



Harbour Master's Guide to Hydrographic and Maritime Information Exchange

The UK Hydrographic Office (UKHO) and the
UK Harbour Masters' Association (UKHMA)



UK Hydrographic
Office



ADMIRALTY

Contents

02 Introduction

03 UKHO, UKHMA and Harbour Masters

04 UKHO

04 UKHMA

04 UKHO and Harbour Masters

05 Background to data regulations and maritime navigation

06 Key organisations:

06 International Maritime Organization (IMO)

06 International Hydrographic Organization (IHO)

06 International Organization for Marine Aids to Navigation (IALA)

06 Hydrographic offices

07 Exchanging information with the UKHO

08 Reporting changes to the UKHO

08 Information selection for ADMIRALTY Notice to Mariners (NMs) and New Editions of charts

09 Bathymetric data

09 Bathymetric surveys

10 Category Zone of Confidence (CATZOC)

12 Data formats

13 Summary of data formats

14 Vertical features

14 Tidal considerations

14 Metadata

14 Timing

15 Survey support

15 Timing

16 Dredged and maintained areas

18 Port developments and changes to port limits

19 Aids to Navigation

20 Lights

20 Buoyage

21 Pilot services, VTS, port operations and radio signals

21 ADMIRALTY Sailing Directions (often referred to as 'Pilots')

22 Tidal data

24 Other hydrographic information

24 Topographic information and conspicuous features

24 Hydrographic Notes

25 Submitting data to the UKHO

26 How data is processed by the UKHO

27 Data flow through the UKHO

29 Distributing safety information

30 Safety notifications: types, details, and guidance

31 Maritime Safety Information

31 Local navigational warnings

32 Guidance on local navigational warnings

33 UKHO Radio Navigational Warning team

34 ADMIRALTY Notices to Mariners (NMs)

34 Port notices

35 Local notification

36 Importance and benefits of sharing data

37 Importance of data sharing

37 UKHO Licensing team and Intellectual Property

38 Seabed 2030

38 UK Centre for Seabed Mapping (UK CSM)

40 Annexes

40 Annex 1: Contact details and key links

41 Annex 2: Acronyms



Introduction

The fourth edition of the 'Harbour Master's Guide to Hydrographic and Maritime Information Exchange' has been jointly prepared by the UK Hydrographic Office (UKHO) and the UK Harbour Masters' Association (UKHMA). The objective of this guide is to assist Harbour Masters in providing suitable, high-quality hydrographic data to support safe and efficient navigation.

The maritime industry has seen significant technological advancement in recent years, with improvements to the way data is gathered, processed, and shared in support of safe navigation. As the industry evolves, the updates to this guide demonstrate our continued commitment to ensuring users have the best possible data to inform their decision making from ship to shore.

This new edition also reflects the UKHO and UKHMA's enduring commitment to the Port Marine Safety Code, helping to ensure safer navigation and more efficient port operations. With the ports sector being so crucial to UK trade, we believe that thriving ports can attract larger ships and a greater volume of goods and services and can continue to contribute to the overall success of local and national economies.

This guide can be read in association with the **UKHO's Guide to Bathymetry** for further information on bathymetric data and hydrographic surveying. Further supporting materials are also available on the **ADMIRALTY website**.



[View the UKHO's Guide to Bathymetry](#)



UKHO, UKHMA and Harbour Masters



The UK Hydrographic Office (UKHO)

The UKHO is an executive agency and trading fund of the Ministry of Defence. We provide hydrographic data and advice as part of our public task to deliver our Safety of Life At Sea (SOLAS) obligations, supporting safe passage in UK waters and other primary charting areas.

We also support safe navigation worldwide through our portfolio of ADMIRALTY products and services, which is relied upon by over 90% of large ships trading internationally to support safe, efficient, and compliant global trade.

The UK Harbour Masters' Association (UKHMA)

The UKHMA, originally formed in 1993, is the world's oldest and largest professional Association of Harbour Masters and Senior Port Marine Managers and represents a unique source of up-to-date, hands-on experience in a range of port and maritime operations.

The objectives of the association include encouraging and promoting the safe and efficient conduct of marine operations in ports, in accordance with the Port & Marine Facilities Safety Code (PMSC) and the Guide to Good Practice on Port Marine Operations.

The UK Hydrographic Office and Harbour Masters

The UKHO and Harbour Masters share a common goal in terms of safety of navigation. Working in collaboration, we can ensure that mariners receive relevant information onto official products to support safe and efficient port entry and exit.

The UKHO works closely to support our ports and harbours and can provide further advice, support, and expertise on hydrography, surveying, and charting.

Key websites



The ADMIRALTY website

The UKHO has an area of the ADMIRALTY website for ports and harbours containing information on data exchange and links to useful documentation.

Visit admiralty.co.uk



The UKHO archive

The UKHO also maintains an archive service, which preserves thousands of navigational and hydrographic records spanning over 400 years. The archive can be used to research historical charted features such as foul ground and dredged depths.

Read more on gov.uk/ukho



The UKHMA website

The UKHMA is a unique professional body consisting of harbour masters, port marine operations officers, harbour managers, commercial bodies that serve the port sector and other appropriate personnel and organisations.

Find out more on the [UKHMA website](https://ukhma.org.uk)



Background to data regulations and maritime navigation

The maritime navigation environment is highly regulated and includes, among others, the following entities and conventions.

Key organisations

International Maritime Organization (IMO)

The IMO is a United Nations specialised agency that has responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. An example of an IMO convention is the Safety of Life at Sea (SOLAS) Convention.

The technical committees of the IMO are assisted in their work of setting maritime regulations and standards by other inter-governmental organisations such as the International Hydrographic Organization (IHO) and the International Organization for Marine Aids to Navigation (IALA).

International Hydrographic Organization (IHO)

The IHO is the authoritative, worldwide hydrographic body. It actively engages all coastal and interested states to advance maritime safety and the protection of the marine environment through the survey and charting of the world's seas. It coordinates the activities of national hydrographic offices and seeks to promote the greatest possible uniformity in nautical charts and documents. It has created the standards (S-57, S-52, S-63) that are used in the production and display of ENCs, along with the S-100 data framework for next-generation navigational solutions.

International Association for Marine Aids to Navigation (IALA)

Previously known as the International Association of Marine Aids to Navigation and Lighthouse Authorities, IALA is an intergovernmental organization whose purpose is to foster the safe, economic and efficient movement of vessels, through improvement and harmonisation of Aids to Navigation worldwide and other appropriate means, for the benefit of the maritime community and the protection of the environment.

Hydrographic offices

Hydrographic offices are governmental organisations that collect, create, and maintain hydrographic information about their territorial waters as required by the IMO's SOLAS Convention.

Hydrographic offices apply IHO standards in the production of the charts and publications that the SOLAS Convention requires ships to carry. Only charts and publications issued by a hydrographic office or other governmental organisation can be called 'official'.

The following IHO standards provide the framework for official charts and publications:

IHO standard	What does this cover?
S-4: Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO	Production and standards of Standard Nautical Charts (SNC)
S-44: IHO Standards for Hydrographic Surveys	Hydrographic surveys
S-52: Specifications for Chart Content and Display Aspects of ECDIS	Display of Electronic Navigational Charts (ENC)
S-57: IHO Transfer Standard for Digital Hydrographic Data	Electronic Navigational Charts (ENC) data standards
S-63: IHO Data Protection Scheme	Encryption and protection of ENCs
S-100 Framework	Next generation of data standards



Find out more about IHO standards

Further information on IHO standards can be downloaded on the IHO website.



Exchanging information with the UKHO



Reporting changes to the UKHO

The UKHO always welcomes comments and feedback on the suitability of its ADMIRALTY products and services, such as coverage and scale. We also welcome input on the accuracy of features shown, such as bathymetry, radio frequencies, navigation light positions and characteristics, and any changes affecting navigation.

Strict control is exercised in selecting information which is necessary for immediate or longer-term action. Each item of new data received into the UKHO is assessed on a scale of potential danger or significance to the mariner taking into consideration the wide variety of users of ADMIRALTY products in the area affected.

Safety-related information is always prioritised in line with our established processes. Information which is considered desirable but not essential for safe navigation is usually included in the next full New Edition of the product when it is published.

See **submitting data to UKHO** for data submission methods.

