ScanNav Documentation
Track Analysis and Sensors

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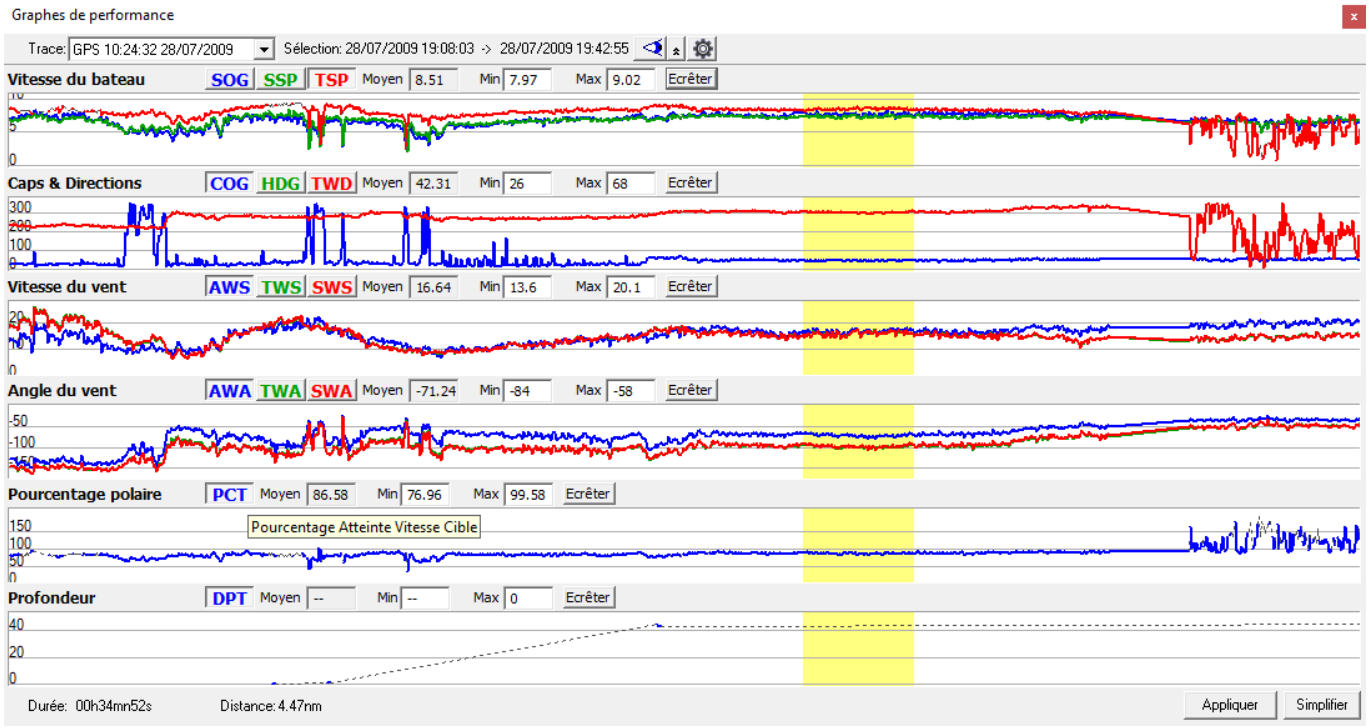
Introduction

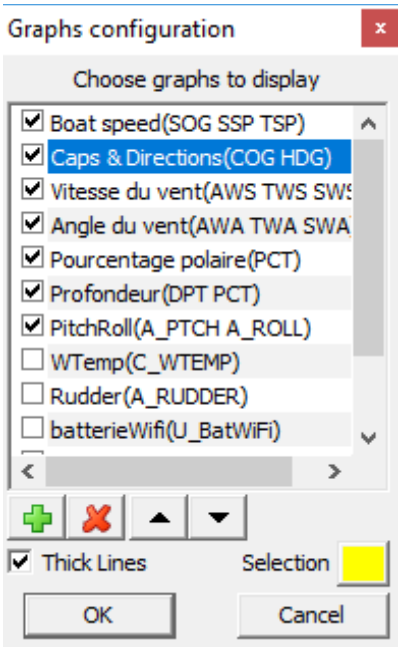
The track analysis graphs allow you to analyze the various parameters acquired in real time during your navigation (depending on the instruments connected), in order to highlight different navigation parameters, determine the performance of your boat at different speeds and conditions, visualize the depths etc. and generally all connected sensors.



Settings

As of version 19.0, several curves can be represented in the same graph.

