

NAVAL DEFENSE NAVIGATION



exail





Exail, a global leader in naval navigation

Trusted by over 50 navies worldwide, delivering sea-proven solutions for resilient, secure, and precise maritime navigation.

Exail leads the way in integrated naval defense navigation, providing cutting-edge, sea-proven technologies that combine precision, reliability, and robust cyber resilience. These advanced capabilities protect surface vessels from spoofing and jamming threats, enable stealth autonomous navigation for submarines, and enhance environmental awareness across naval operations. By empowering naval forces with safe, resilient, and mission-critical navigation capabilities, Exail ensures superiority and success in every maritime mission.

RESILIENT NAVIGATION

PRECISE POSITIONING WITHOUT GNSS

Marins Series & Phins INS
Octans & Quadrans AHRS

UP TO
1NM
360H



Marins Series



Phins

GNSS resilience

Full range of INS and AHRS ensuring reliable navigation under jamming or spoofing, preserving mission integrity.

Exceptional accuracy

Drift < 1 NM per 360 h for tactical superiority in changing maritime environments.



Octans



Quadrans

Robust design for operational continuity

Long-term reliability with reduced maintenance and lower ownership costs.

Enhanced stealth capabilities

Low acoustic signature for silent and covert operations.

SECURE DISTRIBUTION OF CRITICAL NAVIGATION DATA

Netans Series DDU



Secure, centralized data management

with real-time multi-sensor fusion for seamless naval assets communication.

Reliable alignment transfer

Real-time INS-to-weapons data transfer reduces targeting errors and boosts efficiency.

Continuous operation

Full redundancy ensures reliable and uninterrupted data flow.

Built-in cybersecurity

Through advanced protocols, hardware safeguards, threat detection, and integrity checks.

ASSURED PNT THROUGH INTEGRATED NAVIGATION SOLUTIONS

Exail delivers accurate, secure, and resilient Positioning, Navigation, and Timing (PNT) through a fully integrated, cybersecure ecosystem, ensuring navigation superiority for both surface and underwater naval operations.

A FULLY INTEGRATED, PLUG-AND-PLAY ECOSYSTEM

Exail solutions combine inertial navigation systems, data distribution units, tactical displays, and obstacle-avoidance sonars. Each component works independently or as part of a turnkey suite, offering flexibility for mission planning and upgrades. Plug-and-play design reduces integration time and streamlines fleet deployment.

BUILT-IN CYBERSECURITY AND MISSION RESILIENCE

With growing threats from GNSS spoofing, cyberattacks, and electronic interference, Exail ensures continuous and safe navigation. Built-in cybersecurity, sensor fusion, and real-time recalibration help crews maintain situational awareness and coordination across platforms, even in high-risk zones.

KEY BENEFITS FOR NAVAL FORCES

ADAPT TO MISSION NEEDS

with configurable
system options

IMPROVE ACCURACY

with real-time
sensor fusion and
recalibration

SAFEGUARD MISSION DATA

with embedded
cybersecurity
features

ENHANCE FLEET COORDINATION

through
native system
interoperability

MAINTAIN NAVIGATION CONTINUITY

in GNSS-contested
or denied areas

SPEED UP DEPLOYMENT

with modular,
easy-to-integrate
systems

Gecdis-W

Advanced Warship
Electronic Chart Display
and Information System
(WECDIS)

