Document Revisions

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**On**

**The application of maritime surface picture for analysis in risk assessment and the provision of Aids to Navigation**

**Edition 1**

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Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

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| **Date** | **Page / Section Revised** | **Requirement for Revision** |
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The application of maritime surface picture for analysis in risk assessment and the provision of Aids to Navigation

# Introduction

The use of Geographic Information Systems (GIS) to enhance the overall maritime surface picture allows for a more thorough assessment of risk presented to the Mariner. As a consequence the decision making process regarding the requirement for reaction by an Aid to Navigation provider will be assisted and supported by a document record.

# Scope

This document provides guidance on the use of GIS and will cover incorporation of Charting overlays with new and amplification of existing dangers, AIS vessel traffic information, leisure and fishing activities together with existing and proposals for formal routing measures.

# applications

## Emergency Wreck or Obstruction Marking

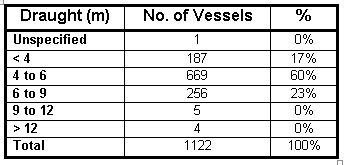
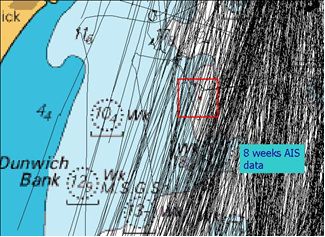
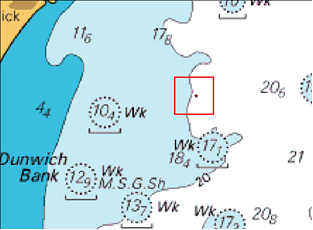
When a new wreck or obstruction has been announced and the decision on whether a vessel and personal must be deployed, firstly for accurate survey and location and then to deploy, if required, the appropriate Aid to Navigation, an informed assessment must be made.

Before traffic data was available this decision relied almost entirely on the expertise of the assessor with no supporting evidence which could underpin the decision.

Information is and has been available for many years regarding vessel trading routes which helped to inform the process but this information was not able to provide data on specific traffic lines or indeed an assessment of the size of vessels actually passing over a particular location.

Considering each situation the assessor of requirements must make a rapid but informed decision on the worst possible situation. With a wreck this means that, particularly with a fishing or leisure vessel, the overall length of the vessel could in exceptional circumstances be the actual height above the seabed. An assessment of the clearance between the wreck and the sea surface at chart datum or lowest astronomical tide (LAT) must be made and a determination of the Risk to the Mariner, based on the worst case scenario.

Using an appropriate analysis tool, and compiling AIS traffic data over a significant period, the assessor is able to extract the volume of vessels over a specific draft that pass in the vicinity of the wreck.

As an example, if we consider an obstruction that has been reported with a maximum height above the sea bed of 10 metres which is located in an area with surrounding depths of 20 metres, then the available depth over the obstruction is 10 metres and this is the delineating draft to be assessed.







## To determine the appropriate overall requirements, number and mix of Aids to Navigation in existing and new applications

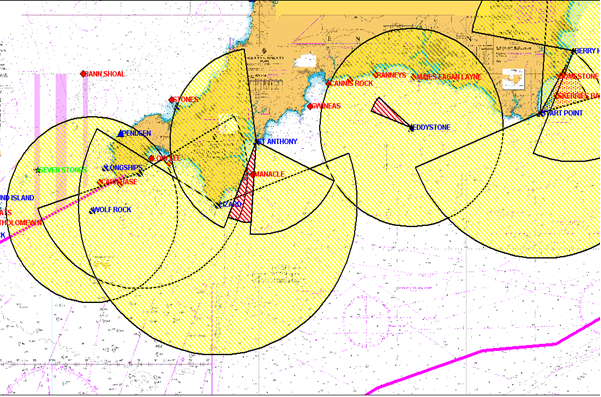
SOLAS Chapter 5, Regulation 13, states that:

