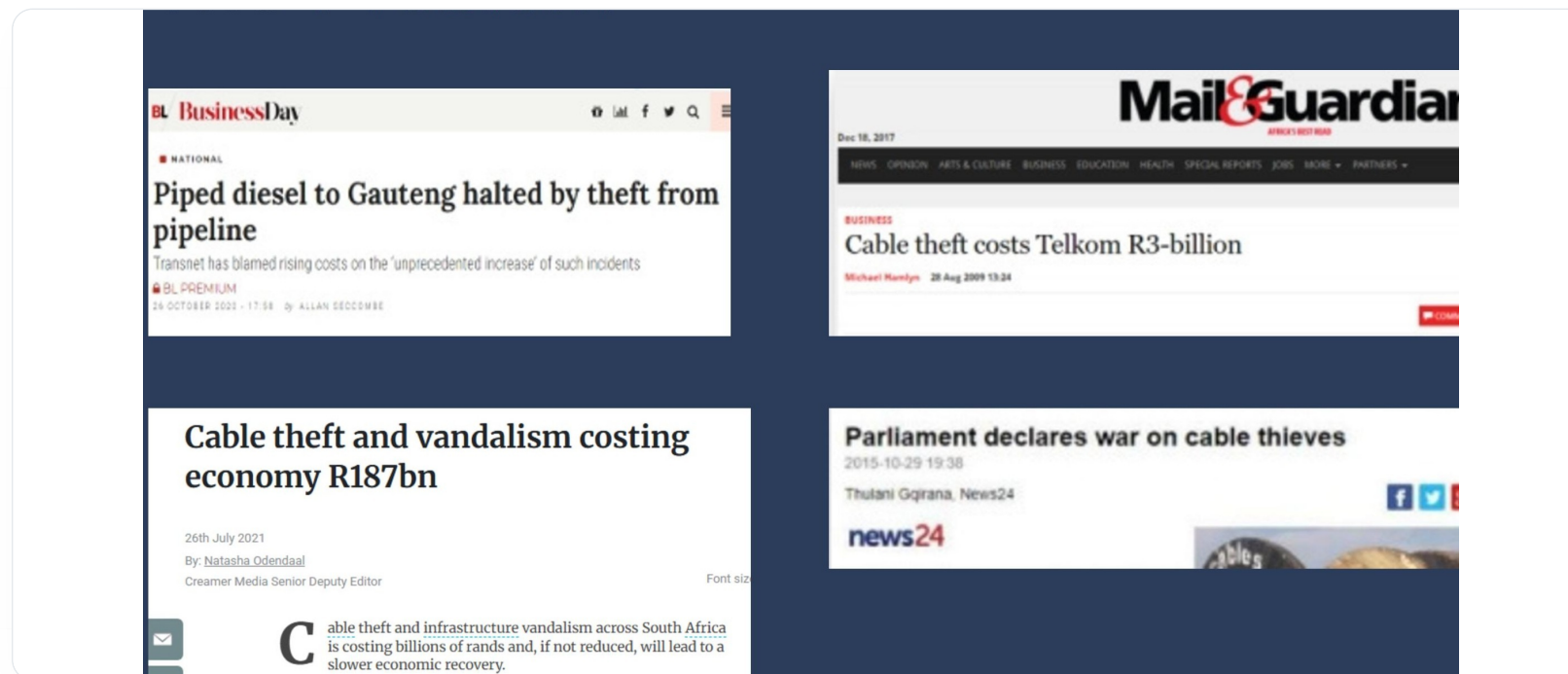
The Problem

- Cable theft costs South Africa **billions each year**, resulting in massive economic losses, productivity disruption, and infrastructure damage
- Pipeline theft is increasing rapidly, with fuel extraction and illegal tapping causing environmental damage and financial loss. Transnet alone reported 26 pipeline breaches in 2020, losing more than **60,000 barrels of crude oil** worth over R50 million
- Theft methods differ for low-voltage vs medium/high-voltage cables — **Securi-Cable** provides passive protection for low-voltage; **Meerkat** provides active protection for medium/high voltage + pipelines
- Private contractors & commercial parks also experience costly disruption from cable theft
- 2,100 km of cable produced annually in SA — 208 km stolen each year — 9,000+ km existing buried cable needing protection — 3,800 km Transnet pipeline network needing protection



