



exail

**SEA AND LAND SOLUTIONS
FOR SPECIAL FORCES**

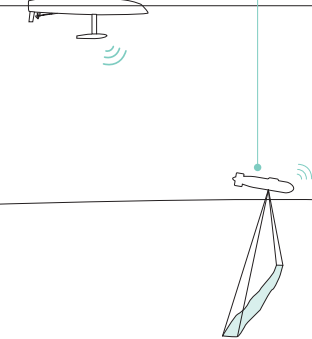
SEA AND LAND SOLUTIONS FOR SPECIAL FORCES



Maritime Intelligence, Surveillance and Reconnaissance (ISR)

DriX
Multi-purpose Unmanned Surface Vessel (USV)

A9-M
Compact Autonomous Underwater Vehicle (AUV)
+
Phins Compact Series
Ultra compact Inertial Navigation Systems (INS) for AUV

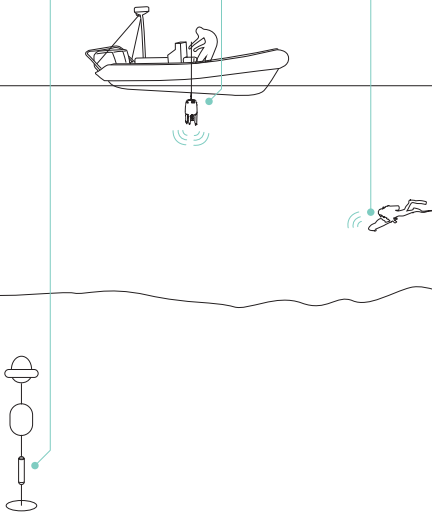


Tracking of divers and release of submerged equipment

Oceano R5
Acoustic release of submerged military assets

Gaps Series
USBL acoustic subsea positioning systems for subsea assets and divers tracking and communication

Phins Compact Series
Ultra compact Inertial Navigation Systems (INS) for Special Delivery Vehicles (SDV)

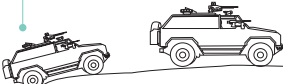


Resilient navigation in all environments

Advans Vega
High-grade Inertial Navigation System (INS) for coastal navigation



Advans Series
Field-proven Inertial Navigation Systems (INS) for land navigation



Air and Land Intelligence, Surveillance and Reconnaissance (ISR)

Teleoperation System
Advanced system for remote Unmanned Ground Vehicle (UGV) command and control



IT180-60
Low noise and long endurance modular VTOL Unmanned Aerial Vehicle (UAV)



Iguana
Unmanned Ground Vehicle (UGV) with multi-mission robotic arm and high obstacle clearance capabilities



RESILIENT NAVIGATION IN ALL ENVIRONMENTS

Navigation solutions for land defense

The Advans Series Inertial Navigation Systems (INS) meet the special forces' needs for resilient navigation in multiple ways. Their compact size, low consumption, and plug-and-play features make them compatible with various platforms, including 4x4 tactical vehicles, quads, snowmobiles, and RHIB. They provide accurate navigation and georeferencing data in GNSS-unavailable, disturbed, or jammed terrains, and can be easily installed on short notice, which is suitable for unpredictable tasks.



Advans Ursa

INS for resilient navigation within GNSS-denied environments



Advans Lyra

Mid-grade INS for resilient navigation within GNSS-denied environments



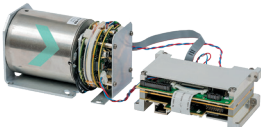
Advans Vega

High-grade INS for long-range applications, including coastal operations

Horizontal position (without GNSS)	0.4% DT (CEP50)	0.2% DT (CEP50)	0.1% DT (CEP50)
Heading	4 mils RMS	1 mil RMS	0.5 mil RMS
Roll and pitch	1 mils	0.5 mil	0.2 mil

Navigation solutions for underwater vehicles

Exail's Phins Compact Series INS offer robust navigation capabilities for underwater vehicles (Special Delivery Vehicles, Autonomous Underwater Vehicles) whatever their size and mission, from accurate navigation to survey grade. The series comes in a wide range of performances, which can be further improved with the coupling with a DVL.



