

First Draft Information Paper

## The need to maximize use of hydrographic survey data

### Introduction

#### **Did you know that the surface of Mars is better mapped than most of the Earth's oceans?**

The chances are that the charts of the waters surrounding your country are based on inadequate or incomplete surveys\* and this could, at best, be constraining the economy of your nation and at worst is a potential hazard for shipping that could cause loss of life or extensive pollution.

#### **[What's that got to do with me?] [How can I help?]**

Whether you are a government minister or officer or working in the maritime Industry you can help. Currently much of the commercial and scientific survey work undertaken worldwide each year is not made available to improve nautical charts; this is often due to lack of knowledge of the requirements. You can assist by promoting understanding of this issue and encouraging adoption of 'best practice' procedures as outlined in this leaflet. Please pass the information on to any colleagues also involved in the exploration and exploitation of continental shelf resources or the regulation of shipping; adoption of a best practice approach will be to the benefit of maritime safety and the wider maritime economy.

#### **Hydrographic Survey is Important**

In addition to being essential in the production of charts facilitating safe and efficient navigation of ships, hydrography underpins almost every other activity associated with the sea. The range of activities it has to support continues to grow but includes:

- *resource exploitation - fishing, minerals, alternative energy sector*
- *environmental protection and management*
- *maritime boundary delimitation*
- *maritime defence and security*
- *tsunami flood and inundation modelling*
- *coastal zone management*
- *tourism – limits the areas available for cruise ships*

#### **There are also international obligations!**

The 165 Member States of the International Maritime Organisation (IMO) who are signatories of the Safety of Life at Sea (SOLAS) Convention have a responsibility under Chapter V regulation 9 to provide Hydrographic Services. Regulation 9.1 states "Contracting Governments undertake to arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information necessary for safe navigation".

*\*based on the fact that most nations listed in IHO C-55 state that .....*

## **What is the problem?**

It is a fact that many areas of the world's seas are either unsurveyed or inadequately surveyed. The International Hydrographic Organization (IHO) issues publication C-55 which presents a clear picture of the worldwide coverage of surveys and nautical charts. It presents estimates, provided by member states, of the area of their waters that have either never been surveyed or needs resurveying. Even amongst those nations with active and well funded hydrographic organisations most have a much survey work still to do.

Whilst new technology such as swath bathymetry and LIDAR has increased the speed with which bathymetric survey data can be collected the cost is still high and in many cases the availability of government owned survey vessels is diminishing. Achieving full hydrographic survey of their national waters is an unachievable target for most nations, even in the medium term; this makes it imperative that the widest use is made of any survey data that is collected.

### **Are we making best use of existing survey information?**

The reality is that much of the survey work that is undertaken is used solely to support specific projects (either government funded or sponsored by a commercial venture) and that less than 20% is received by hydrographic authorities to enable updating of nautical charts. This is clearly an inefficient use of scarce and costly resources that needs to be addressed. In many cases it is a lack of understanding of the value of the data to others and fears that there may be significant cost or resource overhead in supplying the data that prevents its wider use.

Of course there will be occasions when for good reasons bathymetric survey information will need to be withheld, for example due to commercial or other sensitivity. However in these cases consideration should be given to reviewing the situation at a later date when these sensitivities are less of a concern.

### **A 'nil cost' solution!**

Simply through educating stakeholders in government and industry and facilitating and encouraging best practice it will be possible to make significantly increased use of survey work being undertaken for specific projects which will be to the benefit of all parties.

## **Who are the Stakeholders?**

### ***Government Departments:***

Whether directly involved with the collection of data, or responsible for licensing blocks of the seabed for exploration / exploitation or introducing legislation that might require others to collect data as part of their obligations, departmental officials need to be aware of the wider value of any data collected and also of national obligations under the SOLAS Convention .

### ***Development Companies:***

Whether port developer or an oil or gas concern, companies need to be aware of the wider picture and the value of data collected on their behalf to support their projects. At present many of the survey contracts issued do not clearly specify whether there is any constraint on the provision of a copy of the survey information to hydrographic authorities.

### ***Survey companies:***

Generally survey companies are aware of the wider potential use of the data they collect but are bound by the contracts signed and if these don't specifically allow for information to be provided to a

hydrographic authority it is very unlikely that it will be. Survey companies don't feel able to ask for clarification on this aspect of the contract as they don't wish to prejudice either contract placement or future opportunities.

***Hydrographic Authorities:***

These are generally Hydrographic Offices responsible for the provision of nautical charts and publications for their national waters. A few HOs also have a responsibility for charting the waters of other nations. They are often (especially in the latter case) unaware of where new survey is being conducted and, as stated above, they often don't receive any survey information. They are therefore not well placed to ensure that their charts and publications are up to date.

