

MS 11 – Nautical chart service

11.1 Submitting organization

IHO

11.2 Coordinating bodies

IMO and IHO

11.3 Description of the Maritime Service

This Maritime Service provides geospatial information (in digital and / or printed format) to support safe maritime navigation. The types of information depicted in nautical charts include the configuration of the shoreline and seafloor, water depths, locations of dangers to navigation, locations and characteristics of aids to navigation, anchorages, and other features relevant to maritime navigation. SOLAS regulation V/2.2 defines nautical chart or nautical publication as *"a special-purpose map or book, or a specially compiled database from which such a map or book is derived, that is issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution and is designed to meet the requirements of marine navigation"*.

A Nautical chart service should include updated functions to ensure that all navigational products and service are kept current. Update information should be delivered in a standardized format. Distribution networks should conform to standardized data authentication and distribution standards to ensure their safe and secure transmission and delivery.

11.4 Purpose

The primary purpose of this Maritime Service is to provide information to be used for safe navigation. The information provided as part of a Nautical chart service must complement information provided as part of other services such as Nautical publications services and Real-time hydrographic and environmental information services. A Nautical chart service should support functions such as voyage planning, pilotage, collision avoidance, vessel traffic managements, etc.

A Nautical chart service should include discovery metadata information that will enable users to determine what products and services are available within a given area of interest (both geographic and contextual).

11.5 Operational approach

The data model is based on the IHO S-100 Hydrographic Data Model and derived product specifications. It enables information provision in a harmonized way. The products should take into account a harmonized display of navigational information. The portrayal of digital Nautical chart services should conform to IMO / IHO standards.

The provision of Nautical chart services should use distribution strategies, methods, and technologies which can adapt to serve vessels in locations or conditions that may be challenging for data transfer.

Digital chart distribution services should conform the S-100 authentication and encryption data standard. Mechanisms should also be included to accommodate new editions of the Chart product specification, including the issuing of new datasets, and associated feature and portrayal catalogues.

11.6 User needs

The primary users are mariners responsible for maritime navigation. Access to the information is required both onshore and at sea.

SOLAS regulation V/19.2.1.4 describes the requirement for ships to carry "*nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage*". Timely and simple access to uniform up-to-date nautical information for a particular sea area is essential for the conduct of safe voyages.

The Nautical chart service provides navigational information for safe navigation on open sea, for making landfall and for navigation in confined waters.

11.7 Information to be provided

The appropriate resolutions and recommendations adopted by IHO provide the recommended set of information to be covered by the Nautical chart service.

Information related to:	Examples:
Geographical features	<ul style="list-style-type: none"> • Coastline • Inland topography • Bathymetry • Rivers
Transits and routeing	<ul style="list-style-type: none"> • Routes in constricted shipping lanes • Associated Vessel traffic service • Associated Ship reporting system
Ports approaches and entry	<ul style="list-style-type: none"> • Hazards, directions, limiting conditions • Pilot service, outer anchorages • Navigational aids
Protected area information	<ul style="list-style-type: none"> • Locations of marine protected areas • Restrictions and regulations applicable within specific areas
Regulatory information	<ul style="list-style-type: none"> • Laws and regulations applicable in specific locations • Laws and regulations applying to vessels of specific dimensions or carrying specified cargo • Local rules regarding use of specific pilot boarding places by vessels exceeding specified dimensions or carrying hazardous cargo
Navigation aids	<ul style="list-style-type: none"> • Descriptions of lights • Descriptions of buoys
Planning	<ul style="list-style-type: none"> • Mariners' routeing guides
Controlled areas	<ul style="list-style-type: none"> • Vessel traffic service contact information • Ship reporting system contact information • Exercise area contact information
Metadata	<ul style="list-style-type: none"> • Update information • Projection / spheroid • Data bounding polygon

11.8 Associated technical services

IHO does not provide any technical services to deliver charts and nautical publications to the end user. This will be done by the technology which is developed by the value added resellers.

By having established sophisticated secure quality proof transmissions, IHO only ensures that the data will not be corrupted during the transport from the producing HO to the end user.

The Service should include hard media and online delivery mechanisms. The delivery mechanism should make provision for data authentication and data encryption.

(To be further developed)

11.9 Relation to other Maritime Services

Nautical chart service provides overviews of other Maritime Services. It summarizes content information which is covered by other Maritime Services in more detail. Other Maritime Services may reuse information which is provided by the Nautical chart service.

Maritime Service	Examples of information related to MS 11
MS 1 – VTS Information service (INS)	Area of the service, functions, contact information, communication, local sensor information such as CCTV, Radar, AIS. Regulations. Other traffic. Information regarding regulations and special traffic.
MS 2 – VTS Navigational assistance service (NAS)	Recommended routes, directions, navigation advices
MS 4 – Port support service (PSS)	Area of the service, contact information, communication, navigational warnings issued by the MSI service
MS 5 – Maritime safety information (MSI) service	Pilot boarding areas