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An Update on the state of the technology

For underwater acoustic measurements

nortekgroup.com

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Workshop Tecnologías Marinhas 2015

- Patented concurrent mode: shallow water
- Patented concurrent mode: deep water
- Fast Sampling rate
- Multi beam operation
- Ethernet Port
- Access to all raw data
- Low power, smaller size
- Led light
- SUV

Workshop Tecnologías Marinhas 2017

- 2 Instruments
  - Signature 250
  - Signature 100
- 4 new features
  - AHRS
  - QA/QC
  - High resolution mode
  - Echosounder mode

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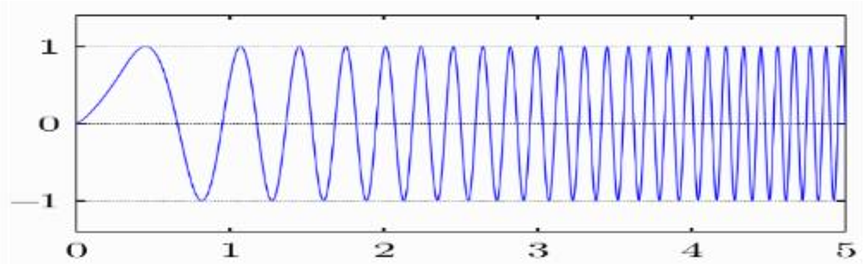
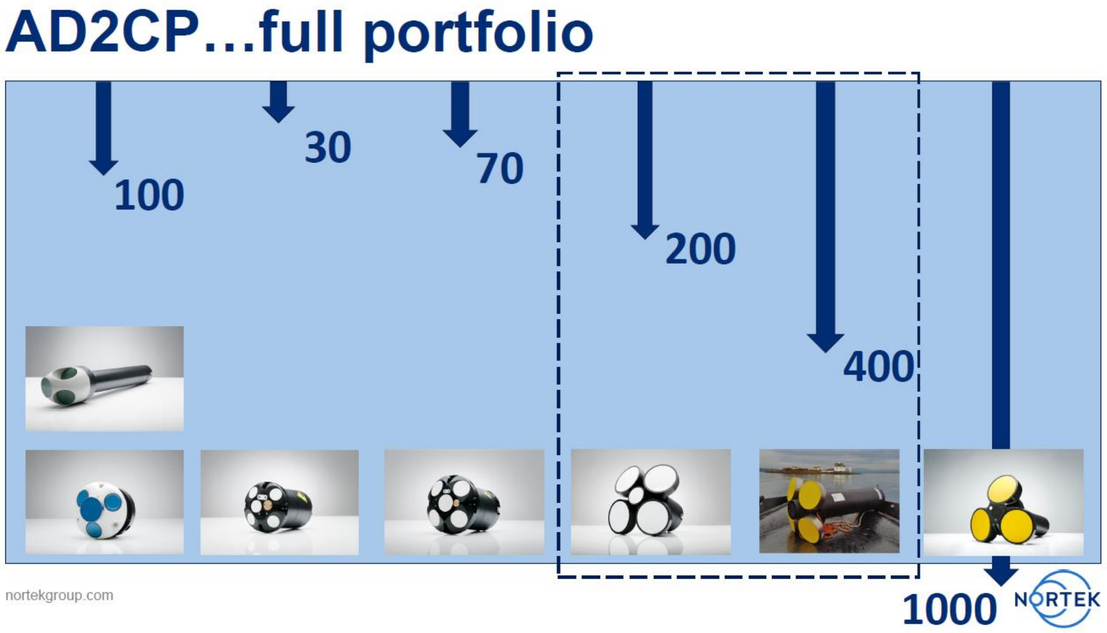
Introduction – AD2CP Platform



- Building block for NORTEK's Signature Series products.
  - **Granted US Patent 7.911.880**
- Patented Concurrent Mode Technology – *Unique*
- Fastest sampling rates of any ADCP – *Unique*
- Biological Echosounder mode – *Unique*
- High-resolution mode – *Unique*
- Embedded AHRS support – *Unique*
- Ethernet Communication – *Unique*
- LED Indicator – *Unique*
- Low Power – *Unique*
- Embedded FTP/Web Server
- Records All Raw Data