Information selection for Notice to Mariners and New Editions of charts

Types of information deemed to be navigationally significant and so promulgated by Notice to Mariners (NMs) or a New Edition of a chart include, but are not limited to, the following:

Type of information	Further detail
Depths 0 to 10 metres	Critical and controlling depths shoaler than charted by at least 0.5 metres (0.3 metres at berths)
Depths 10 to 31 metres	Critical and controlling depths shoaler than charted by at least 1 metre
Reports of new dangers significant to surface navigation	This could include shoal depths and obstructions with less than 31 metres of water over them and wrecks with a depth of 31 metres or less
Changes to the significant characteristics of important Aids to Navigation (AtoN)	Significant characteristics could include the character, period, colour of a light or range (if change is generally over 5 miles) for AtoN
Changes in regulated areas	This could include restricted areas or anchorages
Changes in harbour areas and new ports/port developments	This could include changes to wharves, reclaimed areas, updated date of dredging (if previous date more than 5 years old) and works in progress
New cables and pipelines	Both overhead (with clearances) and seabed to a depth of 200 metres
Offshore structures	This could include production platforms, wind turbines or marine farms
New or amended routeing measures	
Changes in radio AtoN	
Additions or deletions of conspicuous landmarks	
Pilotage services	
Vertical and horizontal clearances of bridges	

Bathymetric data

In its most basic form, bathymetric information usually consists of data points that have XYZ coordinates. The 'X' and 'Y' are the position (e.g. latitude and longitude) and the 'Z' is the depth measurement (also known as a 'sounding').

Bathymetric data is central to the UKHO as it provides important depth information that is used for updating navigational charts, which support SOLAS.

Further information and greater detail on bathymetry can be found in the **UKHO's Guide to Bathymetry**.



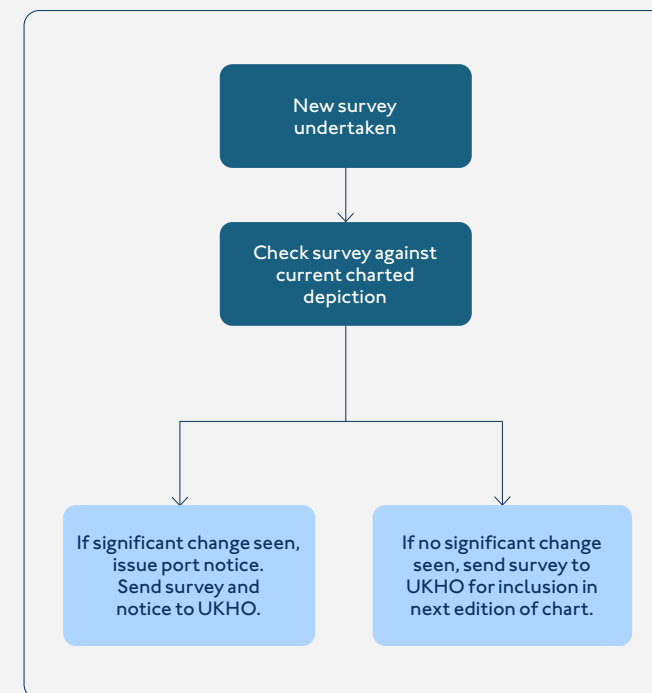
[View the UKHO's Guide to Bathymetry](#)

Bathymetric surveys

To meet their duty to inform the masters of visiting ships of any changes affecting navigation, port authorities have committed to helping ensure that regular surveys and hydrographic information are published in a timely manner. To do so, Harbour Masters should inform the UKHO through the prompt release of port survey results.

Harbour Masters, or their survey teams, must assess new surveys against their previous versions and against current Electronic Navigational Charts (ENCs), Standard Nautical Charts (SNCs) or raster charts. If they find navigationally significant differences between the new survey and the current charts, Harbour Masters should issue port notices as necessary, forwarding the survey and relevant port notice to the UKHO.

If no significant differences are found, they should forward the new survey to the UKHO using the **UKHO Data Upload service** with covering documentation stating that no differences were found. The new survey data will then be considered for inclusion in the next New Edition, and can be incorporated, with consent, into the UKHO's hydrographic database.



Local arrangements between the UKHO and the port authority are in place to cover this process for ports that are surveyed on a frequent basis. If you feel an arrangement might be of benefit, then please get in touch with the ports team to discuss options.



Contact the UKHO Ports Engagement team
portsengagement@ukho.gov.uk

Category Zone of Confidence (CATZOC)

CATZOC values highlight the accuracy of the data presented on charts. By understanding the accuracy of the underlying data in greater detail, the mariner can then manage the level of risk when navigating in a particular area.

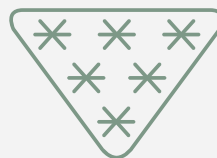
CATZOC does not currently correlate with S-44, although many of the principles are similar.

CATZOC values are assigned to geographical areas to indicate whether data meets a minimum set of criteria for position, depth accuracy and seafloor coverage. The Zone of Confidence (ZOC) value is dependent on the positional and depth accuracy of the survey.

To decide on a ZOC category, all conditions outlined in columns 2 and 4 of the **ZOC table** must be met. For additional explanations please refer to **IHO S-4 B-297**.

ECDIS display these CATZOC values in ENC's using a triangular or lozenge shaped symbol pattern. The number of stars contained within these symbols denotes the CATZOC value. For example, six stars are given to the highest level of data quality (A1) and two stars to the lowest (D).

A single star is not used to avoid possible confusion with a rock symbol. Areas that have not been assessed for CATZOC are shown as the symbol (U) for unassessed.



CATZOC values as displayed in ENC's on an ECDIS

Most multibeam survey data is supplied to the UKHO as gridded XYZ data sets. This is quick to process and validate but will likely receive a CATZOC rating of B as it does not provide enough information to satisfy the A1 rating.

Surveys under the Civil Hydrography Programme are supplied to the UKHO as full density data sets and include the full details and reports including wreck investigations necessary to be able to achieve a CATZOC rating of A1.

Although the positional and depth accuracy of modern single-beam surveys is likely to be high, the limited coverage provided will usually see these assigned a CATZOC rating of C, unless the line spacing is better than 25m or 4 x water depth.

Specific CATZOC requirements can be discussed with the UKHO Bathymetry team and the relevant Geographic Technical Lead.

See **Annex I** for full list of contact details.

Survey key points I:

- Survey data should be shared with the UKHO via the **UKHO Data Upload service** for consideration for NMs or inclusion in the next edition of charts.
- CATZOC provides guidance as to the accuracy of the underlying data shown on charts. A1 is the highest level of data quality.



Regulations of the IHO for International Charts and chart specifications of the IHO

ZOC	Position accuracy	Depth accuracy		Seafloor coverage	Typical survey characteristics
A1	± 5 m + 5% depth	=0.50 + 1%d		Full area search undertaken. Significant seafloor features detected and depths measured.	Controlled, systematic survey high position and depth accuracy achieved using DGPS or a minimum three high quality lines of position (LOP) and a multibeam, channel or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	± 0.6		
		30	± 0.8		
		100	± 1.5		
1000	± 10.5				
A2	± 20 m	=1.00 + 2%d		Full area search undertaken. Significant seafloor features detected and depths measured.	Controlled, systematic survey achieving position and depth accuracy less than ZOC A1 and using a modern survey echosounder and a sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	± 1.2		
		30	± 1.6		
		100	± 3.0		
1000	± 21.0				
B	± 50 m	=1.00 + 2%d		Full area search not achieved; uncharted features, hazardous to surface navigation, are not expected but may exist.	Controlled, systematic survey achieving similar depth but lesser position accuracies than ZOC A2, using a modern survey echosounder, but no sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	± 1.2		
		30	± 1.6		
		100	± 3.0		
1000	± 21.0				
C	± 500 m	=2.00 + 5%d		Full area search not achieved, depth anomalies may be expected.	Low accuracy survey or data collected on an opportunity basis such as soundings on passage.
		Depth (m)	Accuracy (m)		
		10	± 2.5		
		30	± 3.5		
		100	± 7.0		
1000	± 52.0				
D	Worse than ZOC C	Worse than ZOC C		Full area search not achieved, large depth anomalies expected.	Poor quality data or data that cannot be quality assessed due to lack of information.
U	Unassessed – the quality of the bathymetric data has yet to be assessed.				

Source: Regulations of the IHO for International Charts and chart specifications of the IHO



Data formats

The UKHO can accept survey data in many different formats and conditions. However, taking a few simple steps can make it far easier for the UKHO to use and assess the data, enabling a much more efficient process for any necessary chart updates.

For certain ports, the digital data set and survey graphic are required where the latter shows the latest information for non-bathymetric features such as buoys, dredged limits and port developments. Where this occurs, it is beneficial if the graphic is supplied at the same time as the digital data set and annotated to show that it is intended for non-bathymetric data only.

In all cases, the data should be cleaned, with all unreliable data removed. The full-density data should retain the unreliable data, clearly flagged as 'rejected'.

