

SimSail 2.6



User Manual

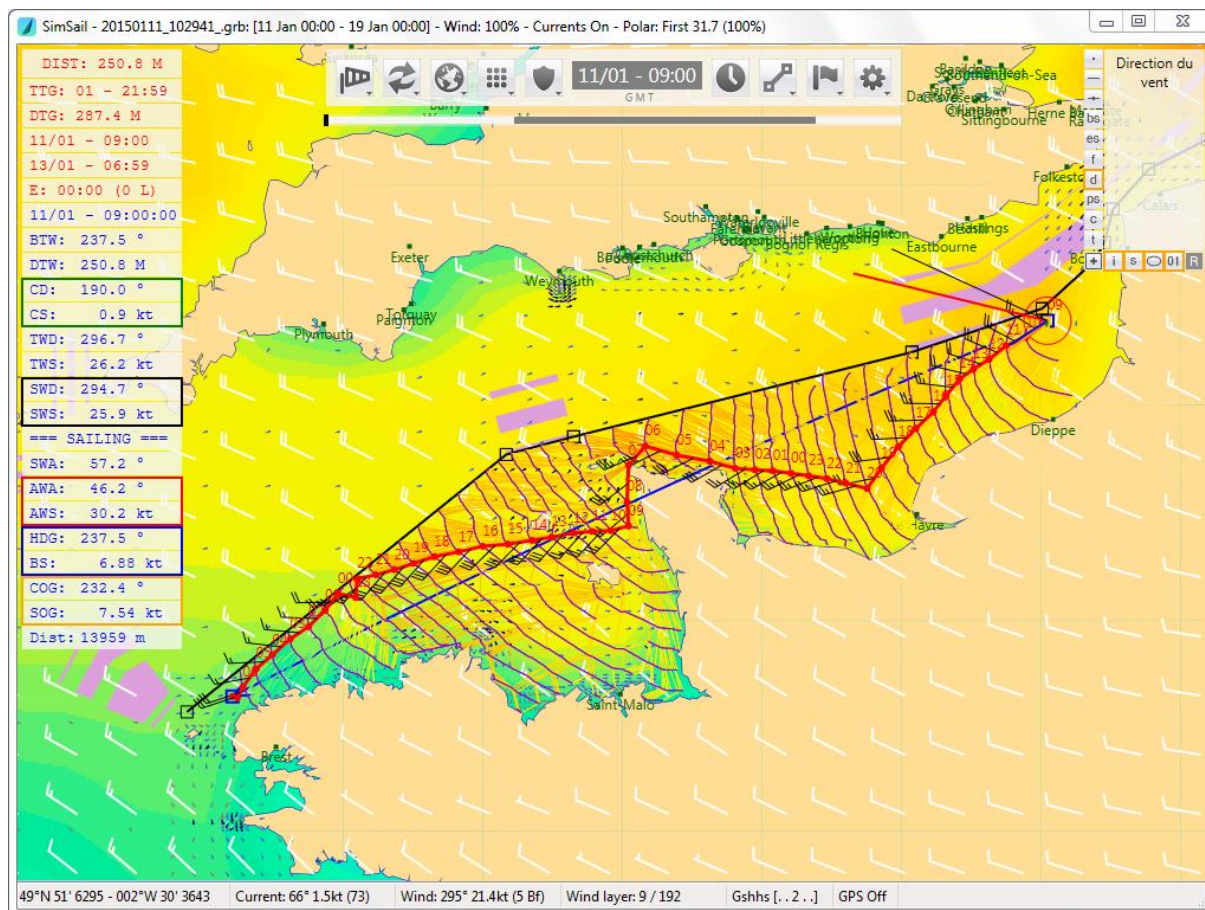
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SimSail

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The routing avoids the land and the barriers defined by the user.

OVERVIEW

SimSail calculates the best routing of a sailing boat based on the boat's speed polar, the wind conditions (based on grib-file weather forecasting), the tidal streams and several parameters.

SimSail offers 2 methods:

- **Best course.** Each step is independent from the others like in a real navigation when the skipper doesn't know the weather forecast and the currents afterwards. Only one route is calculated and displayed;
- **Isochrones.** See the screen capture above. Many legs are calculated at each time step. The best route is displayed.

In this version, the tidal streams are available only for the Channel and the Iroise Sea.

Be prudent with the routing. SimSail is not to replace any skill of a skipper. At sea, a skipper has the ultimate responsibility of the crew and the boat: "Skipper Word is Law" ... not SimSail.

FEATURES

- World coastlines (resolution up to 100 m)
- Mercator projection
- Coastal cities and capitals
- Full scrolling in longitude (infinite map)
- Orthodromy (great circle routing)
- Reading and display of grib
- Import and export of routes with GPX files
- Import of waypoints with GPX files
- Import and export of barriers with GPX files
- Tidal streams for Iroise Sea and the Channel by default
- Can read SHOM tidal streams (they must be purchased from the SHOM website)
- GPS connection to route from the boat location
- Routing by Isochrones or by Best course
- Multiple routings by scan of variables (polar, wind and time)
- Automatic routing or control of all parameters
- Routing time step from 1 min to 6 hours
- Integration of the current into routing calculations
- Option to avoid coasts and barriers
- Grib variation (intensity and lag)
- Several polars provided
- Ability to degrade polars
- Can account for the loss of speed during a tack
- Dual routing, sailing and motoring with fuel consumption
- Min & max wind setting
- Sea state setting
- Statistics of the routing
- Display of all conditions step by step:
 - o BTW Bearing To Waypoint
 - o DTW Distance To Waypoint
 - o CD Current Direction
 - o CS Current Speed
 - o TWD True Wind Direction
 - o TWS True Wind Speed
 - o SWD Surface Wind Direction
 - o SWS Surface Wind Speed
 - o SWA Surface Wind Angle
 - o AWA Apparent Wind Angle
 - o AWS Apparent Wind Speed
 - o HDG Heading of the boat
 - o BS Boat Speed
 - o COG Course Over Ground
 - o SOG Speed Over Ground

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Reports of appreciation, bugs and requests can be sent to edouard.halbert@gmail.com

LICENSE

SimSail is delivered under license GNU Public License 3. The full text of the license is at the root folder of SimSail.

INSTALL

Unzip the file in one folder. It doesn't matter where the folder is. There is no access to the registry. SimSail uses a configuration file that is in the installation folder.

With Windows 7, be sure to give all the rights access to the folder and to the program SimSail.exe otherwise SimSail cannot save information.

[How to install the SHOM tidal streams](#) is page 29.

UNINSTALL

Delete the main SimSail folder and that's it.

SHORTCUTS

- F1: help display
- F2: center boat
- F3: center route
- F4: center routing
- Del: delete the route
- Tab: parameters of routing
- Space: launch a routing
- Escape: stop a routing
- Backspace: delete the routing
- Left: previous hour of wind
- Right: next hour of wind
- Up: next grib layer
- Down: previous grib layer
- Escape: ends a route or ends a routing
- Page Up: previous step of routing
- Page Down: next step of routing
- Control + Page Up: previous 10 steps of routing
- Control + Page Down: next 10 steps of routing
- Shift + Page Up: previous 60 steps of routing
- Shift + Page Down: next 60 steps of routing
- P: display the polar

- R: display the results

QUICK START

When the main window pops up, SimSail restores the previous environment. The parameters of the work environment are in a file named Config.ini situated at the root of the main folder. You can edit the file with a simple text editor.

1) Load a grib file into SimSail. The grib file can be obtained from different sources. Only two of them are presented:

- From Saildocs you can get a file with a "grb" extension. See the specific files named Saildocs in the root folder of SimSail how to get grib files from Saildocs. The advantage of Saildocs is that you don't need any additional software. You send a formatted email to query@saildocs.com with your smartphone for instance and you get, generally in less than one minute, an email back with the grib file. You have then to transfer it into a folder on your computer where is running SimSail. The recommended way is to put all grib files into the folder called "Grips". In the options of SimSail you can change this folder.
- From zyGrib you can get a file with a "bz2" extension. The interface is very intuitive. SimSail reads this type of file. Like the previous method, transfer the file to the folder "Grips".

When a grib is loaded, the winds are displayed on the map. Select the appropriate display (arrows and colors, zones of the grib). The main toolbar at the top of the window is updated with the time range of the file. You can navigate from the first layer to the last with the arrows of the keyboard. With the icon "clock", you can set the time to the current time (UTC) if it is before the last layer of the grib.

The status bar, situated at the bottom of the main window, gives the information of the wind under the mouse position. The wind is fully interpolated between the grid points (space and time interpolation).

2) The currents of the Channel and Iroise Sea are present in SimSail. You cannot change them in this version but you can edit the file under Data\Currents which is a csv file. SimSail interpolates for each time the force and the direction of the current. The status bar, situated at the bottom of the main window, gives the information of the current under the mouse position (direction, force and in brackets the French coefficient).

3) Create a route. Right click on the map and select "create a route". Left click to add waypoints. The number of waypoints is not limited. When you have finished, hit the Escape key or right click. You can save the route or load an existing one. You can move all the waypoints of the route: place the cursor on one waypoint (the cursor changes), left click and move it. With a right click, a submenu opens. You can add waypoints, delete waypoints, prolong, reverse or replace the route.

5) Launch a routing

First, hit the Tab key. A dialog box opens for all the parameters of the routing. Change the parameters as requested. See further all the parameters.

Second, hit the Space key or from the previous box (Routing Parameters), push the button "Start" (or from the Routing menu – Start icon).

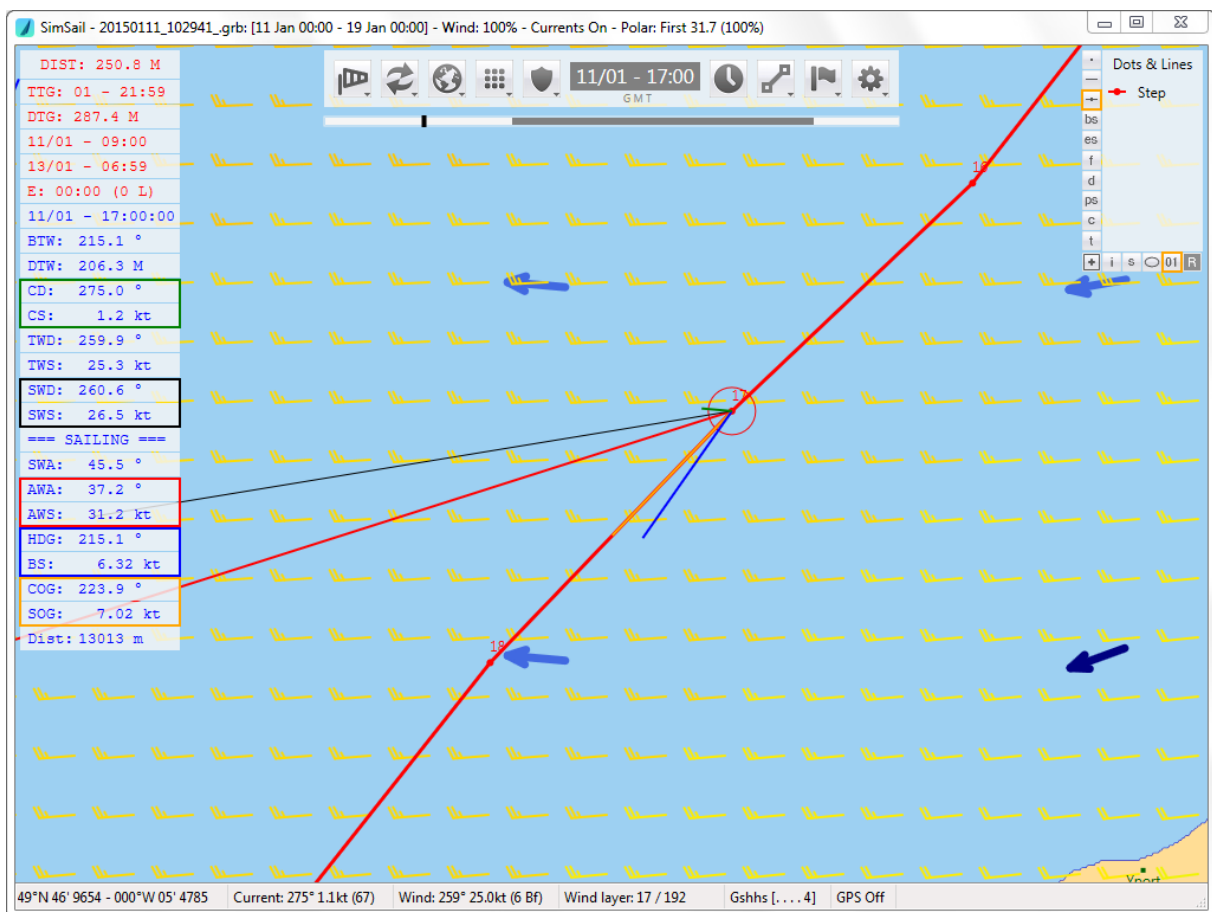
The result of the routing appears on the screen: the route is now colored. Information about the routing is displayed on the left side in Red and information about one time step is displayed in Blue.

