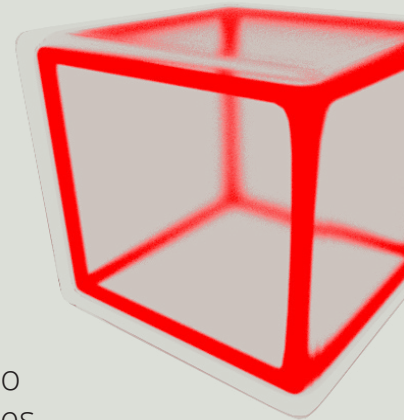


spotOn[®] AE+CP



Combination of spotOn AE (Acoustic Emission) and spotOn CP (Cathodic Protection). It has been developed as a specialist product to detect **third-party damage** and **theft** along petrochemical pipelines



Acoustic Emission (AE) is the most flexible NDT method.

Normally used for screening of large structures, A³ Monitoring utilises AE for monitoring of structures.

AE can be used for monitoring the 'acoustic activity' generated while hitting the pipe. Both accidental (digger hitting pipe) and intentional (theft attempt) third party interference are detected using spotOn AE and appropriate alarm is sent to the asset owner or pipeline operator.

spotOn[®] AE

HYBRID SOLUTION for BEST PERFORMANCES

spotOn[®] CP

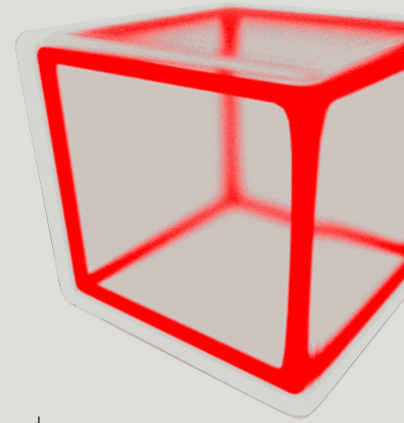
spotOn CP identifies external threats with sudden change of voltage due to coating damages.

Utilising Cathodic Protection monitoring, spotOn can detect when and where an illegal derivation has been attached.

spotOn CP checks voltage and alarm immediately if a value exceeds a user threshold. This communicates using mobile, satellite or wifi comms. Data is automatically stored and can be accessed at any time via Internet.



spotOn[®] AE+CP

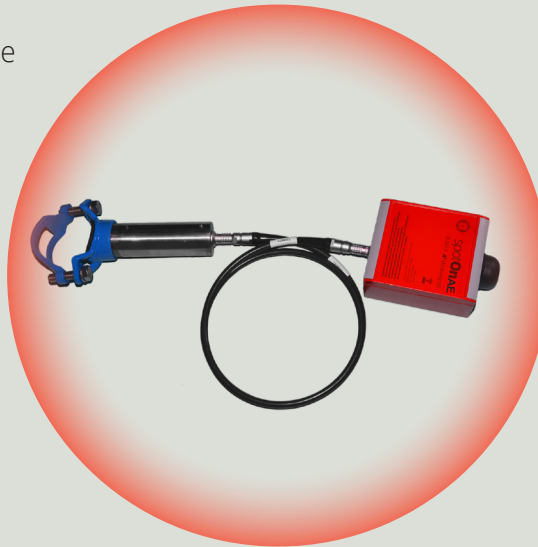


Accurate

- Third party interference detected.
- False calls avoided

Works Everywhere

- -10°C to 70°C
- IP67 to IP69K
- GSM, WiFi or satellite link
- Submersible up to 300 metres
- Intrinsically safe tablet datalogger



Robust

- Withstands harsh environments, and can be buried or submerged

Cost effective

- Retrofit only at specific location.
- Long range (about 300 m)

Real-Time

- Data is available in real-time without user intervention
- Warnings are dispatched automatically when suspicious activity occurs

spotOn **AE + CP** detects third party damages:

AE identifies **events** generated while mechanically interfering with the pipeline

AE detects Acoustic Emission **noise** generated by fluid flow into the illegal branch

CP recognises anomalous variations in **voltage** caused by breakages in coating and by the presence of illegal derivations



spotOn AE + CP TECHNICAL & OPERATING SPECIFICATIONS

AE probe type	20kHz – 100 kHz dry coupled
pipe diameter	3" (DN90) and above
pipe nominal wall thickness	1/8" (3.175mm) to 2" (50.8mm)
pipe temperature	-10°C to 70°C
battery	lithium metal, located in control unit away from pipe for easy replacement
data management	data delivered via shieldCube platform, or via designated private server
data analysis	state-of-the-art shieldCube statistical, with custom-defined fixed and intelligent threshold
probe ingress protection	IP68 — IP69K optional, submersible up to 300 m
control unit storage capacity	in excess of 1 million readings, equivalent to 12 readings per hour over a 10 year period
data visualisation	active visualisation on Google Maps