Signature Monitoring Systems

Drumgrange can provide a range of Signature Monitoring Systems (SMS) for organically monitoring the radiated acoustic emissions of Warships and Submarines.

Our SMS has been developed as a stand-alone system comprising transducer arrays, data acquisition and data distribution sub-systems and PC based operator work-stations. Alternatively, we can offer the transducers with network based telemetry and embed the software application within the platform's existing Sonar or Combat system.
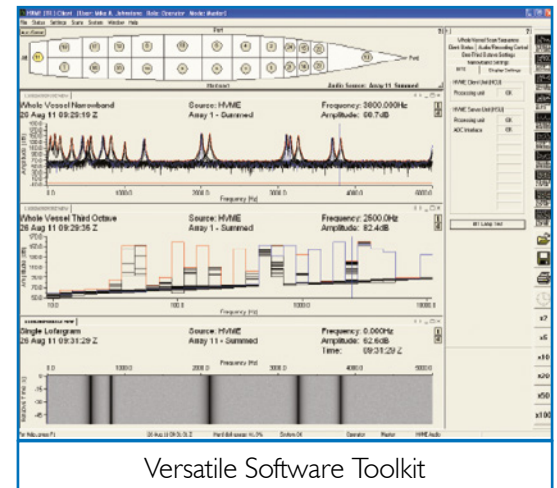
The transducers comprise arrays of hull internally mounted accelerometers and external hydrophones which can be populated throughout the platform or localised in particular compartments to provide real-time radiated noise estimates and to aid the localisation of noise sources.

The software provides a modular acoustic analysis toolkit and an equipment database which allows the operators to customise the system to suit the platform configuration.

Key features of the software include:

- Windows based application operated independently or within a networked combat system

- Single transducer, compartment or whole platform acoustic measurements

- Narrowband or third octave analysis

- Single or summed Lofargram displays

- Frequency coverage depending on transducers

- Raw data capture for post-processing

Drumgrange can also provide fully customised solutions to suit bespoke requirements.

Versatile Software Toolkit

Bulkhead Mountable Control Panel

WHEN MISSION CRITICALITY MATTERS

Drumgrange's Signature Monitoring System Key Features	

Monitoring and Analysis Displays	Channel Analysis;
	  • 3rd Octave
	  • Lofargram
	  • Wideband
	Compartment Scan
	Whole Vessel Scan
	User populated machinery database
	User populated calibration factors
	Narrowband zoom.
	Peak find function
	Saved and restore scan results data.
	Comparison function to overlay current scan results with previous scans
	User annotation of scan results.

User Tools	Line cursor identifying a single frequency and its associated amplitude. Sideband cursor identifying a frequency and selected sidebands. Harmonic cursor identifying a frequency and its harmonics. Crosshair cursor identifying a frequency, amplitude and time on a lofargram display. Machinery cursor identifying machinery frequencies from an operator entered database of known frequencies
Aural Facilities	Baseband operation Wideband and narrowband modes Can be slaved to analysis or scan channels
Alarms	Operator controlled alarms on exceeding configured noise level limits
Data Logging	Operator controlled signal, signature and screen data logged to encrypted removable media Readout of disk space used
BITE Reporting	BITE reporting to LRU BITE reports logged to removable media Serial PMS status reporting

SMS Hardware	
Compact bulkhead mountable console Rack mounted processing enclosure COTS processing hardware Low noise signal conditioning and acquisition electronics	EMC: DEF STAN 59-411 for below decks Environmental: DEF STAN 00-35 CE Marking: LVD 2006/95/EC, EMC 2004/108/EC