

# 10 STEPS TO ECDIS MANDATION

# OVERVIEW

## What is ECDIS mandation?

The International Maritime Organization (IMO) approved amendments to the International Convention for the Safety of Life at Sea (SOLAS) mandating the fitting of Electronic Chart Display Information System (ECDIS) at the 86th session of the Maritime Safety Committee (MSC) in June 2009. The amendment to SOLAS means that all large passenger, tanker and cargo ships will be obliged to fit ECDIS on a rolling timetable that begins in July 2012.

## What is the purpose of this guide?

ECDIS is an evolving technology and the new regulations surrounding its mandated use can seem confusing. The purpose of this guide is to clarify the process that leads to adoption of ECDIS by shipping companies, in step with SOLAS Regulations.

## What is the involvement of the UKHO?

The United Kingdom Hydrographic Office (UKHO) is the leading supplier of official Electronic Navigational Charts (ENCs) allowed under SOLAS Regulations. We believe that the mandation of ECDIS puts a powerful tool into the hands of seafarers that can mean safer and more efficient voyages, and at the same time help to protect the marine environment. Our own research suggests that shipowners need to start planning their strategy for the transition to ECDIS now to get the best results.



*"We believe the timing is right to harness fully the technology that has been available for some time. We have been working with our colleagues within the hydrographic community to ensure that there is comprehensive SOLAS carriage compliant digital chart coverage of major shipping routes and ports in an integrated offering that also meets the international mariners' stated requirements for service and updating. Evidence for this comes from our wide-ranging SOLAS users and the take-up of subscriptions from trial licences in our AVCS service."*

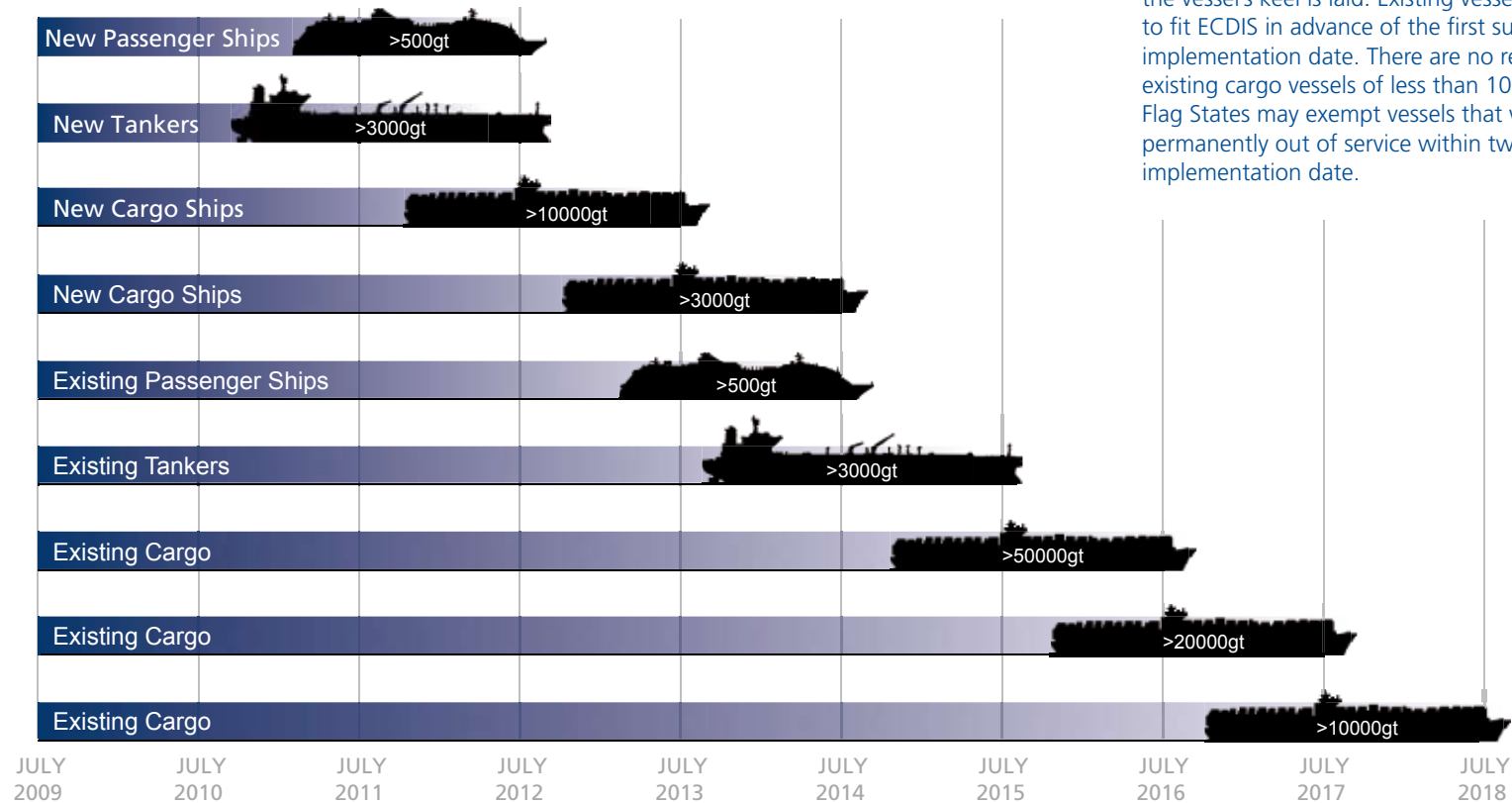
*"The timescales for implementation of mandation are practical and allow for increased training in the use of ECDIS, something that we believe is now the most critical issue to be considered. Accordingly, between now and 2012, there are a number of steps and considerations to be made by users to ensure that there is a smooth transition from paper to digital navigation."*