Phins Compact C3

Most compact INS for customized subsea integration



Phins Compact C5

Compact INS for AUV and SDV



Phins Compact C7

Highest performance INS for customized subsea integration

Heading	0.15 deg secant latitude RMS	0.05 deg secant latitude RMS	0.01 deg secant latitude RMS
Roll and pitch	0.05 deg	0.01 deg	0.01 deg
Position accuracy with DVL-aided performance (straight line from origin)	0.2 % TD (CEP 50)	0.1 % TD (CEP 50)	0.05 % TD (CEP 50)
Position accuracy with DVL-aided performance (area survey pattern)	0.04 % TD (CEP 50)	0.02 % TD (CEP 50)	0.01 % TD (CEP 50)

TRACKING OF DIVERS AND RELEASE OF SUBMERGED EQUIPMENT



Gaps M5/M7 USBL acoustic positioning systems

Gaps Series provides subsea assets with absolute location and acoustic communication, from ultra-shallow to deep water depths. Thanks to its embedded FOG-based inertial systems, it is ready to use and does not need calibration after installation. Gaps Series can be deployed from any type of vessel, for permanent and opportunity installation.

- Easy to install, operate and repair for cost efficiency
- Pre-calibrated USBL system
- Ultimate performances
- Third-party friendly
- From ultra-shallow to deep water operations

Acoustic coverage (Deg)	200
Operating range (m)	995 m with Gaps M5 4,000 m with Gaps M7
Positioning accuracy (% slant range)	0.5 % slant range with Gaps M5 0.1% slant range with Gaps M7
Range accuracy (mm)	20
Weight (air/water, kg)	14 / -5 with Gaps M5 16 / -7 with Gaps M7



Oceano R5 Acoustic release

The latest version of Exail's acoustic releases, Oceano R5 is ideal for releasing up to 2,500kg payload in harsh environments down to 6,000m water depth. Fitted with a positive drive-off release mechanism, it is extremely reliable. The combination of an optimized design in a robust Super Duplex Stainless Steel (SDSS) housing offers outstanding corrosion resistance.

- Unrivalled battery life (60 months @ 0°C)
- Corrosion-resistant SDSS housing
- Capable of releasing up to 2,500 kg payload
- Positive drive-off mechanism
- Back-up cell for release

Load characteristics	2 500 kg SWL / 2 500 kg RL / 5 000 kg TL
Overall dimensions (dia x L)	136 x 676 mm
Overall weight (air / water)	25 kg / 19 kg
Operating frequency	Low frequency (8.0 to 16.0 kHz)
Transducer beam pattern	Omnidirectional (horizontal plan) / Hemispherical (vertical plan)
Operating life	60 months @ 0°C (Alkaline)
Range	More than 10,000 m depending on ambient noise and acoustic propagation conditions

MARITIME INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE



DriX Unmanned Surface Vehicle (USV)

A versatile and efficient USV, DriX can be tuned to fit the needs of any military integrator and can be used to conduct diverse military operations, including military bathymetry, Rapid Environmental Assessment (REA), and divers’ tracking. Thanks to its certified Deployment System (DDS), DriX can be deployed from the coastline, from an amphibious ship dock, or from a frigate davit.

- Outstanding seakeeping and speed capabilities
- Highly accurate surface and subsea data acquisition
- Multi-AUV control and positioning from the surface
- Communication gateway between subsea drones and remote operation center
- Optimized for both coastal and offshore missions
- Highly versatile payload system thanks to open architecture

Dimensions	L 7,710 x W 0,824m / 2m (draft)
Endurance	Up to 10 days (operation speed dependent)
Fuel capacity	250 L (average consumption 2 L/H)
Speed	Up to 13 knots (payload configuration dependent)
Communications	Wifi, radio, 4G, SATCOMS



A9-M Autonomous Underwater Vehicle (AUV)

A9-M is a compact AUV for object detection, classification, and survey in shallow water operations. This robust lightweight underwater drone is easy to operate even in the harshest environmental conditions. Man-portable, it can be easily deployed using small crafts, rigid-hulled inflatable boats (RHIBs), and other unmanned surface vessels. Mission preparation, deployment, and recovery take only a few minutes.

- Man-portable, easy to use and deploy
- High-resolution imagery
- Standalone capability: complete operational system, including mission planning, real-time mission monitoring and post-processing and report generation, for operation from RHIB
- Embedded ATD/ATR
- Modular architecture for easy maintenance
- Low magnetic and acoustic signature

Dimensions	Lenght 2m, diameter 23cm, 70kg
Endurance	Up to 20 hours (2 energy sections)
Max speed	Over 5 knots
Nominal speed	3 knots
Operational depth	3-300 m

AIR AND LAND INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE



IT180-60
Unmanned Aerial
Vehicle (UAV)

The IT180-60 is a long endurance electrical Vertical Take-Off and Landing (VTOL) UAV which can carry multiple payloads. Offering robustness, reliability and performance, the IT180-60 can be operated in harsh weather conditions (wind gusts up to 60 km/h, rain, sand, extreme temperatures, etc.). It offers live and enhanced vision, low noise pollution, as well as superior tracking capabilities for intelligence missions.