You can navigate on the simulated route using the tool time below the main menu or the following the keys:

- Page Up: previous step
- Page Down: next step
- Control + Page Up: previous 10 steps
- Control + Page Down: next 10 steps
- Shift + Page Up: previous 60 steps
- Shift + Page Down: next 60 steps

The point of the routing that is displayed on the left panel has a red circle around it with 5 lines:

- The Green line indicates the Current and corresponds to the green rectangle in the left panel: CD = Current Direction and CS = Current Speed;
- The Black line indicates the Surface Wind as the result of the true wind and the current (Black rectangle in the left panel: SWD = Surface Wind Direction and SWS = Surface Wind Speed);
- The Red line indicates the Apparent Wind (Red rectangle in the left panel: AWA = Apparent Wind Angle and AWS = Apparent Wind Speed);
- The Blue line indicates the Heading (Blue rectangle in the left panel: HDG = heading and BS = Boat Speed);
- The Orange line indicates the Course Over Ground (COG) and the SOG (Speed Over ground) of the boat (Orange rectangle).



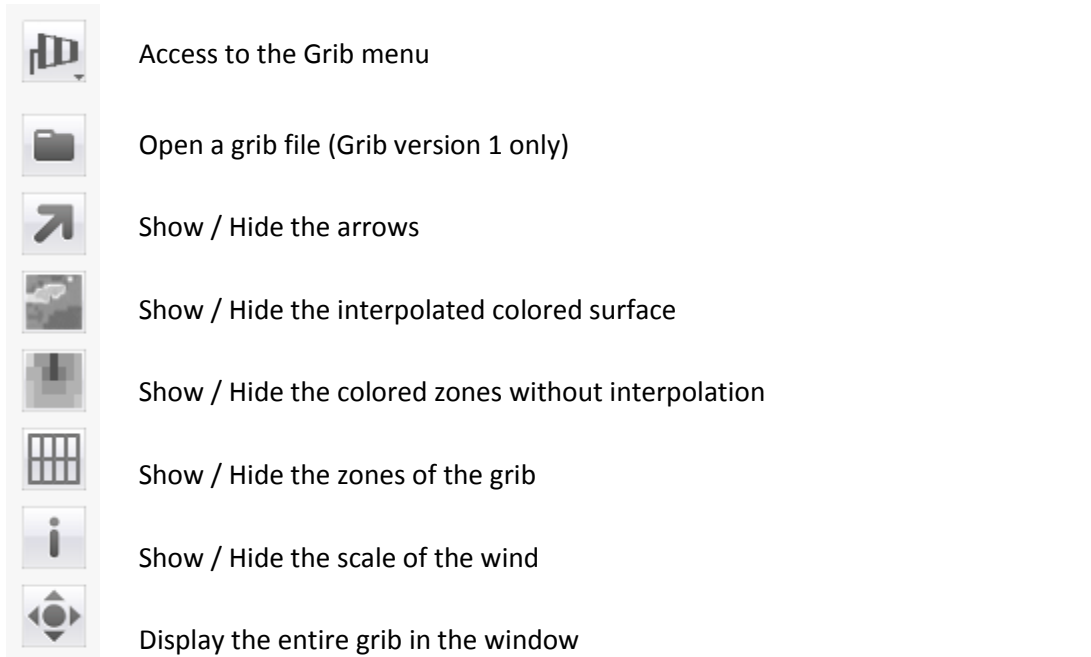
TOOLBAR

Main tool bar

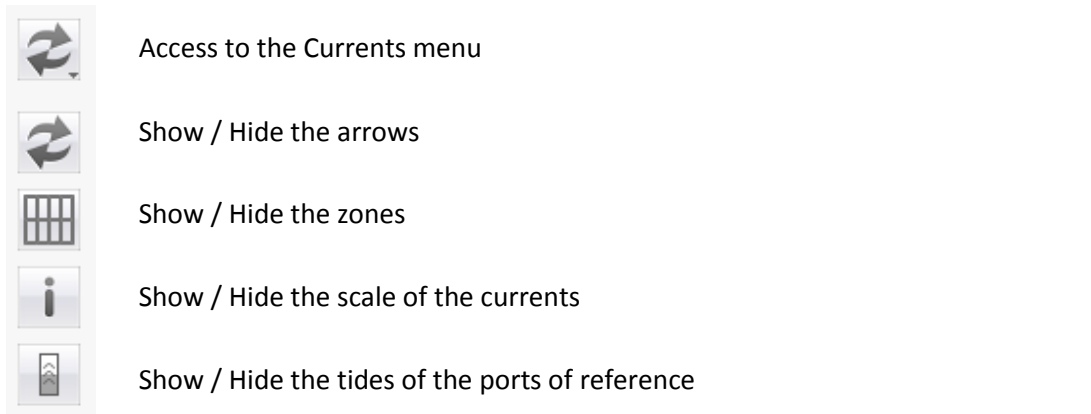


Winds, Currents, Map, Waypoints, Barriers, Current time, Clock, Route, Routing, Options





Winds








Currents







Map

	Access to the Map menu
	Show / Hide the colored land
	Show / Hide the coastline
	Show / Hide the map grid






Waypoints of the route

	Access to the Waypoints menu
	Add a set of waypoints (GPX file)
	Remove all waypoints
	Show / Hide the waypoints
	Change the type of display: point (.), plus (+) or cross (x)

Barriers








	Access to the Barriers menu
	Add a set of barriers (GPX file)
	Save the barriers (GPX file)
	Delete all barriers

Route






	Access to the Route menu
	Open a route file (GPX file)
	Save the route (GPX file)
	Remove the route (Delete key)
	Frame The Route In The Window (Key F3)

Magnet: waypoint of the route close to a map waypoint sticks to the latter

Routing

	Access to the Routing menu
	Open the Parameters dialog box (Tab key)
	Start the routing (Space key)
	Export the current routing (GPX file)
	Remove the routing (Delete key)
	Frame the routing in the window (Key F4)
	Show / Hide the panels (left and right)

Options

	Access to the Options menu
	Open the Options dialog box
	Full screen (F11 key)
	Display the shortcuts (F1 key)
	About SimSail

PANELS

When a routing has been performed, two panels are visible on the left and on the right.

LEFT PANEL

The left panel indicates the information of the time step represented by the red circle on the route. With the keys Page Up and Page Down, you can navigate along the time steps.

In Red (information covers the entire routing)

DIST: 36.9 M
TTG: 00 - 06:13
DTG: 40.4 M
06/01 - 11:00
06/01 - 17:13
E: 00:00 (0 L)
06/01 - 11:00:00
BTW: 276.7 °
DTW: 36.9 M
CD: 85.0 °
CS: 1.2 kt
TWD: 211.0 °
TWS: 9.6 kt
SWD: 204.9 °
SWS: 9.0 kt
=== SAILING ===
SWA: 71.8 °
AWA: 42.6 °
AWS: 12.6 kt
HDG: 276.7 °
BS: 6.48 kt
COG: 279.3 °
SOG: 5.34 kt
Dist: 2459 m

- DIST: overall theoretical distance
- TTG: Time To Target (day – hours:minutes)
- DTG: Distance To Target with the routing (overall distance sailed)
- Date of departure
- Date of arrival
- E: Hours of Engine with the consumption in liters.

In Blue (specific time step represented by the red circle in the routing)

- Date of the step
- BTW: Bearing To Waypoint
- DTW: Distance To Waypoint
- CD: Current Direction
- CS: Current Speed
- TWD: True Wind Direction
- TWS: True Wind Speed
- SWD: Surface Wind Direction
- SWS: Surface Wind Speed
- ==SAILING== or ==ENGINE==
- SWA: Surface Wind Angle
- AWA: Apparent Wind Angle
- AWS: Apparent Wind Speed
- HDG: Heading
- BS: Boat Speed
- COG: Course Over Ground
- SOG: Speed Over Ground
- Dist: Distance done during this step

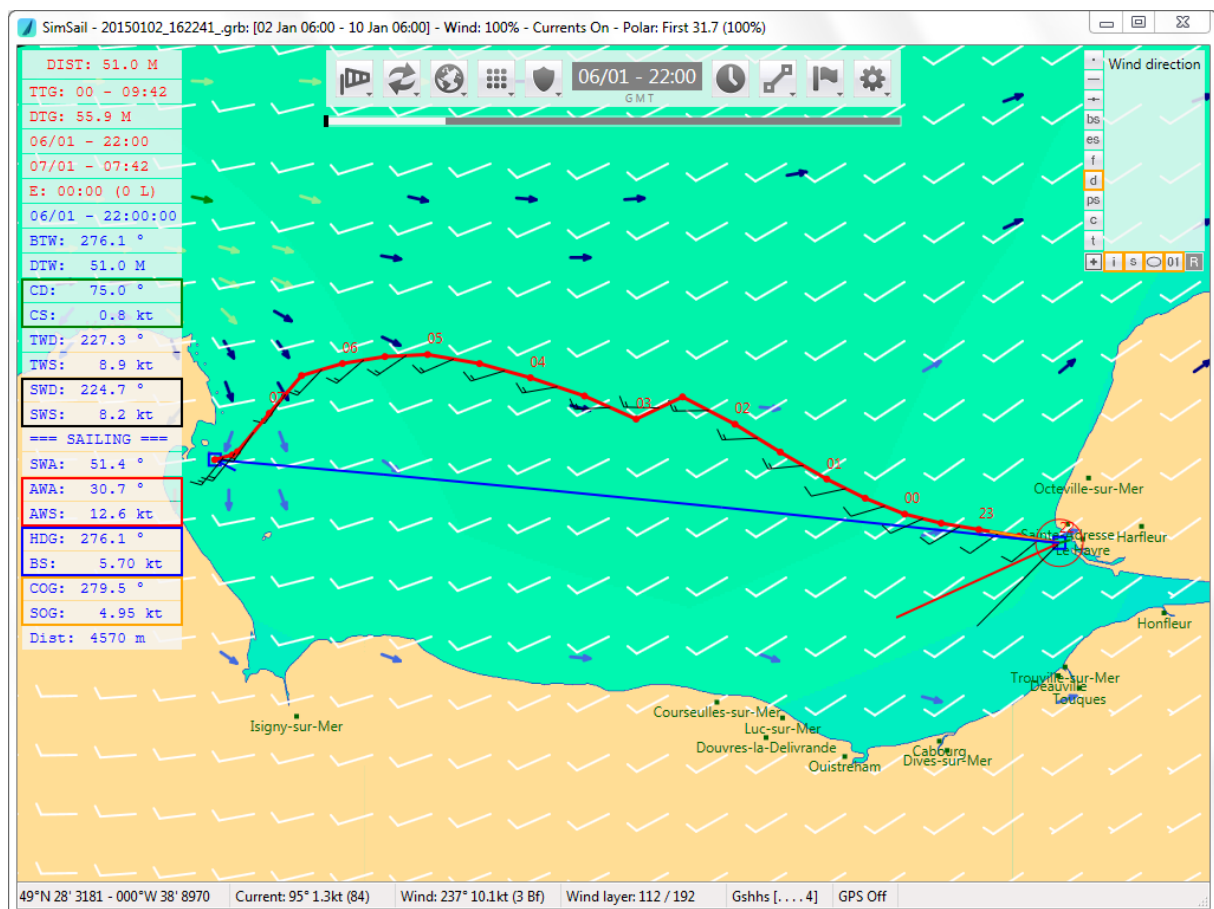
RIGHT PANEL

•	Points of sail	.	Dots	
—		-	Lines	
→	Engine	-.-	Dots & Lines	
bs	Up	bs	Boat Speed	Colored segments
es	Reaching	es	Engine-Sailing	2 colored segments
f	Down	f	Wind Force	Colored segments according to the weather conditions
d		d	Wind Direction	Colored segments according to the weather conditions
ps		ps	Points of Sails	4 colored segments: up, down and reaching and engine
c		c	Currents	3 colored segments: up, down, neutral
t		t	Tacks	Starboard / Portside
+		+	Centre the boat	In the window
i		W	Isochrones	Show / Hide
s		s	Segments	Show / Hide
0		O	Ellipses	Show / Hide
1		01	Hours	Show / Hide
R		R	Result	Show/Hide the results in a window

ROUTING METHODS

Let's do a routing for a route from Le Havre to Saint-Vaast La Hougue. The two methods proposed by SimSail are described hereafter.