ADCPs – looking forward

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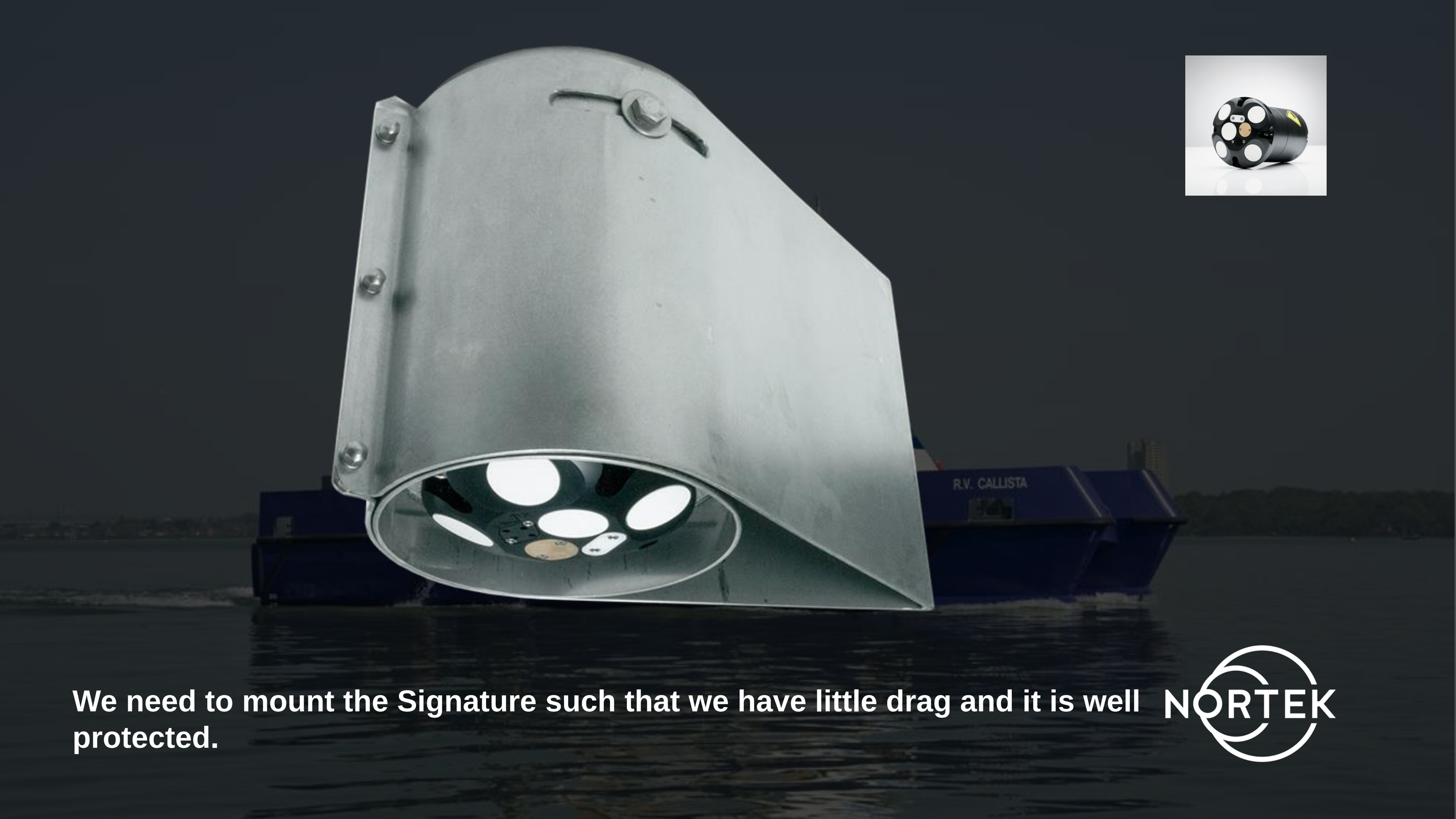
We need a good ADCP that has proper broadband technology, a great bottom track and a 5 th beam.



We need to mount the Signature such that we have little drag and it is well protected.

A GNSS is needed to know where we are taking the measurements. We need a GNSS that also outputs heading, has synchronization options and has an Ethernet connection.

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We add a box with sturdy connectors, power options, an ethernet switch and colorfull LEDs. We'll get back to those later.

A notebook works well in the office or in the bistro. We'll take it to the next step and box it up in a robust 19-inch rack together with the connection box and a monitor on top.