**Rear Admiral Ian Moncrieff**  
– UK National Hydrographer

## Step 1. Find out how your fleet will be affected

Fitting of ECDIS will become mandatory in a rolling timetable that begins in July 2012. The legislation will be phased by vessel type and size to eventually apply to almost all large merchant vessels and passenger ships. Use the diagram to determine which of your ships will be affected and when.

The timetable for newbuilds is based on the date the vessel's keel is laid. Existing vessels will be required to fit ECDIS in advance of the first survey after the implementation date. There are no requirements for existing cargo vessels of less than 10,000 gross tons. Flag States may exempt vessels that will be taken permanently out of service within two years of the implementation date.



Based on IMO Circular letter issued December 2008. Please check [www.thefutureofnavigation.com](http://www.thefutureofnavigation.com) for the latest updates and news.

## Step 2. Consider your implementation strategy

It is important to recognise that the transition from paper to electronic navigation is a fundamental change in the way ship navigation will be conducted, not simply a case of fitting another piece of hardware to ensure compliance with a carriage requirement.

To successfully fit ECDIS on a vessel or across a fleet and operate it in a safe and efficient manner requires consideration of a number of interrelated elements.

As well as decisions on the purchase and installation of the ECDIS equipment thought must be given to training and to the amendment of bridge procedures. Lastly but importantly is the selection of a chart service that best meets operational needs and fulfills the carriage requirements.

All of these factors need to be taken into account when developing the implementation strategy for your fleet. It will depend on the types of vessel in your fleet as well as the mix of new and existing vessels and the trading pattern they operate.



### Develop a strategy across your fleet

- Newbuilds
- Existing ships
- Training

### Step 3. Choosing the correct ECDIS fit

There is a large range of ECDIS equipment available, from those that are part of an integrated bridge system, through to small standalone units that could be more appropriate for retrofit to vessels that have limited bridge space.

The IMO standards require that vessels must carry a backup to ECDIS that can take over the chart-based navigation functions in event of system failure. The fitting of a second ECDIS or the carriage of paper charts are widely accepted as back-up that will meet requirements. Depending on your Flag State, other solutions such as the carriage of a Chart Radar or other type-approved electronic back-up may be accepted.

You will need to decide whether to fit vessels with single or dual ECDIS systems. Fitting a dual system will allow a significant reduction in the paper charts carried (in some cases down to zero). If using paper charts as a back-up to a single ECDIS you are likely to require the carriage of a full (or only slightly reduced) folio.

However you intend to install and operate with ECDIS, you will need to work closely with the Maritime Authority that your vessels are registered with to ensure you comply with all the requirements.

For a list of Flag State back-up requirements, you can also refer to the Compendium of Flag State ECDIS requirements at [www.ukho.gov.uk/2012compliance](http://www.ukho.gov.uk/2012compliance)



#### Dual or Single ECDIS

- Dual – reduce the requirement for paper charts
- Single – carry and maintain existing paper charts

### Step 4. Choose the right chart solution for you

Only official Electronic Navigation Charts (ENCs) from an authorised supplier meet SOLAS carriage requirements for charts in ECDIS. These must be kept fully up to date for the latest Notices to Mariners (NMs).

You should be looking for a chart service that is compliant with the new regulations, provides the best coverage for your areas of operation, provides flexibility both in terms of the charts you buy and their licence periods and includes a regular update service.

Look also for a chart supplier that can provide official raster navigational charts, such as ARCS, for areas where ENCs are not available. This will enable you to always navigate with official data.