Survey method	Data formats and conditions
Single-beam echo sounder (SBES)	All the full-density data points, together with supporting metadata and a report of survey.
Swathe system (e.g. a Multibeam echo sounder MBES)	<p>Gridding the data to a suitable resolution (typically 2 metres) is recommended; in such cases, details of the gridding method used also need to be supplied. We also recommend using shoal-biased gridding to ensure that critical depths are not lost.</p> <p>The preferred format for bathymetric data is a digital data set. XYZ datasets should preferably be provided in ASCII format: latitude; longitude or Grid E; Grid N and depth, with all details being provided in the metadata.</p> <p>However, the UKHO will accept survey graphics if digital data sets are not possible.</p>



Summary of data formats

Type of data format	Comments	Most suitable for	Example data formats
Full density processed	<ul style="list-style-type: none"> – Rejected data viewable – Individual survey lines identifiable – Ancillary data/offsets etc. viewable – Easy for us to identify noises/spikes – Unique/proprietary formats – Largest file sizes 	MBES LIDAR	Caris HIPS HDCS GSF
XYZ full density	<ul style="list-style-type: none"> – Rejected data not viewable – XY&Z columns need descriptions (e.g. is depth positive up or down) – We can identify noise/spikes but not as easy as 'Full Density Processed' as rejected data not viewable – Easily transferable format 	SBES Small MBES and LIDAR data sets	ASCII/text*
XYZ thinned/gridded	<ul style="list-style-type: none"> – Rejected data not viewable – XY&Z columns need descriptions (e.g. is depth positive up or down) – Impossible/not easy for us to identify noise/spikes – Depths need to be described (e.g. they can be shoal, average or deep etc.) – Shouldn't be interpolated – Easily transferable format 	MBES LIDAR	ASCII/text*
Surface gridded	<ul style="list-style-type: none"> – Rejected data not viewable – Depths need to be described (e.g. they can be shoal, average or deep etc.) – Shouldn't be interpolated 	MBES LIDAR	BAG CSAR
Sounding plot	<ul style="list-style-type: none"> – Rejected data not viewable – Depths need to be described as to shoal/deep bias and location of label datum – Geo-referencing required 	Any data type, but only if digital data is not available	DXF, Shape, S57, PDF, TIF

*The UKHO preferred XYZ format: latitude longitude (or grid E grid N) depth (positive down)

Vertical features

For all swathe surveys, man-made features (such as quay walls and beacons that are vertical and dry at all states of tide) should have all bathymetric data points removed from the vertical element of the structure. This prevents alongside depths being incorrectly charted.

Further details can be found in the **UKHO's Guide to Bathymetry**.

Tidal considerations

All survey depths need to be adjusted for tides. To be of most use, soundings should be reduced to the relevant local Chart Datum (CD).

Observed tides should be used whenever possible as predicted tides may not be of sufficient accuracy.

Where the surveying method uses global navigation satellite system (GNSS) height and an appropriate tidal model such as Vertical Offshore Reference Frame (VORF) to calibrate depths, the need for observed tides may be negated. If large differences are discovered between observed and predicted tides, please inform the **UKHO Tides team**.

Further details can be found in the **UKHO's Guide to Bathymetry**.



Contact the UKHO Tides team
tides@ukho.gov.uk

Metadata

The minimum (critical) metadata necessary to be delivered with the data is included as part of the data upload service. The data upload service will guide you through the information we require.

Harbour Masters are advised to contact the **UKHO Bathymetric Data Centre** for detailed advice regarding data formats and metadata.



Contact the UKHO Bathymetric Data Centre
bathyqueries@ukho.gov.uk

Timing

It is important that Harbour Masters supply bathymetric survey data to the UKHO as soon as possible so that it can update products and databases.

For ports surveyed on a very frequent basis, local data supply arrangements between the port and the UKHO may be necessary to ensure that data is supplied on time and in the right format.





Survey support

The **UKHO Bathymetric Data Centre** can provide data and surveying support upon request. This can be especially useful when non-routine surveying is being carried out, such as when a contract surveyor is used for the first time.

Examples of where the UKHO can provide support:

- Providing an example of a survey specification
- Providing an example of a report of survey
- Advising on pre-written specifications to ensure they achieve the required quality
- Support during survey operations
- Miscellaneous advice on data content and data collection through site visits, visits to the UKHO or external communications

The **UKHO's Guide to Bathymetry** contains details on bathymetry, survey methods and specific bathymetry-related terminology.

When appointing a surveyor or contracting a survey contractor, consideration should be made to the type and quality of the surveys to be undertaken and ensure that a suitably qualified and experienced person or contractor is selected.



[View the UKHO's Guide to Bathymetry](#)

Survey key points II:

- Where a survey shows significant changes, a local notice should be issued.
- All survey data should be sent to the UKHO for consideration and inclusion in next New Edition of the chart.
- The preferred format for bathymetric data is a digital data set and should be uploaded using the **UKHO Data Upload service**. It is an online form that captures the all the data we need alongside the bathymetry data you send us.
- If the survey graphic includes latest information on non-bathymetric features, please also send this to the UKHO.
- The **UKHO Bathymetric Data Centre** can provide advice and guidance on request.
- Inform the **UKHO Tides team** if large differences between observed and predicted tides are observed.

Dredged and maintained areas

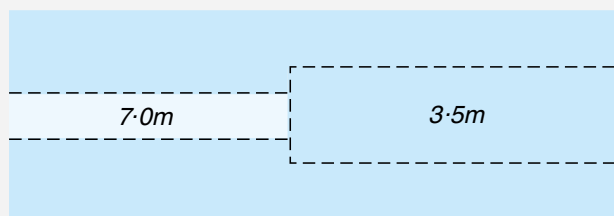
ADMIRALTY charts distinguish between areas that are regularly dredged and those that are not routinely maintained at a particular depth.

Harbour Masters should inform the UKHO about the areas that are routinely maintained and those that are not. Port authorities will need to consider this aspect of charting most carefully. The annotation 'Dredged to xx metres' in a fairway which otherwise shows no soundings is a statement of fact upon which mariners rely and take as a guarantee.

Maintained depth areas can be charted where the port undertakes regular survey monitoring and dredging to maintain depths at the quoted level. Temporary shoaling is managed by the port authority (port local notice or by pilots) until the quoted depth is re-established.

If depths are being maintained, there is no need to provide the UKHO with regular monitoring surveys, although it is the responsibility of the Harbour Master to inform the UKHO of significant temporary changes or permanent amendments to the quoted depths for updating of charts by Notice to Mariner or New Edition.

In most cases, charts will carry a warning that siltation may occur and guidance to consult the local authority for the latest information. Charts will show either the depth and legend 'Maintained Depth XX.Xm', 'Dredged to XX.Xm' or just the depth (depending on space) to indicate maintained depths.



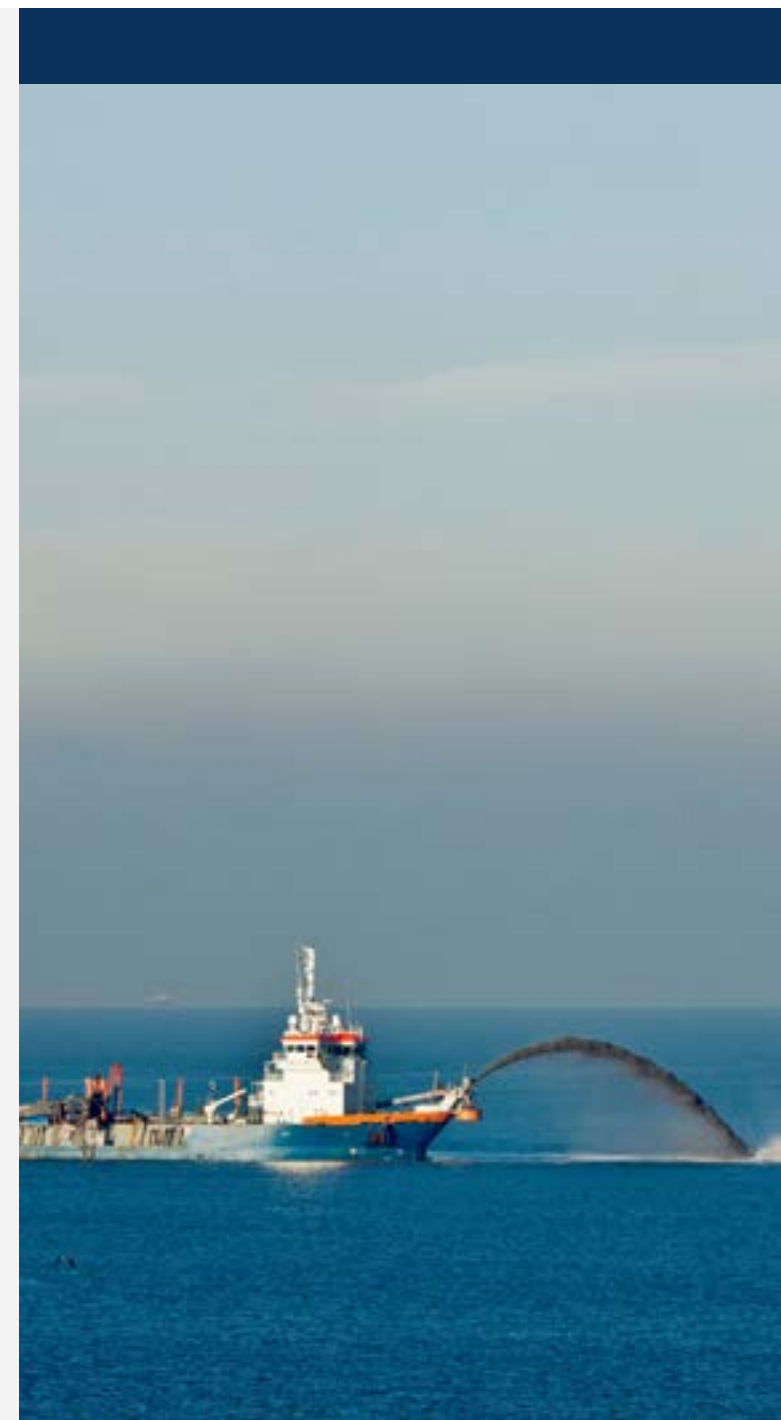
How dredged depths appear on a navigational chart

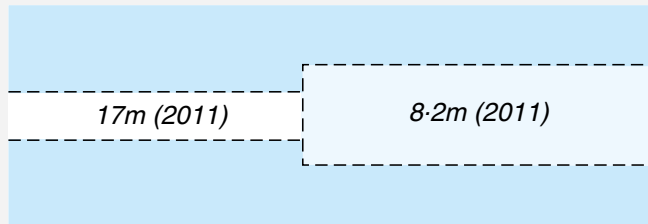
DREDGED DEPTHS

Dredged depths shown are subject to siltation and liable to change. For the latest information, consult the Southampton Harbour Master (www.southamptonvts.co.uk).