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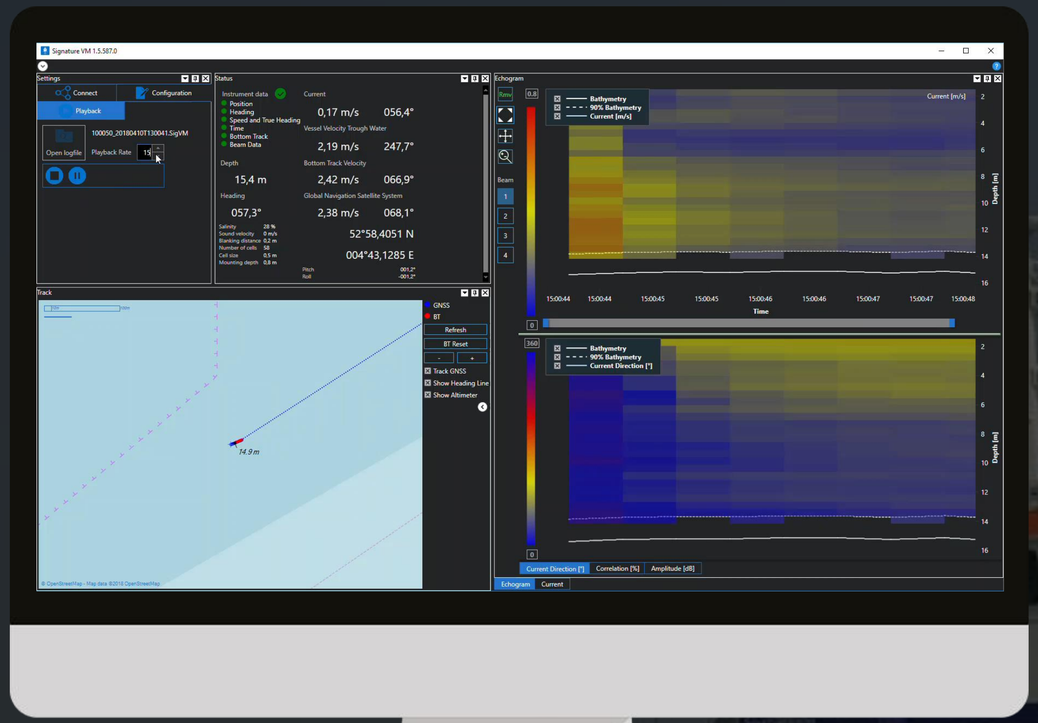


Then we need data acquisition software that allows us to easily discover the instruments, stores the data and just shows that everythings works. The software also drives the LEDs so that you can see statuses at a glance.

Signature VM 1.5.587.0

Settings

Connect | Configuration

Playback

100050_20180410T130041.SigVM

Open logfile | Playback Rate 15

Status

Instrument data
- Position
- Heading
- Speed and True Heading
- Time
- Bottom Track
- Beam Data

Current
0,44 m/s 097,8°

Vessel Velocity Trough Water
2,74 m/s 233,0°

Depth
14,6 m

Bottom Track Velocity
3,05 m/s 057,3°

Heading
048,3°

Global Navigation Satellite System
3,10 m/s 058,5°

Salinity	28 %
Sound velocity	0 m/s
Blanking distance	0,2 m
Number of cells	58
Cell size	0,5 m
Mounting depth	0,8 m

