CEESCOPE-USV Echosounder for Remote Hydrographic Surveying

CEE HydroSystems has announced the release of a singlebeam echosounder survey system, designed specifically for the growing number of shallow-water unmanned surface vehicle (USV) survey applications using both commercially-available and custom-manufactured remotely operated boats. The CEESCOPE-USV is an echosounder, GNSS and broadband radio telemetry package that can be installed on practically any remotely operated boat.

As an entirely self-contained module requiring no interface with the USV, challenges of instrument data integration on the vehicle are minimised or eliminated. Rigorous data handling eliminates latency concerns resulting from radio transmission to the shore, and the CEESCOPE-USV brings a clear separation between the vehicle and the bathymetric data solution. Using high capacity radio telemetry, detailed 20Hz dual frequency soundings, up to 20Hz RTK GNSS, and a detailed digital echogram are available to the USV operator on shore, via the CEE LINK radio base station. Using software packages such as HYPACK and Eye4Software Hydromagic, data from the CEESCOPE-USV telemetry link allows the operator to steer the USV along the survey line just like in any manned boat survey. Users wishing to add real time video or side scan capability to their USV may plug the data output from these devices into the CEESCOPE-USV and those data are relayed to the shore with the GNSS and bathymetry data. Similarly, navigation data may be exported from the CEESCOPE-USV to vehicle control systems if needed, such as for waypoint guidance.

Adrian McDonald of CEE HydroSystems USA said that by removing the requirement for the vehicle to also handle data telemetry, total system costs may be reduced, and the separation of the instrument and vehicle electronics is advantageous in several ways. By offering a complete data package designed specifically for USV surveying, CEE Hydrosystems facilitated surveyors to create their own USV designs as they no longer have to worry about how to handle multiplexing, storing, and transmitting their data.

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