

# ARTEMIS CABLE & PIPELINE TRACKING



ENGINEERING  
EXCELLENCE  
UNDERWATER

# ARTEMIS SMD INNOVATION

PROVEN TECHNOLOGY  
ENABLING CABLE AND  
PIPELINE TRACKING  
THROUGH PASSIVE  
AND ACTIVE SYSTEMS

PASSIVE SYSTEM  
UP TO 10M DETECTION RANGE

ACTIVE SYSTEM  
UP TO 5M DETECTION RANGE

LIVE DATA SURVEYS  
FASTER, CLEARER,  
REAL-TIME DATA

VERSATILE SYSTEM  
USE ON AUV, ROV & TRENCHER

NON-INTRUSIVE  
WORK WITHOUT INTERRUPTION

# NEXT GENERATION SURVEY & TRACKING TECHNOLOGY

Artemis represents a huge leap forward in cable and pipeline tracking technology. Like its namesake, Artemis is an unrivalled hunter, outperforming the next best solution in terms of depth, orientation and accuracy, all without the need for a live cable.

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→ LIVE SURVEYS CABLES AND PIPELINES DEEPER THAN ANY EXISTING TECHNOLOGY

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→ ACCURATELY LOCATES AND ORIENTATES UNPOWERED, POWERED AND FAULTED CABLES

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→ SURVEYS CABLES FASTER THAN STANDARD TRACKING TECH

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→ SIMULTANEOUS CABLE TRACKING AND BURIAL DEPTH ASSURANCE

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→ PLUG AND PLAY FOR ANY ASSET/VEHICLE

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→ REAL-TIME, LIVE DATA

SMD, a world leader in subsea vehicle manufacturing & seabed intervention specialist, has joined forces with Optimal Ranging Inc. to bring to market this unique range of cable and pipeline tracking and survey technologies.

Artemis Passive has been designed to detect and survey live or toned cables. Artemis Active has been specifically developed to address the detection and tracking issues of multi-pass trenching and surveying of cables and pipelines during installation, repair and when the power is off without the need for a tone.

Trenching operators can now have the ultimate confidence that they will be able to perform single or multi-pass jetting operations without a break in service.

Surveyance and cable repair companies can now find buried, broken and abandoned cables without the need for passive residual tone.

