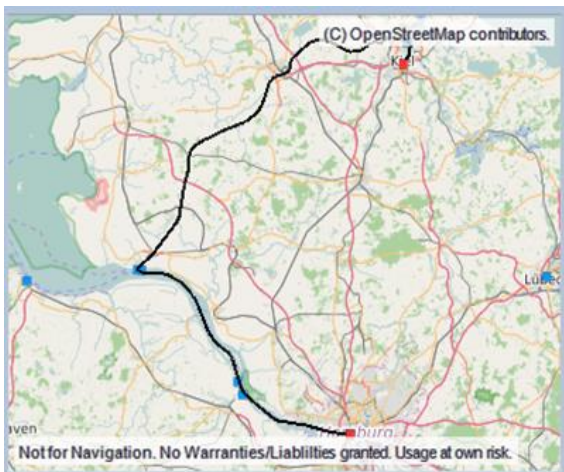


New “Distance Table”

Since the early days of System 5, sea distance calculation in the modules “Distance Table”, “Voyage Estimation” or “Voyage Operation” has been done via a third party engine supplied by “AtoBviaC Plc.” based in the UK.

This company was sold in 2015, and a new license agreement could not be reached. After exploring the alternatives, we decided to start our own development in July 2016.

Now, 15 months later, we are proud to announce the launch of our new, completely self-developed distance engine with more than 2,200 ports and 23,000 routing points.



Our graphs (and consequently distance results) always look like this, with no land crossing at all.

- More than 20 routing options like canals (Suez, Panama, Kiel, etc.) or directives (Cape Cod Canal, Avoid Piracy Area, etc.) implemented.
- All ECA regulations including new Chinese ones (Pearl River Delta, Yangtze River Delta and Bohai Waters) have been taken into account. ECA sections of a calculated distance are separately stated.
- An average distance calculation takes less than a second thanks to our optimized, so-called “A*” algorithm, which recalculates every distance each time you ask for it.
- The use of “OpenStreetMap” guarantees access to the latest maps. Royalties for commercial use are paid by Reinhardt Software.
- All our routing logic, routing points and ports are included in the assemblies installed on your system. There is **no** internet access required in order to run calculations.

New “Distance Table”

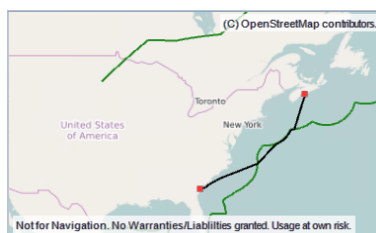
Optimized „avoid ECA Zone“ Routing

Just going around an ECA zone does not automatically mean saving money. The routing algorithm must include actual bunker prices to find the right spot for leaving and re-entering ECA zones.

The graphs below show results for „Halifax to Savannah“. With low sulphur Mgo prices currently ranging from USD 450,00 to more than USD 590,00 per ton, System 5 optimizes the ECA routing as shown below.



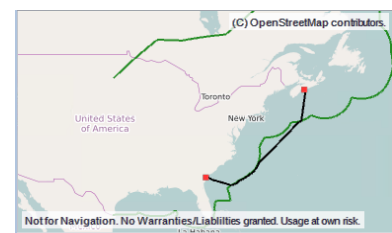
No ECA Optimization



Optimized

Ifo: 335,00 USD/mt

Mgo 0.1% : 450,00 USD/mt



Ifo: 350,00 USD/mt

Mgo 0.1 % : 590,00 USD/mt

There is one feature we did NOT implement on purpose!

Our Distance Table is not intended to be used for actual navigation, therefore we did not implement “Traffic Separation Scheme” (TSS). The cost (longer “calculation runtime” and significantly higher development efforts) for taking TSS into account are too high compared with the actual difference in distance. In the end, the result shall give you a good idea about the sailing distance, enabling you to make a commercial decision.

A second reason for not using TSS is a distance table’s accuracy. We have compared many of our main competitors’ results. One example, where the issue becomes apparent, is e.g. the route from Hamburg to Rotterdam – a route where TSS is actually in place. Only one competing system differentiates and seems to apply TSS. However, the distances of all systems vary between 295.00 nm and 330.24 nm. So what is the correct distance? Even we don’t know exactly, and we do not pretend to be 100 % precise by stating different distances between “A to B” and “B to A”. Our new distance engine returns 317.00 nm for both directions.

New “Distance Table”

Updates & Costs

The new distance engine will be updated on a regular basis. We will do our best to implement missing or new ports and additional routing options as quickly as possible. All input from your side is highly appreciated.

Until the end of 2017, all System 5 customers with a current “Distance Table” license can switch to the new engine and use it free of charge until 31 December 2017. As of January 2018, a moderate fee of only € 60.00 **per year and license** will be charged to cover the ongoing updating service. For installations with more than 3 licenses volume discounts will be applied.

Please be advised that you won't be able to install any further System 5 updates after July 2018 without an update to the new engine. The currently applied software certificate for using the former engine expires at that time, and the engine will not initialize with a version of System 5 compiled after that date.