Areas that are not regularly dredged can also be included on charts. This can be because there is limited siltation or because berths are dredged as and when required to meet operational requirements, for example. These are charted with year of last dredging or control survey, so legend 'Dredged to XX.Xm (YYYY)' or 'XX.Xm (YYYY)'. For those areas that are not routinely maintained, post-dredge (rather than pre-dredge) or check surveys should be supplied to the UKHO as and when they are undertaken. This enables the year of dredging to be updated, providing greater confidence to the user.

If no post-dredge hydrographic surveys are available, please provide the UKHO with information on the most recent dredging, its date and the depth reached where possible.





Example of dredged depths with years

The alternative option of removing the annotation 'Dredged to XXm' and showing all depths in the fairway is preferable whenever surveys show that the shallowest depth in the fairway is less than that indicated by the annotation, especially if there are no upcoming plans for remedial dredging.

For some ports and harbours, showing all surveyed depths can be preferable as this also highlights areas deeper than the dredged annotation, as well as those that are shallower.



Harbour Masters are encouraged to discuss the charting of dredged areas within their port with the UKHO.

The UKHO also maintains a comprehensive archive of previous chart editions which are available and can be used to support marine licensing applications with respect to previously licensed or achieved dredged depths within a port.

Dredged areas key point:

- Maintained depth areas can be charted where the port undertakes regular survey monitoring and dredging to maintain depths at the quoted level.
- It is the responsibility of the Harbour Master to inform the UKHO of significant temporary changes or permanent amendments to the quoted depths for updating of charts.
- Chart notes can be used to identify areas where depths are not regularly dredged, but post-dredge or check surveys should be supplied to the UKHO using the **UKHO Data Upload service** when undertaken.
- Harbour Masters are encouraged to discuss charting of dredged areas within their port with the UKHO.



Port developments and changes to port limits

Port and harbour developments affecting quays, dredged areas, new berths, and onshore building outlines within the harbour area and any changes to charted port limits are of particular interest to the UKHO.

Harbour Masters can help by notifying the UKHO with plenty of advance before work begins to discuss a plan for chart updating and NMs. Port authorities are requested to give information on the nature of the work, its location (with any preliminary drawings) and key scheduled dates.

Any associated new or temporary AtoN to be put in place are of particular importance, including information on when they will be installed, when they will be operational, and precisely where they will be located. This information will enable the UKHO to consider any preliminary chart/publication or NMs action that it needs to take.

Many such changes can usefully be covered by Preliminary Notices to Mariners (PNMs), while charted legends such as 'Works in Progress 2024' might be needed for extensive changes.

On completion, please send the UKHO copies of engineering drawings and photos showing the development, together with details of AtoN and their characteristics, and the limits of any new dredged areas or depths in the area.

Port development key points:

- Information on port development affecting quays, dredged areas, new berths, and onshore building outlines should be sent to the UKHO.
- Please advise the UKHO well in advance of works starting with details on any associated changes to AtoN.
- On completion of work, please send the UKHO engineering drawings and photos showing new development with details of AtoN and limits of any new dredged or depths in the area.
- The UKHO should be advised of changes to port limits.
- Please send non-survey data to Source Data Receipt (SDR) at sdr@ukho.gov.uk.

Aids to Navigation (AtoN)

In considering any amendments to AtoN (such as fixed and floating navigational lights, buoyage and fog signals), Harbour Masters should advise the relevant General Lighthouse Authority (GLA) (e.g. Trinity House, the Northern Lighthouse Board or the Commissioners of Irish Lights) in the first instance as per their obligations.

Changes to AtoN

Please inform the UKHO of any changes to AtoN with details of the following:

Name, location, geographic position, and datum on which the position is based (preferably WGS84 Datum). If an existing light, the ADMIRALTY List of Lights number (ALL) should also be included	For leading lights or lights in line, the lead and distance between front and rear lights
Characteristics of light and phases	For directional lights, the centre line bearing from seaward and colours/characteristics/bearings of all visible sectors
Establishment of major new AtoN or significant changes to existing ones, when such establishment or change might be misleading to shipping	Detailed description of any fog signal
Visible sectors with bearings from seaward and including any arcs obscured	Details of any other co-located AtoN (RACONS or AIS stations)
Elevation of the light above Mean High Water Springs (MHWS) Nominal range	Details of any other co-located AtoN (RACONS or AIS stations)
Description of structure or buoy (including shape, topmark, colour and category), with height of the structure above ground level for fixed aids	Details of any temporary disruptions to service (e.g. Temporarily Extinguished) with dates





Lights

Depending upon the scale of the ADMIRALTY chart and the frequency of change to an AtoN, it may not be possible to include all AtoN on our charts. We will however include details of all fixed lights in our ADMIRALTY List of Lights (ALL).

When AtoN may become temporarily out of service or off station within a port's limits, it may not always be necessary or possible for the UKHO to issue a temporary NM for the change.

If the problem is resolved quickly in less than two months, then there may not be a need for an ADMIRALTY Notice to Mariners. Therefore, it is important for the port to issue local port NMs to warn local users of any changes to AtoN.

Buoyage

When the UKHO is aware that buoyage is adjusted regularly within a port, we will often include a cautionary note on our charts to advise the mariner to consult the port for the latest changes to AtoN.

If the port is planning a major change of AtoN (such as moving a buoyed channel), early notification of the planned changes will allow the UKHO to consider issuing a preliminary notice in advance of the changes. This will support the introduction of the changes.

If any AtoN outside of the port limits are observed to be different to how they are shown on the ADMIRALTY chart, we would be grateful to receive details of the observed change by submitting a **H102 form** with details of the difference.

When the port receives sanction approval from the relevant GLA to install or remove AtoN, please remember to contact the UKHO separately to advise on when the changes are being made.

AtoN key points:

- Please inform the UKHO of changes to AtoN including lights, buoyage, and fog signals using a **H102 form**.
- All changes to fixed lights are included in ADMIRALTY List of Lights. Changes that are resolved within two months may not require an ADMIRALTY Notice to Mariners to be issued.
- In areas where there are regular changes to buoyage, a chart note can be used to refer users to the port authority for latest information.
- Please inform the UKHO when sanction approval is received from the relevant GLA for changes or installation of a light.
- Any observed changes to AtoN outside of port limits are also gratefully received.



Pilot services, VTS, port operations and radio signals

Harbour Masters should report details of all new services and procedures to the UKHO, as well as amendments to existing ones. Whenever possible, such details should be provided before implementation so that the UKHO has sufficient time to update any affected ADMIRALTY charts and publications and to share the information as widely as possible.

The description of the navigational services and operational procedures used in the port and its approaches should also be regularly reviewed, with an annual review recommended.

Port authorities should judge the accuracy and completeness of the information. It should also be made clear if certain vessels (such as pleasure craft) are exempt from compliance with any requirements.

Details of radio signals information should be compared with the entry within the relevant ADMIRALTY List of Radio Signals (ALRS) volume, updated to the latest available Section VI Weekly ADMIRALTY NMs.

New, additional, or confirming information provided to the UKHO should include details of who provided the information and should confirm that it is based on an announcement by, or has been verified with, the relevant authority.

ADMIRALTY Sailing Directions (often referred to as Pilots)

Sailing Directions offer mariners a clear picture of their environment by providing comprehensive coverage of cautions, landmarks, navigational hazards, buoyage, meteorological data, details of pilotage, national shipping regulations, port facilities and guides to major port entry.

Harbour Masters are encouraged to review the content of ADMIRALTY Sailing Directions to identify any procedural or feature details that may have changed such as guidance on port entry regulations, berth details, port infrastructure and services as well as contact details. Any changes should be reported to the UKHO who will then update their records.

ADMIRALTY Sailing Directions are greatly enhanced by the use of topical, up-to-date colour photographs of important features. Where opportunity and resources allow, Harbour Masters are encouraged to support these publications by providing aerial oblique colour photographs of port approaches, key AtoN, and recommended leading lines, along with other useful general views.