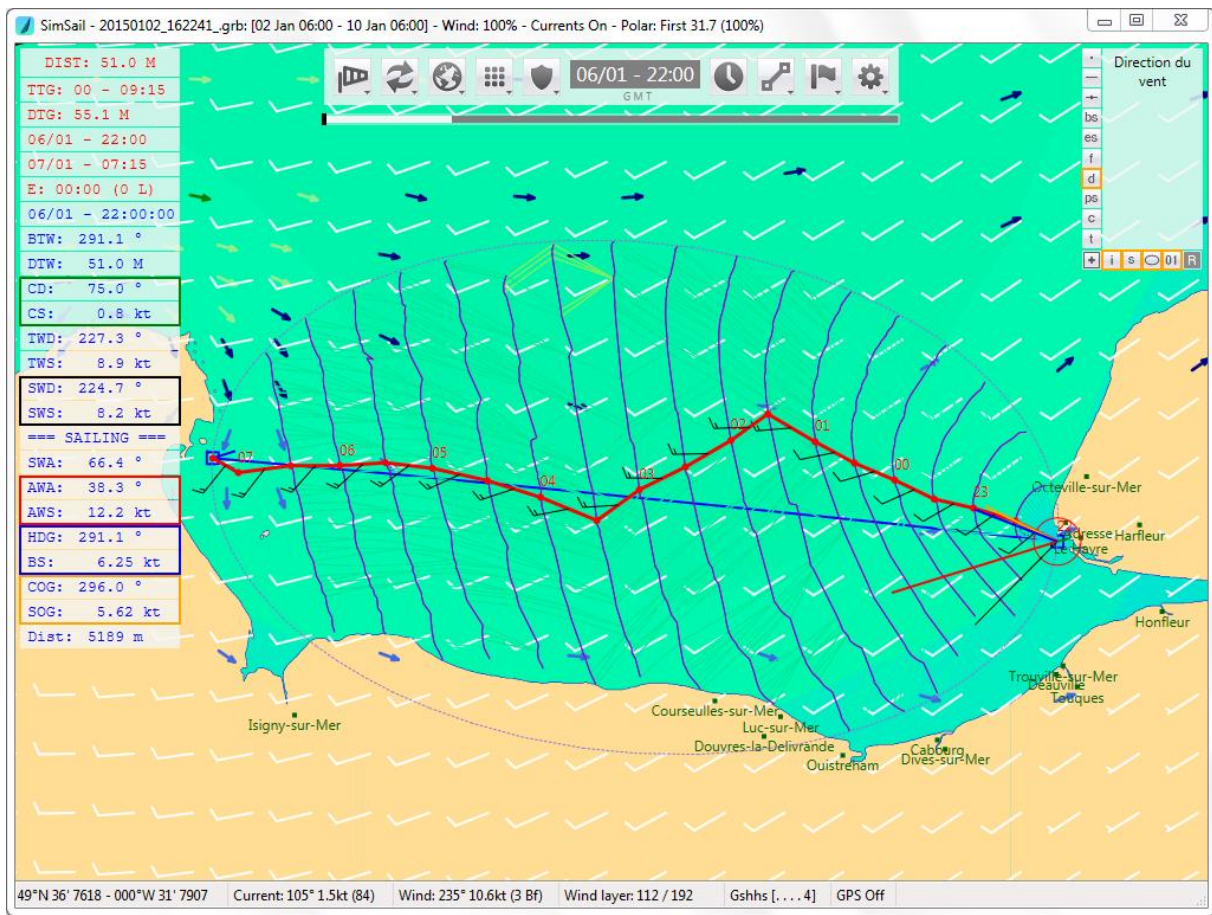
Best course



The boat follows the winds. After the start, the wind heads and the routing shows this rotation. Before the end, the wind comes around to a better favorable angle. The sailing takes 9 hours and 42 minutes.

This method is used to see what happens when, at each time step, the boat chooses the best course/tack using the knowledge of the local weather and currents conditions. This method reflects a route followed by a skipper who doesn't take in account the weather forecast and the currents. In this sense, there is no optimization. For instance, the best tack might be an excellent choice at the beginning of the route but doing that for each time step may appear not optimal at the end of the route.

Isochrones



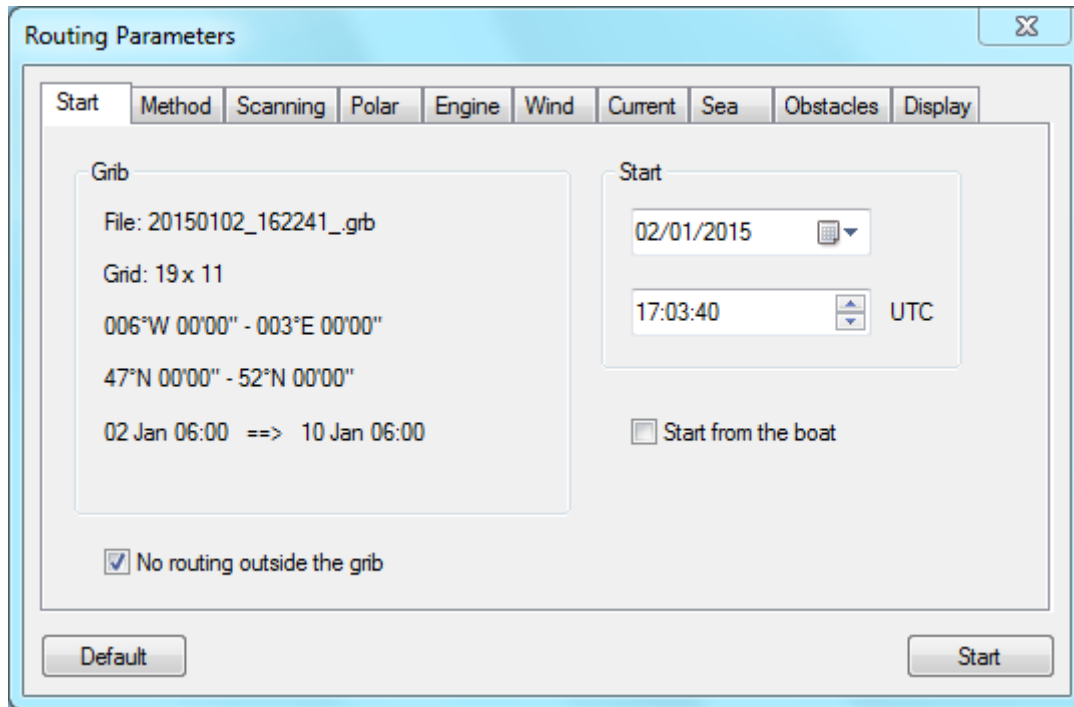
Compared to the previous routing, for the same conditions, the voyage will take 37 minutes less, mainly because, at midway, the best route is to stay a while on starboard after the windward tack done at 01:30.

When the routing doesn't reach the last waypoint, change the parameters of the routing.

ROUTING PARAMETERS

Most of the parameters can be reset to the default ones with the button 'default' at the bottom left of the dialog box. The default parameters are in a file named Default.ini situated at the root of the Data folder. All these default parameters may be edited with a text editor.

Start



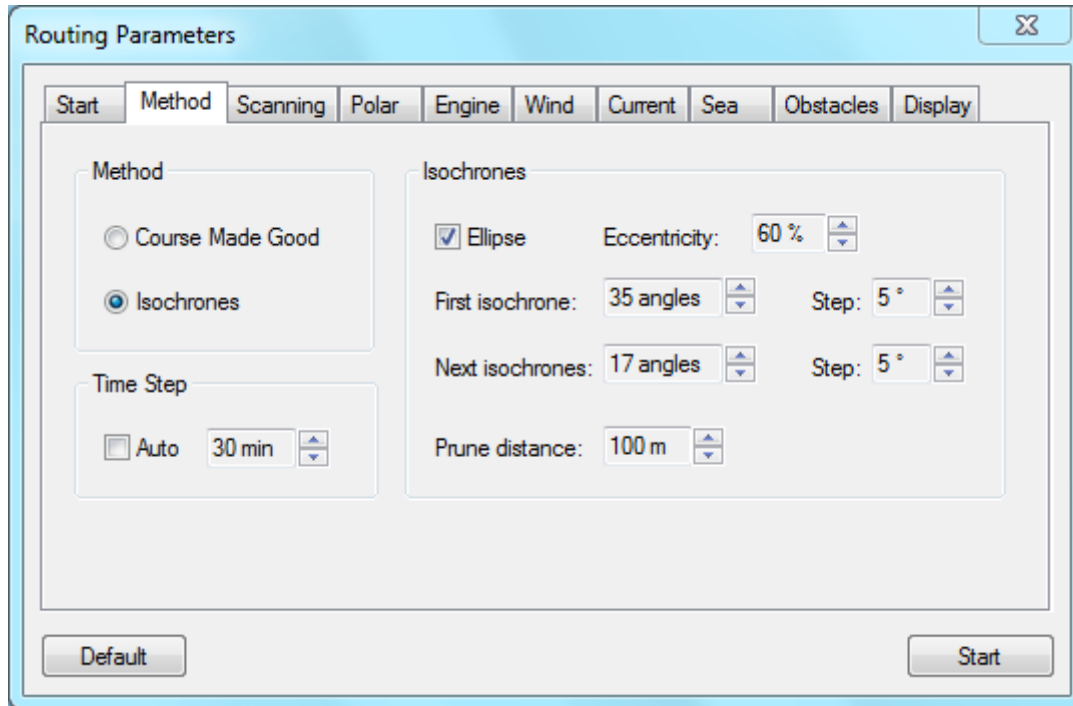
Be careful, all the dates are in Universal Time

The grib parameters are recalled on the left side of the dialog box. The last line is important as it is the commencement and the end of the grib file. If the routing is outside the time range of the grib, the wind is set to zero and the boat utilizes the engine if she cans (option in Engine Tab).

The routing can be done outside the grib if the boat utilizes the engine.

The routing can start from the boat. In this case, the routing goes to the second waypoint and proceeds with the next. The first waypoint is stored and displayed in order to be restored if the routing doesn't start from the boat anymore.

Method



Ellipse should be considered as an envelope of the routing.

Eccentricity defines the width of the ellipse. Less the eccentricity is, faster is the calculation but it limits the possibility to test numerous routes.

First isochrone / Next isochrones: The aperture is different for the first isochrone line and the next ones. At each point of the routing, this method calculates several angles. For instance, in the screen capture above, the next isochrones are set to 17 angles and 5°. At each new routing point, 17 routing points are calculated with an aperture of 5°.

Prune distance: SimSail eliminates the routing points whose distance is inferior to the prune distance. This method keeps only the best routing points. If the prune distance is set to zero, all the routing points are kept. More the prune distance is small and more the calculations are long.

The time step can vary from 1 min to 360 min. For a long route or a route with several legs that are unequal in length, the best is to tick the checkbox 'Auto'. In this case, the time step is calculated in accordance with the length of each leg and the prune distance is modified on each leg.

These are the most important factors for the routing. Sometimes, SimSail cannot find an optimal route and stops the calculations before to reach the final waypoint. This is because one of the factors doesn't allow a complete simulation. Change the factor(s).