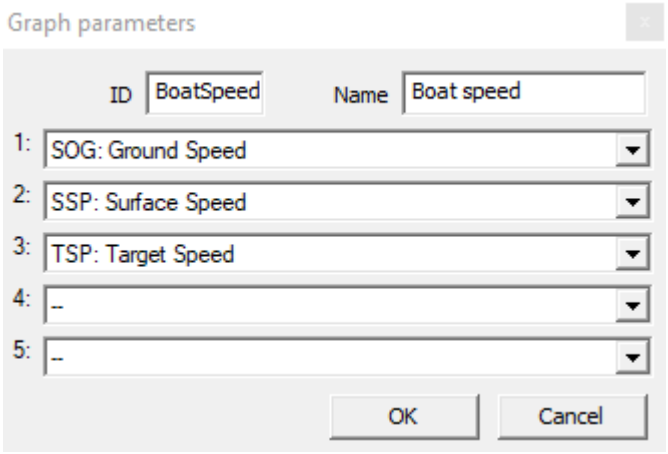
- The colored buttons (SOG, SSP, TSP, etc.) are used to select the curve whose min / max / average values are taken into account in the edit fields. Their color is associated with the corresponding curve color, and a tooltip is displayed by hovering over it to give a more meaningful label.
- All graphics are customizable, and it is possible to add / remove and rename at will.
- At first use, if there are no configured parameters, a list of preconfigured graphs is taken into account by default.
- To configure them, use the button or right-click anywhere in the window to bring up the dialogue below:



- Check / uncheck the boxes to enable / disable the corresponding graphs
- You can change the entries order by selecting one or more entries and using the 2 buttons to move up / down the selected entries.
- The line thickness of curves can be single or double (option "thick lines")
- The “Selection” button lets you set the highlight color representing the selected part of the track, on the map overlay, and its representation in the analysis window.

add or **modify** entries

- If no entry is selected (i.e. highlighted in blue) the following dialog contains empty fields
- If one or more entries are selected, the fields are initialized with those of the **first selected entry**



- The "ID" field is an arbitrary alphanumeric character string that identifies the graph. If you fill in a non-existent value, it will create a new graph. And if you assign an existing name, the corresponding graph will be replaced. It can not be empty, and must contain only alpha-numeric characters excluding any space or other special characters.
- The "Name" field is the label that will be displayed as the title for the graph. If it is empty, it takes the value of the identifier.
- The choice lists that follow let you select the various curves to be included in the graph and their order. It is possible to add up to 5 curves, but it is recommended not to put more than 3 for a matter of readability.

Deletes selected entries

- Make sure to include in the same graph only data with the same scale units. Indeed, the scale is adaptive: It dynamically adapts its min / max bounds so as to include all values of all curves over the displayed period. Thus, if for example you mix speed and heading in the same graph, you may have a flat speed curve if you are navigating at a course of 300°. The proposed choices are grouped by compatibility order, but there is no prohibition.
- The values of the percent polar reach curve can reach peaks if you are navigating out of the polar scope, but still close enough to not be null. Any values below 2% or above 200% are therefore arbitrarily considered invalid.
- Portions of invalid values are drawn in single gray dashed lines.
- For the calculation of the different wind variants, if the Surface Speed is not known (no loch), the Ground Speed is substituted in order to have at least one approach that should not be so far in areas without any currents.

Operation

To open the tracks analysis window, click on button in the main toolbar, or right-clik on a track in the map, and choose the menu entry “Analyze”. You will then be able to:

- Either choose a track in the top-left list (click on reveal the elements in the list)
- Or click on a track in the map to select it.

The full track will be represented in the different graphs. For each graph, the Mean, Minimum, and Maximum values are indicated for the selected segment (highlighted in yellow). Start and End dates of the selected segment are given at the top of the window and the duration and total distance at the bottom of the window.

To analyze a specific portion of the track, left-click at a given position on the track in the map, or on one of the graphs, then, without releasing the button, drag the mouse to select the desired segment. The selection will then be represented highlighted in the graphs and on the map, and Mean/Minimum/Maximum values will be recalculated for this segment.
You can zoom on the graphs to have a more detailed view, and/or scroll to different positions using the mouse wheel or keyboard arrows.

- To Zoom:
  - Turn the mouse wheel forward or backward
  - Or use the up and down arrows of the keyboard.
  - Or on a touch interface, use 2 fingers and move them apart or closer to zoom in or out.
- To scroll inside the track :
  - Press the mouse wheel without turning it (or the mouse middle button), and move the mouse to the left or right.
  - Or use the left and right arrows of the keyboard.
  - Or on a touch interface, use 2 fingers moving them together to the left or right.

The vertical scale of the different graphs will adapt automatically according to the visualized section so as to have the most possible details.

: Press this button to zoom the map to the selected segment.

: Press this button to minimize the window to its minimum header. This lets you mask temporarily the graphs window so as to have a better view on the map. Pressing the button again will restore it to its original size. The window can also be resized by dragging its edges like any resizable window.

: Refresh graphs. Useful especially when analysing the active trace, in order to refresh the last values as and when the evolution.

Tracks modifications:

Clip:

You can clean the track by removing eventual aberration points, using the “Clip” buttons.

- Select the segment to modify
- Change the Min or Max value in the corresponding graph
- Click on the “Clip” button for this graph.
- All points under “Min” value or above “Max” value will be removed from the track.

All modifications done using the “Clip” buttons stay local to the graphs representations until you press the “Apply” button. You may therefore do tests without affecting the memorized track.

Simplification:

Clicking on the “Simplify” button will open the Tracks simplification window for the selected segment. This is very useful as graphs help you determine the portions of a track that may be simplified without loss of information.

Integration of various sensors (Analysis and Repeaters)

The different generic sensors can be integrated to the Analysis tool. Please refer to the Repeaters documentation