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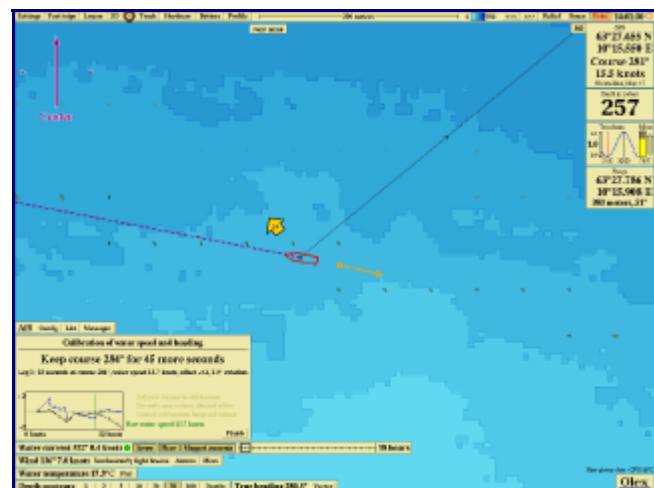
## Olex introduces automatic water current detection and mapping

We have now introduced a new Olex software module called SB. This module lets the 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 realtime 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.

The latest Olex version, 6.4, contains a demo and sample data collected by our own vessel a few months ago. The attached screenshots are from the demo. Future versions will allow sharing of currents data.



## INSTRUMENTS

One can use surprisingly simple instruments for this current mapping. This is possible because Olex

does a good job in calibrating the sensors, recognizing various short-term errors, and using GPS positions for prediction validation.

In our own boat, we use a Furuno SC-60 for position, heading, course and speed over ground, and a simple paddlewheel water speed sensor from Airmar for speed through water. These two instruments are sufficient. Of course, a higher grade water speed sensor can also be used, but careful sensor placement and high grade true heading may be more important. Maybe a mid price electromagnetic solid state sensor will be a good option.

At the Nor-Fishing expo, we were approached by skippers having costly doppler sonars capable of giving water currents at various depths. A natural development will be to interface to such instruments, to map currents close to the sea bottom.

## **CALIBRATION**

Regardless of what water speed sensor is used, it has to be calibrated for nonlinear speed response due to water flow patterns. The Olex has a special mode where it asks the skipper to steer opposing straight lines at various speeds, automatically working out a graph of apparent water speed and correction factors. Same for the heading sensor. This procedure will likely only be done during initial water trials, but can be repeated by the skipper if deemed necessary.

## **PRICING AND AVAILABILITY**

This new SB module has a list price of one-third the normal Olex price - 10.000 NOK, EUR1300, USD1660, GBP840, CAN1960 - the same as the ITI software module. The software is part of Olex 6.4, available for download now from our web site.