Scanning

Routing Parameters

Start Method **Scanning** Polar Engine Wind Current Sea Obstacles Display

	Value	Min	Max	Step	Iterations
<input type="checkbox"/> Polar	100 %	83 %	99 %	2 %	8
<input type="checkbox"/> Wind	100 %	80 %	100 %	10 %	2
<input type="checkbox"/> Start	10:55	-2 hr	2 hr	2 hr	2

☒ Several polars

Polar: First 31.7 JPK 960 Sun Fast 3200

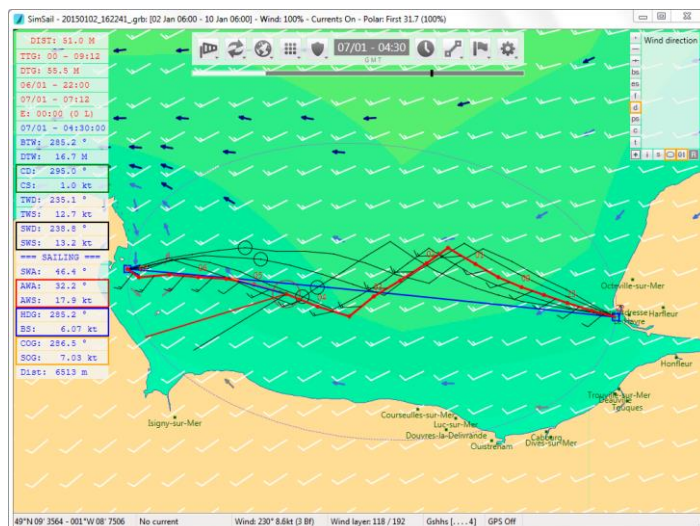
Rating: ☒ 0.9610 ... ☒ 0.9820 ... ☒ 1.0010 ...

Default Start

This version of SimSail brings the scan of the polar, the wind and the start time. In addition, it offers the possibility to test a routing with several polars (with their ratings).

The original value is recalled. This is the value set in another tab. Select the min and max values and the step.

SimSail performs the different routings and finishes by the original routing (recalled by the value). In the example above, the time start is studied. The normal value defined in the previous tab is 22:00. 4 routings are performed, the first with a start at 20:00 (22:00 – 2 hours) and the last at 00:00 (22:00 + 2 hours).

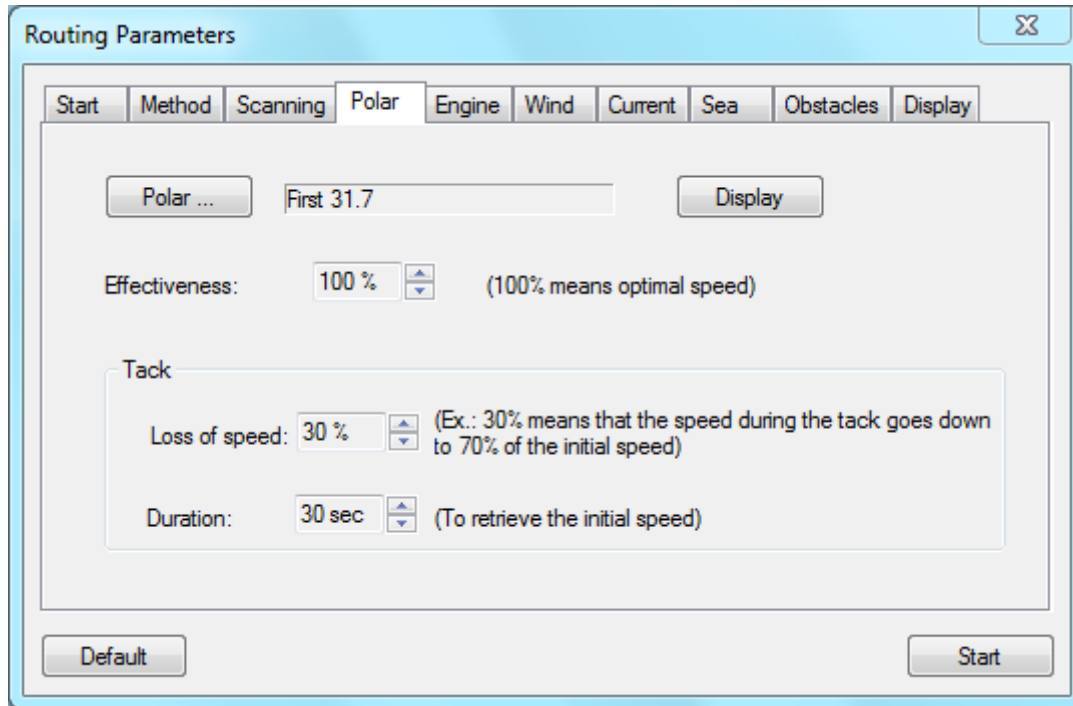


Results of the routing			
Parameter	Scan 1	Scan 2	Scan 3
Polar	100 %	100 %	100 %
Wind	100 %	100 %	100 %
Start	-1 hr	1 hr	Reached
Final Waypoint	Reached	Reached	Reached
TIMES			
Departure	Tue 6 Jan - 21: 00: 00	Tue 6 Jan - 23: 00: 00	Tue 6 Jan - 22: 00: 00
Arrival	Wed 7 Jan - 06: 24: 51	Wed 7 Jan - 07: 40: 46	Wed 7 Jan - 07: 12: 39
Duration	09 hr 24 min	08 hr 48 min	09 hr 12 min
DISTANCES			
Theoretical	51.03 M	51.03 M	51.03 M
Sailed	0.03 M (+ 8 %)	0.03 M (+ 8 %)	0.03 M (+ 9 %)
BOAT SPEED			
Average	5.86 M	6.23 M	6.02 M
Range	[4.98 kt - 7.66 kt]	[5.40 kt - 7.38 kt]	[4.91 kt - 7.03 kt]
ENGINE			
Engine	No	No	No
Hours of engine	0 hr	0 hr	0 hr
Consumption	0 L	0 L	0 L
WIND			
Average	11.8 kt	13.0 kt	12.3 kt
Range	[7.53 kt - 15.31 kt]	[9.11 kt - 16.04 kt]	[8.22 kt - 14.49 kt]
POINTS OF SAIL			
Engine	0 %	0 %	0 %
Up	100 %	89 %	87 %
Reaching	0 %	11 %	13 %
Down	0 %	0 %	0 %
TACKS			
Portside	79 %	83 %	79 %
Starboard	21 %	17 %	22 %
Changes	2	2	2
CURRENT			
Downstream	35 %	49 %	38 %
Upstream	65 %	45 %	62 %
Neutral	0 %	6 %	0 %
CALCULATIONS			
Isochrones	20	19	19
Points	16208	14649	15618
Valid points	1036	1066	1052

The results are displayed in a specific window. In this example, starting at 00:00 (last simulated route = + 2 hours) will gain 36 minutes (08:39 compared to 09:15 displayed on the left of the main window).

You can visualize a routing by clicking a header column “Scan x” of the window of results.

Polar



Polar... opens a dialog box to open a polar file that has a "pol" extension. This is a table you can edit with a text editor. The table gives for several angles (True Wind Angle) and several forces of wind (True Wind Speed), the expected speed of the boat. For a specific angle and a specific force, SimSail performs an interpolation between the known values provided by the polar file. Outside the range of the values, there is no extrapolation. For instance, if the last wind force is 35 kt, the speed for 45 kt will be the same as at 35 kt.

Set the effectiveness of the polar: for instance, 90% means that the sailing boat sails at 90% of its optimal speed.

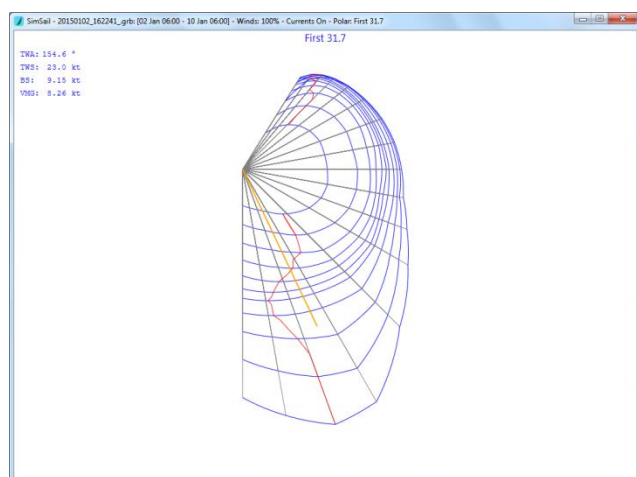
The loss of speed during a windward tack is taken in account. Not during a downwind tack.

Loss of speed is the loss of the speed with regard to the speed before the tack. For instance, 30% of loss means that the worst speed during the tack is 70% of the speed at the beginning of the tack.

Duration is the time between the start of the tack when the speed decreases and the end of the tack when the speed is back at the start speed.

Display is the button where you can display the polar. Hit the Escape key to quit this window.

The display on the left top gives the value where the mouse is (extremity of the orange line).



Engine

Routing Parameters

Start Method Scanning Polar **Engine** Wind Current Sea Obstacles Display

☒ Engine when low speed

If boat speed is lower than: 4.0 kt

Speed with engine: 5.0 kt

Fuel consumption: 1.5 l/h

Default Start

If “Engine when low speed” is checked, the sailing boat utilizes the engine when the boat speed is lower than the parameter defined in the first up-down control. In this case, the speed with the engine is defined by the second up-down control.

Fuel Consumption: liters per hour for the speed specified above.

Wind

Routing Parameters

Start Method Scanning Polar Engine **Wind** Current Sea Obstacles Display

Grib

Intensity: 100 % (100% = no change)

Lag: 0 hr

Surface wind on the route

Minimum: 0 kt

Maximum: 60 kt

Constant wind

☐ Force the wind

Speed: 15 kt

Direction: 270 °

Default Start

Intensity: 100% means that the grib is not changed. 110% means that the wind is 10% stronger than the grib.

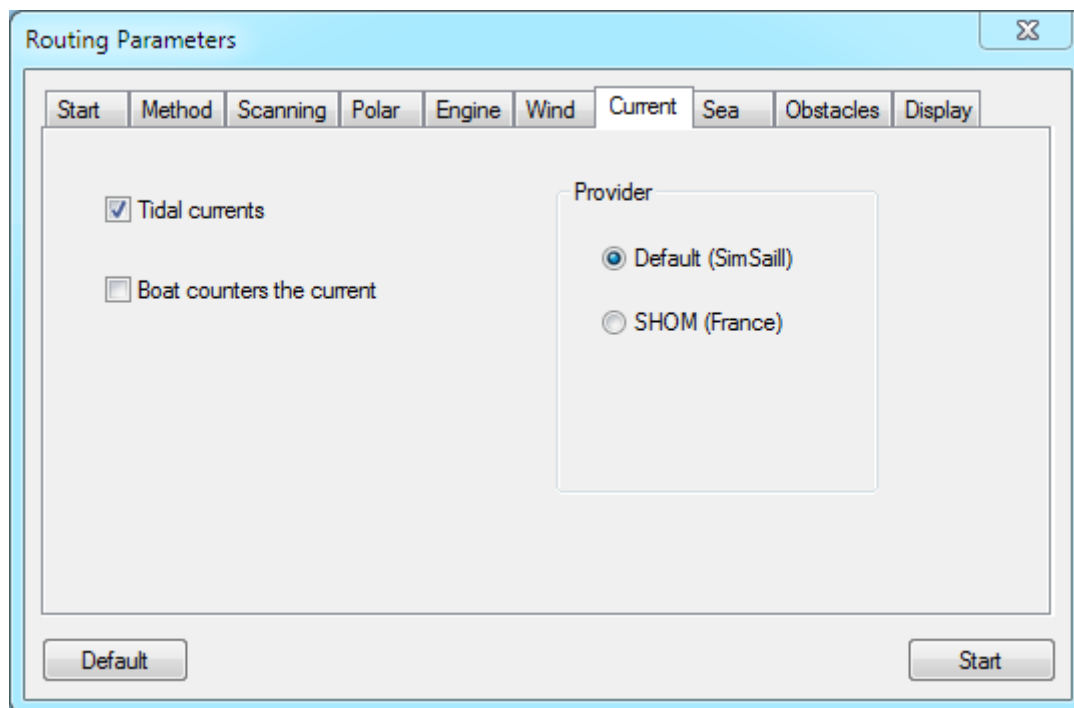
Lag: represents a delay between the data of the grib and the wind.

