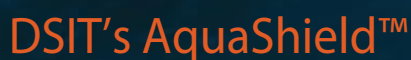




AQUASHIELD™
DIVER DETECTION SONAR

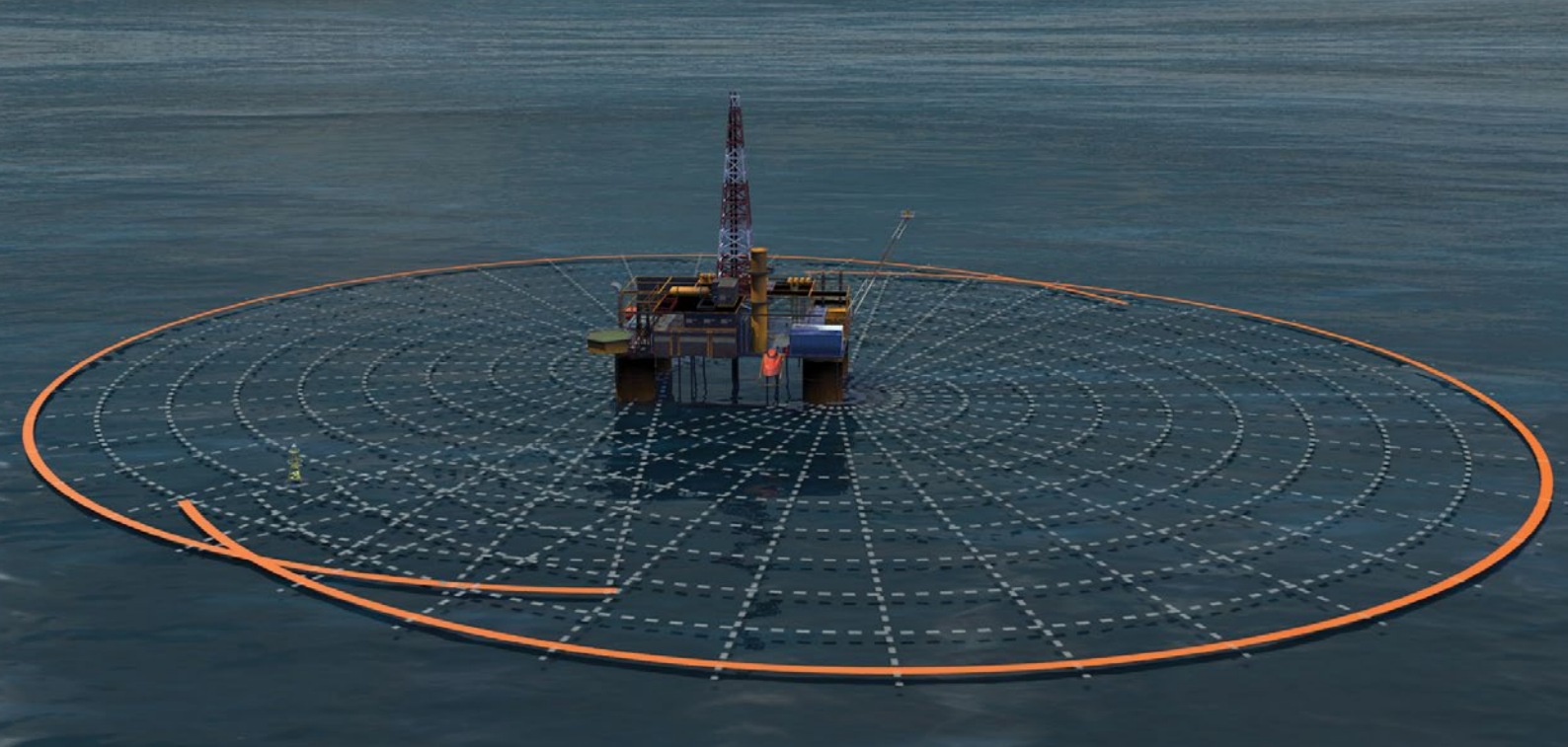


The AquaShield™ is an advanced Diver Detection Sonar (DDS) system, incorporating years of experience accumulated from continuous operation at multiple sites around the world. The system is operational in-the-water, protecting naval bases, energy terminals, commercial ports, off-shore platforms and other high value assets from underwater intrusion. AquaShield's unique modular design enables tailoring of the system to customer requirements and site specific geography. The AquaShield™ offers a long range of detection for even the weakest of targets, and can easily handle over 1,000 contacts simultaneously. The combination of a fully automatic mode of operation, very low maintenance requirements and high system reliability create a highly cost-effective system. AquaShield™ DDS - the best underwater security system available.

