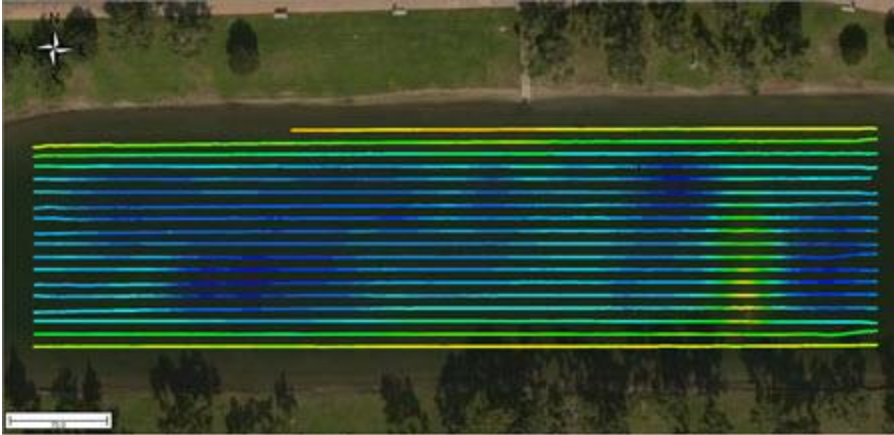


CEE HydroSystems Launch CEE-PILOT™ Robotic USV Navigation Controller.

In partnership with marine autonomy experts Dynautics Ltd and hydrographic survey acquisition software developer Eye4Software, CEE HydroSystems can now offer a uniquely simple robotic waypoint navigation controller for the CEE-USV™ remotely-operated hydrographic survey boat. In common with all other CEE survey equipment, the principal design criteria were simplicity and ease of use. Survey line planning and radio-link uploading of the course plan from the shore control PC to the CEE-USV is handled by entirely within the Hydromagic software package. The CEE-USV system architecture is based on the network-capable CEESCOPE-LITE™ echo sounder and is carefully designed to avoid the need for any remote PC on-board the USV, which would add undesirable complexity. As there is also no need for additional proprietary autonomy software to operate the robotic system, the CEE-PILOT™ solution reduces to an absolute minimum the added complexity of a robotically operating survey boat, while still realizing the benefits of autonomous operation.

Dynautics' advanced algorithms running on the CEE-USV's on-board SPECTRE™ control module use high update rate GNSS data from the CEESCOPE-LITE and inertial data to effect remarkably precise line-following. When used on a small, highly maneuverable vehicle such as the CEE-USV that is equipped with dual differential thrusters and dual rudders, the SPECTRE™ can maintain cross track errors consistently below 30cm (1ft).

Operators can run a pre-set line plan loaded into Hydromagic before the survey, or simply mark a boundary using the USV when in the field and then assign a line bearing and spacing to fill in the area as necessary. Survey line plans may be easily adjusted on the fly.



The CEE-USV is a 2m (6.5ft) high-performance remotely-operated survey boat for shallow water singlebeam surveying, and is used for industrial water surveying, river profiling, and harbor surveys. The CEESCOPE-LITE is an “all in one” RTK GNSS-enabled dual frequency echo sounder with built-in long-range radio telemetry.