VTOL automatic take-off and landing	Yes
Weight (unloaded)	21 kg
Max payload	5 kg
Max speed	72 km/h
Endurance	Up to 60 mn



Iguana
Unmanned Ground
Vehicle (UGV)

The Iguana is a two-man portable UGV for specialized intervention, that can be deployed within the most challenging environments. Its robotic arm, which can be fitted with a comprehensive set of tools (X-RAY systems, disrupters, lasers, etc.), offers multi-mission capabilities. Highly maneuverable and narrow, it benefits from high obstacle clearance capabilities (up to 50 cm) and can operate in highly confined spaces.

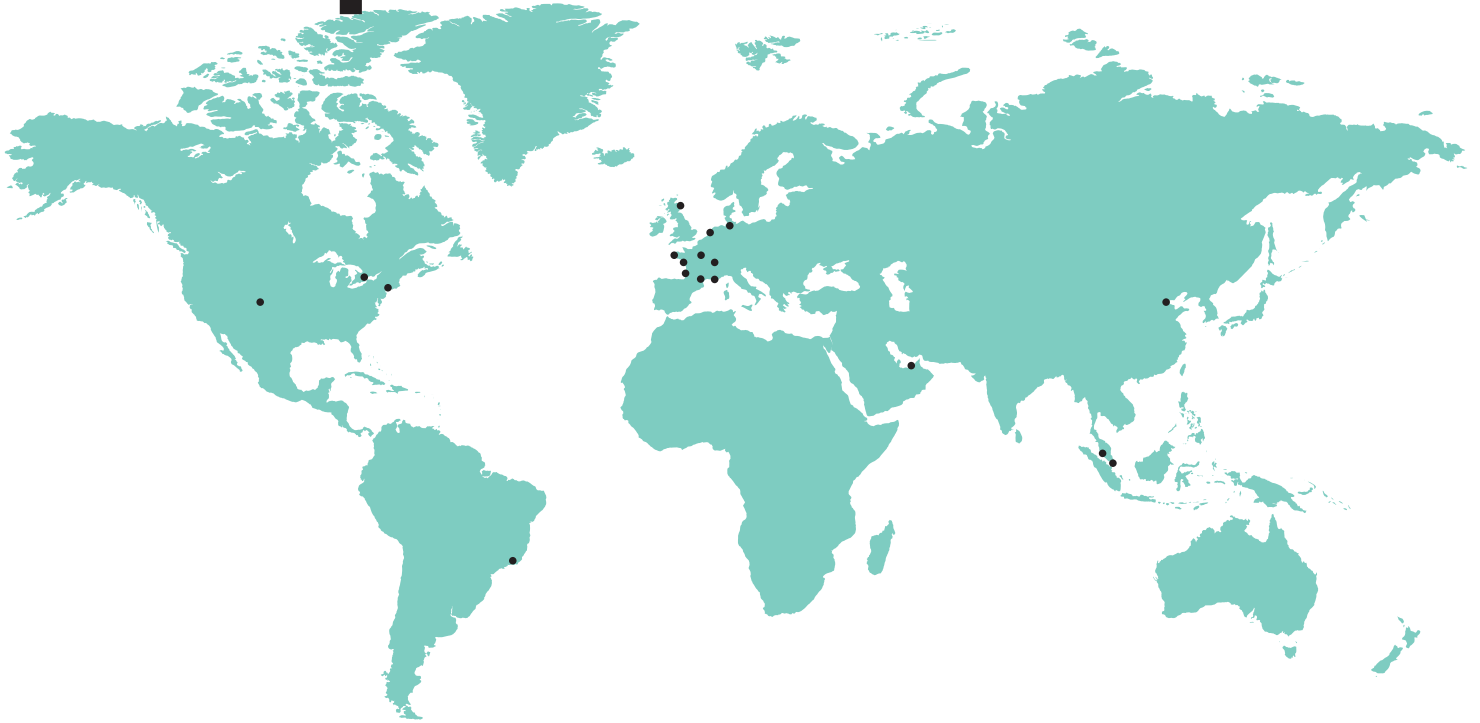
Obstacle deariance	50 cm
Weight (base)	52 kg
Manipulator robotic arm	6 axis
Vertical x horizontal reach	2.2 m x 1.2 m



Mission System

The advanced mission system is able to control multiple UGVs and UAVs and bring safer operations by keeping troops away from the danger zone. Offering complete situational awareness, the mission system can be tailored to specific needs and for any existing land vehicle, expanding special forces capabilities.

our global footprint



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