Minimal wind: the routing avoids the winds inferior to the value. If set to 0, there is no minimal force of wind.

Maximal Wind: the routing avoids the winds superior to the value.

Force the wind: Constant wind everywhere means that the grib file is no more taken in account. A constant wind, in direction and force, is available all over the world. Mainly used when the grib is not available. If the constant wind is set to 0 and the boat can utilize her engine, the routing becomes a pure motor routing. This is useful for the motor boats.

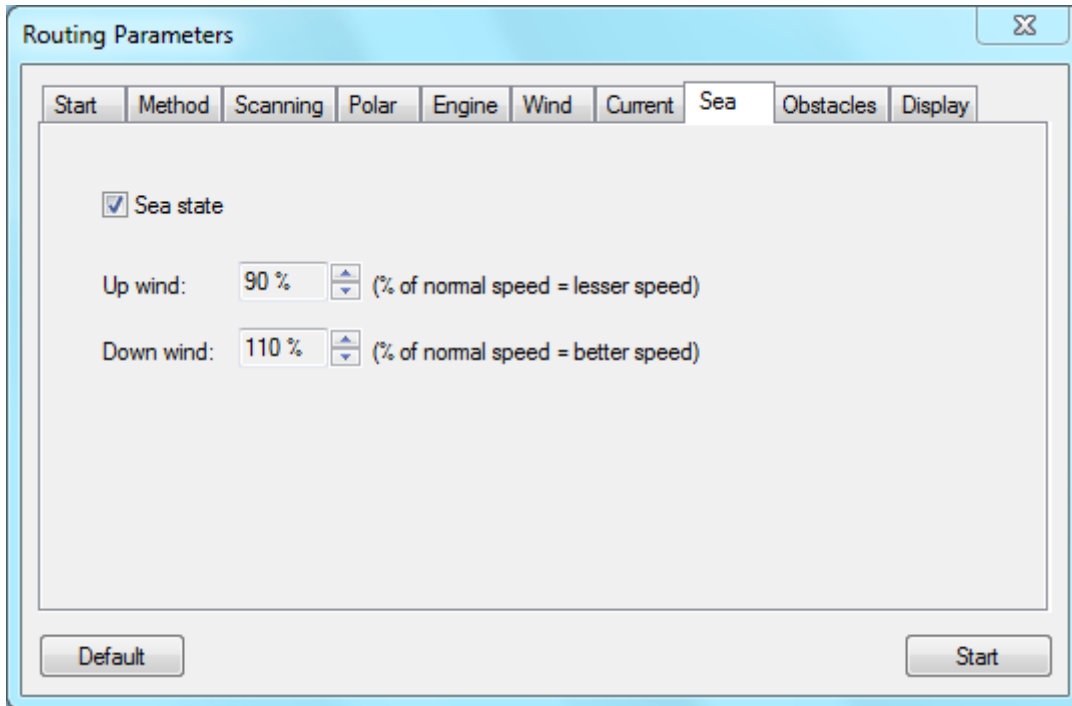
Current



Tidal currents: deselect to not have them in the calculations. A routing with the currents and without them helps to determine if the currents help you or not. When a routing is done, selecting the button 'c' situated in the right panel displays the routing with three colors according to the current (Up / Down / Neutral).

Boat counters the currents: If checked, the sailing boat counters the currents, meaning that the boat corrects, if possible, the course in order to have the COG equal to the BTW.

Sea

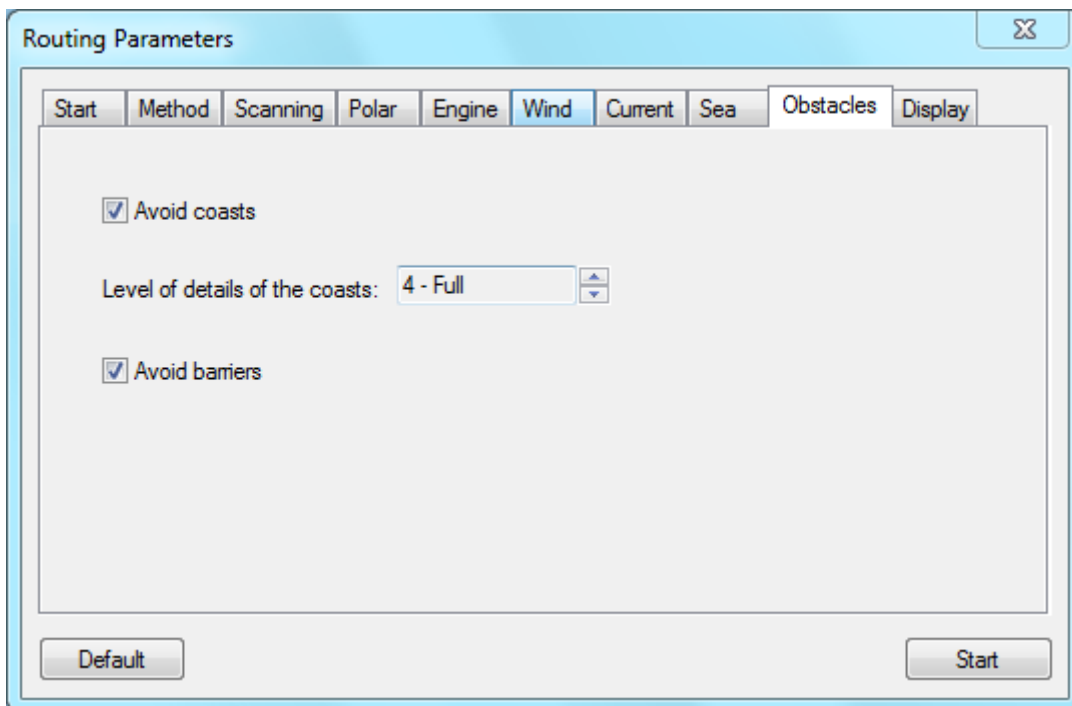


Sea state: it reflects that the polar is over estimated in upwind conditions where the sailing boat hits the waves and under estimated in downwind conditions where the sailing boat may surf on the waves.

Up wind: the boat may decelerate. 90% means that the boat losses 10% of her optimal speed.

Downwind: the boat may accelerate. 110% means that the boat has a gain of 10% of speed.

Obstacles



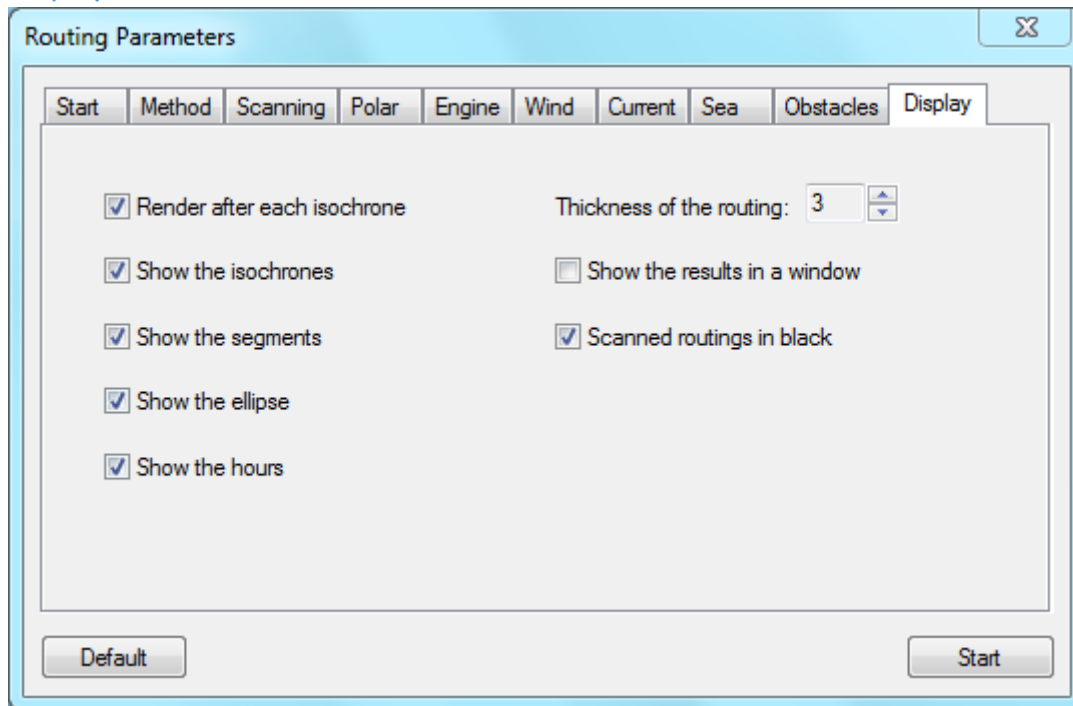
Avoid coasts: the routing avoids the coastlines.

Level of details of the coasts: from 1 – Crude (= rough calculations) to 4 – Full (= detailed calculations).

- LOD 1: resolution = 25 km
- LOD 2: resolution = 5 km
- LOD 3: resolution = 1 km
- LOD 4: resolution = 200 m
- LOD 5: resolution = 100 m

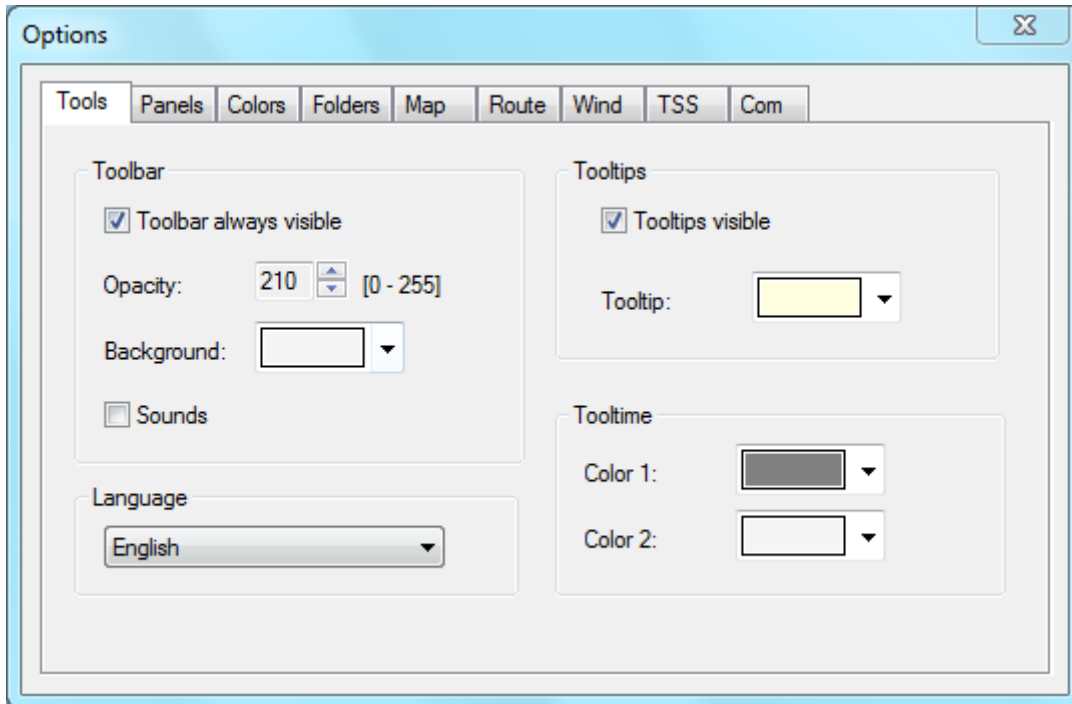
Avoid barriers: the routing does not cross the barriers defined by the user.

Display



SIMSAIL OPTIONS

Tools



The toolbar can be shown or hidden when the mouse is not in its region. The toolbar cannot be moved.