Any supporting images will also be able to be used within future products such as ADMIRALTY Digital Sailing Directions to help support mariner safety.

Radio Signals and Sailing Directions key points:

- Changes to port entry regulations, berth details, port infrastructure and services as well as contact details should be reported to the UKHO.
- Please provide information on new radio services or procedures to the UKHO.
- Photos greatly enhance ADMIRALTY Sailing Directions; please upload your photographs to admiralty.co.uk/publications/admiralty-sailing-directions/image-upload



Tidal data

The tidal predictions produced by the UKHO and published as the ADMIRALTY Tide Tables, ADMIRALTY TotalTide and EasyTide products, are calculated using the results of analyses of tidal observations gathered at various ports and locations worldwide.

As the existing tidal data at a port can be altered by any major dredging or engineering works (particularly tidal streams), it is therefore possible that the predictions in these ADMIRALTY publications may require updating.

Where Harbour Masters operate a tide gauge, the UKHO welcomes confirmation that the values it records agree with the predictions obtained from the ADMIRALTY products (taking into consideration any weather-related variations). If the values do not agree on a regular basis (i.e. are not solely subject to weather effects), please provide the UKHO with raw tidal records from the gauge for potential re-analysis and recalculation of the port's tidal predictions.

To create tidal predictions, the UKHO needs to analyse tidal records that have been recorded over a minimum of 30 days. Data covering a longer period enables the UKHO to calculate more accurate tidal predictions.

See **Tidal height/stream records information** for details about what to include in tidal height/stream records.





Tidal height/stream records information

Tidal height data	Tidal stream data
Name, location, horizontal geographic position, and vertical datum upon which the position of the recording gauge is based.	Name, location, horizontal geographic position, and description of the recording stream equipment (e.g. Acoustic Doppler Current Profiler (ADCP) or similar).
Connection between the zero of the tide gauge and Chart Datum, and/or Ordnance Datum (Newlyn or Local Ordnance Datum). Additionally, a GNSS (GPS) height of the recording gauge if available.	Depth of water in which the equipment is located and how the recorded data relates to the depth below the sea surface and above the seabed.
Time zone preferably maintained in UTC (GMT) (Time Zone 0000) throughout the record. Preferably an 'on-the-hour' time stamp, with a maximum output of hourly heights (gauges usually record every 10 or 15 minutes, or similar).	Time zone preferably maintained in UTC (GMT) (Time Zone 0000) throughout the record. Preferably an 'on-the-hour' time stamp with a maximum output of half-hourly rates and directions (ADCPs usually record every 10 or 15 minutes, or similar).
Digital data in Excel or Text format, with clear indication as to which is the raw recorded tidal data (when other data such as weather records are included).	
Data can be submitted via email if convenient, at regular intervals (for example in calendar months, quarterly etc.).	

Tide key points:

- Existing tidal data, particularly tidal streams, at a port can be altered by any major dredging or engineering works.
- To create tidal predictions, the UKHO needs to analyse tidal records that have been recorded over a minimum of 30 days.
- Raw tidal records should be provided if regular differences are seen between observed and predicted tides which cannot be explained due to weather-related variation.
- Tidal data can be submitted using the **H276 Meta-Data Report for Tide Data Deliverables to UKHO form**.



Other hydrographic information

Information on other new or changed hydrographic features should be sent to the UKHO, including cables, pipelines and marine farms that are either on or below the surface. Up-to-date copies of local port regulations, port guides and local byelaws containing useful information for updating ADMIRALTY charts and publications should also be provided. Features of interest include regulated anchorages, anchoring-prohibited areas, harbour limits and local speed regulations.

Topographic information and conspicuous features

Details of onshore building developments in the port area and throughout the adjacent coastal surroundings can be of great benefit to navigation.

Although beyond the normal scope of ADMIRALTY NMs, such information can significantly enhance New Editions of ADMIRALTY charts and can therefore be of substantial interest to the UKHO. This is particularly relevant where formerly conspicuous buildings have become obscured or where highly noticeable new structures have been erected.

Port authorities should initiate regular reviews of such changes when discussing charting and nautical publications with pilots and bridge officers. They should also consider undertaking an occasional inspection of the shoreline from the water.

Hydrographic Notes

Reporting new or suspected dangers to navigation or changes observed in AtoN can also be sent to the UKHO using Hydrographic Notes (H-Notes).

H-Note forms can be found in the Mariner's Handbook (NPI00) or downloaded from the **ADMIRALTY website**.

The completed H-Note can should be sent via email to SDR at sdr@ukho.gov.uk. For additional clarification, please include chart images and photographs.

Other key points:

- Information on other new or changed hydrographic features should be sent to the UKHO, including cables, pipelines and marine farms that are either on or below the surface.
- Details of onshore building developments are of interest to the UKHO, particularly where formerly conspicuous buildings have been obscured or where new structures have been erected.
- The **H-Note form** can be used to report any new or suspected dangers.

Submitting data to the UKHO



Bathymetry data

To upload survey/bathymetric data, please use the UKHO Data Upload service.

[Visit the UKHO Data Upload service](#)



Other data

To share other data that may result in changes to charts or publications, send to SDR:

sdr@ukho.gov.uk



Urgent information

Where hazards or urgent information relating to safe navigation within harbour limits may impact passing coastal traffic or vessels approaching the port, inform the UKHO Radio Navigation Warnings (RNW) team.

navwarnings@ukho.gov.uk

telephone: +44(0)1823 353448

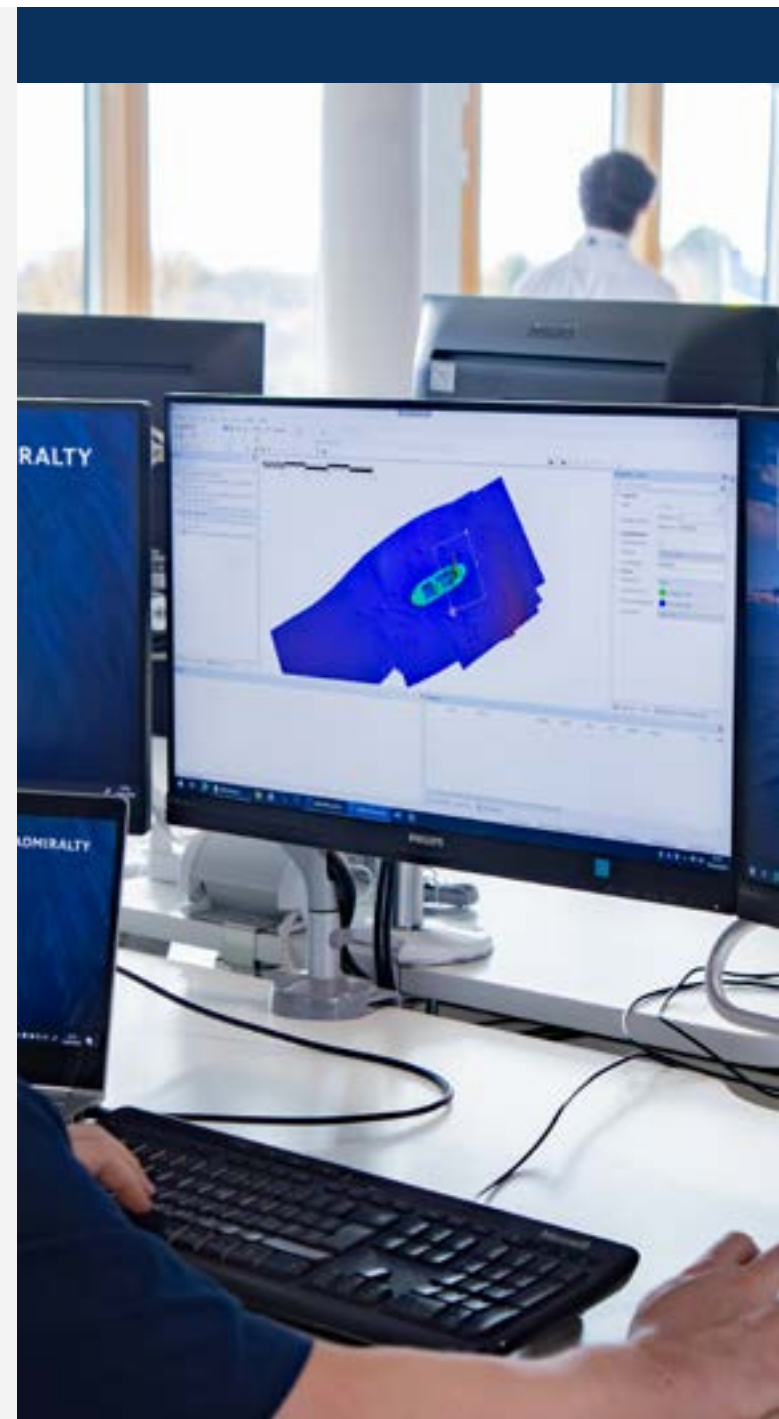


Customer Services

For any questions, or if you're not sure of whether to submit data, contact Customer Services.

