

CEESCOPE™ and Enhanced StarFish Side Scan for Rapid Mobilization Surveys with the Royal Australian Navy.

The Royal Australian Navy (RAN) required a modern, easy to use, rapid deployment survey capability comprising a single beam echo sounder and side scan imaging. To meet this requirement, CEE engineers first took the Tritech StarFish side scan and designed a waterproof, ruggedized battery-operated topside to replace the OEM unit. Then, the existing RTK CEESCOPE™ was augmented with an arctic grade power pack. Together, the CEESCOPE and Tactical StarFish form the Rapid Mobilization Survey System (RMSS), used for three distinct but related RAN survey challenges.

The use of single beam bathymetric surveying paired with simultaneous side scan imaging is recognized by the Royal Australian Navy, among others, as a technique well suited to rapid response surveying where accurate data are needed quickly, often in remote and potentially difficult environments. To fulfil several survey requirements with a single equipment suite, RAN contracted CEE HydroSystems to supply a hardware, software and support package designed specifically for their identified survey scenarios.

While the benefits of the equipment selected are widely applicable – ease of use, mobility, and ruggedness – the RAN identified three discrete survey challenges for the new equipment:

Rapid Environmental Assessment

In this case, survey crews deploy quickly via rigid-inflatable (RIB) boats from the HMAS Canberra-class landing helicopter dock (LHD).



HMAS Canberra.

The rapid environmental assessment (REA) survey is required to survey a navigation lane/channel for landing craft (LLC) to safely navigate to the beach or the intended offload point and ease of mobilization is a key requirement for this scenario.



RAN landing craft.

Vessel of Opportunity

Deployable Geospatial Survey Teams (DGST) travel by commercial airlines to foreign ports to help in disaster relief efforts following cyclone and tsunami events. These activities may include identification of navigation hazards, improving situational awareness for boat coxswains, and beach surveying related to bringing aid onshore.

For this application it was critical that RMSS kit components were designed and packaged to be suitable for airline travel, and installation hardware offered maximum flexibility for mounting on varied boat types.

Conventional Survey Vessels

Each of the survey ships Leeuwin and Melville, and survey motor launches Paluma (IV), Mermaid, Shepparton (II) and Benalla (II) has a RMSS kit, which is deployed from a Light Utility Boat (LUB) for general shallow water surveying. HYPACK acquisition software is used by RMSS surveyors, leading to a qualified and accurate survey product deliverable.



Survey Ship (AGS) Leeuwin Class.



Motor launch Paluma-class.



RAN LUB with side pole mount.



Commissioning Tactical Survey Kits.

The value of the RMSS to the RAN highlights the benefits of having a varied choice of survey tools. Advanced AUVs and multibeam echo sounders, for example, certainly offer exceptional capability in certain scenarios, however the RAN application highlights the continuing value of modern single beam echo sounding techniques and equipment for shallow water surveying.