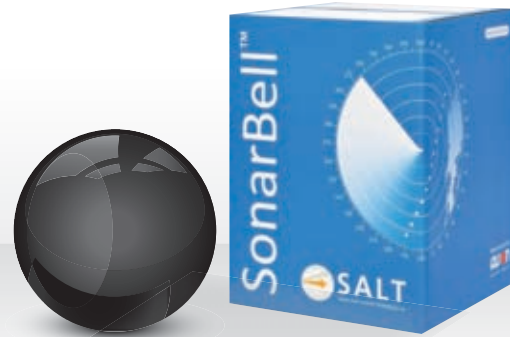


SonarBell™ SUMMS – SonarBell™ Underwater Mine Marking System

Defence Products

SALT has designed a number of systems for military and security use utilising the unique properties of the passive SonarBell™ technology of which the SUMMS system is one.



➔ Enhancing Mine and Ordnance Clearance Operations



In clearing an area suspected of containing sea mines or other ordnance, those charged with the operation are often under significant time or other pressures. Efficient marking of objects classified as suspicious for further investigation/disposal by SonarBell™ can make a significant contribution to the rate of progress achieved.

SonarBell™ can also make a significant difference to commercially managed operations in terms of:

- ➔ "Post-Operations clearance"- speeding up area recovery for the return of commercial shipping
- ➔ Removal of historical ordnance from the seabed to allow commercial exploitation

SonarBell™ is a totally passive device with a significant and dependable acoustic signature and low non-acoustic signature. As such it provides an ideal device for marking mines or other objects for subsequent exploitation or destruction.

➔ Maximising the benefit of the SonarBell™



SonarBells™ work with all types of sonar from the highly sophisticated hull mounted and side-scan devices at the top of the scale down to fish-finders and depth sounders at the bottom.

To get maximum performance from different combinations of sonar detection systems owned by the client, SonarBells™ are tuned to induce maximum resonance at the appropriate frequencies.

Resonance can be broad or narrow band depending on client requirements and bespoke signatures can be created to align SonarBell™ with differing sonar's used in the same operation.

SALT is familiar with this design process and such requirements can be met through our Bespoke Design Services.

The SUMMS system can be supplied with the weights, floats and ropes necessary for efficient utilisation as the customer requires.

➔ Wide Ranging Applicability

SonarBells™ are very simple devices but as a consequence they have potentially a very wide ranging applicability. For example:

- ➔ Marking wrecks or other underwater hazards
- ➔ Marking of floating, tethered and bottom mines
- ➔ Marking of ordnance for commercial post-operations clearance
- ➔ Marking of historical ordnance during area preparation for commercial exploitation i.e. Offshore wind farms
- ➔ Marking clear channels and minefield boundaries

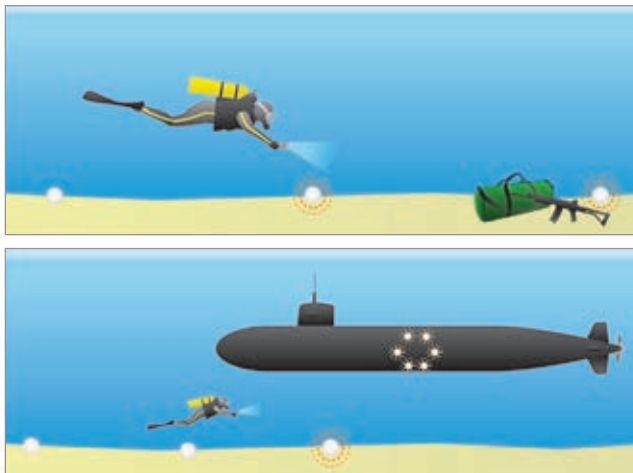


Other Defence products available from SALT include:

SonarBell™ Entry, Exit And Recovery System - SEEARS

SonarBells™ are capable of supporting combat swimmers during the entry, exit and recovery operational phases, acting as waypoints between compass bearings and can also be used to mark the location of equipment for recovery during or after operations.

SALT provide a set of SonarBells™ and hand-held sonar tuned for optimal performance.



SonarBell™ Performance and Training System - SPATS

Knowing the effective range of a swimmer detection sonar is vital if interception teams are to be brought to the appropriate state of readiness for the prevailing conditions - allowing you to reduce unnecessary fatigue.

Having SonarBells™ in the water as range markers can provide the difference between knowing you have enough warning to arrange swimmer interception and hoping you have.



SonarBell™ Equipment Tracking System - SETS

Delivering passive tracking of underwater equipment for in-service position monitoring and asset recovery in the event of power failure or loss of communication.

SonarBells™ supplied can be tailored for different size AUV/ROVs and for the frequency of the surveillance sonar.



➔ SALT Bespoke Design Services

As the pioneers of SonarBell™, SALT has unrivalled experience in designing SonarBells™ that meet client requirements. We would be delighted to talk over any specific requirements you might have.

Subsea Asset Location Technologies (SALT) Ltd is a 'spin out' company from the UK Ministry of Defence's, Defence Science and Technology Laboratory (Dstl) and was formed to make this military derived technology available to a wider market.



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