52°58,5984 N

004°43,8483 E

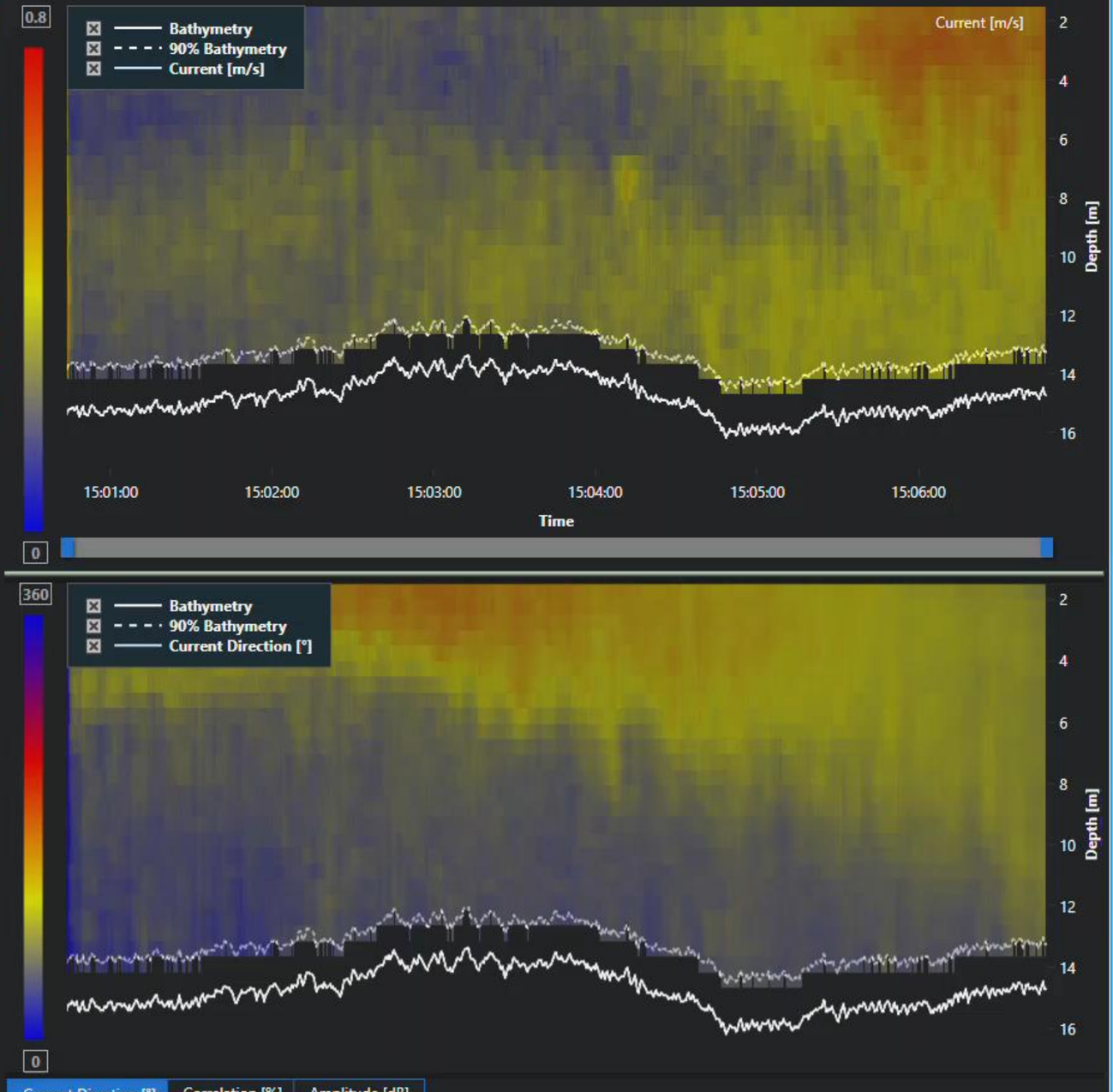
Pitch 000,9°
Roll -001,4°

Track

GNSS
BT
Refresh
BT Reset
- +
Track GNSS
Show Heading Line
Show Altimeter

Echogram

Rmv
Beam 1 2 3 4



Echogram | Current

So that is all we need. Tightly integrated and ready to go