# ARTEMIS CABLE + PIPELINE TRACKING: OVERVIEW



# ARTEMIS RANGE AVAILABLE TO PURCHASE & HIRE

## FIND IT

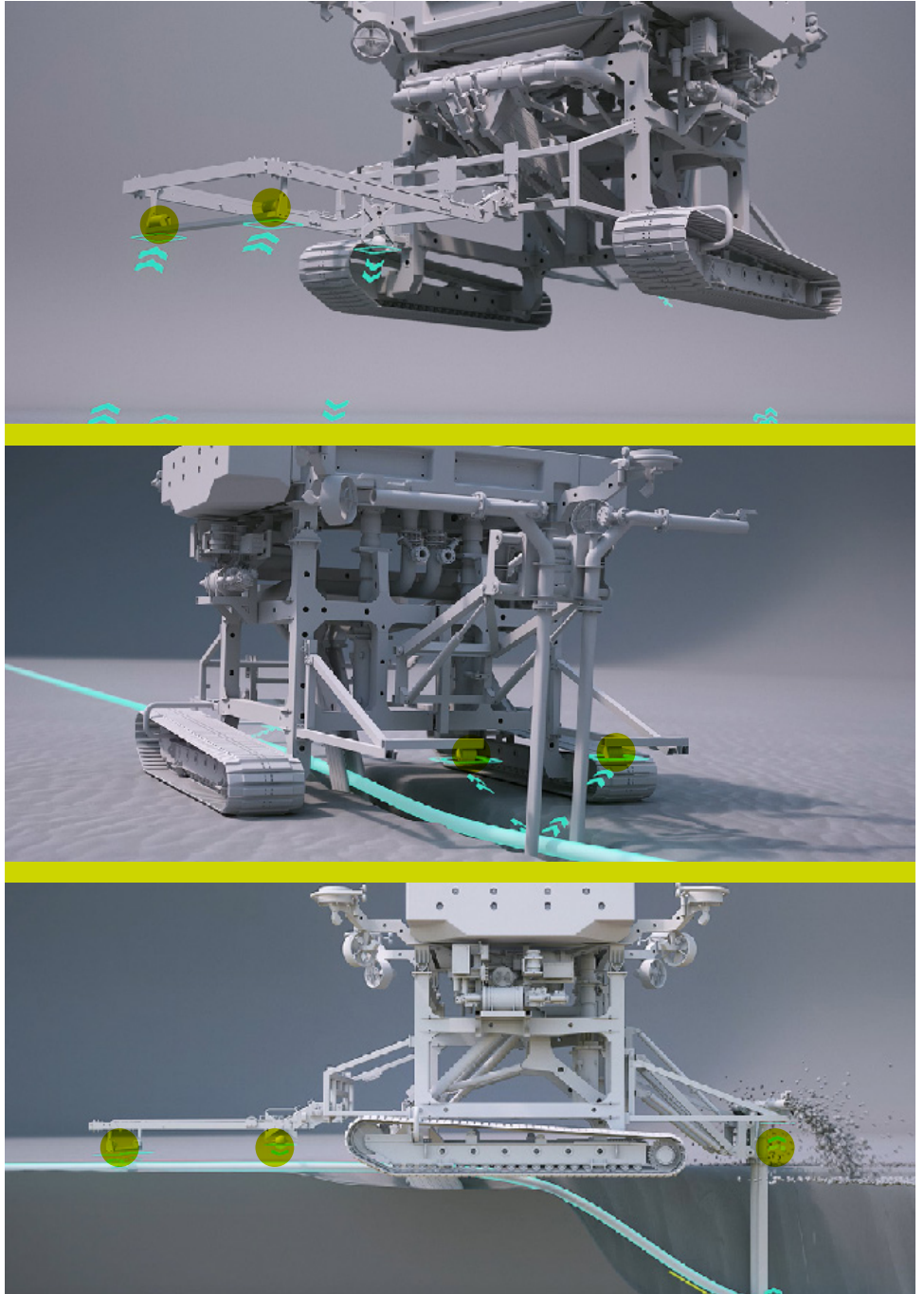
Artemis Passive enables power cables to be quickly and accurately located from a distance of up to 10m when the cable is live or toned. Artemis Active can be utilised on cables or pipelines with no power or tone, from a distance of up to 5m. This flexible and versatile technology solution can track cables during installation, trenching, deburial or when damaged or broken.

## TRACK IT

Unlike other cable/pipeline tracking solutions, Artemis can account for interference from sources other than the cable, reducing the margin for error while minimising time taken to locate and track the asset. An inductive coil is used to induce a continuous 3000hz AC tone, inducing low power into the cable or pipeline. The tone produces a magnetic field around the asset which is then used to accurately track the cable or pipeline.

## PROVE IT

Artemis is the only solution which can simultaneously provide the exact location and orientation data at the front and rear of a vehicle for ultimate assurance of cable burial by tracking the depth, offset, yaw and angle of cable burial at the rear of the trencher while simultaneously directing the vehicle at the front. When combined with SMD's trenching technology, this capability allows cables and pipelines to be accurately tracked and buried to the desired depth.



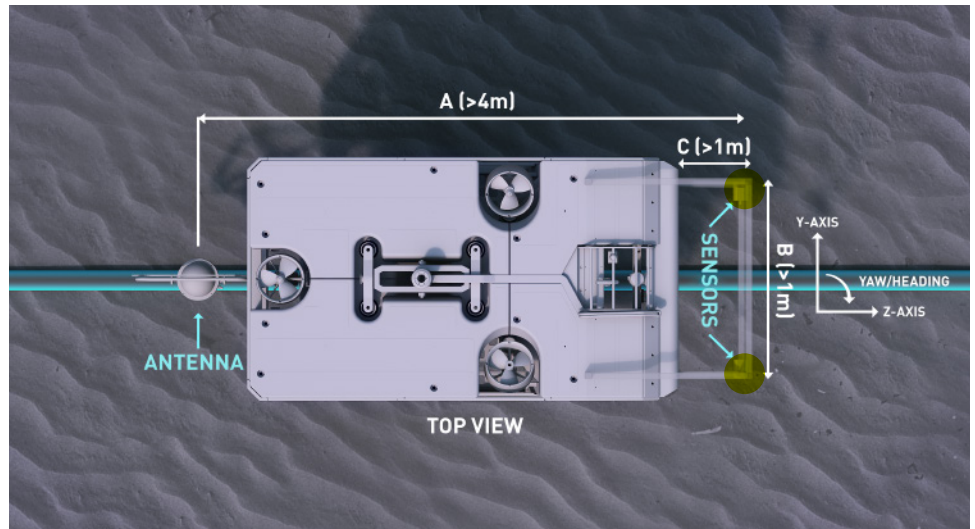
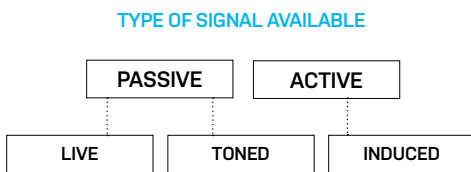
# ARTEMIS: APPLICATION + USAGE

