Meerkat

Underground cable and pipeline protection, engineered and owned by Nucleus.

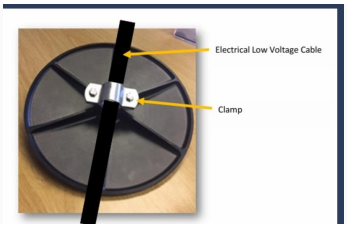
Cable and pipeline theft is one of South Africa's most costly infrastructure problems — and one that conventional security can't reach, because the threat starts underground, out of sight. Meerkat is Nucleus's answer: a system built to stop theft at the point of extraction and to alert response teams before real damage is done.

R187bn	208 km	9,000+ km	3,800 km
estimated annual cost of cable theft & vandalism to the SA economy	of cable stolen every year, out of 2,100 km produced annually	of existing buried cable in South Africa needing protection	Transnet pipeline network exposed to the same risk

Two components, one system

PASSIVE PROTECTION

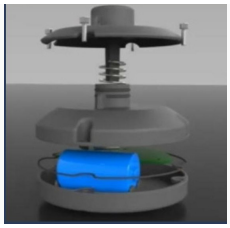
Securi-Cable



Anchors installed every 5 metres along low-voltage cable, physically preventing the most common theft method — ripping cable from the ground with a vehicle. Mechanical extraction becomes impossible.

ACTIVE PROTECTION

Meerkat sensor



A buried, battery-powered sensor for medium- and high-voltage cable and pipelines. Buried 400–500mm above the asset, it detects the change in soil pressure the moment digging begins and sends an SOS with exact GPS coordinates.

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From first dig to response, in four steps

1

Meerkat is buried 400–500mm above the pipeline or high-value cable it's protecting.

2

As thieves redig the trench, at least one unit among the spaced sensors activates — placed roughly 3m apart in soft soil.

3

The GPS signal triggers long before the cable or pipeline itself is reached.

4

The response team is alerted with exact coordinates — with drone support available for aerial visuals before they arrive.

Field-tested with the City of Cape Town

Meerkat was approved for an initial test project with the City of Cape Town's Electrical Department, run in partnership with ADT's Tactical Response Unit and Fidelity Services Group. A prototype unit was buried above an underground cable along the M5 highway for 10 days, with a simulated theft carried out by City technical staff — the response unit wasn't told the exact time of the test.

From the moment the unit activated to the response team arriving on site, the total elapsed time was:

10 minutes.

Built for the long term, underground

15 yrs	12 yrs	100%
battery shelf-life	minimum operational life	resin-potted electronics — fully waterproof

Built to scale

The next iteration of Meerkat moves from GSM/GPS to Sigfox/LoRa connectivity — lower running cost and lower power consumption — with pre-mapped GPS coordinates stored in the cloud to reduce hardware cost as the system rolls out at scale.

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