



## Tracking Cables

- Locating and estimating the depth of burial of cables below the sea bottom is a difficult and expensive problem. In 2019, GapEOD developed the **UltraTEM-MCT** system to improve cable surveys.
- **UltraTEM-MCT** offers significantly deeper detection and higher resolution than competing acoustic, magnetic and pulse-induction technologies.
- **UltraTEM-MCT** has proven its value in with a depth of burial survey at Borssele wind-farm where the cable was buried too deep for conventional technologies.
- The combination of the latest technology with custom software from Black Tusk Geophysics allows for accurate position and depth of burial surveys, including real-time tracking and depth estimation.



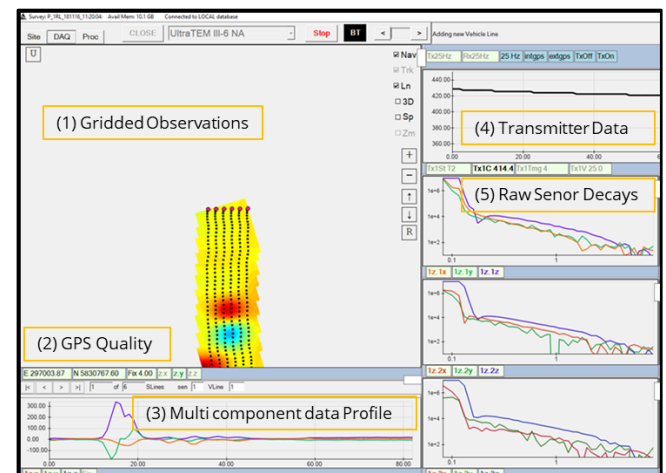
## UltraTEM-MCT Components

- High current transmitter loop for very deep cable detection.
- Six three-component EM sensors (receivers) allow for high spatial resolution and optimal estimation of depth of burial.
- Two electronics enclosures for transmitter, receiver and power supply

## Capabilities and Performance

- Pulse induction technology requires no contact with cable.
- Accurate estimation of cable position & depth (typically better than 10 cm at a standoff distance of 3.5 m).
- Can be deployed from a free flying or trenching ROV.

## Real-time software interface





## Technical Specifications

<b>Dimensions Array (L x W)</b>	1.8 m x 1.8 m
<b>Dimensions Electronics Box Cylindrical (L x W)</b>	425 x 262 mm
<b>Depth Rating</b>	100 m
<b>Data Acquisition &amp; processing Software</b>	BTField by Black Tusk Geophysics

<b>Weight (sensors &amp; electronics)</b>	96 kg (in air) 9 kg (in water)
<b>Number of Electronics Boxes</b>	1 x Transmit 1 x Receive
<b>Positioning</b>	Customizable for Vessel Configuration
<b>Detection swath</b>	2.4 m

## Transmitter Technical Specifications

<b>Transmitter</b>	EODTx50 Marine
<b>Power Supply</b>	90 - 240 V
<b>Powerline Frequency</b>	50 or 60 Hz
<b>Transmitter Frequency</b>	25, 30, 75 & 90 Hz
<b>Transmitter Duty Cycle</b>	50%

<b>Number of Transmitter Loops</b>	1
<b>Transmitter Loop Dimensions</b>	1.8 x 1.8 m
<b>Loop Wire</b>	2.5 mm <sup>2</sup> Copper wire
<b>Transmitter Current (max.)</b>	50 Amps
<b>Detection Capabilities (245 mm diameter cable)</b>	4.0 m above cable 6.0 m in zig-zag mode

## Receiver Technical Specifications

<b>Receiver Coils (3-component)</b>	6
<b>Coil Effective Area</b>	104.5 m <sup>2</sup>
<b>Receiver Noise Level @ 1 ms</b>	757.25 nV
<b>Receiver Dynamic Range @ 1 ms</b>	122 dB
<b>Output Signal Range</b>	± 9626.74 μT/s
<b>Coil Noise Level @ 1 ms</b>	0.060134 μT/s

<b>System Noise @ 1000 Hz</b>	< 4 nT/s/√Hz
<b>Receiver Sampling Frequency</b>	800 kHz
<b>Output Decays</b>	5 to 15 per second
<b>Samples per Decay</b>	45 log-spaced time-channels
<b>Decay Range</b>	0.05 to 10 ms