- A - Antenna separation:  
Minimum 4m - 20m  
maximum
- B - Sensor separation:  
1m minimum up to 5m  
maximum
- C - Sensors must be at  
least 1m from metallic  
structures

## ● ARTEMIS SENSORS

### ARTEMIS SENSOR APPLICATION & USAGE

Artemis cable tracking technology is available in three different modes of operation; live, toned and induced. Artemis Passive system is utilised when there is a residual tone, whether this be live or toned, and Artemis Active system is utilised when the tone needs to be induced.

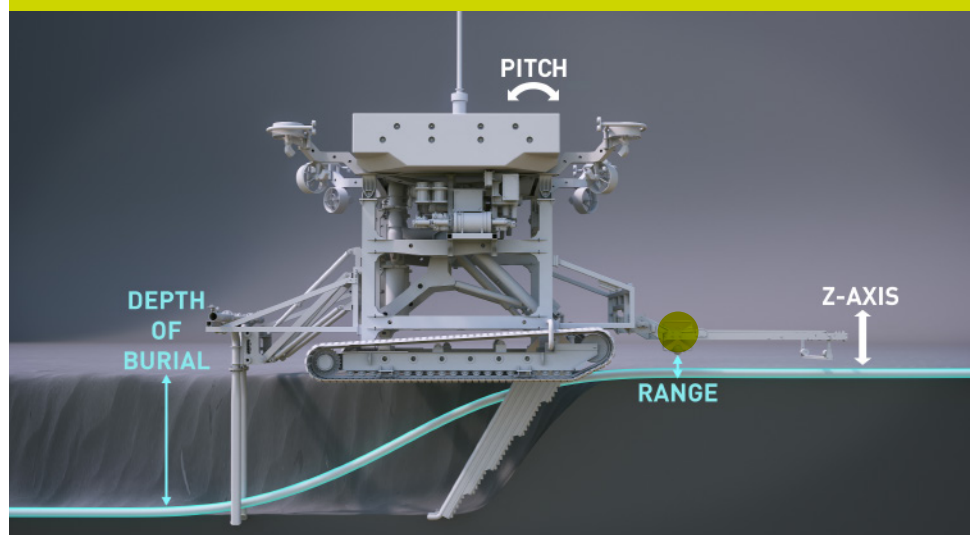


### POSITIONING & OPERATION

The sensors and antenna should be positioned away from any large metallic structures at a minimum distance of 1m and 0.5m respectively.

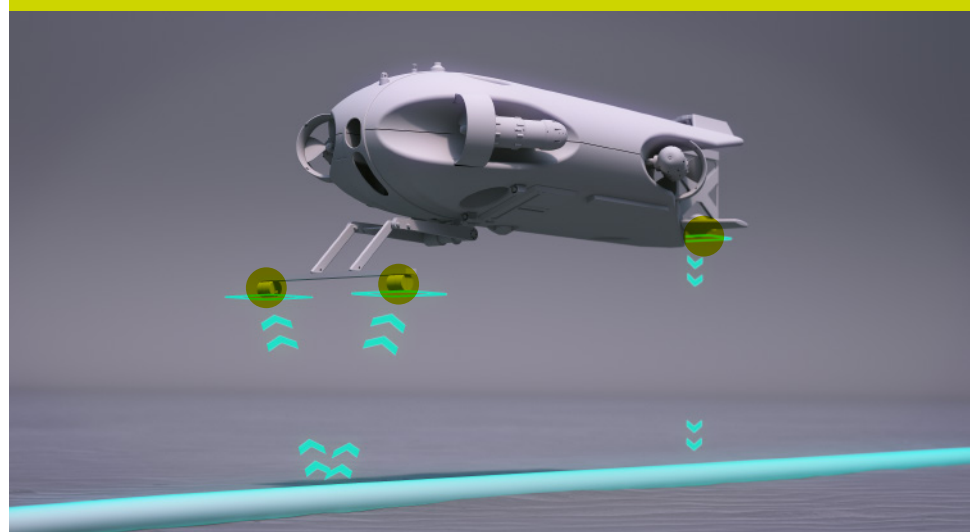
Range is defined as the distance from the antenna and sensor centre line to the centre of the target (product).