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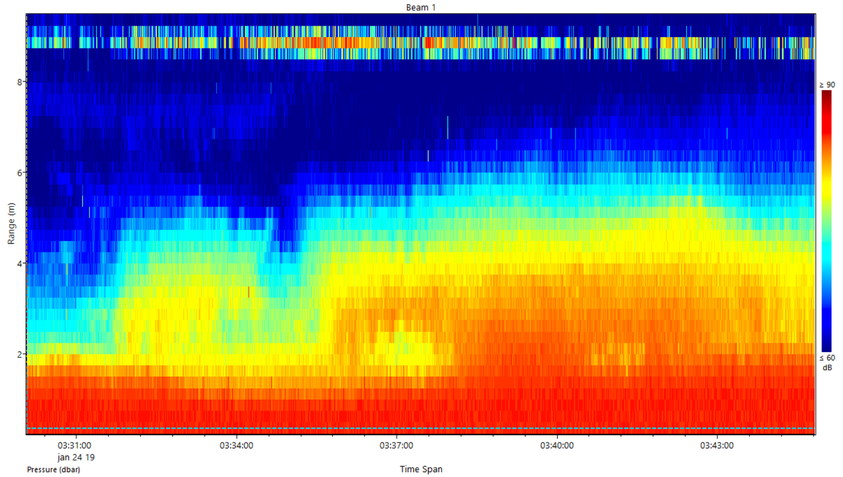
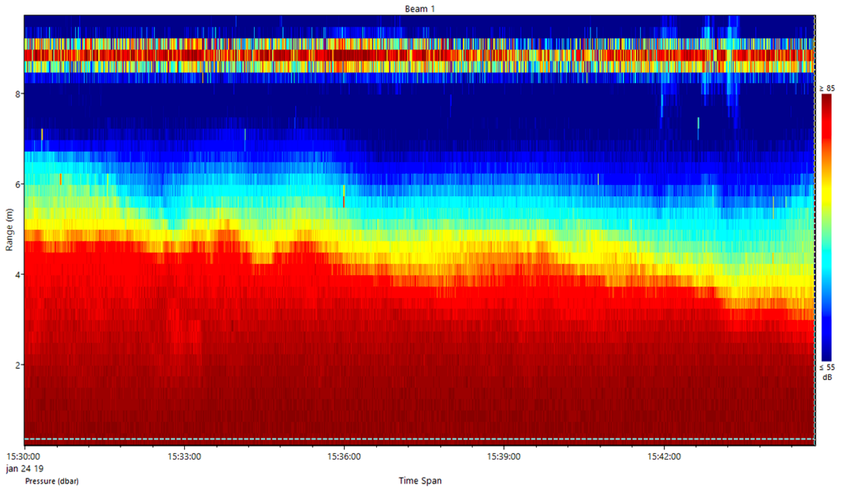
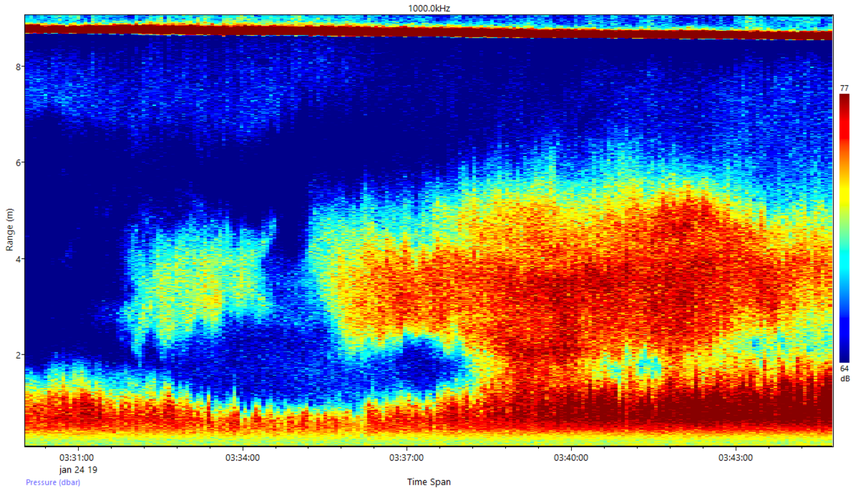
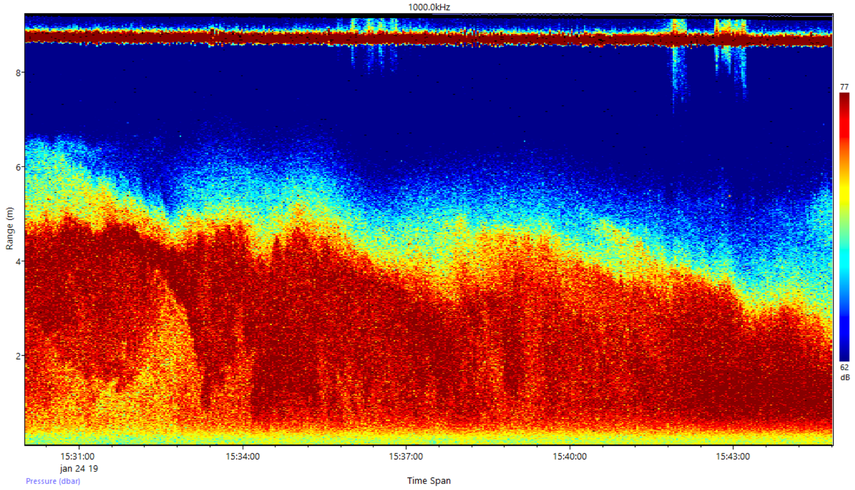
What about sediments?





