

SURFACE NAVIGATION & MOTION STABILIZATION



exail





Exail, a global standard in surface maritime operations

Built on decades of field experience, Exail is the trusted partner for major offshore operators, commercial fleets, and oceanographic institutions worldwide, delivering sea-proven resilience for every mission.

Operational success in the modern maritime industry demands a synergy between advanced innovation and field-proven reliability. As offshore energy projects, hydrographic surveys, and scientific expeditions grow in complexity, the integrity of data for navigation, dynamic positioning, and complex motion compensation remains the bedrock of safety and performance. Exail addresses these critical stakes by providing high-performance solutions designed to ensure operational continuity, even in GNSS-denied environments. This long-standing commitment to excellence provides the certainty required for success across all commercial and scientific maritime sectors.

TOTAL RESILIENCE FOR UNINTERRUPTED OPERATIONS

SECURING THE MISSION: ENGINEERED FOR CONTINUITY

Exail systems act as the inertial heart of the vessel, delivering the high-frequency heading, attitude, and motion data required for resilient navigation, precise stabilization and station-keeping. Field-proven and globally deployed, these solutions leverage synergies across the wider Exail ecosystem to guarantee mission continuity and operational success in all sea states.

VERSATILITY ACROSS ALL PLATFORMS

- Jack-ups, cable-layers and support vessels
- Hydrographic and research vessels
- Surface combatants and patrol craft
- Luxury yachts and cruise liners
- Uncrewed Surface Vessels (USVs)
- Racing boats

TAILORED PERFORMANCE FOR EVERY OPERATION



Quadrans

Compact, cost-effective reliability for supply vessels



Octans 9

Export-free standard for global operations



Hydrins

Survey-grade precision for demanding operations



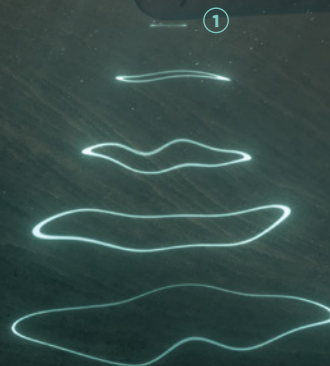
Phins

Survey-grade precision for demanding operations

	Quadrans	Octans 9	Hydrins	Phins
Heading accuracy (RMS) with GNSS	0.15 deg sec. latitude	0.05 deg sec. latitude	0.01 deg sec. latitude	0.01 deg sec. latitude
Roll & pitch (RMS) no GNSS	0.23 deg	0.10 deg	0.05 deg	0.05 deg
Real-time heave	10% RMS / 10 cm	5% RMS / 5 cm	5% RMS / 5 cm	5% RMS / 5 cm
Smart heave	5% RMS / 5 cm	2% RMS / 2 cm	2% RMS / 2 cm	2% RMS / 2 cm
Drift without aiding for 1, 2, 5 min			0.8 m / 3.2 m / 20 m (CEP 50)	0.8 m / 3.2 m / 20 m (CEP 50)
External sensors	1 GNSS, 1 EM log	2 GNSS, 2 EM log	2 GNSS	2 GNSS, 2 DVL, 2 EM log, 1 depth sensor, 3 USBL, 10 LBL, 1 CTD/SVP

IMO NAVIGATION RESILIENCE AND PRECISION IN GNSS-DENIED ENVIRONMENTS

- **Reliable positioning** despite signal interference, jamming, or spoofing.
- **High-confidence transit** in narrow or high-traffic areas.
- **Low position drift** down to 0.1% of traveled distance (with DVL Bottom-Track or Speed Log).
- **Maintenance-free technology** eliminates downtime and failures.
- **MED-IMO certified** for every vessel and application.



THIRD-PARTY DVL ①

Speed measurement relative to the seabed



PHINS ②

INS with multi-sensor integration, smart data fusion and robust rejection filters

or



QUADRANS

IMO-certified FOG gyrocompass for reliable navigation

DYNAMIC POSITIONING

EFFICIENT STATION-KEEPING IN CHALLENGING SEA-STATES

- **Sub-meter positioning accuracy:** from centimeters to meters, depending on transponder array layout and quantity.
- **Low-latency data** for instant thruster response.
- **Reduced fuel and wear** through efficient thruster control.
- **Real-time standard deviation** estimations for high-confidence maneuvers in high-risk zones.
- **High-frequency updates** maximizing work windows during harsh weather.
- **3D architecture** ensuring perfect vessel alignment without crosstalk.



PHINS 2
High-end INS for DP
with open architecture
for 3rd-party integration



NETANS N1
Secure data distribution
with continuous integrity
checks and reliable
retransmission



GAPS M3
USBL positioning system for
high-reliability DP operations



CANOPUS
LBL transponder
for absolute seabed
reference



MOTION COMPENSATION

RELIABLE STABILITY AND SAFETY ON DECK

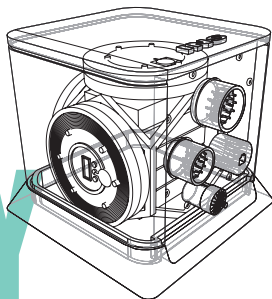
- **Precise real-time heave:** down to 5 cm or 5%.
- **High-accuracy heading** up to 0.05° sec Lat RMS with GNSS (0.1° sec Lat RMS without GNSS).
- **Accurate real-time data** for pile-driving, wind turbine installation, and complex maritime tasks.
- **Plug-and-play architecture** for seamless deployment into any surface platform or sub-system.



OCTANS 9 6

High-precision, export-free AHRS
for on-board equipment stabilization.
Delivers real-time heave with low latency
and extensive protocol support

WHY CHOOSE FOG OVER MEMS?



1

True North-seeking

Unlike MEMS, FOG is a true gyrocompass that finds North autonomously without needing GNSS or a magnetic compass.

2

GNSS-denied performance

FOG offers ultra-low drift, maintaining highly precise navigation for hours if GNSS is jammed or lost, whereas MEMS fails in minutes.

3

Solid-state reliability

With no moving parts, FOG is immune to ship vibrations and requires zero maintenance, ensuring a much longer operational life.

4

Total peace of mind

ITAR-free technology for unrestricted global deployment, backed by 24/7 expert technical assistance worldwide.

5

Full in-house design and production

All core FOG components are produced internally, ensuring full value chain control for unmatched reliability, secured supply, and ongoing innovation.



Learn more
about Exail
FOG technology