The Admiralty Vector Chart Service (AVCS) is the leading, fully official, fully compliant ENC service. It contains more official ENC coverage than any other service and incorporates flexible licensing and automatic updating via internet or by CD-ROM. To find out more about the Admiralty products and services available to help you transition to ECDIS visit [www.ukho.gov.uk](http://www.ukho.gov.uk) or speak to your Admiralty Distributor.



#### Obtain official charts

- Ensure charts are official and compliant
- Keep them up to date with the latest Notices to Mariners (NMs)

### Step 5. Get your crew trained

Training is a key element in the successful and safe transition to electronic navigation.

Flag States will normally, as a minimum, require that ships officers attend an approved generic ECDIS operator training course based on the IMO standard model. In addition, the ISM Code requires that ships officers have familiarisation training for all safety equipment fitted onboard. This requirement can be met through type specific training provided by the ECDIS manufacturer.

As a minimum, you should be able to satisfy your Flag State and any independent audit authorities that your crews are competent in the use of ECDIS to maintain safety of navigation.

The UKHO is developing training material, including computer based packages, to assist the mariner to read and interpret ENCs with the same confidence they have with paper charts.



#### Establish Flag State training requirements

- Demonstrate compliance through training

### Step 6. Get Flag State Certification

It is essential to understand your Flag State's requirements for certification. Under existing regulations you will need to obtain a certificate of equivalency to allow ECDIS to be used to fulfil the SOLAS chart carriage requirement.

The certificate is proof that the vessel has a type approved ECDIS, fitted in accordance with IMO requirements and an approved back-up system. You should check that your Flag State will accept the type-approval certification for the ECDIS equipment you wish to fit.

Where ECDIS has been fitted this should be indicated on the record of equipment attached to the vessel's safety equipment certificate; this will also give details of the backup that is to be used.

You should also talk to your classification society and insurance / P&I club to see if they have any further specific requirements.

Flag State requirements may change following the adoption of carriage requirements for ECDIS, so it will be important to remain in close contact with them.



#### **Pull together the paperwork**

- Obtain Letter of Equivalency from your Flag State
- Ensure the ECDIS Type-Approval Certificate is accepted
- Talk to your Class Society, Insurance and P&I clubs. They may have further specific requirements

## Step 7. Demonstrate compliance for Port State Inspection

As well as having to satisfy the initial requirements of your Flag State when installing ECDIS, Port State Control will be checking to ensure compliance with the new regulations.

Inspections might require physical demonstrations of competency by your crew as well as evidence of inclusion of ECDIS operation procedures in your onboard safety management systems. This is in addition to basic certification described in Step 6.

Some commercial operators' vetting schemes will have similar demands and non-compliance with their requirements could put your ship off-hire.



### Get ready for inspection

- Physical demonstrations
- Crew competency
- Onboard safety management systems

### Step 8. Co-ordinate shore-side and ship management

Close co-ordination between ship and shore is vital for successful implementation. Identify all your stakeholders – class society, insurers, charterers – and include them in your plans as early as possible.

It's worth conducting a full analysis to determine how ECDIS on board your vessels could change ways of working on shore. Practical areas to look at include management of chart data and passage planning. Successful implementation will require a re-write of your company's safety management system, which is likely to be best achieved through structured consultation between onboard and ashore staff.



#### Inform shoreside stakeholders

- Review the impact ECDIS on-board will have on shore-side operations
- Review company's safety management system

## Step 9. Start now!

There is a lot to do so don't wait for the deadline. Arranging training and acquiring certification can take three months but you might need as much as six months to implement your strategy depending on whether the vessel is a newbuild or retrofit.

The sooner the strategy is adopted, the sooner you will have a realistic expectation of costs and issues. If your ship is affected by the first phase adoption in 2012, you should start planning now.



### Start now

- Start now to allow time for a smooth transition
- Revising Safety Management Procedures is one of the most time consuming tasks. Make an early start

### Step 10. The aim is safety but the result can also be efficiency

ECDIS has been shown to contribute significantly to safety of life at sea, but it can also increase operational efficiency that in turn can lead to bottom line savings.

Navigators and superintendents regularly report a steady flow of benefits from using ECDIS. Updates to chart data can be virtually instant. Navigation tasks and bridge workload can be optimized, situational awareness improved and stress reduced when navigating in congested waters where most accidents occur.

ECDIS also offers data reporting and auditing tools that can eliminate redundant practices and improve voyage planning, delivering tangible fuel savings. Early adopters will be the ones that see the advantages soonest.

**Visit the Information section on the UKHO website [www.ukho.gov.uk](http://www.ukho.gov.uk) for more guidelines and regular updates over the coming months.**



#### Make the most of ECDIS

- Update charts automatically
- Improve efficiency
- Improve shore to ship working