

Research Facilities & Laboratories

The Alliance provides 400 square meters of operational scientific space in total consisting of:

- Main Scientific Laboratory
- Tactical Coordinator's Office
- Programmers' Office
- Environmental Equipment Maintenance Laboratory
- Acoustic Equipment Maintenance Workshop
- Amplifier Room
- Wet Laboratory
- Oceanographic Winch room

Sensors

A wide variety of acoustic and oceanographic sensors can be inquired about for possible deployment from the Alliance. These include:

- Vertical and horizontal towed arrays,
- Self recording oceanographic devices
- Towed oscillating systems
- Mine counter measures research tools

The vessel is fitted with a 75 kHz acoustic Doppler current profiler for underway surface current profiling, as well as an 80-beam ATLAS MD (49 KhZ) multibeam swath mapping system. Because the system is so integrated with time tagged precise positioning, it provides a means for determining seabed site morphology in specific areas of acoustic and scientific interest, down to depths of about 1000 meters.

Acoustics

On the Alliance, every aspect of the construction, operation and continuing maintenance of the vessel is completed with the aim of facilitating the lowest possible Underwater Radiated Noise (URN) levels at all speeds and in all operating conditions. For example, the two diesel-electric generators, the main source of propulsion, are mounted on vibration isolating rafts and enclosed within booths to reduce the sound emitted, and a secondary gas turbine propulsion system generates even less noise. While drifting, batteries may be used to induce a state of absolute quiet.

Vessel acoustics are managed by the Planned Maintenance System (PMS), and the hull vibration monitoring system (HVMS), which is supported by both static and underway noise ranging. The HVMS also provides an excellent equipment health monitoring system, and is useful for identifying degrading equipment.