IN THE MEDIA

The Problem — as reported



SECTION 02

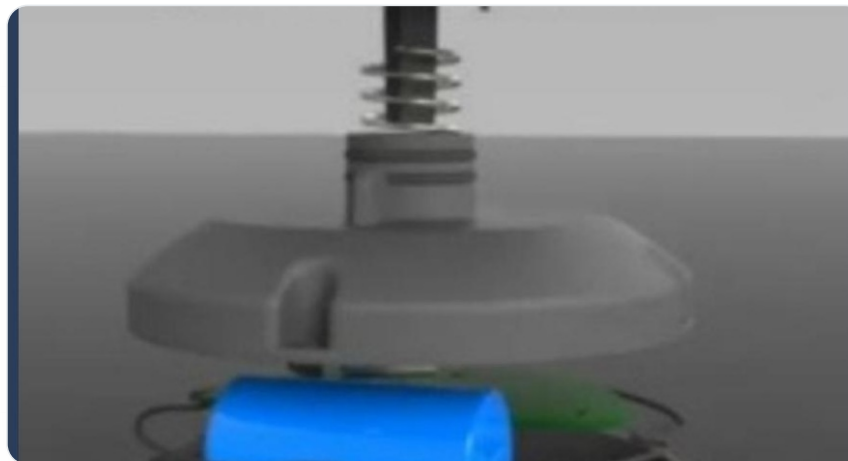
Product Offering



MEERKAT

Product Description

- 15-year battery shelf-life, 12-year minimum operational life
- Electronics potted in resin → fully waterproof
- 3 design iterations for pressure disc optimization



Exploded view of Meerkat



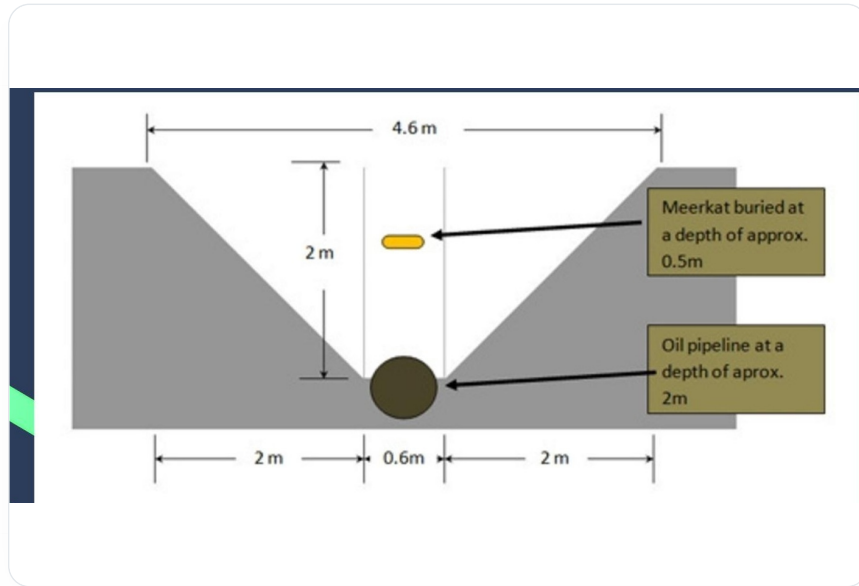
Meerkat prototype housing

HOW IT WORKS

Meerkat System

Meerkat is an early-warning buried sensor that activates long before thieves reach underground assets. The Meerkat is buried at a depth of 400–500 mm above the copper cable or pipeline (medium- or high-voltage cable is buried at an average depth of 1 m).

When soil is removed, the decrease in pressure activates the device, sending an SOS message with exact GPS coordinates — giving armed response teams a significant time advantage.



youtu.be/Rxeyjzy7wls

Meerkat Spacing

The Meerkat sensor system can be buried at varying intervals depending on the risk level and soil conditions, with closer placement in high-risk areas.

