



RETHINK UNDERWATER DEFENCE



GREYSHARK™

GREYSHARK™ extends your capabilities far beyond previous planning

Combine comprehensive advanced sensors and a complete autonomous behavior over long distances. Expand the sensor coverage through swarm capabilities. Embed GREYSHARK™ in complex mission scenarios and battle tactics.

Fully integrate GREYSHARK™ into your battle management systems through live data connectivity.



6

units in
a swarm

Areas of application

- Blue & brown water
 - Unmanned long-range missions
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- Ship drop & slipping for port-to-port
 - Recognition and identification
 - Target illumination
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- Deterrence through presence
 - Deterrence through identification
 - Critical infrastructure monitoring
 - Over-the-horizon reconnaissance
 - Channel clearing
 - Mine warfare +
-



Deterrence through presence

Patrol and protect a critical sea area with single or multiple GREYSHARK™. Make them hold their position passively on the seabed and activate at critical events, e.g., the identification of a specific vessel.

Define smart behaviors for your GREYSHARK™. Have them approach targets under active sensors, or quietly withdraw and report.

Deterrence through identification

Identify vessels with your GREYSHARK™ passive sensors, sensor fusion and A.I. systems. Analyze vessel movements and traffic in an area. Track individual vessels and even follow them.

400

meter wide
route during
scan mode



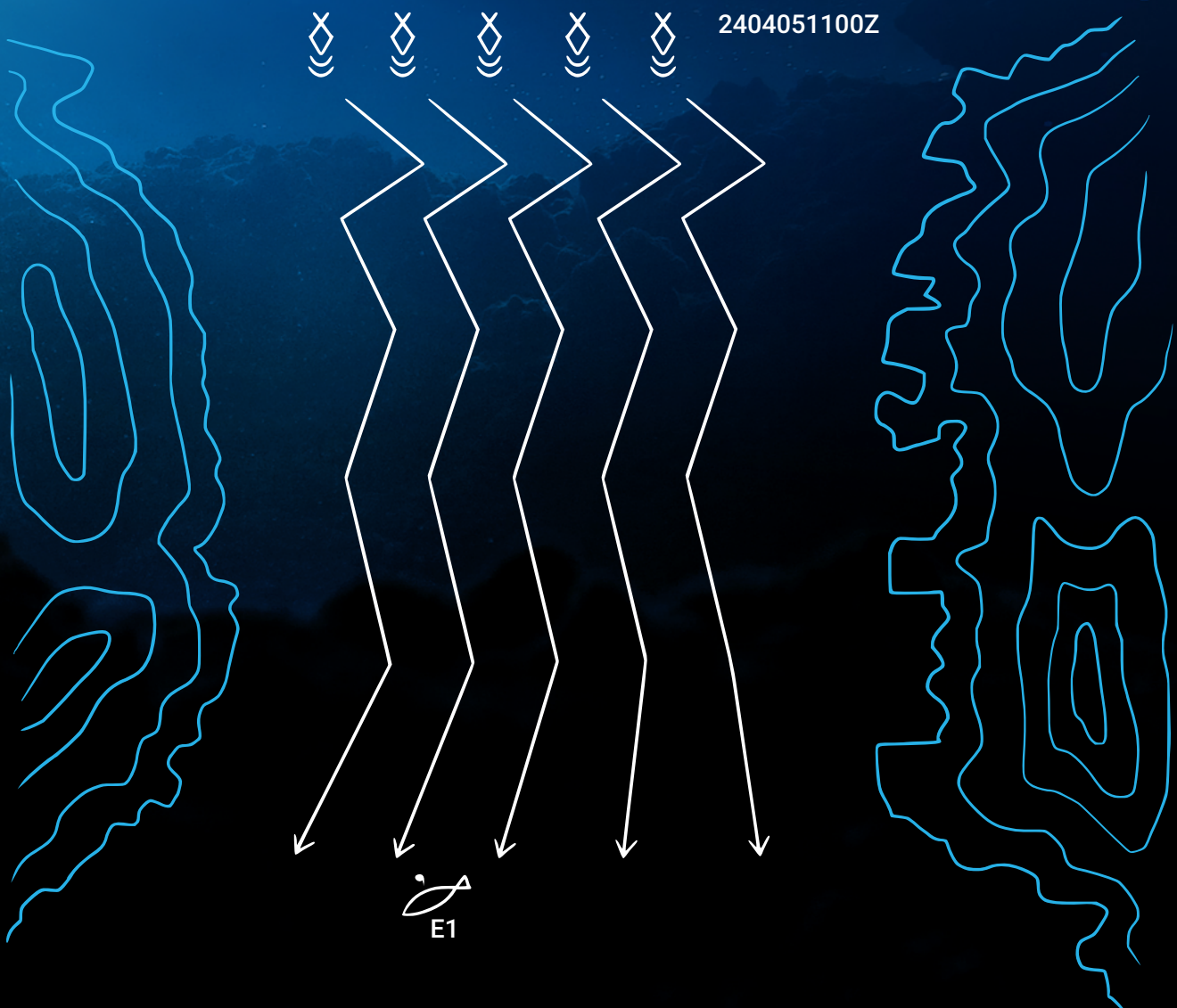
Illumination

Employ single GREYSHARK™ or a swarm for sonar illumination. Extend the sensor range of your manned underwater vessels and keep them passive, yet informed.

During operation, GREYSHARK™ reports all identified targets via encrypted underwater communication to other GREYSHARK™, own vessels and, if appropriate, to situational awareness systems.