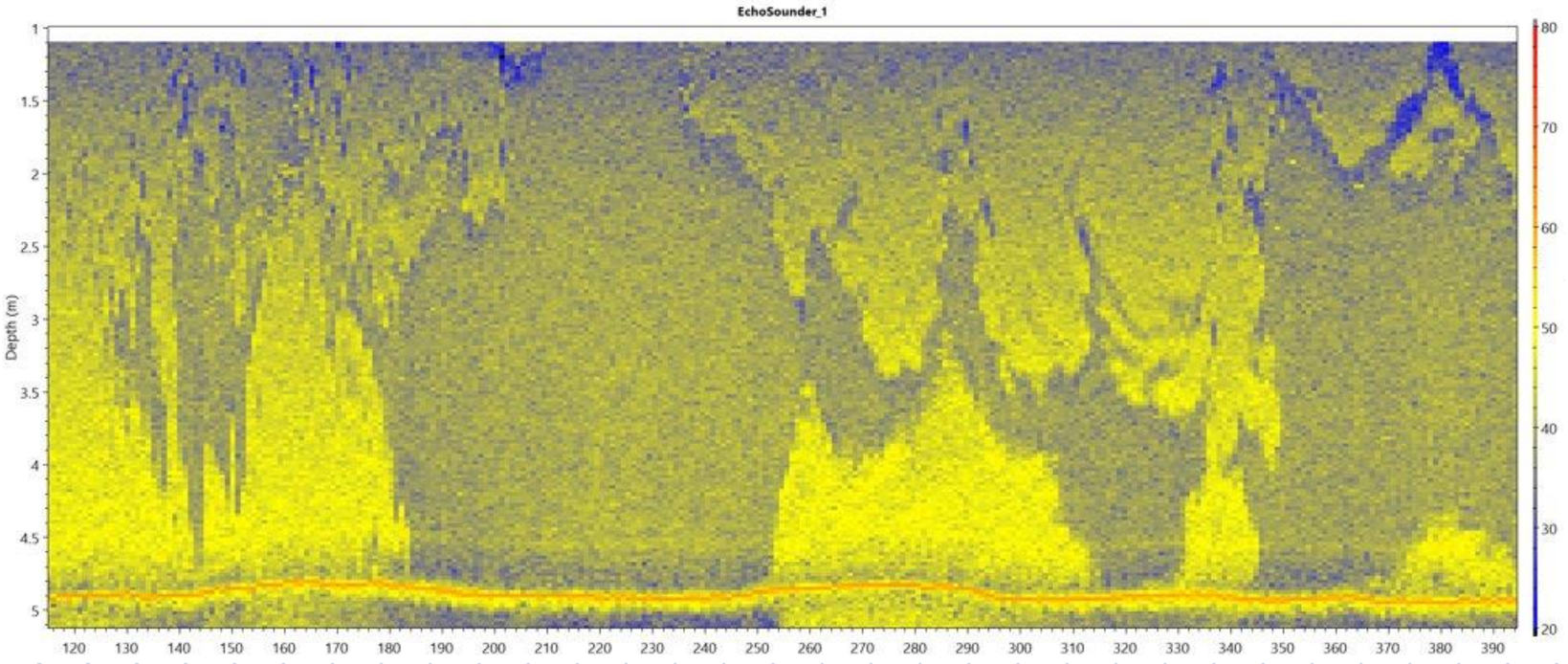
Cell Size 1 = 0.1 to 2 m





Cell Size 1 = 0.003 to 0.025 m

Echosounder echogram Signature1000 VM



Back to simplicity

Nortek Eco Key Development Concepts

- No prior experience needed to operate
- All components included
- Easy data access
- Reliable data
- Shallow water deployments (~1 m to ~30 m)
- Current profiles and directional waves

Nortek Eco Components

- Eco
  - No connectors
  - Inductive charging
  - Bluetooth communication
  - Smartphone operation
  - GPS location tagging
  - Online data
  - Integrated buoy
- Time-Release Buoy
  - No mounting frame needed
  - Simple recovery