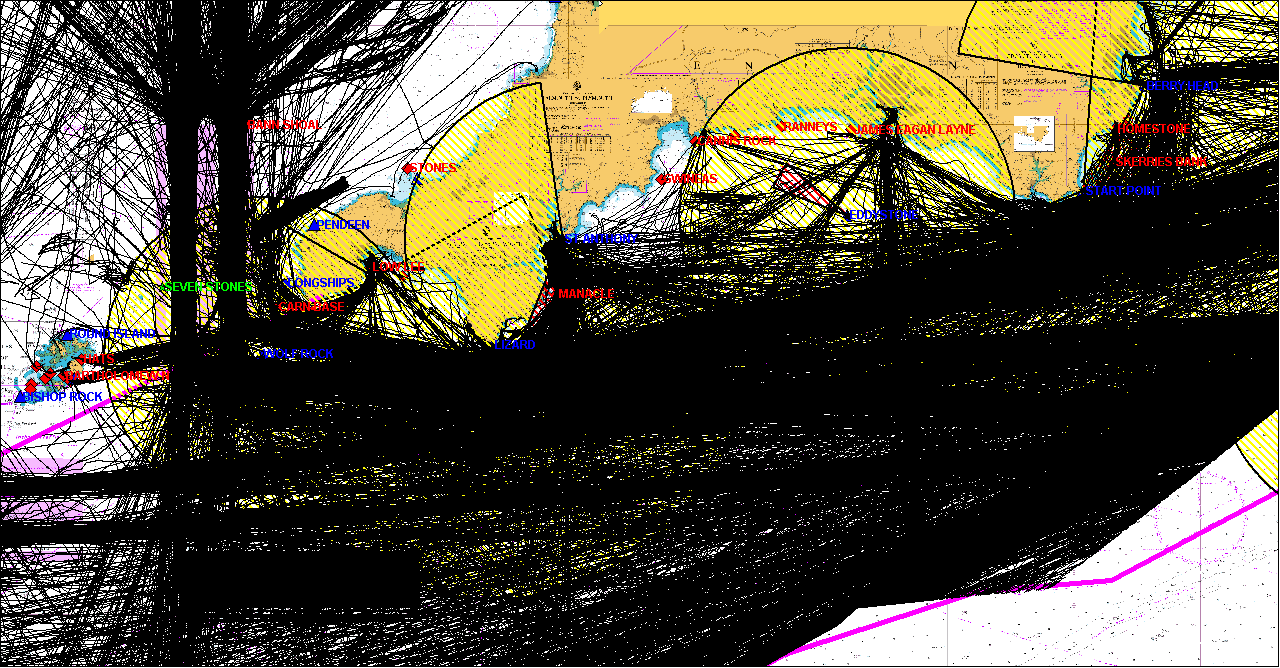
*Each Contracting Government undertakes to provide, as it deems practical*

*and necessary either individually or in co-operation with other Contracting Governments, such aids to navigation as the volume of traffic justifies and the degree of risk requires.*

By considering the actual coverage of current AtoNs provided, including accurate assessment nominal ranges and both charted and uncharted sectors of fixed lights, and combining this data with up to date traffic patterns, an informed decision on the on-going requirements for existing Aids and the requirement for additional or different aids can be made.

An on-going assessment of requirements will always be required to take ensure that any changes to the requirements including account of the above including changing bathymetry are addressed as appropriate to ensure continued safety of the Mariner.





## Assessment of marking requirements for new or existing shoals and shallow areas subsequent to hydrographic survey

When new survey information is received which has relevance to the Aids to Navigation deployed by a Lighthouse Authority, a decision is required on whether new or amended marking is required and importantly if changes are required, the time frame within which they must be carried out.

# Concepts

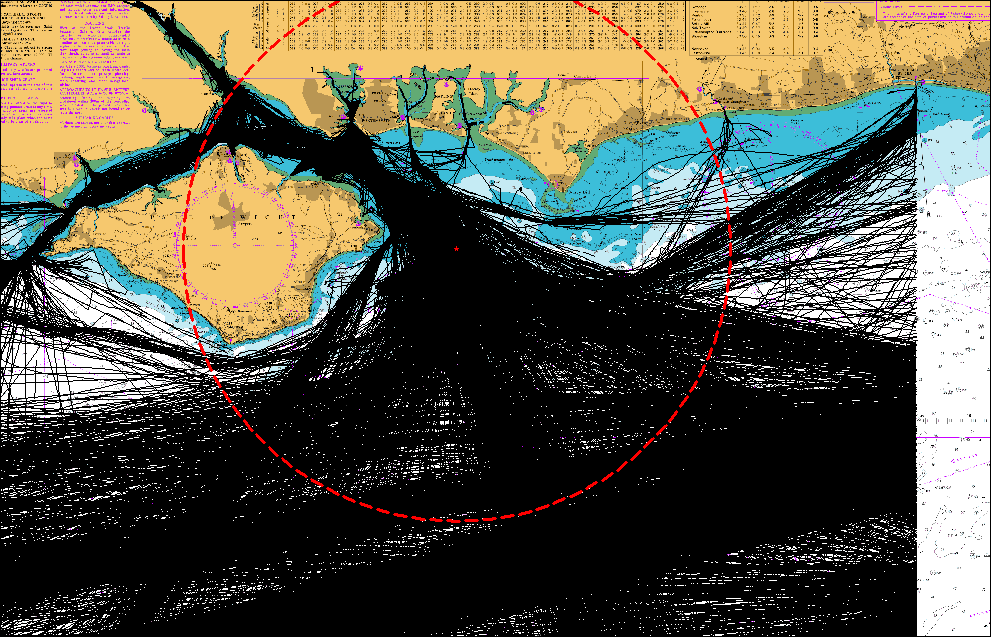
## Aid to Navigation coverage including coverage sectors

## AIS vessel traffic analysis

## Leisure sailing areas and routes

## Overlays of new and existing offshore developments

# Other considerations







1. Annex Title

Guidelines should have Annexes. Appendices are attached to Annexes.

ANNEX HEAD1