Channel clearing

Scare away enemy reconnaissance with a swarm of GREYSHARK™ searching parallel under active sensors. GREYSHARK™ will actively look for specific vessel classes, report in real-time, and follow them.



Over-the-horizon reconnaissance

Send GREYSHARK™ into a defined area and identify vessels, objects, structures, sensors and effectors according to random or fixed search patterns. Chose to receive reports directly upon detection, after completion of the search area or only after return, as required by your mission.



Mine warfare +

Identify mines with active sensors (sonar, LIDAR, camera, electromagnetic) and A.I. based

Automatic Target Recognition. GREYSHARK™ has excellent MCMV characteristics, including a silent electric propulsion system, a non-metallic, non-pressurized hull structure and a very low own sonar signature.



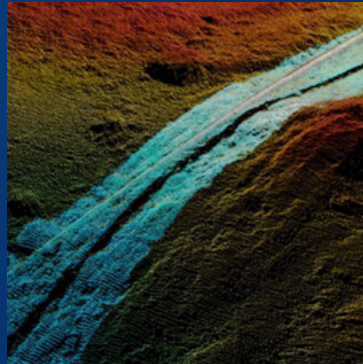
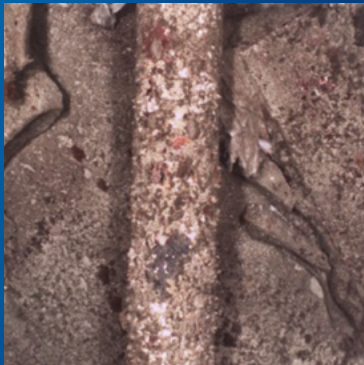
Monitor critical infrastructure

Use GREYSHARK™ to monitor known underwater structures, harbors, cables, pipelines.

Track security risk with a sensor fusion of LIDAR, camera, sonar and electromagnetic sensors.

Powerful change detection algorithms speed up regular patrols.

GREYSHARK™ will follow the infrastructure and deliver more data than classic sensors. No surface vessel is needed to deploy inspection underwater AUVs. The results can be passed on directly during the deployment and after the return.



2.7

km² each hour
by one unit



The future of underwater defence

Utilizing advanced artificial intelligence, sensor fusion and groundbreaking innovations within robotics and fuel-cell technology, your GREYSHARK™ will be a cornerstone in future unmanned underwater defence.



Potential Areas



Specifications

Depth Rating: 650 m (Step 2: 4000 m)