## **What should Industry Best Practice look like?**

1. All stakeholders recognise the importance of making best use of bathymetric data that is collected for whatever reason and understand their role in facilitating this.
2. That those responsible for licensing offshore exploration / exploitation should where possible ensure that licenses include a requirement that any bathymetric information collected should be rendered to a hydrographic authority for inclusion in nautical charts.
3. Exploration / Exploitation companies should ensure that ITTs and contracts for hydrographic survey contain information on:
  - what companies should do if finding any dangers to navigation during the conduct of surveys
  - whether survey information collected should be rendered by the survey company to a hydrographic authority and if so which one and in what form or-
  - what specific survey product(s) are to be provided for onward transmission to a hydrographic authority by the contracting company

Where possible the companies, or their contractors, should inform the hydrographic authority as to the areas to be surveyed and the nature of the bathymetric product that will be provided. This will allow nautical chart action to be planned where this is appropriate.

4. Hydrographic survey companies should check that ITTs and contracts are clear as to the requirements for provision of bathymetric data and where this is not the case, feel free to seek clarification from the contracting company without fear of prejudicing current or future work opportunities.
5. Hydrographic authorities should be aware of surveys being conducted in waters for which they are responsible and should welcome all information provided and ensure that it is considered for inclusion in existing or new nautical charts. They should accept processed survey information (as opposed to raw data) as being suitable for this task as long as it [meets IHO recommendations][is accompanied by necessary metadata]. They should recognise the proprietary nature of information provided and ensure that any restrictions placed on its use are upheld.
6. At minimal extra survey information is exploited to the maximum extent possible allowing Hydrographic authorities to more fully update nautical charts. All stakeholders should be seen as conscientious stewards within the maritime domain.

## Enforcement through contract

For many national administrations there will be legal obstacles to enforcing the provision of bathymetric information through contractual obligation; where this is the case the generic clause shown below could be modified to 'strongly recommend' conformance with Industry best practice.

Alternatively, given that the provision of data should be publicly recognised (and maybe rewarded), companies could seek positive PR by voluntarily committing to the inclusion into agreements statements such as that below.

*Example of generic clause that could be included in Government licensing agreements:*

Legal view:

[The Licensee shall render to *[national or international hydrographic authorities – as appropriate]* all bathymetric survey data collected pursuant to this Licence, in a form suitable to the updating of nautical charts. The Licensee warrants its understanding that such data may be processed and sampled *[in accordance with IHO guidance S-XXX]* for inclusion in products used in marine navigation. The Licensee shall report to *[national or international hydrographic authorities – as appropriate]* all dangers to navigation found by it during its exercise of the rights conferred by this licence. To the extent that any said bathymetric survey data or information about dangers to navigation are protected by any intellectual property rights of the Licensee, of any type whatsoever, the Licensee shall grant to the receiving *[national or international hydrographic authorities – as appropriate]* a non-exclusive perpetual worldwide licence to do such things as the *[national or international hydrographic authorities – as appropriate]* may require to be done with such bathymetric survey data or information for the limited purpose of producing products for use in marine navigation and sub-licensing others to do likewise.]

SOLAS view:

[To assist in upholding commitments under the International Maritime Organization Safety of Life at Sea (SOLAS) Convention and as a condition of the grant of license, the licensee will ensure that any bathymetric survey data collected by them or any third party working on their behalf is made available, in a form suitable to the updating of nautical charts, to *[national or international hydrographic authorities – as appropriate]*. The bathymetric information rendered may be processed and sampled *[in accordance with IHO guidance S-XXX]* to protect commercial interest and minimise the cost of provision. All dangers to navigation found during the conduct of surveys must be immediately reported to [.....] for wider promulgation to ensure safety of shipping. Where, for any reason, the Licensee believes it is not possible to release bathymetric data as required by this condition then they must report this to the Licensor. ]

*Example of generic statement made by Licensors and those issuing ITT for survey work committing to best practice:*

To support of safety of navigation and in the spirit of Industry best practice [the licensee /contracting company] will ensure that any bathymetric survey data collected as part of [Project XXX] is made available, in a form suitable to the updating of nautical charts, to *[national or international hydrographic authorities – as appropriate]*. The bathymetric information rendered will be processed and sampled *[in accordance with IHO guidance S-XXX] [ and provided with appropriate metadata]*. Any dangers to navigation found during the conduct of surveys will be immediately reported to [.....] for wider promulgation.