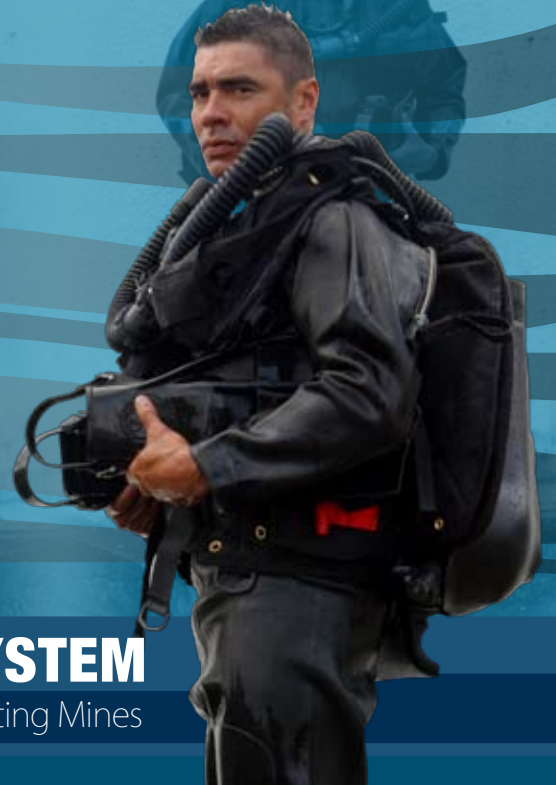




DSES



DIVER SIGNATURE EVALUATION SYSTEM

Evaluating Diver Performance When Identifying And Deactivating Mines

BENEFITS

- COTS – VIRTUALLY ALL THE COMPONENTS ARE COMMERCIALY SOURCED REDUCING THE THROUGH LIFE COSTS AND SUPPORTABILITY RISKS.
- LIGHTWEIGHT AND COMPACT – THE COMPLETE SYSTEM IS SMALL AND PORTABLE ENOUGH TO BE DEPLOYED AND RECOVERED BY 2 PEOPLE.
- EASE OF USE – DSES CAN BE DEPLOYED AND OPERATIONAL IN LESS THAN 2 HOURS, ONLY REQUIRING A RHIB OR SIMILAR SIZED VESSEL.
- REAL TIME FEEDBACK – DSES PROVIDES NEAR REAL TIME FEEDBACK ON THE PERFORMANCE OF THE DIVER AND EQUIPMENT.
- FLEXIBILITY – THRESHOLD LEVELS FOR ALL SENSORS ARE OPERATOR SET BASED ON THE MINE THREAT PROFILE
- RISK REDUCTION – DSES ENABLES DIVER TECHNIQUES AND EQUIPMENT TO BE EVALUATED AND VERIFIED EITHER IN THEATRE OR BEFORE DEPLOYMENT.



DSES uses sensors and electronic systems mounted in a fibreglass mine shape on the sea bed to collect data and transfer it for real time analysis of the signature from divers and their equipment.

Operation

The mine shape is deployed onto the seabed from a RHIB or similar sized boat. The seabed computer is positioned about 50m away whilst the battery pack, laptop and interface box remain in the boat. The system is powered up and the operator sets the required threshold levels before the diver approaches the mine. On completion of the serial the system is recovered for post use maintenance.

Mine Shape

The manta mine like shape houses the sensors, an electronic compass module and alarms. The sensors are:

- Acoustic
- Pressure
- Magnetic
- Electric (Option)

The electric compass module with tilt and temperature sensors ensures the level deployment of the mine shape and monitors the sea water temperature. A mine activation warning light and audible alarm are fitted to indicate mine activation when trigger thresholds are reached.

Seabed Computer

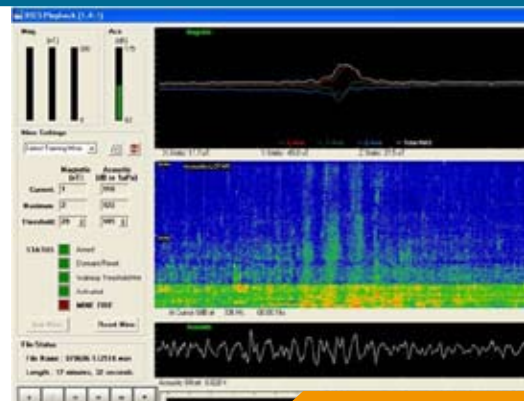
This contains the main computer, data acquisition card, converter, differential receiver card and power rails. It is connected to the mine shape by a 50m cable and after storing and converting the data transfers it to the boat based equipment. Connected to the seabed computer is an underwater video camera for visually monitoring the diver's movements.

Boat Based Equipment

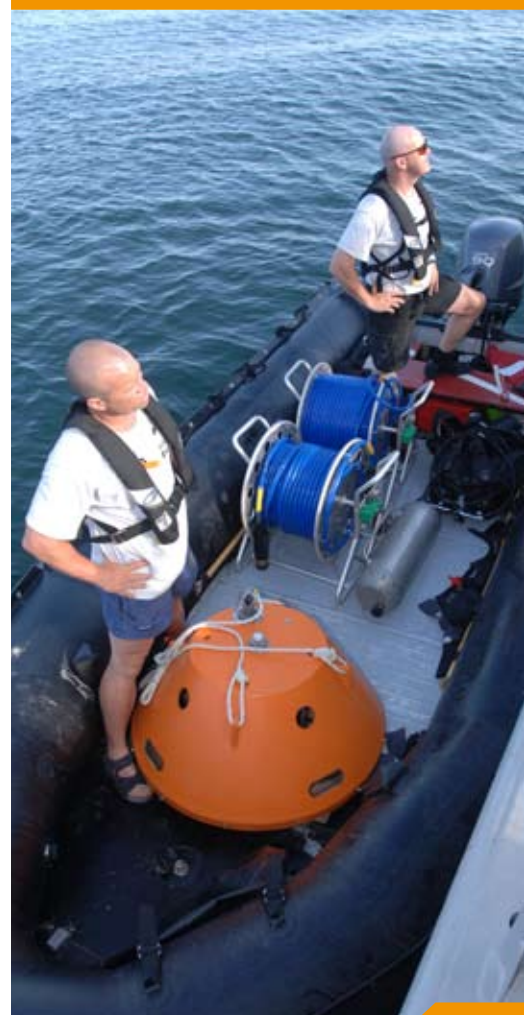
The Boat based equipment consists of three parts: the battery pods, Toughbook computer and the interface box.

Software

The software has been developed by New Zealand's Defence Technology Agency using Delphi. It allows specific mine settings and thresholds to be entered by the operator based on threat mine data. Serial data is recorded in the seabed computer, viewed in real time on the Toughbook and transferred between serials as required. The display shows the various sensor recorded levels, mine status and recording details. Underwater camera footage is viewed and recorded on the toughbook in real time.



Software



Operation



Seabed Computer