customerservices@ukho.gov.uk

Telephone: +44 (0)1823 484444



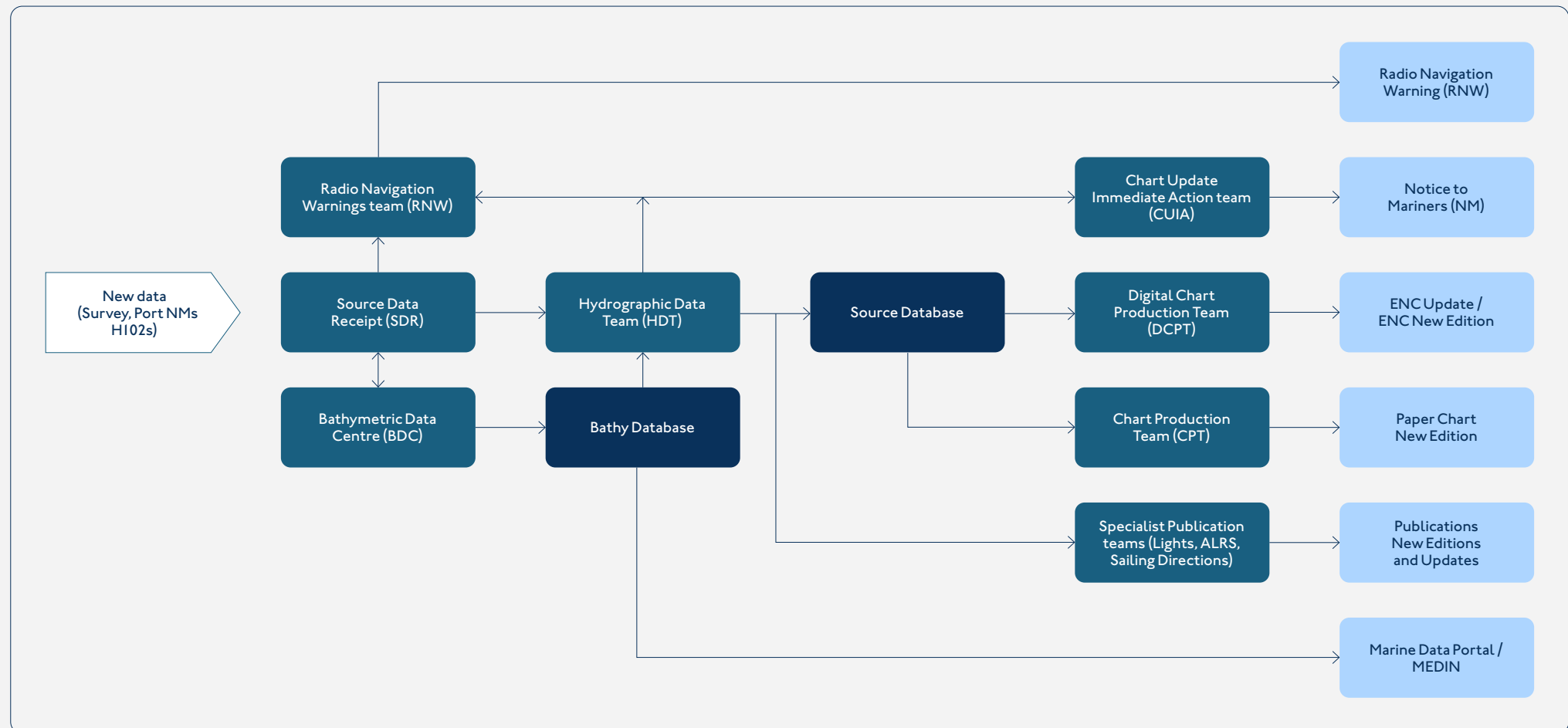


How data is processed by the UKHO



Data flow through the UKHO

When data arrives at the UKHO, it is logged and then forwarded to different production teams as required from Ingest (left) to Products (right):

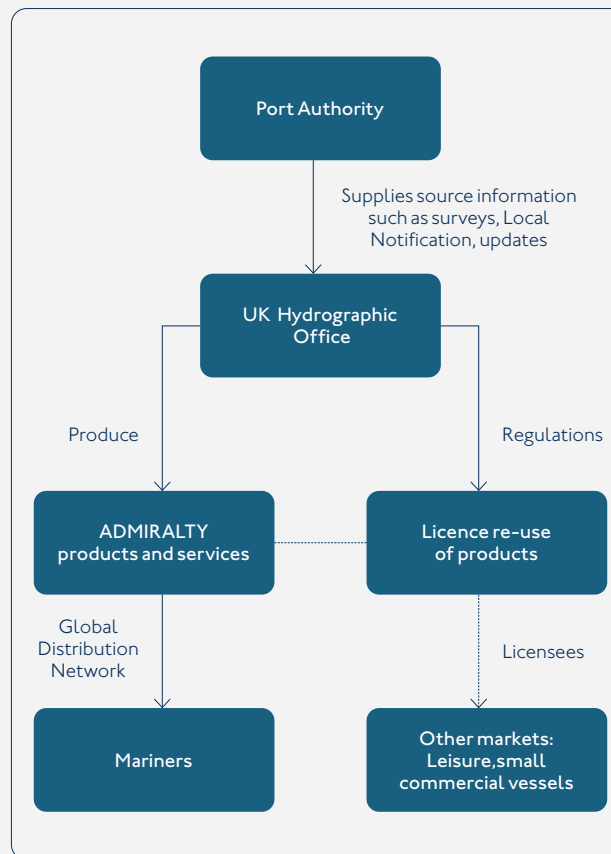




Use of a production database environment means that ENC's are at least as up to date as paper charts, and frequently updated ahead of the paper charts. ENC updates also contain more detailed updates; when a new source such as a small survey is received, it is fully compiled into the Source Database.

The ENC is then updated for all the new survey information, whilst paper charts are only updated for the most significant changes by NMs, with the full survey included at the next New Edition of the paper chart.

The following diagram shows how data supplied by ports is used by the UKHO and its route to the various markets:



Simplified flow of data/information from port authority to end users

Data flow key points:

- All data received into the UKHO is recorded and logged. Production teams assess the information for action against ADMIRALTY products.
- Updates are applied to different products. While paper charts are updated with the whole survey at next New Edition. ENC's are generally updated ahead of paper charts and include more detailed updates.
- ADMIRALTY products and services are sold to mariners through a global distribution network.
- ADMIRALTY products are licensed to other markets through the **licensing** of data to third parties.



Distributing safety information

Distributing safety information

Maritime Safety Information (MSI) is the collective term for navigational and meteorological warnings, meteorological forecasts, and other urgent safety related messages broadcast to ships.

Navigational warnings are messages containing urgent information relevant to safe navigation which are promulgated as part of a numbered series.

In addition to broadcasts of MSI, there are several other methods for transmitting information likely to affect the safety of navigation at sea, including within harbour limits and approaches.

The methods that the UKHO uses to distribute safety-related information depend upon urgency and location. A navigational warning is most appropriate for data that requires immediate attention, while less urgent information may be distributed by NMs.

Safety notifications: types, details, and guidance

Type	Purpose	Issued by and details
1. MSI (NAVAREA, Coastal, Local warnings)	Radio broadcasts to alert vessels quickly to the presence of navigational hazards such as works being conducted or changes affecting navigation.	NAVAREA and Coastal Warnings (WZ) issued by the UKHO and broadcast via HM Coast Guard (HMCG) within 30 minutes of original information arriving. Selection of information follows IMO guidance. Local warnings are usually broadcast via VHF Radio Telephony by the Harbour Master or authority responsible for vessel traffic.
2. ADMIRALTY Notice to Mariners (NM)	Alerts vessels to the presence of navigational hazards, works being conducted, or navigational significant changes to detail shown on ADMIRALTY charts and ENC's. Cancels any associated Radio Navigation Warnings (RNW).	Issued by the UKHO on a daily/weekly basis via the web. Selection of information follows set criteria on the navigational significance of the feature. There are three types of ADMIRALTY NM: – Permanent (NM) – Temporary (TNM) – Preliminary (PNM)
3. Port Notice to Mariners	Alerts vessels of works and changes within harbour limits or in the general vicinity.	Port Notice to Mariners are issued by the port authority. Port NMs should be sent to the UKHO who will assess whether an ADMIRALTY NM is required.
4. Local Notification	Alerts regulatory authorities, port authorities, local user groups and the UKHO of the activity being conducted, the period, nature of the change, precautions etc.	Local Notifications can take a variety of different forms. They can be sent as emails to relevant authorities such as port authorities, coastguards, the UKHO and interested groups as well as posted on local notice boards to ensure they reach the relevant audience. On receipt, the UKHO who will assess if an ADMIRALTY NM is required.



Maritime Safety Information (MSI)

The World-Wide Navigational Warning Service (WWNWS) is the internationally coordinated global service for promulgation of navigational warnings.

