



PANOR

Portable Acoustic Noise Range

DESCRIPTION

The PANOR (Portable Acoustic NOise Range) system is a transportable acoustic noise range facility, used to measure and analyse underwater radiated noise from surface/submarine vessels.

PURPOSE

The system's primary purpose is to obtain the underwater acoustic characteristics of a vessel in order to determine the probability of its detection by mines and passive sonars and to evidence possible malfunctions of vessel equipment.

This is achieved by performing the measurements during several predetermined runs inside a proper range area.

SYSTEM COMPONENTS

- Integrated Sensors Array, included in the Wet End Subsystem composed by two distinct moored components:
 - . A mooring
 - . B mooring
- Vessel Navigation Subsystem
- Support Vessel Subsystem
- Ground based Data Centre Facility

FUNCTIONING

The Vertical Acoustic Array, included in the A mooring, accomplishes the task of acquiring the acoustic radiated noise from the surface/submarine vessels under trial.

The acoustic signals are then pre-processed, digitised and radio transmitted by the Acquisition and Processing Subsystem located in the A Mooring Acquisition and Data Radio Transmission Buoy to the Support Vessel Subsystem, where the SVS, the digitised signals are collected, pre analysed and processed together with the time referred tracking data of the Under Test Vessel.

The stored data are transferred to the ground based Data Centre Facility for further analyses, like:

- Third-octave analysis
- LOFAR analysis
- DEMON analysis
- Transient analysis

Data Centre Facility tools support the storage of the relevant acoustic characteristics in the data bank.

TECHNICAL DETAILS

- Integrated Sensors Array composition:

- . 27 pre-amplified hydrophones, narrow band;
- . 2 pre-amplified hydrophones, wide band, located at both ends of the array;
- . 3 auxiliary sensors (one depthometer, for array depth measurement, and 2 inclinometers, for array inclination measurement).

- Main characteristics:

- . Array length: 45 mt.
- . Outer diameter: 60 mm.
- . Operating depth: up to 200 mt.
- . Survival depth: up to 500 mt.

STATUS

In service with Italian Navy, it is currently used for the operational noise measurements of different types of vessels. It is available for loan to Navies, upon specific request.