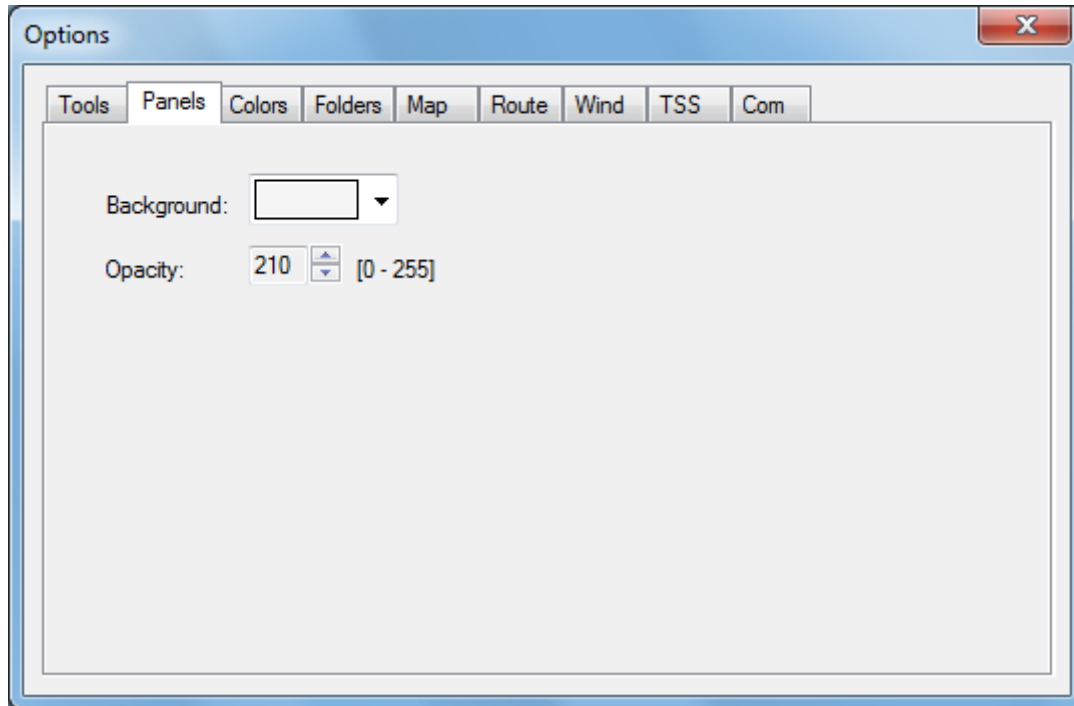
All the buttons of the toolbar have tooltips that can be shown or hidden.

Opacity is a value between 0 and 255. 0 is for full transparency and 255 for opaque.

You can choose the color of the toolbar and the two colors of the time tool (bar below the main toolbar).

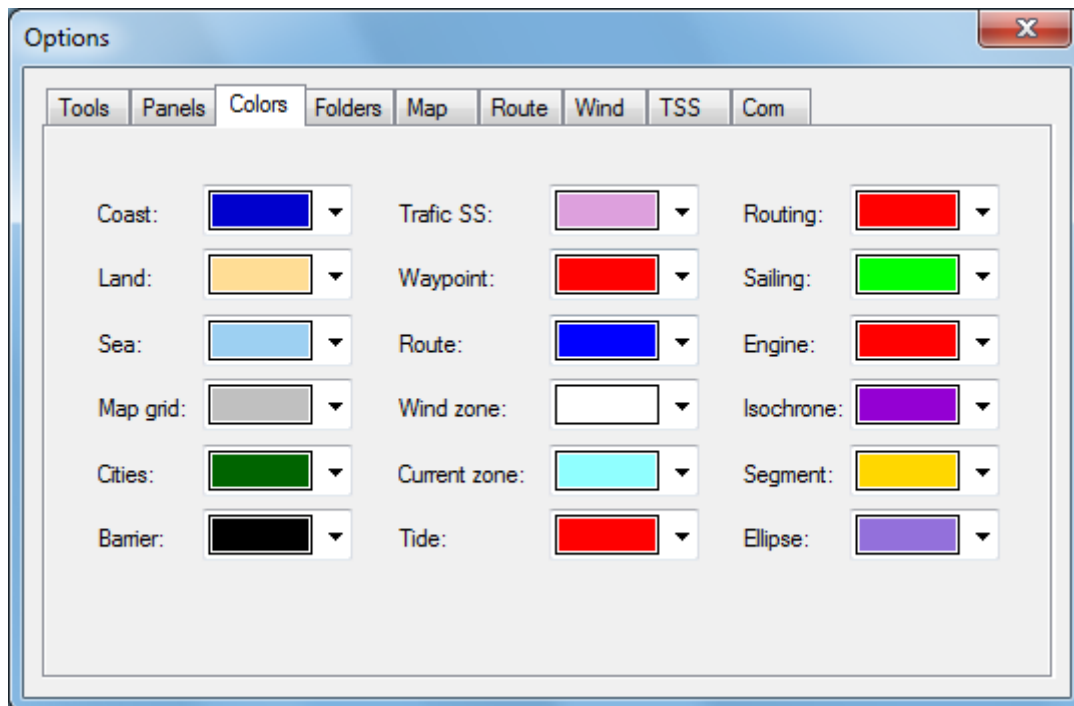
Language: Select your preferred language. The change is taken in account after the closing of the window Options.

Panels



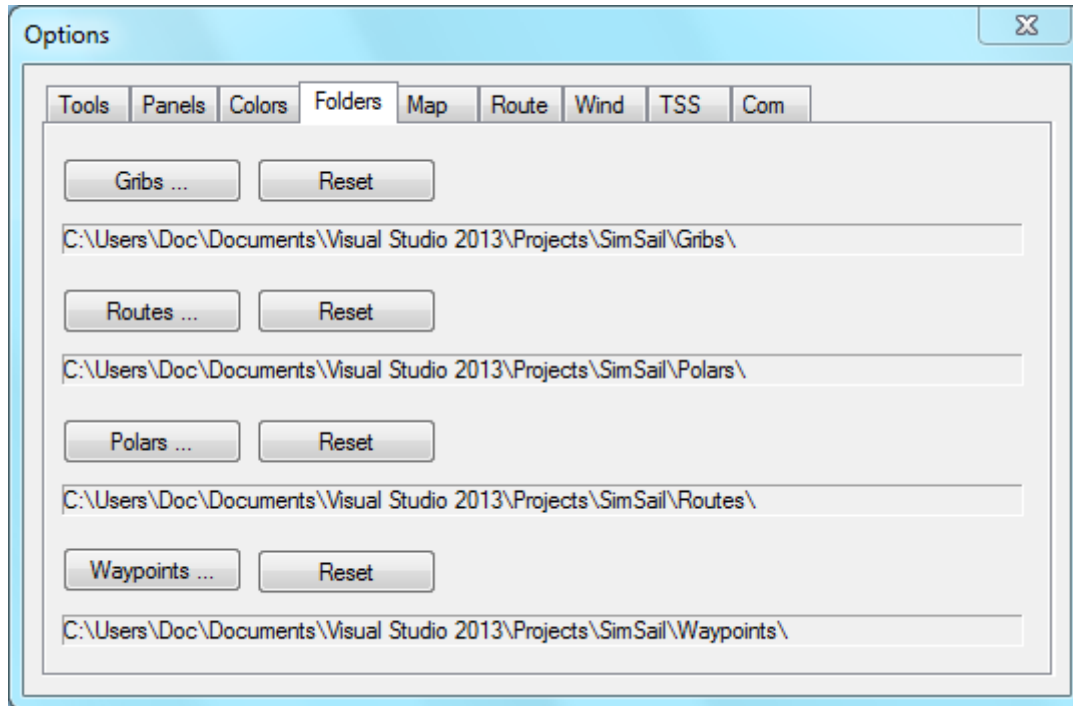
You can select the color and the opacity of the left and right panels that are displayed with a routing.

Colors



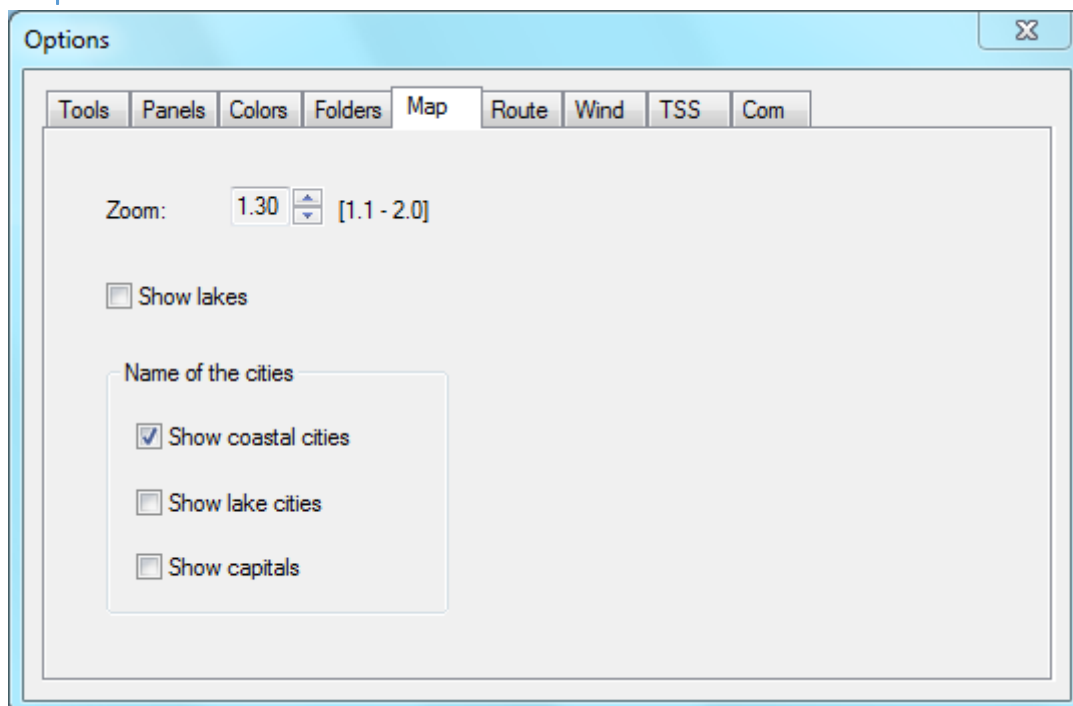
Select the different colors.

Folders



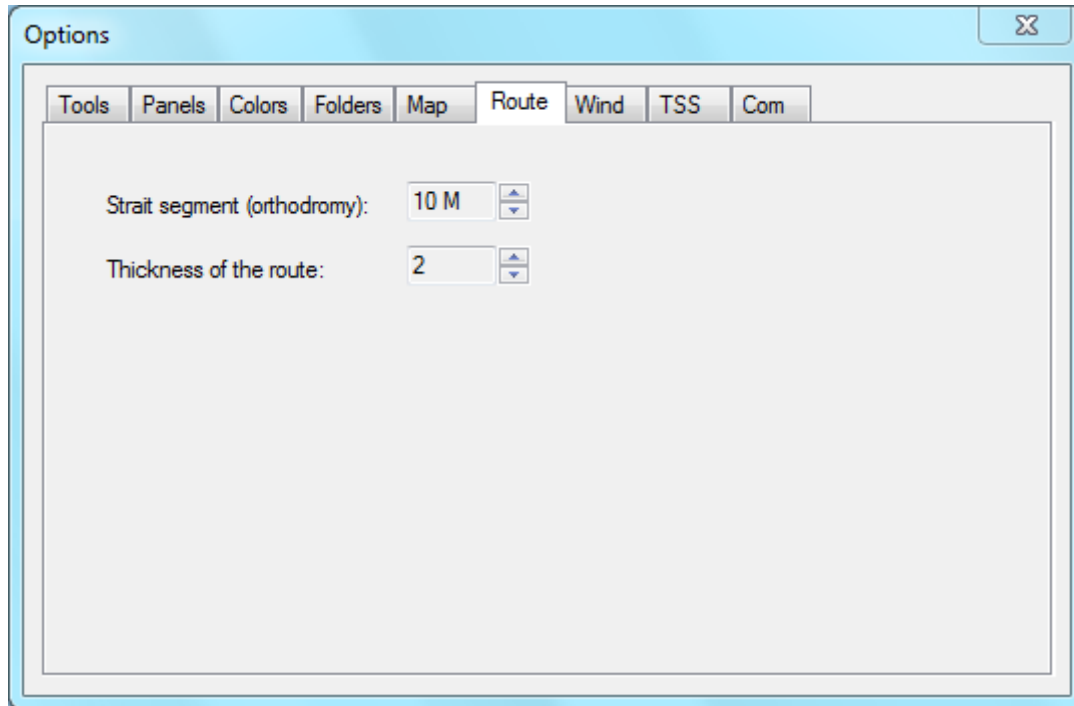
The folders by default can be selected. This is useful if you use another navigation or weather software. It allows putting all the Gribs in a common folder.

