



e-navigation made easy

NAVTOR AS

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NAVTOR IS READY FOR THE ECDIS MANDATE, ARE YOU?

ECDIS uptake has so far been limited to a minority of the world's fleet. However, when carriage becomes mandatory, an increasing body of owners and operators will be confronted with the administrative headache that comes with managing an ENC portfolio.

This rising administrative burden is taking more and more of the bridge officers' time, as less time is spent on navigation and more and more is spent on paper-shuffling and box-ticking. One of the biggest issues is chart management and more specifically checking that the licenses and permits needed to access the required electronic charts for upcoming voyages are ordered.

Simply effective solutions

NAVTOR has dedicated itself to making life simpler and safer for the navigator and more efficient for the ship-owner. By harnessing the very latest modern technology, NAVTOR has created clear operational advantages

for end users and fine-tuned the ENC proposition to perfection. It is now possible to distribute, update and manage ENCs seamlessly and NAVTOR is now moving towards the goal of instantaneous, online-enabled ECDIS operation, making the Mandate easier for everyone to comply with.

And when we say everyone, we mean everyone: NAVTOR's ENC service is compatible with all makes of ECDIS, which is a real advantage for ship-owners that may have multiple ECDIS brands across the different vessels in their fleet.



Thousands of navigators will make the move from paper charts to Electronic Navigational Charts



By July 2014 all existing passenger ships over 500 gross tons must be fitted with ECDIS and ENC

NAVTOR, LEADING THE WAY IN E-NAVIGATION

With carriage requirements for authorized electronic charts (ENC) moving towards an official IMO mandate, Stavanger-based Smedvig saw an opportunity to establish a company providing automated electronic navigation services for the distribution and updating of electronic maritime navigational information. In Egersund, a coastal town in the south west part of Norway, well known for its maritime electronic industry, Smedvig contacted experienced personnel in the maritime industry with mutual interests and expertise, leading to the formation of NAVTOR in the summer of 2011.

At the head office in Egersund the company has a team of personnel with extensive experience in the development, marketing, sales and support of official electronic charts and navigational information services for the professional maritime market.

NAVTOR has a subsidiary in St. Petersburg manned by experienced technical experts

specializing in the field of ECDIS kernels and maritime software development.

From the point that Peder Smedvig established his first company in shipping back in 1915 through to the present day, the history of the Smedvig family's operations demonstrates an excellent track record in managing business

The benchmark for the Smedvig Family Office is to build and operate an investment portfolio that is robust and will perform very competitively compared to its peers. The objective is to secure and grow the wealth of current and future generations of the Smedvig family; this has led to a decision to invest in projects and assets for the long-term.



«MT VENI» completed 13/11-1970 at Götaverken Arendalsvarvet A/B, Göteborg, Sweden for Smedvigs Tankrederi A/S (Peder Smedvig A/S), Stavanger

BE PREPARED FOR THE ECDIS MANDATE

ECDIS carriage is mandatory and began its gradual rollout in July 2012. The legislation will be phased by ship type and size, eventually applying to almost all large merchant and passenger vessels.

Use the diagram to the right to help you identify ECDIS installation deadlines for your ship or fleet. Existing ships will have to fit ECDIS before the first survey following the implementation date. If you're acquiring new ships, remember that the timetable for new builds is based on when the keel is laid. There are two very important exceptions. Existing cargo ships of fewer than 10,000 gross tons won't require ECDIS. In addition, some flag states may also exempt ships due to be taken out of service within two years of the implementation date.

The UK Hydrographic office offers an informative booklet – 'Your nine stage guide to SOLAS requirements' – that details what you need to know and how best to be prepared for ECDIS implementation.

ECDIS compliance dates by ship type and size

This chart shows when the regulations come into force for each vessel type.



SIMPLIFIED ENC SERVICE FOR ALL ECDIS SYSTEMS

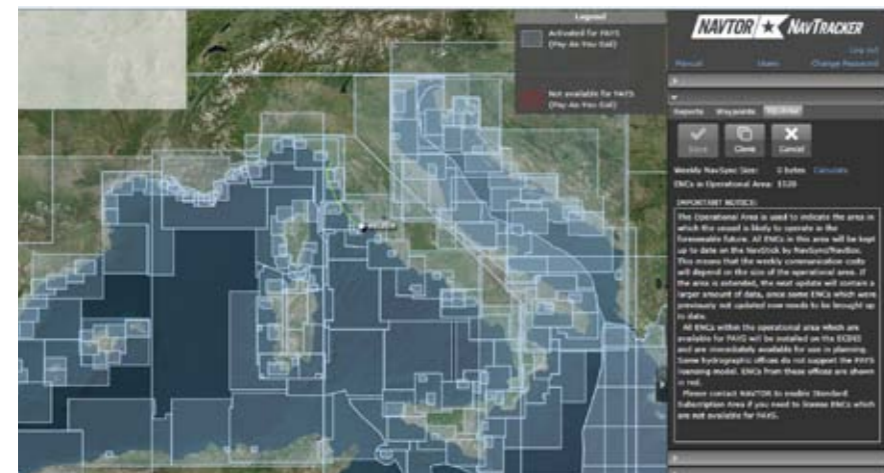
The innovative NAVTOR e-navigation ENC service is a completely new solution that simplifies the ordering, licensing, updating and, importantly, the administration of ENC chart portfolios