Range: 1100 Nm

Speed: 10 Kts cruise

Length: 6,5 m

Diameter: 1.5 m

Weight: 3500 kg

Sensors

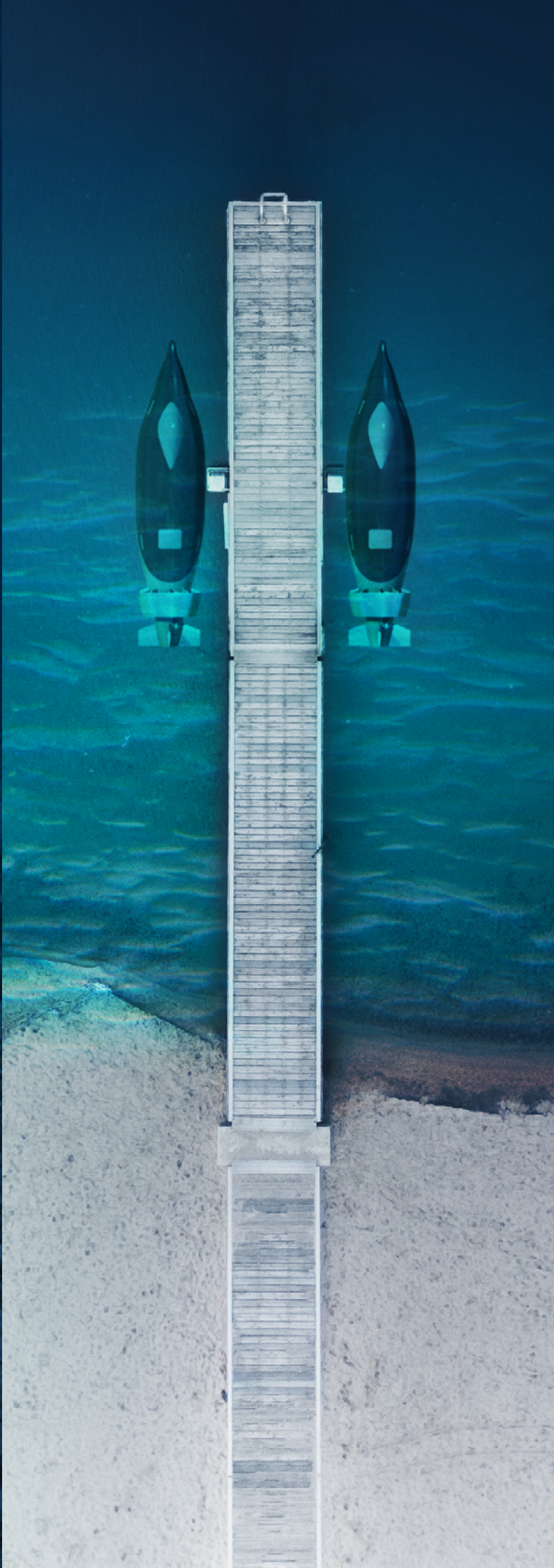
- Multibeam imaging
 - Synthetic aperture sonar imaging
 - LIDAR
 - Collision avoidance
 - AI camera system
-