Map



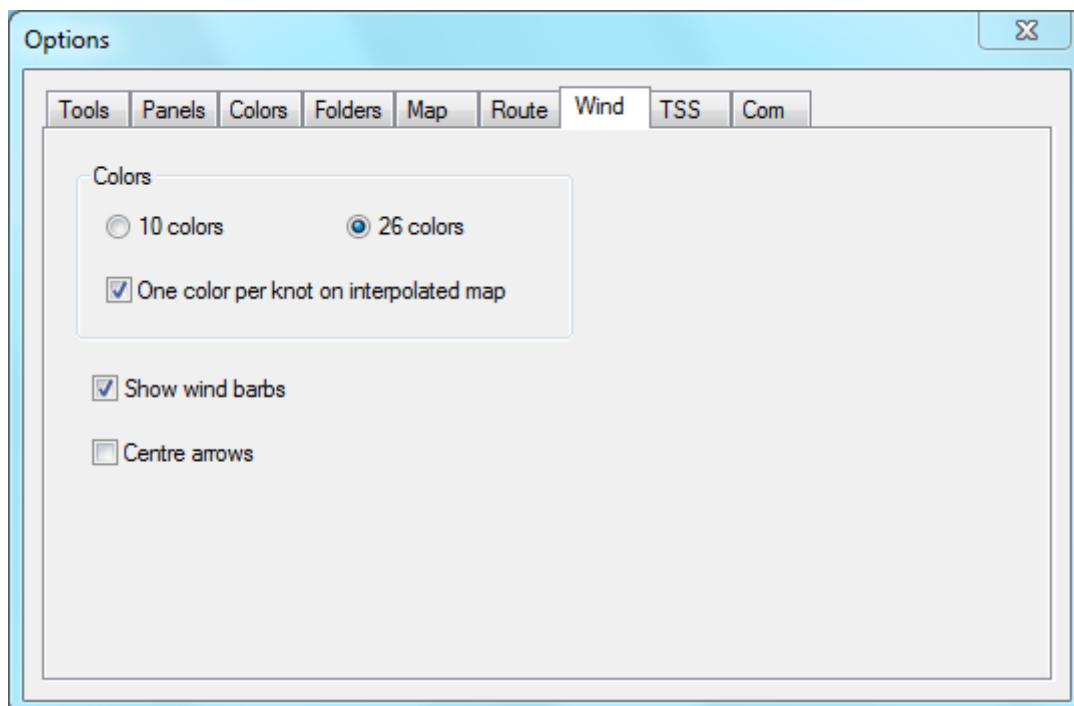
Zoom is used by the mouse wheel when zooming up or down.

Route



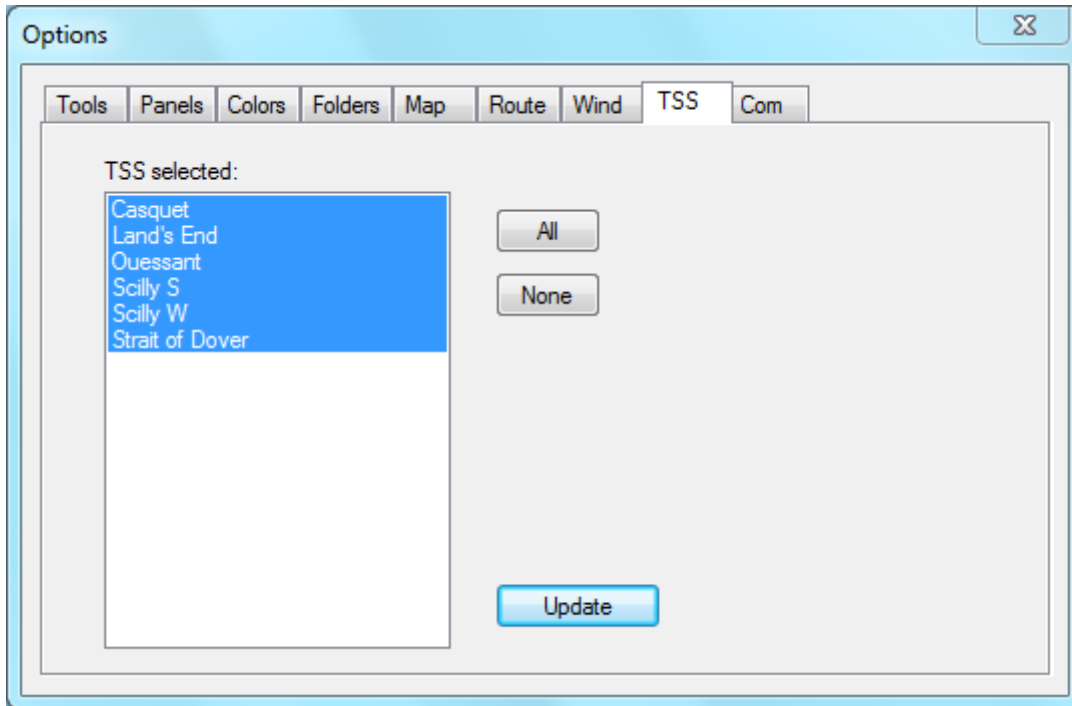
Strait segment (orthodromy) is the small segment of the route to represent the orthodromy (great circle).

Wind



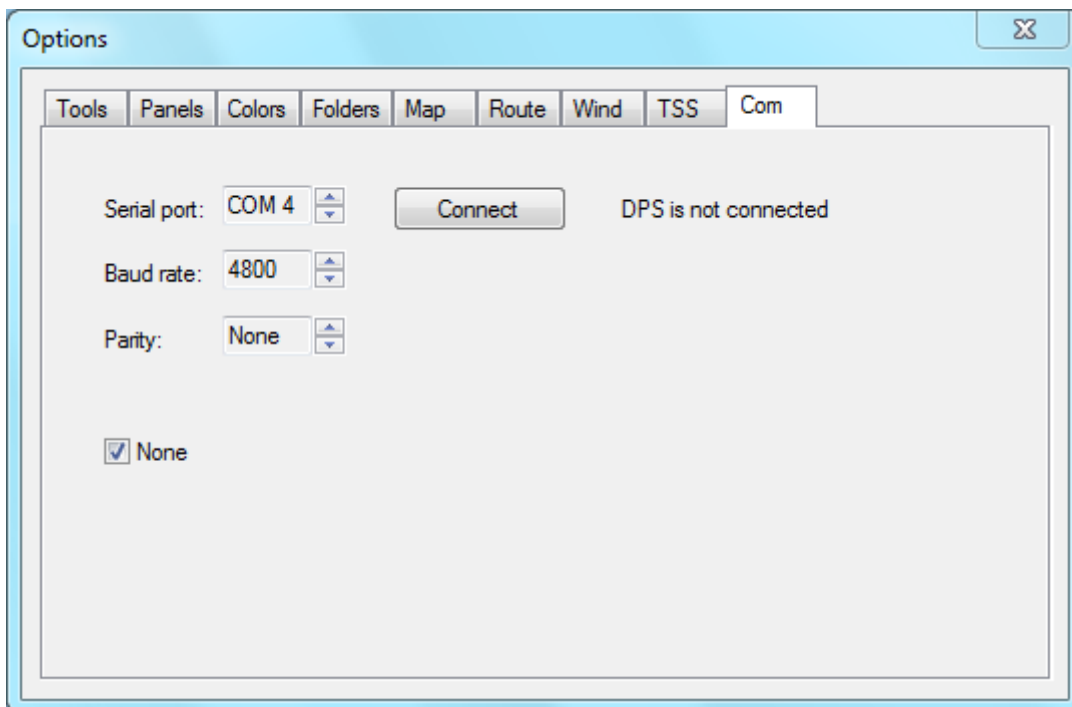
2 sets of colors are proposed.

Traffic Separation Schemes



The traffic Separation Schemes (TSS) can be set by the user. A TSS is a GPX file got from any navigation software. To create a new TSS, 1) draw a route in your favorite navigation software. 2) Export the route in GPX format. 3) Place the route in the folder Data/Tss under the root of SimSail. When the dialog box Options opens, it lists all the GPX files present in the Data/Tss folder. A highlighted TSS is considered as selected. To take in account the changes, hit the button 'Update'.

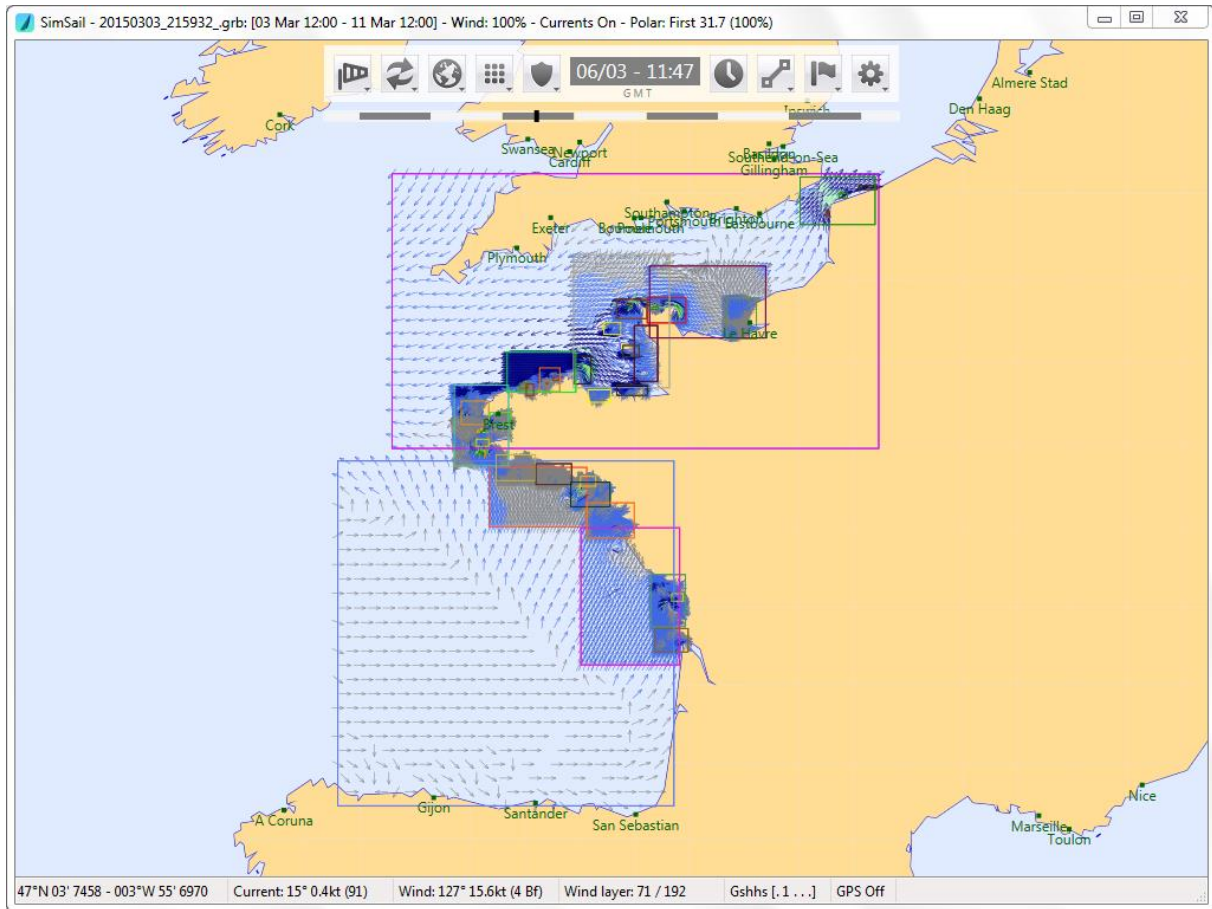
Com



When the GPS is not connected, the boat is colored in red on the map, otherwise in green. The line represents the COG and the SOG of the boat.



HOW TO INSTALL SHOM TIDAL STREAMS



The SHOM tidal streams are not provided with SimSail but SimSail can read them.