Depth of Burial (DOB), is defined as the distance between the mean of the seabed and the centre of the cable located by Artemis.



### SURVEY AND TRACKING TECHNOLOGY

Artemis Passive and Active systems allow detection of a utility through measurement of an existing AC magnetic field, or through induction into the utility where a magnetic field is not present, therefore allowing use on powered & non-powered cables, pipelines and data cables.



THE IMAGES ABOVE PROVIDE EXAMPLES OF MODES OF APPLICATION

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**WEIGHTS - AIR (WATER)**

E-POD	10kg (3.6kg)
Antenna	22kg (10kg)
Sensor	3.9kg (1.7)

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**CONNECTIVITY REQUIREMENTS**

Data Port	RS-232 or RS-485
Voltage	24-30VDC
Current	3A Max
Connector	Subconn



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**SIMULATED ENVIRONMENT**

Following considerable lab testing, we proved how Artemis works and how its performance can exceed the current state-of-the-art technology using a 33kV offshore power cable buried to 3 different depths in a controlled seawater dock environment.

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**VEHICLE INTEGRATION**

Artemis was tested with various offshore vehicle types and sizes to ensure the two systems do not affect each other and that Artemis can truly be fully adapted.



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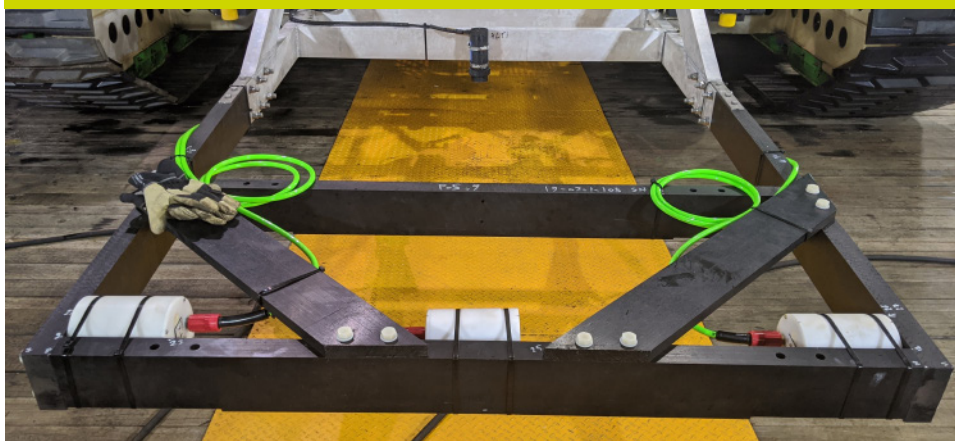
**OFFSHORE TESTING 'TRACKING'**

Artemis was tested offshore in the North Sea alongside a competitor product to prove its worth in a live export cable multi-pass burial project. Artemis was proven to be the superior tracking solution.

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**OFFSHORE TESTING 'SURVEY'**

Artemis has tested and improved its calibration process and procedures over a number of survey trials. The survey trials have confirmed system accuracy, through a developed understanding of the interaction of Artemis with the seabed, sea and air.



# ARTEMIS: PASSIVE & ACTIVE SYSTEMS

Artemis can be used on power cables, pipelines and data cables in both active and passive modes. Artemis Passive is utilised when there is a residual tone and Artemis Active is required when a tone needs to be induced. Artemis Active requires a metal pathway for an electric current with a route to earth through seawater.

Extensive trials and development have provided a high level of confidence in the stated detection range when used on power cables. On-going development work continues for the use of Artemis with pipelines and data cables to fully understand the detectability range, though promising results have been obtained in trials performed.

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## DATA = DETECTIBILITY RANGE

Artemis Passive	Live	up to 10m*
	Toned	up to 10m
Artemis Active	Induced	up to 5m

\* Detectability range is based on the cable having a minimum current of 36A





# PROVEN TECHNOLOGY

Artemis is the only solution that can simultaneously provide exact location and orientation data for ultimate assurance of cable burial by tracking the depth, offset, yaw and angle of cable burial at the rear of the trencher, while directing the vehicle at the front. When combined with SMD's trenching technology, this capability allows cables and pipelines to be accurately tracked and buried to the desired depth.

**SMD have collaborated on a number of key projects that have utilised Artemis Sensors for live, toned and induced modes.**

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**ENERGINET**



**Statnett**



BOOK AN APPOINTMENT  
TO DISCUSS YOUR PROJECT  
WITH OUR SPECIALISED  
ARTEMIS TEAM:



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