Portable
Easy to Use
Affordable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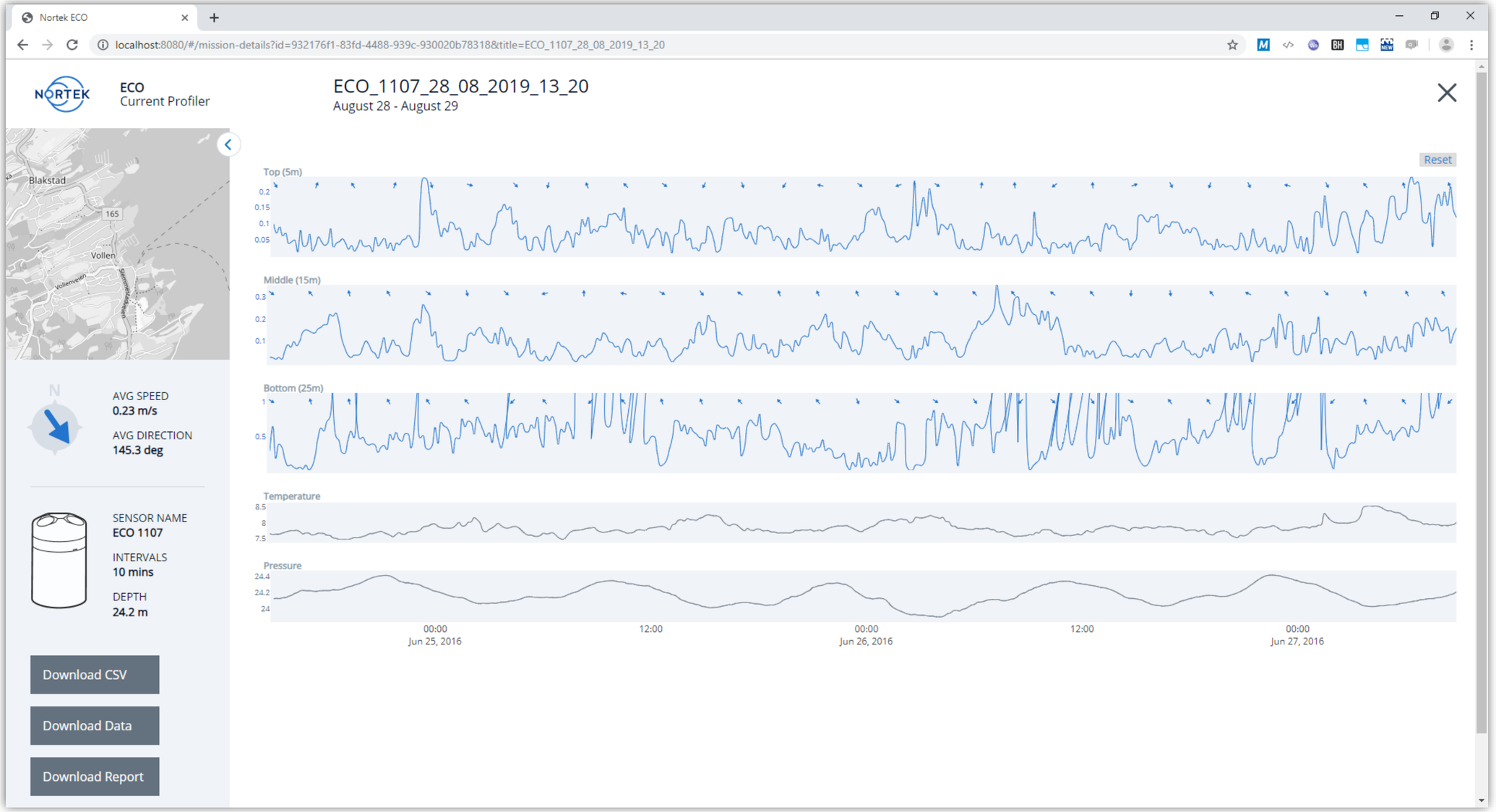
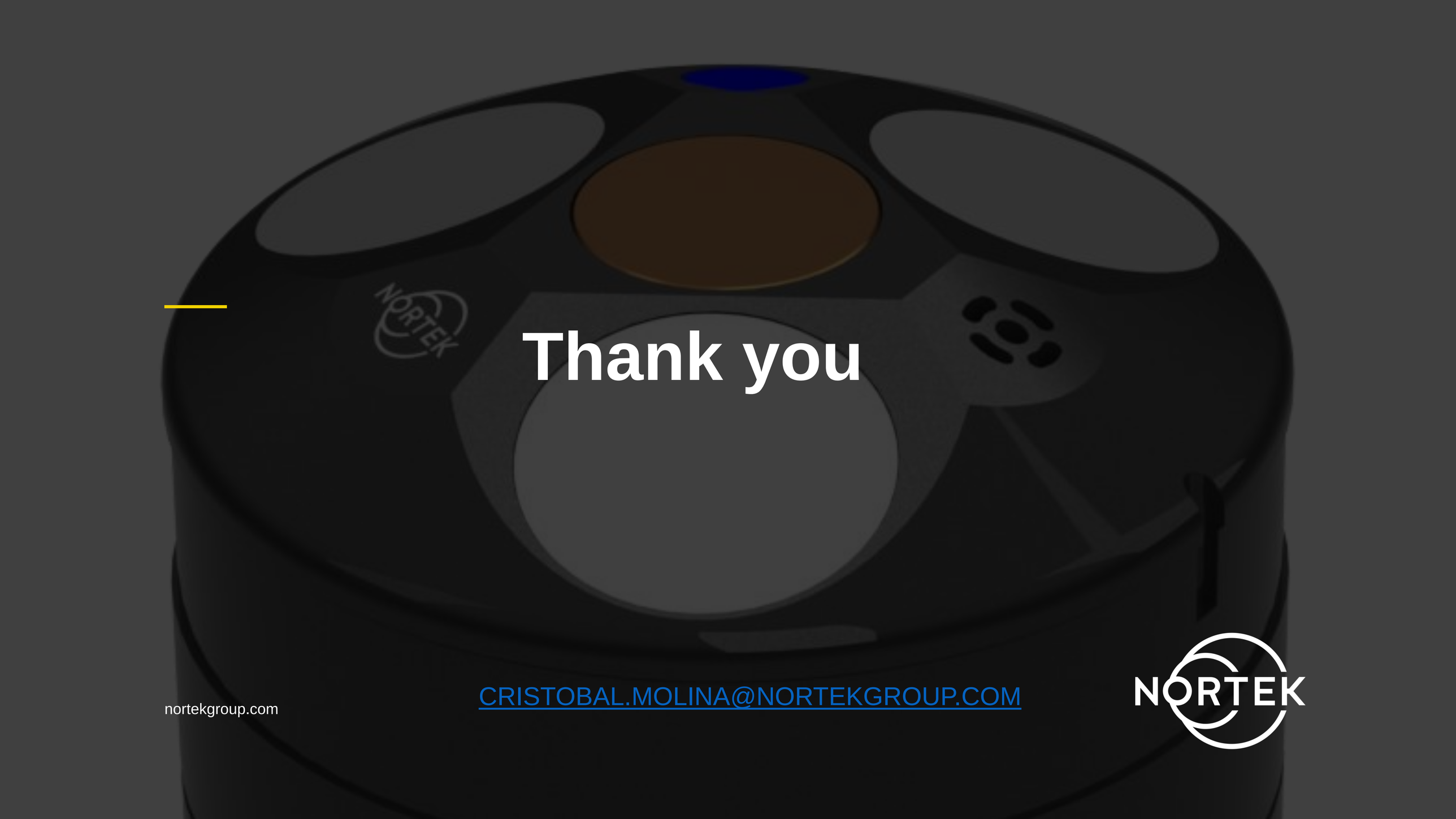

Nortek ECO
localhost:8080/#/mission-details?id=932176f1-83fd-4488-939c-930020b78318&title=ECO_1107_28_08_2019_13_20
ECO
Current Profiler
ECO_1107_28_08_2019_13_20
August 28 - August 29
Blakstad
165
Vollen
Reset
Top (5m)
Middle (15m)
Bottom (25m)
Temperature
Pressure
AVG SPEED
0.23 m/s
AVG DIRECTION
145.3 deg
SENSOR NAME
ECO 1107
INTERVALS
10 mins
DEPTH
24.2 m
Download CSV
Download Data
Download Report
00:00
Jun 25, 2016
12:00
00:00
Jun 26, 2016
12:00
00:00
Jun 27, 2016



Thank you

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