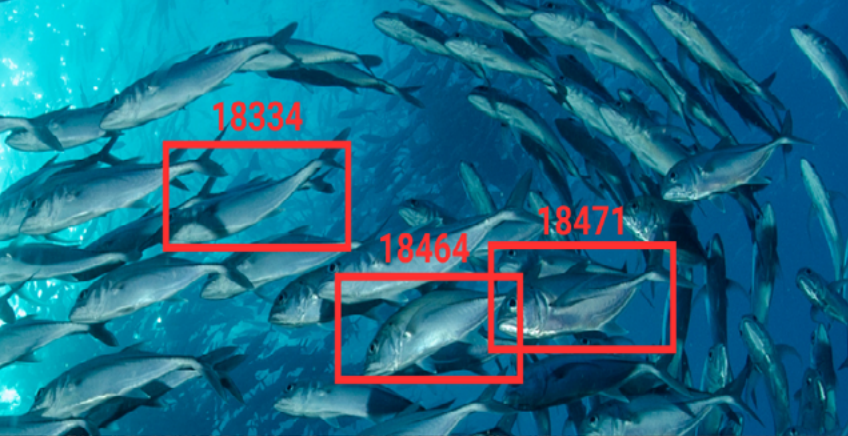
Navigation

- INS
 - DVL
 - GNSS
 - USBL
-

Communication

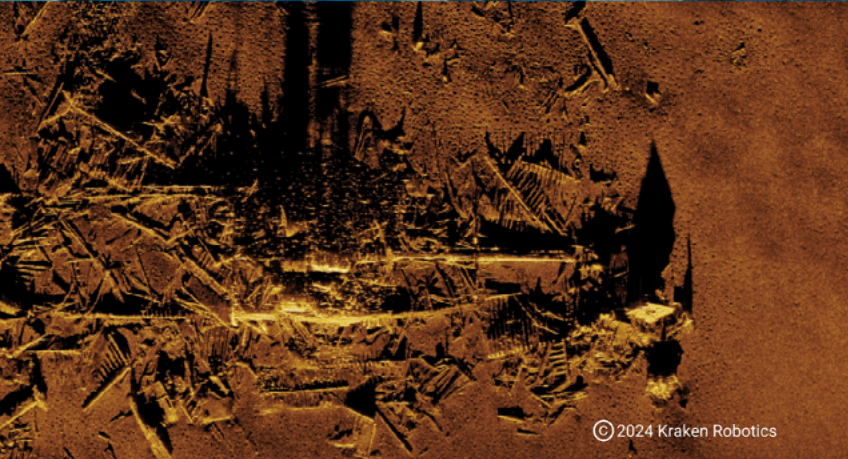
- USBL
- Tactical radio
- Satellite





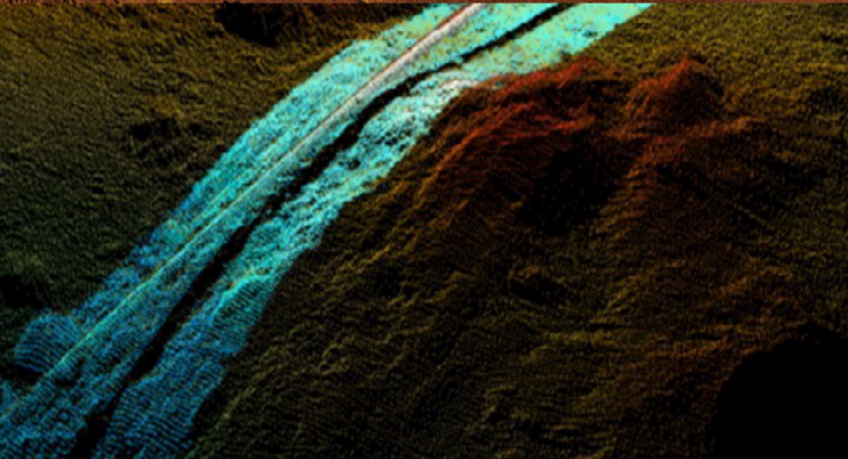
AI Vision

Underwater camera system with strobe LEDs



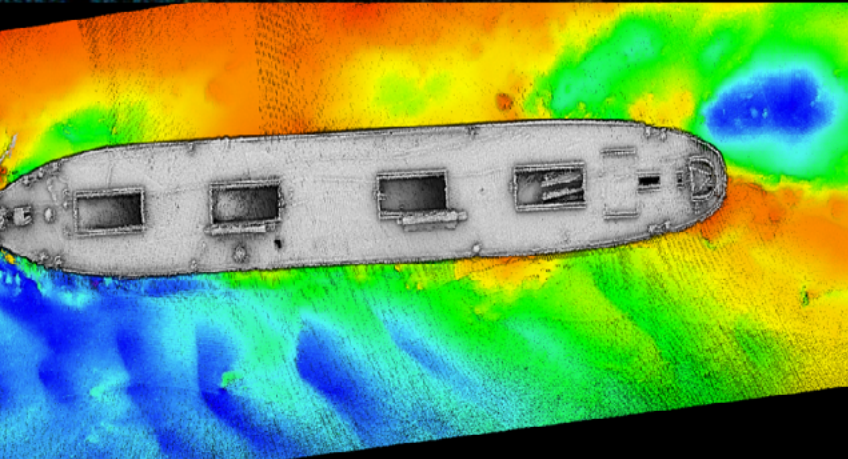
Synthetic Aperture Sonar

High resolution sonar imaging system



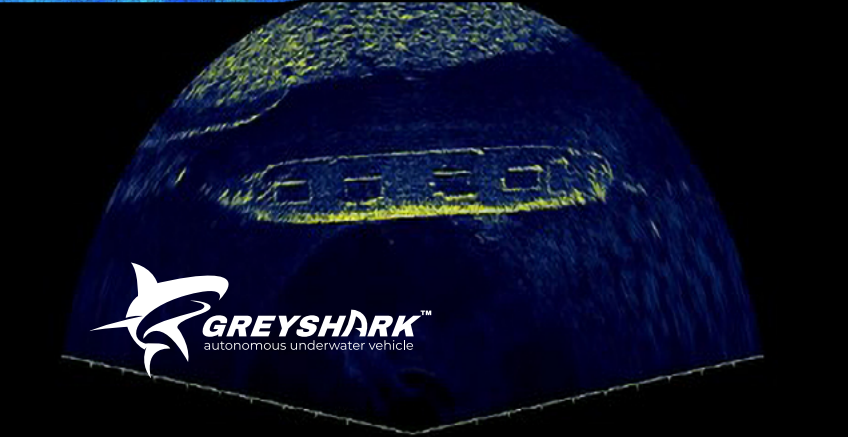
LIDAR

Underwater laser with change detection system



Downfacing Multibeam Sonar

3D sea bed sonar mapping system



Front Facing Multibeam Sonar

3D mapping system for object detection and collision avoidance

An aerial photograph of a two-lane asphalt road that curves through a dense forest of green trees. The road is bordered by a metal guardrail on the left side. A white semi-truck is driving on the road, moving away from the viewer. The surrounding landscape is a mix of green foliage and rocky terrain. The text 'Global Shipping' is overlaid on the left side of the image.

Global Shipping

Container transport system
with access to standardised
logistics platforms.



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