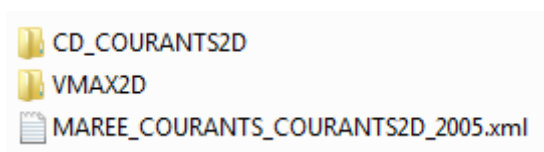
Purchase the streams on the SHOM website:

<http://diffusion.shom.fr/produits/courants-maree/courants-2d.html>

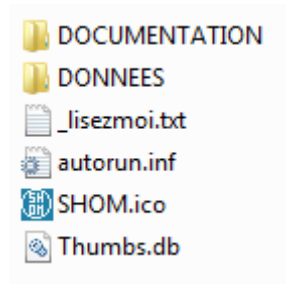
For the creation of an account, see <https://diffusion.shom.fr/customer/account/create/>

Once you get the file named “C2D.7z”, you need to decompress it with the program 7z (freeware) downloadable at <http://www.7-zip.org/>

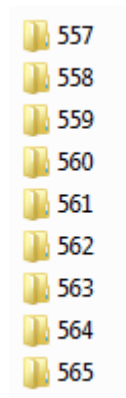
You obtain a folder named “C2D” where you have the following folders and files:



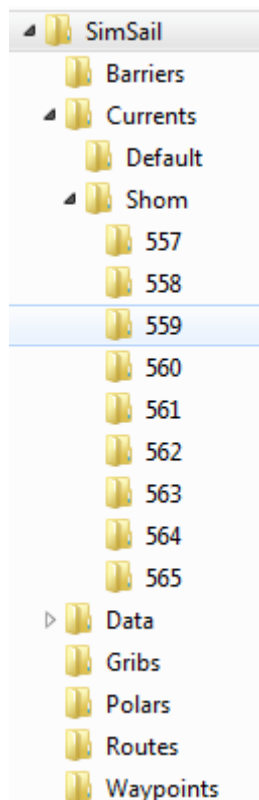
Open the first folder “CD_COURANTS2D” and you should have:



Open the folder named “DONNEES” (Data in English) and you should have 9 folders:



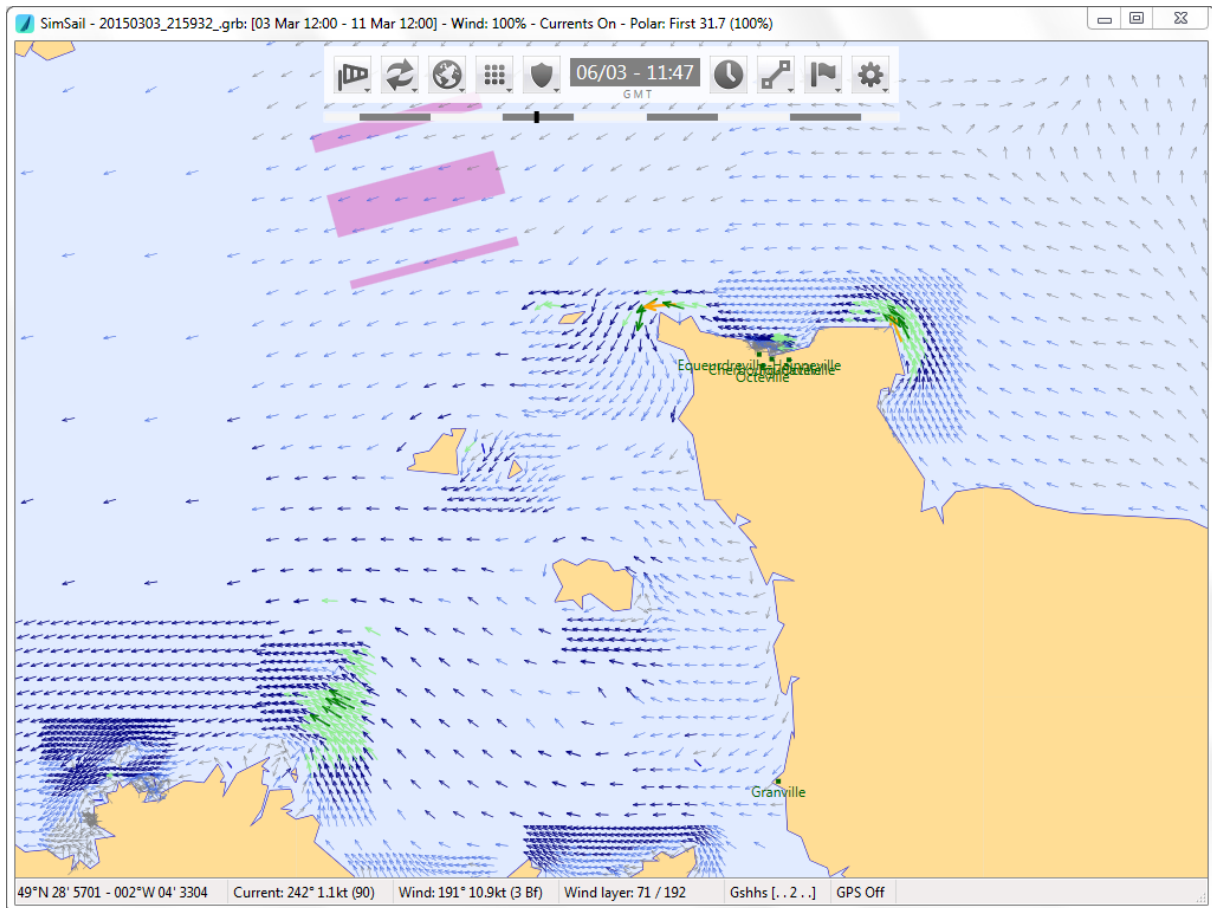
Into the folder “Currents” placed under the SimSail root, create a new folder named “Shom” and copy all the folders above with their contents under the new folder Shom of SimSail. You should have something like that:



To run properly, SimSail needs the 9 folders from 557 to 565.

When the installation is correct, in the Routing parameters dialog box, you can select a radio button called “SHOM (France)”.

On the map, you can switch between the default currents and the SHOM using the shortcut keyboard “C”.



THE AUTHOR HAS NO LINK WITH THE SHOM.

THE USE OF THE SHOM DATA IS THE SOLE RESPONSIBILITY OF THE USER. TRACK CHANGES

TRACK CHANGES

Version 2.6

- Can read the tidal streams from the SHOM (France)
- Ctrl key over the tool time to have steps of 10 min
- Basic logger
- VMG optimised
- Can define precisely the points of the route
- Routing scan with 3 polars and theirs ratings

Version 2.5

- Internationalization
- Full orthodromy (route, ellipses and routing) – great circle
- Infinite map in longitude including normal work around the dateline
- Multiple routing by scanning different parameters (polar, wind or time)
- At the end of a routing, display a summary in a window
- Display the reason why the routing did not reached the final waypoint
- Waypoints should be at sea to do a routing and incorrect waypoints are marked
- Routing can be done out of the ellipse
- Actual currents are displayed when routing progresses
- Time lag added for the grib
- Grib is correctly aligned on the Mercator map, especially on high latitudes
- Option added for the grib colors (one color per knot of wind)
- Option added to not route outside the grib
- Main folder of SimSail may be moved
- At the opening, load all the previous waypoints
- Option added for the factor of zoom of the map
- Pending local language of the operating system, GPX files read numbers that have a ‘,’ or a ‘.’
- Windows of Routing parameters and Options keep their locations on the screen
- Tool time improved
- Popup menus for the route and the barriers have been uniformed and improved
- Option added to display or not the lakes
- Management of the barriers and the route refined
- Menu 'Add waypoints' is now combined with the menu 'Open waypoints'
- Framing of the grib and the route improved
- GPS stability improved
- Routing from the boat
- Routing can be stopped better with Escape key
- Auto routing improved
- Management of the Traffic Separation Schemes improved

Version 2.3

- The isochrones routing is 10% faster.
- The start date and time cannot be selected out of the range of the grib.
- The non-homogenous grib can be loaded. It concerned Saildocs which can provide a grib that covers two weeks, with a grid for the first week different from the second week.

- Several icons of the right panel have been changed.
- For the dual routing, sailing and engine, the engine is now on when the boat speed is below a threshold.
- Stability improvements.

Version 2.2

- The isochrones routing is much faster (3 times faster than the version 2.1). Abandon of the previous method of interpolation of the polar which was a bi-cubic spline interpolation.
- Stability improvements.
- Icon Routes changed for clarity.
- Best finish at the waypoints.
- GPS and Languages functions are still in development.

Version 2.1

- Barriers added.
- Correction of bugs after intensive use of the software during the summer cruise.
- GPS function added.
- Language added.

Version 2.0

- For a better and faster rendering and to avoid developing for two graphics engine, GDI+ is no more implemented. Thus XP is no more supported. SimSail is only available for Windows 7 that utilizes Direct2D.
- Isochrones and Intermediate waypoints methods have been implemented. Available for multi segments.
- Routing avoids the coasts. Quality of the coasts can be changed for the precision of the calculations.
- Many additional routing parameters.
- Several additional options of SimSail.
- Enhanced calculation of the routing.
- Cities are visible.
- Map grid of 1° x 1°.
- Stability improvements.

Version 1.0

- Direct2D implemented and choice between Direct2D and GDI+ can be made in dialog box Options.
- Additional options in the dialog box Options with new tabs.
- Management of the shorelines GSHHS has been totally rebuilt. The full world is available.
- SimSail can read the original data that can be downloaded at <http://gmt.soest.hawaii.edu/files/download> (See the file gshhg-gmt-nc4-[version].tar.gz)
- Automatic quality of the shorelines has been implemented and is visible in the status bar.
- Routing improved with Counter currents fixed.
- Display of the winds has been improved. There are more arrows and the colored surface is more readable.
- Several improvements on the toolbar to limit at maximum the refreshment of the window.
- A bar below the toolbar has been added to better navigate in the grib or in the routing.
- Display of tides has been added for the main reference ports.

- F1 key displays the help. Several shortcuts have been added.
- Speed of rendering has been increased.
- Stability improved.

Version 0.9

- New dialog box with tabs for the options of SimSail.
- Toolbar can be hidden when the mouse is not over. This option is saved.
- Tooltips have been added for the buttons of the toolbar. They can be shown or hidden and this option is saved.
- The name of the waypoints is displayed close to them, under the mouse position.
- Several colors can be changed in the options dialog box and saved.
- Folders of grib, waypoints, routes and polars can be changed and saved. The first time SimSail opens, the folders are the default ones. When they are changed with the Options dialog box, they are saved and restored.
- New dialog box with tabs for the routing parameters.
- The polar can be displayed. Access by the Routing dialog box, Polar Tab. Escape key comes back to the normal display.
- The details of each point of the routing are displayed on the left. Keys, Page Up and Page down, in conjunction with Control (10 time steps) or Shift (60 time steps) key allows navigating along the routing.
- The route is displayed with arrows to see the departure and the arrival.
- The speed of the boat is calculated in interpolating the polar with a bi-cubic spline.
- The boat cannot have a course inferior the VMG upwind or superior to the VMG downwind.
- A unique wind available for the world can be set.
- Grib from zyGrib, UGrib and Meteo Consult can be read.
- The display of the winds in gradient colors has been improved.
- The time to calculate a routing has been divided by two.
- SimSail doesn't need any more msvcrt100D.dll.
- SimSail is now under the license GPL3.
- When the routing is not in the time or spatial range of the grib, SimSail utilizes the engine.
- The routing can be exported as a route and can be open in navigation software like OpenCPN or MaxSea.
- Several optimisations in the rendering.
- Routing can be done without the currents.
- Legend of the routing has been added and display of the routing can be selected from the legend on the upper right.
- Memory leaks almost solved.

Version 0.8

First release candidate to have been tested by another tester at sea.

- New toolbar with vertical menu of buttons.
- Polar can be changed.
- New routing procedure, in particular when a waypoint of the route is reached.

Version 0.7

- Compressed grib with bz2 extension can be read.

Version 0.6

- Enhancement of routing.
- Lambert projection.

Version 0.5

First release candidate tested at sea during summer 2013.

- Basic routing.

Version 0.4

- Waypoints.
- Route.

Version 0.3

- Currents.

Version 0.2

- Shorelines.
- Grib files.

Version 0.1

- Map moving on Win32 C++.