Main Features

- ★ No operator required – fully automatic (from detection through tracking and classification to alert)
- ★ Capable of handling more than 1,000 sonar contacts simultaneously
- ★ Highly accurate positioning of the threat
- ★ Built to operate 24/7/365 in all weather and water conditions
- ★ Robust design – can withstand an explosion of 0.2kg TNT at a distance of 5 meters only
- ★ Built in redundancy
- ★ 3 sector coverage options: 120°, 240°, 360°
- ★ Open architecture supports easy integration with any C&C and other sensors
- ★ Display includes multiple display formats, target data, exclusion zones and more
- ★ Proven high reliability – systems operating in the water for years with zero malfunctions
- ★ Very little maintenance needed





The AquaShield™ System Units



The AquaShield™ Applications

The AquaShield™ is designed to guard the following coastal and offshore sites from underwater intrusion and sabotage:

- ★ Naval Bases
- ★ Energy terminals
- ★ Offshore platforms
- ★ Ports and Harbors
- ★ Nuclear power facilities
- ★ Underwater pipelines and cables
- ★ Borders
- ★ VIP Sites
- ★ Other critical coastal/offshore asset

Underwater Threats

Any underwater intruder, including:

- ★ Divers with closed circuit breathing apparatus
- ★ Divers with open circuit breathing apparatus
- ★ Diver Propulsion Vehicles (DPV)
- ★ Swimmer Delivery Vehicles (SDV)
- ★ Unmanned Underwater Vehicles (UUV)



AquaShield™ Specifications

| The AquaShield™ Main Units | | Special Processing Algorithms | Detection Ranges | |
|---|---------------------|--|---|--------------------------|
| <div>>> Underwater Unit</div> <div>>> Processing Unit</div> <div>>> Control and Display Unit</div> <div>>> Junction Box</div> | | <div>>> Performance Optimization</div> <div>>> Coherent and Energy Detection</div> <div>>> Bearing Interpolation</div> <div>>> CFAR Processing</div> <div>>> Two Dimensional Normalization</div> <div>>> Adaptive Threshold</div> <div>>> Automatic Detection</div> <div>>> Automatic Tracking</div> <div>>> Automatic Classification</div> <div>>> False Alarm reduction</div> <div>>> Automatic Alert</div> <div>>> Automatic Elimination of Wakes</div> <div>>> Static Target Suppression</div> | Diver with open circuit breathing apparatus | 1,000m |
| | | | Diver with closed circuit breathing apparatus | 700m |
| | | | Swimmer Delivery Vehicle (SDV) | 1,500m |
| | | | Transmit / Receive Parameters | |
| The Underwater Unit | | | Source Level (Max) | 220 dB re 1μPa @ 1 meter |
| <div>>> Underwater Front-end Electronic unit (UFE)</div> | | | Center Frequency | 60 KHz |
| | | | Transmission Modes | CW and LFM |
| >> 1 Transmit Array (Tx) with 360° coverage | | | Pulse Width | 1- 40 ms |
| <div>>> 1 – 3 Receive Arrays (Rx) depending on the required coverage:</div> <div><div>■ 1 Rx array for coverage of 120°</div><div>■ 2 Rx arrays for coverage of 240°</div><div>■ 3 Rx arrays for coverage of 360°</div></div> | | Display Formats | Range Accuracy | better than 0.5 meter |
| | | >> Sonar Data | Bearing Accuracy | 0.1° |
| | | <div>>> Tactical Picture on:</div> <div><div>■ Aerial photo</div><div>■ Satellite Image</div><div>■ Nautical Chart</div></div> | Transmit Array | 40 cm |
| | | >> Overlay of Sonar Data on any type of Tactical Picture | Receive Array X 3 | 125 cm |
| Interface & Integration | | Recording & Playback | Built In Test (BIT) | |
| LAN Interface | TCP/IP | Several modes of data recording and playback enable debriefing of special events | >> Constant monitoring of all modules | |
| Integration | with any C&C system | | >> Automatic alert in case of failure | |

About DSIT

DSIT Solutions Ltd., a subsidiary of Acorn Energy (NASDAQ: ACFN), develops and produces sonar and fiber optic applications for the defense, commercial, energy and homeland security markets.

The company employs a world-class multi-disciplinary team of professionals that are skilled in the latest sonar and Real-Time technologies. DSIT products include: SeaShield™ Submarine Detection Sonar, AquaShield™ Diver Detection Sonar (DDS), PointShield™ Portable Diver Detection Sonar (PDDS), Portable Acoustic Range (PAR), Underwater Acoustic Signal Analysis (UASA), and a wide variety of Sonar Simulators and Trainers.

Discover

what's down there



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