Netans Series

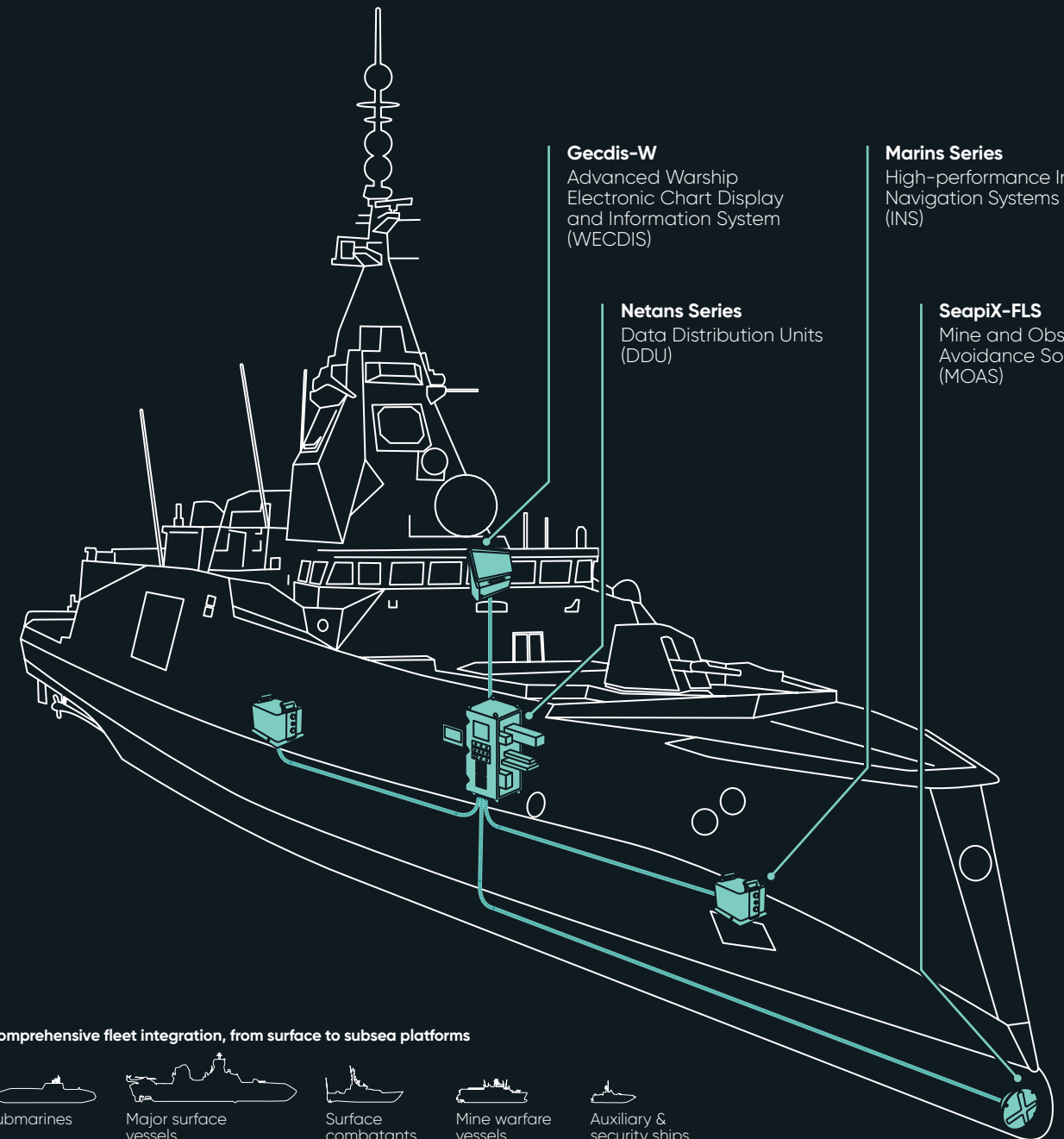
Data Distribution Units
(DDU)

Marins Series

High-performance Inertial
Navigation Systems
(INS)

SeapiX-FLS

Mine and Obstacle
Avoidance Sonar
(MOAS)



Comprehensive fleet integration, from surface to subsea platforms

Submarines

Major surface
vessels

Surface
combatants

Mine warfare
vessels

Auxiliary &
security ships



TACTICAL AWARENESS

EARLY DETECTION OF UNDERWATER THREATS SeapiX Series MOAS



Autonomous detection mapping

Real-time obstacle probability maps support adaptive navigation.

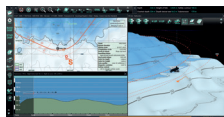
Flexible integration

Easily deployable on crewed/uncrewed vessels and fixed platforms for any mission profile.

3D real-time obstacle detection

Georeferenced multibeam imaging covers the full water column, from surface to seabed, for precise awareness.

COMPLETE SITUATIONAL AWARENESS AT SEA Gecdis-W WECDIS



Integrated sensor data

Fuses GNSS, INS, sonar, and charts into a unified tactical display.

Smart navigation & tactical awareness

Integration of real-time data for safe, informed decisions.

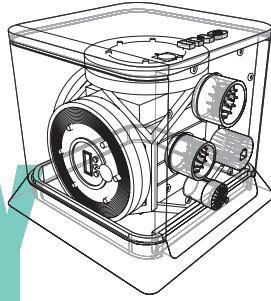
Interoperability

Tracks 1,000+ targets with military symbology; shares data via W-AIS and Combat System.

Military features

ECDIS/STANAG compliant; includes radar overlay, screen kilo, gun sectors and moving haven.





WHY CHOOSE FIBER OPTIC GYROSCOPES?

1

Mission-critical precision

Advanced algorithms deliver ultra-accurate heading and positioning, vital for GNSS-navigation and targeting.

2

Combat-ready robustness

Shock, vibration, and interference-resistant, ensuring reliable data in high-intensity or extreme environments.

3

Stealth operation

Solid-state design means no moving parts, no noise, reducing acoustic signature for silent navigation.

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.

4

Field-proven at sea

Deployed by 50+ navies worldwide, with 500,000+ hours MTBF.

Trusted performance on both surface ships and submarines.



Learn more
about Exail
FOG technology

