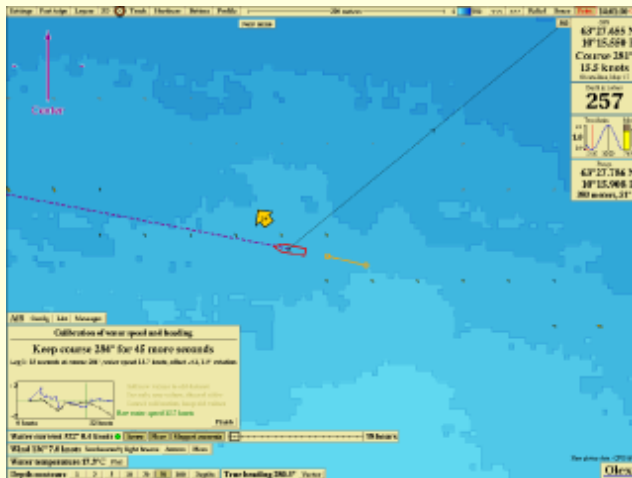


The SB-module lets Olex detect and map water currents. By analyzing five NMEA data types - position, speed over ground, course over ground, true heading, and speed through water - the vessel drift related to ground is calculated and shown as a variable-size arrow pointing away from the ship. This drift is assumed to be representative of the water current. Accuracy is very good and only limited by instrument resolution.

In addition to the real time water current, the values are also mapped in a cell-like structure much like the seabed depth, albeit at a somewhat coarser resolution. The mapping takes the main tidal phase into account; that is, for a given position, currents are mapped in several time slices synced to the moon's angle from the earth, the so-called M2 tidal constituent. The effect of this is that as the vessel sails around and collects current readings, a detailed map of water flow is built up; at any time, the assumed currents are shown as small arrows, related to the actual point of the tidal phase. There is a slider available to test how the flow will be like at a certain time into the future.



Instruments' calibration

Surprisingly simple instruments can be used for current mapping. This is possible because Olex is calibrating the sensors, recognizing various short-term errors, and using GPS for prediction validation. All water speed and heading sensors have to be calibrated for nonlinear response patterns. Olex has a special calibration mode where the vessel is steered in opposing straight lines at various speeds, automatically working out the water speed and heading correction factors.