As part of the WWNWS, the UKHO acts as the United Kingdom National Coordinator and NAVAREA I coordinator, responsible for assessing, selecting, and issuing Navigational Warnings within UK coastal waters and NAVAREA I. The Maritime and Coastguard Agency are responsible for MSI policy decisions.

The UKHO is responsible for issuing the following types of Navigational Warnings:

- NAVAREA warnings – A navigational warning or in-force bulletin promulgated as part of a numbered series by a NAVAREA coordinator. These warnings are normally broadcast via the Enhanced Group Call service by a Recognised Mobile Satellite Service provider.
- Coastal Warnings (WZ) – A navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. These warnings are normally broadcast via the NAVTEX system. In the UK, these warnings are generally issued for hazards seawards of the Fairway Buoy, or outside of harbour limits up to the limit of the NAVTEX service area.

In addition to the systems above, HM Coastguard broadcasts MSI via Radio Telephony (MF/VHF). Navigational warnings are also available on the ADMIRALTY website.

Where hazards or urgent information relating to safe navigation within harbour limits may impact passing coastal traffic or vessels approaching the port, harbour authorities should inform the UKHO Radio Navigation Warnings (RNW) team.

The UKHO RNW team will determine if a Coastal Navigation Warning is required. On rare occasions where ports may be required to close, warnings may also be broadcast as a NAVAREA I Warning.

Where possible, Harbour Masters should make MSI available to seafarers prior to their departure.

Local navigational warnings

A local warning is a navigational warning which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority. In the UK, local warnings are usually broadcast via VHF Radio Telephony by the Harbour Master or authority responsible for vessel traffic. Harbour Masters may also request local warnings to be broadcast by HM Coastguard where appropriate.

The timely and effective distribution of such information by competent authorities is critical to:

- Ensure the safety of life and property
- Minimise the risk of pollution and environmental damage
- Discharge any liability resting with the competent authority



Guidance on local navigational warnings

A local navigational warning should comprise the following elements:

- Message ID (consecutive numbers) – this is optional but desirable
- Preamble – describing the general locality of the hazard
- Warning – key subject (e.g. wreck, shoal, etc.), geographical position, any amplifying remarks
- Cancellations – a local navigational warning can be self-cancelling on a particular date/time or can otherwise be used to cancel a specific previous warning

The **Joint IMO/IHO/WMO Manual on Maritime Safety Information** provides further guidance on the creation of Navigational Warnings which can be downloaded from the World Meteorological Organization website.

The following subjects may be suitable for a navigational warning:

Casualties to lights, fog signals, buoys, and other AtoN	The establishment of research or scientific instruments
The presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking	The establishment of offshore structures
Establishment of major new AtoN or significant changes to existing ones, when such establishment or change might be misleading to shipping	Significant malfunctioning of radio navigation services
The presence of large unwieldy tows	Information concerning events which might affect the safety of shipping, sometimes over wide areas (e.g. naval exercises, missile firings, space missions, ordnance dumping zones, etc.)
Drifting hazards	Operating anomalies identified within ECDIS including ENC issues
Areas where search and rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas)	Acts of piracy and armed robbery against ships
The presence of newly discovered rocks, shoals, reefs, and wrecks likely to constitute a danger to shipping, and, if relevant, their marking	World Health Organization (WHO) health advisory information
Unexpected alteration or suspension of established routes	Security-related requirements
Cable or pipe-laying activities, seismic surveys, the towing of large, submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting a potential danger	



The UKHO Radio Navigational Warning (RNW) team

The UKHO RNW team carries out the day-to-day operational tasks of the NAVAREA I Coordinator and the UK National Coordinator. As UK National Coordinator, the UKHO can provide guidance on operational issues and standards concerning the provision of local navigational warnings.

Harbour Masters are encouraged to contact the UKHO RNW team to seek advice and discuss issues and procedures, particularly if they are intending to establish a new local navigational warning service. The RNW section is manned 24 hours a day, seven days a week.



Contact the UKHO RNW team
navwarnings@ukho.gov.uk
+44 (0)1823 353 448





ADMIRALTY Notices to Mariners (NMs)

ADMIRALTY NMs are issued on a daily and weekly basis via the web in order to enable ADMIRALTY charts and publications to be kept up to date between New Editions.

All data supplied to the UKHO is assessed by the production teams, with those significant items meeting the safety **criteria** promulgated by ADMIRALTY NMs to update existing ADMIRALTY products.

Please refer to the '**Reporting changes to the UKHO**' section within this guide for details of significant features which fall within these selection criteria, which will usually be distributed by textual NMs, issued by the UKHO quickly after it receives the source information.

There are three main types of ADMIRALTY NMs:

- Permanent NM (also known as a 'chart correction')
 - for changes that are navigationally significant and complete. For complex changes, NMs may take the form of a Notice to Mariners Block or an Urgent New Edition of the appropriate chart(s).
- Temporary NM (TNM) – for significant changes or works that are likely to last 2–12 months in duration.
- Preliminary NM (PNM) – for planned changes or long-term works usually longer than 12 months that are underway or about to be started. PNMs will generally stay in force until the relevant chart updates are issued by New Edition or NM on completion of the works.

Updates for other ADMIRALTY products (such as the List of Lights, List of Radio Signals and Sailing Directions) are also included in the weekly Notice to Mariners bulletin.

ENCs do not have NMs but are instead updated to include all of the latest information for an area and also include Temporary and Preliminary items with appropriate warnings.

Port notices

Port notices are issued by the local harbour authority primarily to convey messages to local users regarding changes or items of safety-related interest within the harbour and general vicinity. These port notices also received by the UKHO and assessed to generate product updates (both via NMs and New Editions).

Key information should include:

- Positions (ideally referred to WGS84 or quote the relevant datum)
- Timescales (where known)
- Description of the change/items of interest
- Former Notices cancelled as a result of this information

It is also useful to periodically issue a notice to re-cap existing notices in force.



Local notification

Local notifications are a method for sharing of safety-related information to regulatory authorities, port authorities, user groups and the UKHO. There is often a requirement for a Local Notification to be issued under the associated Marine Licence.

Distribution depends on whether the activity/change is inside or outside of harbour limits:

- Within harbour limits the relevant port authority should always be notified before the works/activity commences. It is then the responsibility of the port authority to alert other interested parties by issuing a port NM if the port or harbour thinks it is of significance to navigation. The UKHO will then assess the port NM, so does not need to be notified directly.
- Outside of harbour limits, the UKHO, regulatory authorities, local user groups and nearby port authorities need to receive the local notification and will then determine their own action if deemed navigationally significant. The UKHO requires notification at least five days before work commences; other authorities/user groups may require longer.

Key items to consider when creating a local notification are:

- Timely – issued as far ahead of the specified activity as possible
- Specific – deals only with individual issues of navigation safety and does not contain historic background information on the project/activity
- Location – provides details of the location using latitude/longitude and known datum
- Dated – commencement/expiry/renewal dates should be clearly stated

MSI key points:

- There are different ways in which information can be provided to mariners; the method used depends on the type of information and the urgency.
- Harbour Masters are encouraged to contact the **UKHO RNW team** to seek advice and discuss issues and procedures, particularly if they are intending to establish a new Local Navigational Warning service.



Importance and benefits of sharing data



Importance of data sharing

Sharing your data plays an important role in supporting safety at sea for mariners and underpinning the responsible use of our oceans.

As outlined in this guide, the data that is shared with the UKHO directly contributes to updating our ADMIRALTY charts and publications, which are relied upon by mariners across the globe to ensure safe voyages.

Sharing your data with the UKHO can not only support safe maritime navigation through the updating of official ADMIRALTY products and services, but can also support with effective data governance and licensing through the UKHO's data custodianship.

Sharing your data with the UKHO can support:

- Enhanced port operations through the provision of products, services, and expertise
- Maintenance of official ADMIRALTY products and services for all UK waters
- Safe maritime navigation through fast and efficient updates
- Effective data governance with the UKHO's data custodianship
- Effective management of third-party licensing of your data
- Closer collaboration to help shape the next generation of navigation services

The UKHO Licensing team and Intellectual Property

The UKHO has a Crown Copyright Delegation of Authority to licence and protect all its Intellectual Property (IP). Under this Public Task, the UKHO Licensing Team licence the re-use of UKHO IP, including data received from UK ports where there are permissions in place to do this, to external third parties for purposes other than under the Public Task's navigation.

This could include:

- charts for planning applications to legal reports
- commercial route-plotters to academic studies
- sailing guides
- soft furnishings
- movie props and backgrounds

Ports and other users can use the UKHO data free of charge with either a free online licence or one of our non-commercial or low-value licences if the applicant meets the qualifying criteria. Details on these licences can be found through the **UKHO Copyright Licensing website**.

In addition to managing its licensees, the team also provides the UKHO with advice on its IP and protects its data through checks and audits of licensee products. Part of this protection includes the issuing of Release Statements, which are advisory notices that accompany any data released by the UKHO to authorised recipients, including port authorities.