The ECDIS is the navigation information centre on the bridge, but it displays more than just electronic charts. With this in mind, NAVTOR examined the needs of navigators and, as a result, chose to provide additional services in combination with the innovative distribution of official ENC. Combining weather prediction with information such as safe and economical routing, in addition to other relevant navigational information, allows NAVTOR to offer a complete package that is the modern navigator's prime source of digital nautical information.

The integration of digital navigation marks a fundamental shift in the way ship navigation is conducted



From July 2014 all new cargo ships over 3 000 gross ton need to be fitted with ECDIS and ENC



COST-EFFECTIVE AND FLEXIBLE SUBSCRIPTION

Pay As You Sail (PAYS) is a flexible subscription model that operates on a three-month rolling contract basis and meets the demands of the majority of maritime operations. For liners or ferries operating on regular routes, the Standard Subscription Area (SSA) is an alternative subscription model, running for arranged periods of three, six or 12 months.

SEAMLESS ENC DISTRIBUTION AND UPDATING

Managing ENC updates and keeping track of the correct licences and permits is, for many navigators, a laborious task and an inefficient use of resources. However, by making this information fully available online, instead of on CDs, the navigator can gain easy access to the very latest versions of charts and any associated paperwork. The NavStick USB drive acts as the bridge between the ECDIS and an internet-enabled computer.

NAVTOR's online synchronisation package, NavSync, offers other key time-saving and safety benefits. It automatically checks for updates and generates email reminders for the navigator, should he or she not carry them out. In addition, it also boasts a function enabling it to print reports, demonstrating to port authorities that vessels have the most up to date, fully authorised ENCs. This is a failsafe way to get the latest information at the touch of a few buttons, delivering seamless control over updates, paperwork and time management.



Global ENC coverage on the NavStick



SIMPLE AND SEAMLESS BY THE NAVBOX

The NavBox is an international roaming feature installed on the bridge of the vessel, that is programmed to

download new navigational data. Hence the navigator doesn't have to request for the latest available data and updates, it will automatically be downloaded, and on hand to be installed on the ECDIS.

By connecting the NavBox to the ECDIS, the full seamless distribution is achieved.



EASY AND SAFE

No more CDs and no more worrying about the latest chart editions and updates, just a simple, time and labour saving way to access the latest Electronic Navigational Charts (ENCs) on the NavStick.



Once signed up as a Navtor ENC Service subscriber, the NavStick is shipped to you containing global ENC coverage.



Go to <http://navsync.navtor.com> and install NavSync on your PC.



Start NavSync and insert the NavStick into one of the computer's USB ports



Update NavStick with the latest ENC database

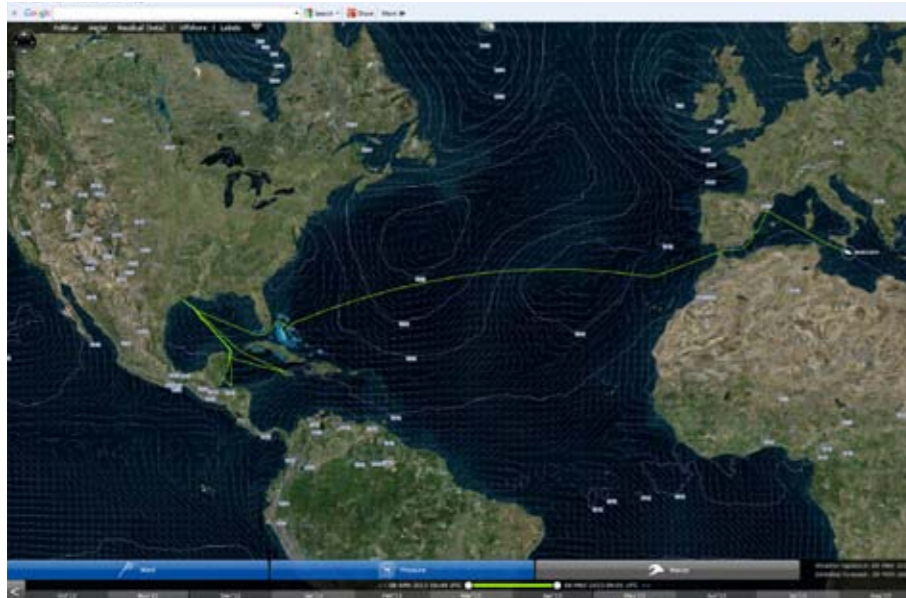


Move the NavStick to the ECDIS and install permits and ENCs

NAVTRACKER GETS IT ALL ORGANIZED

Subscribers to the NAVTOR ENC Service can enjoy the benefits of using the free NavTracker PC software to manage a vessel's ENC portfolio. With NavTracker, both the navigator on board and the ship management on shore have a full over-

