Special developed software for hydrographic surveying and dredging operation control.

The software consists of several modules and is intended for:

- The positioning of dredgers and depth monitoring of the digging tool.
- The positioning of survey launches and depth sounding of the dredging area.
- Processing of logged hydrographic data in the survey office.

The software is running on standard PC's under Windows and can be interfaced with all kind of sensors.

As hardware for the **positioning** a DGPS is used, with one or two antennas. One antenna, when only the position of the vessel is required and two for position and heading together. Depending on the required accuracy, different types of DGPS can be chosen, varying from sub-metre (<80 cm.) accuracy to some centimetres accuracy.

The most important module in the software package is **Profiler**. Profiler supports the skipper/dredgemaster in controlling the dredging operation and is suitable for all kind of dredging-, excavation- and dumping activities. Besides the DGPS several sensors are used, such as inclinometers, angle transducers, pressure transmitters, motion sensors, etc., to display not only the vessel itself but also the position of the digging tool (suction head, cutter, bucket, etc.).

The operations are shown in top view or cross-section, where the position of the digging tool is displayed relative to the actual- and designed depth to avoid overdredging and to increase the dredging efficiency. The actual depth is updated in real-time with the depth of the digging tool.
Tidal information can be entered manually or by a tidal receiver.

To check the dredging activities with a survey launch, the software module **Sextant** is available to gather hydrographic data and to run survey lines. For positioning, the same type of DGPS can be used as mentioned above. For the depth measurement several echosounders can be used, with one or two frequencies. The latter is used, to detect the silt on top of the sandlayer. To optimise this process, a motion sensor (heave, pitch and roll) can be added.

In the survey office the following software modules are available for post processing:

Geoplot:
- Importing the sounding data
- Editing these data
- Applying tidal reduction
- Plotting depth charts and creating the depth colour matri
- Creating profiles along survey lines.
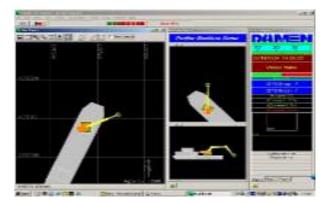
Model: - Creating surface models
- Creating digital terrain models (3D)
- Executing volume calculations
- Generating depth contour lines.

Planning: Preparation and planning of survey lines in various configurations. However random running of survey lines is an alternative.

MapEdit: Preparation and editing of basemaps in CHT. DXF, DGN, E00, SHP and other formats.

Tide: Entry and editing of tidal prediction data for use in Geoplot.

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