Intruder Detection System for Surveillance and UNDERWATER Protection of Critical Infrastructures and Ships
Easy manual ‘over-the-side’ deployment or davit-crane deployment.
DDS-03 is a high-frequency active sonar specifically designed to protect harbours, anchored vessels and critical infrastructures against underwater threats. DDS-03 can be integrated with any surveillance system.

**Three Operation Modes**
- **Protection of Harbour Entrances**
- **Protection of Ships**
- **Protection of Critical Infrastructure**

DDS-03 is a modular and upgradable system capable of protecting any area, infrastructure or ship. The System can be installed either in a ship, harbour piers or on the seabed.
The objective of the Underwater Deterrent System is to ‘warn off’ unauthorized divers that they are in a protected area and, if needed, to emit dissuasive acoustic signals.

**OPERATION. Reduced Operator Workload.**
When DDS-03 tracks a threat, it automatically generates an alert indicating the threat’s position, distance, trajectory and type of contact, allowing the operator to cast a deterrent message to the diver or send a patrol to the area. The automatic detection, classification and tracking functions provide reliable alerts of multiple underwater targets with minimal false alarms.

**COMPACT SYSTEM.** Long range detection in a system which is easy to handle, deploy and use.
The DDS-03 system is composed of a sonar which detects threats and a surface unit responsible for the graphic display and system control. Each sonar unit provides a full 360 degrees of coverage, and is capable of detecting and tracking underwater threats. Multiple underwater units can be integrated into a common control unit increasing the detection range. Mobile device with supervision & interception functions is available to complement the system.

**Easy integration and minimal maintenance.**
DDS-03 can be operated stand-alone or integrated into any Security Control Centre. This technology, which we originally designed for military purposes, is currently being used for surveillance and protection of critical infrastructures and high-value ships.
**Coverage**

DDS-03 covers 360° surveillance. To extend protection coverage extra sonar units can be added. Beam steering transmissions ensure detections at any deployed depth.

**Alarms, Tracking & Classification**

DDS-03 works 24 hours a day providing automatic alarms, tracking and classification. Reduced false alarm algorithms are based on Weight Of Evidence (WOE) levels.

**HMI & Displays**

DDS-03 HMI provides sonar displays and nautical charts. Simple and intuitive software. No specialist operator required.

**Dimensions & Design**

Lightweight units with compact dimensions and WIFI communication for easy installation on-board ships.

DDS-03 complies with EMI, Environmental, Chocks and Vibration standards.

**Installation**

Different forms of deployment depending on the operational use and zones to be protected.

**Deterrent System**

A soft-kill reaction against any underwater intrusion. DES allows the operator to send underwater warnings. The deterrent system can be installed in a patrol boat.

**Mobile devices**

App for easy guiding the security forces to the threat position.

**Cost Effective**

COTS-based architecture and modularity offer a cost-effective solution for underwater surveillance and the protection of large areas.

**Performance Analysis**

Software to calculate the probability of detection related to range, and the best depth to deploy the sonar.

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**KEY FEATURES**

- DDS-03 covers 360° surveillance. To extend protection coverage extra sonar units can be added.
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- Different forms of deployment depending on the operational use and zones to be protected.
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- App for easy guiding the security forces to the threat position.
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**Diagram:**

- DDS-03 covers 360° surveillance.
- DDS-03 provides automatic alarms, tracking and classification.
- DDS-03 HMI provides sonar displays and nautical charts.
- Lightweight units with compact dimensions and WIFI communication for easy installation.
- DDS-03 complies with EMI, Environmental, Chocks and Vibration standards.
- Different forms of deployment depending on the operational use and zones to be protected.
- A soft-kill reaction against any underwater intrusion.
- DDS-03 allows easy guiding the security forces to the threat position.
- COTS-based architecture and modularity offer a cost-effective solution for underwater surveillance.
- Software to calculate the probability of detection related to range, and the best depth to deploy the sonar.

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**Abbreviations:**

- DDS-03: Direct Deterrence System
- SDV: Surface Detection Vehicle
- UUV: Underwater Unmanned Vehicle
- USV: Unmanned Surface Vehicle
- RF: Radio Frequency
- WIFI: Wireless Fidelity
- EMI: Electromagnetic Interference
- WOE: Weight Of Evidence
- DES: Deterrent System
- COTS: Commercial Off-The-Shelf