view of chart usage, chart update history, vessel tracking and service management, in addition to a free three-days weather prediction. NavTracker provides the user with an easy way to handle administration and make changes to their chosen subscription. The Operational Area functionality allows the user to add or remove charts as needed, simply and efficiently.



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FULL CONTROL OF YOUR FLEET ON YOUR SMART PHONE AND TABLET

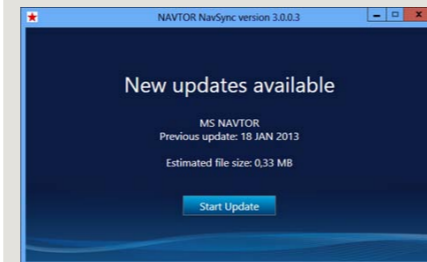
NAVATOR has launched the NavTracker app as a free addition to its NavSync service. The app, suitable for use on internet-enabled devices, is yet another high-tech game-changer for ship navigation. Navigators and management ashore have the option to follow the vessel's movement, check if the ENC portfolio is up-dated and get full control over actual cost for a vessel running on the Pay As You Sail

Combined with the NavSync online update service, all changes to the subscription will be updated on board, alongside chart updates, with just a few clicks on the PC.

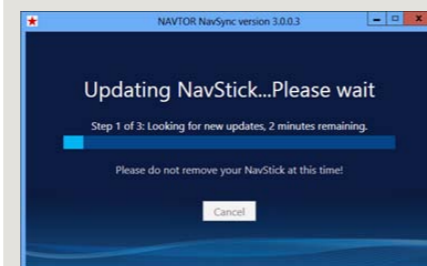


CHART UPDATING THE EASY WAY

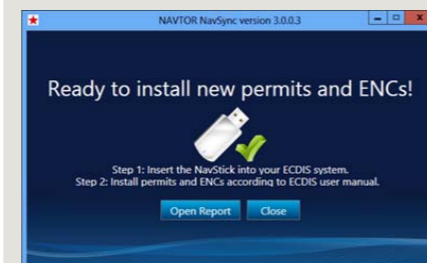
After NavSync has finished checking for new ENC's and updates within your operational area, you will receive a prompt



before continuing the update. The vessel name, the date of your last update and an estimate on how much data needs to be downloaded will appear on the screen.



NavSync starts a fully automatic three-step update process.



When NavSync has finished updating the NavStick the following screen will appear.

WEATHER SERVICES AND WEATHER ROUTING

Seaware Onboard is an advanced and comprehensive onboard weather and ship routing product suite, ranging from basic weather presentation and voyage planning, to advanced sea-keeping support and advice.