Contact the UKHO Licensing team
licensingteam@ukho.gov.uk

Seabed 2030

Seabed 2030 is a joint initiative led by the Nippon Foundation of Japan and the General Bathymetric Chart of the Oceans (GEBCO) with the aim of accelerating ocean mapping efforts and improving the sharing of modern seabed data around the world.

By working with partners across industry, governments, research, NGOs and wider, the programme aims to bring together all available bathymetric data to produce a definitive map of the world's entire seabed by 2030. The initiative is a flagship programme of the United Nation's Ocean Decade of Ocean Science for Sustainable Development (2021–2030).

The UKHO is continuing to support the aims of Seabed 2030. By sharing your data, you will directly contribute to the objective of improving ocean mapping efforts to build a more complete picture of the world's seabed.

UK Centre for Seabed Mapping (UK CSM)

The UK government alone invests in over 30 public sector organisations to collect and use marine geospatial information. There is an opportunity to establish and support a collaborative seabed mapping community which coordinates the collection, management, and access of publicly funded data.

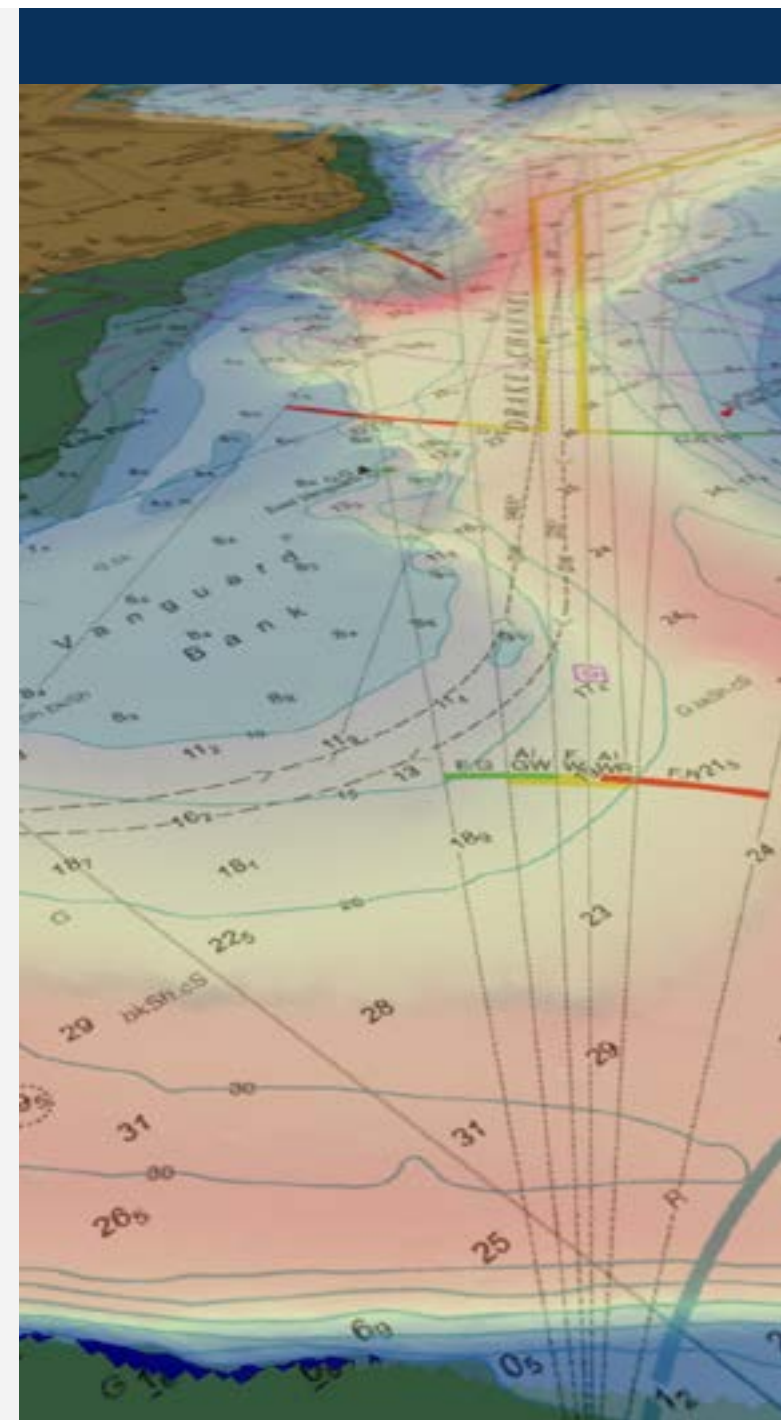
The UK CSM (focusing on bathymetry) seeks to address four recommendations set out in the future of UK marine geospatial data study:

- Data Collaboration
- Data Standards
- Data Accessibility
- Data Collection

The members of the UK CSM invite all UK public sector organisations who share a common interest in optimising the UK's national maritime assets for the security and prosperity of our country to become members of the UK CSM.

The UKHO has administered the UK CSM Management team to establish proper governance and formalise the collaborative seabed mapping community.

This collaboration is developing a network of all public stakeholders and an infrastructure to enable proactive and meaningful cross-government coordination and integration — in terms of operational activity and promoting the sector.





Contact details

If you have any questions or would like to know more, please contact:

portsengagement@ukho.gov.uk



UK Hydrographic
Office

ADMIRALTY



Annex I: Contact details and key links

Key websites



The ADMIRALTY website

The UKHO has an area of the ADMIRALTY website for ports and harbours containing information on data exchange and links to useful documentation.

[Visit admiralty.co.uk](https://www.admiralty.co.uk)



The UKHO archive

The UKHO also maintains an archive service, which preserves thousands of navigational and hydrographic records spanning over 400 years. The archive can be used to research historical charted features such as foul ground and dredged depths.

[Read more on gov.uk/ukho](https://www.gov.uk/ukho)



The UKHMA website

The UKHMA is a unique professional body consisting of harbour masters, port marine operations officers, harbour managers, commercial bodies that serve the port sector and other appropriate personnel and organisations.

[Find out more on the UKHMA website](https://www.ukhma.org.uk)



UKHO Copyright Licensing

The UKHO website contains information on copyright licensing, including how to obtain permission to reproduce copyright material and standard terms and conditions.

[Read more on gov.uk/ukho](https://www.gov.uk/ukho)

Key contacts



Customer Services

customerservices@ukho.gov.uk

Telephone: +44 (0)1823 484444



Geographic Technical Leads

For charting advice or guidance:

gm_hw_hub@ukho.gov.uk



UKHO Licensing team

For any questions relating to licensing of data or copyright licences:

licensingteam@ukho.gov.uk



UKHO Ports Engagement team

For general questions or questions about agreements:

[admiralty.co.uk/share-data/ports-and-harbours](https://www.admiralty.co.uk/share-data/ports-and-harbours)

portsengagement@ukho.gov.uk



UKHO Bathymetric Data Centre

For survey support and questions on bathymetry:

bathyqueries@ukho.gov.uk



UKHO Tides team

For any questions related to tidal data:

tides@ukho.gov.uk

Submitting data to the UKHO



Bathymetry data

To upload survey/bathymetric data, please use the UKHO Data Upload service.

[Visit the UKHO Data Upload service](#)



Other data

To share other data that may result in changes to charts or publications, send to SDR:

sdr@ukho.gov.uk



Urgent information

Where hazards or urgent information relating to safe navigation within harbour limits may impact passing coastal traffic or vessels approaching the port, inform the UKHO Radio Navigation Warnings (RNW) team.

navwarnings@ukho.gov.uk

telephone: +44(0)1823 353448



Annex 2: Acronyms

ADCP	Acoustic Doppler Current Profiler
AIS	Automatic Identification System
ALL	ADMIRALTY List of Lights
ALRS	ADMIRALTY List of Radio Signals
AtoN	Aids to Navigation
CATZOC	Category of Zone of Confidence
ECDIS	Electronic Chart Display and Information System
ENC	Electronic Navigational Chart
GLA	General Lighthouse Authority
GMT	Greenwich Mean Time
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HMCG	His Majesty's Coastguard
HO	Hydrographic Office
IALA	International Organization for Marine Aids to Navigation
IHO	International Hydrographic Organization
IMO	International Maritime Organization
INT	International Chart
IPR	Intellectual Property Rights
MBES	Multibeam echo sounder
MF	Medium Frequency
MHWS	Mean High Water Springs
MHWS	Mean High Water Springs
NMs	Notice(s) to Mariners

PNMs	Preliminary Notice to Mariners
RACON	Radar Beacon
RNW	Radio Navigation Warnings
SBES	Single-beam echo sounder
SNC	Standard Nautical Charts
SOLAS	Safety of Life at Sea
TNMs	Temporary Notice to Mariners
UKHMA	United Kingdom Harbour Masters Association
UKHO	UK Hydrographic Office
UN	United Nations
UTC	Coordinated Universal Time
VHF	Very High Frequency
WMO	World Meteorological Organization
WWNWS	Worldwide Navigational Warning Service