The MUNIN AUV provides high quality data combined with survey grade position accuracy in a compact platform. The system combines the best technology from the HUGIN and REMUS vehicles along with some innovative developments. The result is a reliable vehicle with a new tightly integrated navigation and payload section offering class leading performance.

The low-logistics concept behind MUNIN enables operators to use ships of opportunity. Separated into modular sections, each piece is transportable by air and the entire system can be mobilized at very short notice.

MUNIN collects data from many different sensors concurrently, providing a complete data product from a single mission.

The AUV utilizes the same operating software and user interface as HUGIN. Consequently it enables MUNIN to conduct complex mission such as pipeline inspection and is interoperable with existing HUGIN installations.

Features
- World class navigation
- Tailored EM 2040 multibeam
- IHO special order (S-44) compliant
- Calibration free navigation and payload section
- Advanced and seamlessly integrated post mission analysis package
- Integrated pipeline inspection with automated pipeline detection and tracking
- Fast battery charging
- Swappable lithium ion battery section
- Several launch and recovery options available

A  Nose section with FLS and CT sensor
B  Replaceable battery section
C  Navigation and payload section
D  Control and battery section
E  Tail section with cNODE transducer
Technical specifications

Weight and Dimensions
- Overall length 300-400 cm depending on configuration
- Vehicle outer diameter 34 cm
- Weight in air: < 300 kg

Maximum operating depth
- 1500 m standard (600 m version optional)

Vehicle speed
- Up to 4.5 knots

Energy
- Internal 5 kWh standard
- Exchangeable 5 kWh lithium ion battery modules

Endurance
- 12-24 hours

Navigation
- Kongsberg NavP aided inertial navigation system (AINS) with Honeywell HG9900 inertial measurement unit (IMU)
- Advanced new rigid design integrating IMU, DVL, MBE and SSS in a single mechanical housing, calibration free after transport or re-mobilization (factory calibrated)
- IHO special order (S-44) compliant
- Acoustic positioning using cNODE and HiPAP (option)
- Novatel L1/L2 GPS
- Broadband 300/600 kHz doppler velocity log
- Paroscientific Digiquartz depth sensor
- Terrain referenced navigation (option)

Communications
- cNODE acoustic command and data link
- Wi-Fi
- Iridium

Payload sensors
- Tailored version of EM 2040 multibeam echo sounder, 200-400 kHz 1°x1° beam width, swath 120°
- EdgeTech side scan sonar dual frequency
- NBOS conductivity and temperature (CT) sensor
- Forward looking sonar with advanced terrain following and collision avoidance
- EdgeTech sub-bottom profiler 2-16 kHz (option)
- Still image camera (option)

Software
- HUGIN operator system (HOS)
- Pipeline inspection (option)
- NavLab navigation post-processing (option)
- Reflection post-mission analysis (option)

Topside Equipment
- Operator and payload computer
- Post-mission analysis computer
- Vehicle battery charger
- Towfish, pole mounted or HiPAP acoustic communications (option)
- Maintenance cart
- Seapath 20 vessel heading/GPS (option)

Launch and Recovery System
- Mini stinger (ramp) solution
- Crane mounted electric or hydraulic lifting saddle
- MUNIN adapter for existing HUGIN stingers

To find out more please call us at Kongsberg Maritime or visit our web site

www.km.kongsberg.com/auv

Specifications subject to change without prior notice.

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