

# Six RTK CEESCOPE Echosounder Systems for Australian Navy



Hydrographic echosounder manufacturer CEE HydroSystems recently completed the delivery of several CEESCOPE 200kHz singlebeam echosounder survey systems for the Royal Australian Navy (RAN) hydrographic group based in Cairns, Australia. The CEESCOPE ultra-compact waterproof singlebeam 200kHz sonar systems were supplied with built-in RTK GNSS receivers, UHF radio and activated L-Band subscription differential corrections to give the RAN surveyors flexibility in terms of their satellite positioning solution.

Replacing their existing and ageing CEEDUCER echo sounders, the CEESCOPE units will be used for near shore littoral Rapid Environmental Assessment (REA) surveys. For example, a REA may be needed to facilitate

safe navigation of a large vessel in unfamiliar waters such as when delivering emergency aid. The REA surveys may call for use of a vessel of opportunity, with limited existing survey infrastructure, leading the survey team to select the CEE echo sounder that specifically is designed with rapid mobilisation in mind.

## Centimetre Precision

The RAN's Deployable Geospatial Support Team and hydrographic training school based at HMAS *Penguin* in Sydney Harbor will also be using the new CEESCOPE echo sounders for routine surveys and training missions, primarily on the Navy LUB's (Light Utility Boats). In RTK mode, the CEESCOPE will communicate directly with Trimble RTK base stations used by the RAN for centimetre precision on detail surveys close to existing infrastructure; L-Band corrections or autonomous positioning will be adequate for remote or REA navigation operations.

Along with the CEESCOPE echo sounders, acquisition software HYPACK MAX gives the RAN surveyors a trusted and well supported acquisition package making use of the CEESCOPE's water column echo envelope data for real time quality control, one of several improvements realised over the previous CEEDUCER echo sounder used by the RAN until 2015. Replacing the CEE HydroSystems signature bright yellow enclosures with a more discreet packaging was the only modification needed to meet RAN field suitability criteria.