The necessary distance between units is influenced by the soil type and its angle of repose; for instance, in softer or 'loose' soils/sand, the high angle of repose allows for wider spacing.



PROCESS

How Meerkat Works

1

Meerkat is buried 400-500 mm above pipelines or high-value cables

2

As thieves redig the trench, at least one device among the spaced units activates ($\pm 3\text{m}$ apart in soft soil)

3

The GPS signal is triggered long before the cable is reached

4

Drones are dispatched to units to provide aerial visuals before response teams arrive

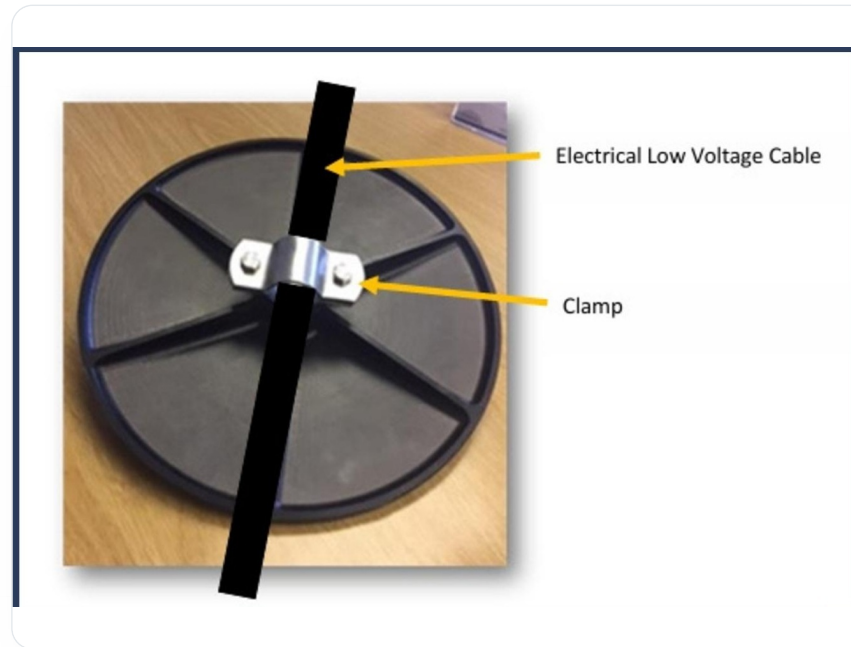


This will greatly assist in prosecution of thieves, as well as informing the reaction team of what to expect. Drones can also cover vast distances in a relatively short time.

SECURI-CABLE · ALPHA 2

Securi-Cable Test

Securi-Cable Anchor prevents low-voltage cable from being ripped from the ground using a vehicle — a common theft method. Anchors are installed every 5 meters along cables, making mechanical extraction impossible. Alpha 1 and Alpha 2 prototypes were tested; the nylon-based Alpha 2 demonstrated high strength and practicality for large-scale rollout.



SECTION 03

Testing



FIELD TRIAL

Testing & Validation



Meerkat Test — The Meerkat system was approved for an initial test project for the City of Cape Town’s Electrical Department. An ‘Alpha Prototype’ unit was buried above an underground cable along the M5 highway for 10 days. The test involved a simulated cable theft performed by City of Cape Town technical staff in conjunction with ADT’s Tactical Response Unit, which was kept unaware of the exact time of the simulation.

The unit’s PCB was programmed to send an ‘SOS’ data message directly to the Tactical Response Unit, and the primary goal was to measure response time. From activation until the response team arrived on site, the total time elapsed was **10 minutes**.

DOCUMENTATION

Testing Videos

youtu.be/wOmeAhgqAbs

NEXT ITERATION

Improvements

- GSM/GPS too expensive & power-heavy
- Sigfox/LoRa → cheaper, lower running cost, low power consumption
- Cloud-stored pre-mapped GPS coordinates reduce hardware cost



Thanks!

Do you have any questions?