Seaware Onboard offers three levels of functionality and sophistication; from

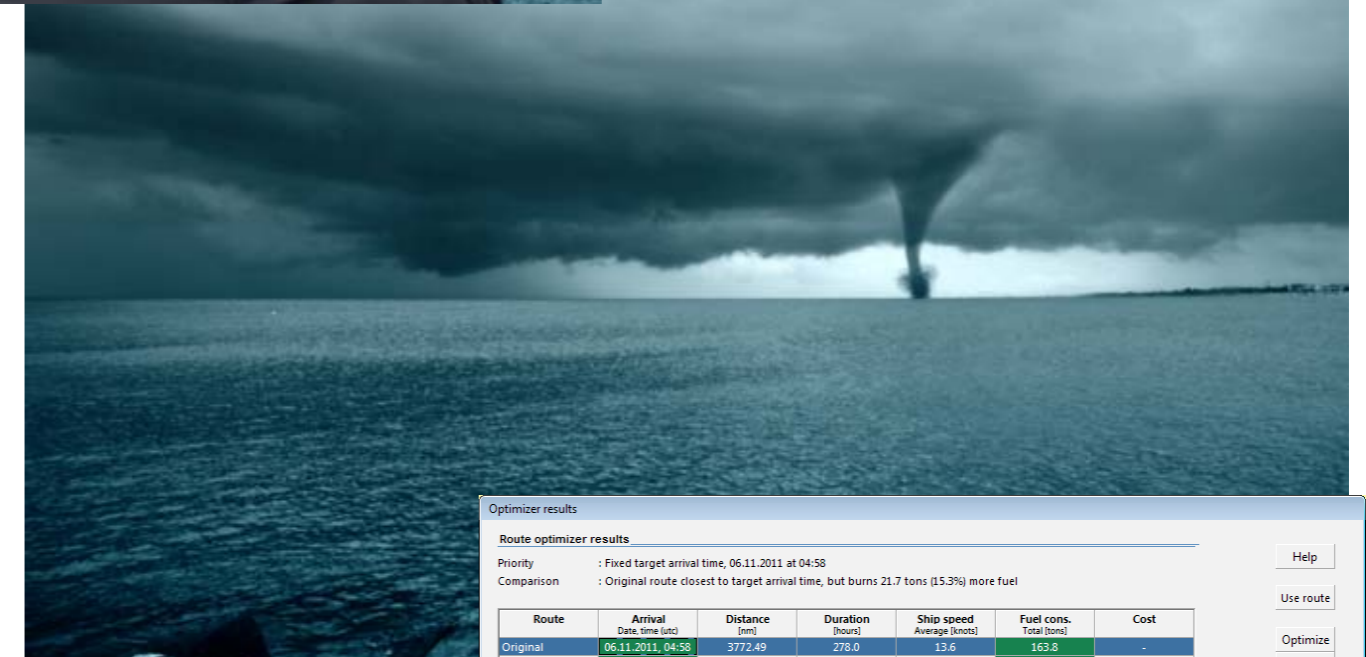
the 'basic' yet full-featured voyage planning software Seaware Routing, to

voyage planning and optimization with respect to ship performance



the cutting-edge EnRoute Life system, equipped with a motion sensor enabling full control of the ship's dynamic behaviour, even in real-time. **Seaware Routing:** Includes graphical weather presentation,

Seaware EnRoute: Adds in the prediction of a ship's dynamics **Seaware EnRoute Life:** Built around the advanced voyage planning functionality of Seaware EnRoute, but with added, powerful real-time support at sea and extensive recording capabilities



Optimizer results

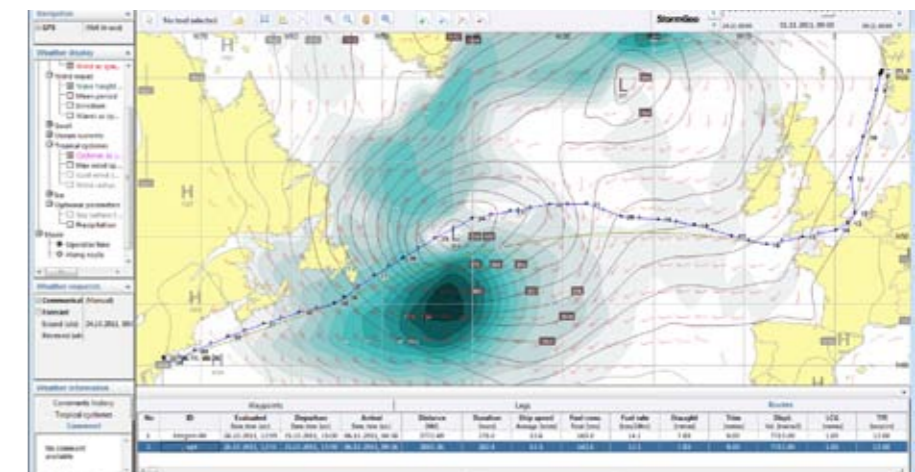
Route optimizer results

Priority : Fixed target arrival time, 06.11.2011 at 04:58

Comparison : Original route closest to target arrival time, but burns 21.7 tons (15.3%) more fuel

| Route | Arrival Date, time (UTC) | Distance (nm) | Duration (hours) | Ship speed Average (knots) | Fuel cons. Total (tons) | Cost |
|-----------|--------------------------|---------------|------------------|----------------------------|-------------------------|------|
| Original | 06.11.2011, 04:58 | 3772.49 | 278.0 | 13.6 | 163.8 | - |
| Optimized | 06.11.2011, 09:26 | 3810.36 | 282.4 | 13.5 | 142.1 | - |

Route from Bergen, Norway to NewYork, USA (ETD Oct 25th 2011): Fuel saving was 22tons (15.3%), or 22 x USD600, at one voyage in addition to avoiding highest waves.



The Seaware software is developed by highly skilled Naval Architects, boasting vast experience in computer programming. The team utilizes their combined skills and technical and scientific knowhow to ensure that all products are absolutely state-of-the-art. SeaWare Onboard uses the most accurate and enhanced weather data available, delivered by StormGeo in Bergen, Norway. The meteorologists at StormGeo share our basic scientific philosophy and deliver outstanding data quality.