Kongsberg/Caris/Fugro

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IHO CAPACITY BUILDING – INDUSTRY CONTRIBUTION

INTRODUCTION

Capacity Building (CB) is a key component of the International Hydrographic Organisation (IHO) approach to achieving its mission and objectives. Capacity Building is focused on the development of knowledge, capacity and capability in maritime safety information, surveying and paper and digital chart production among established and emergent Hydrographic Offices worldwide. Industry, acting as a consortium, has proven it can contribute successfully to this IHO led initiative. Through the enhancement of hydrographic capability nations will not only be able to contribute significantly to their SOLAS legal obligations but also enhance the economic possibilities of their infrastructure.

AIM

The aim of this paper is to introduce the concept of addressing resource limitations of the IHO CB Programme through the collaboration with industry.

DISCUSSION

Background

The IHO has a three phase development strategy to building a national hydrographic capacity:

- Phase One encourages all states to recognize their national responsibilities for the provision of hydrographic services and initiate the collection and dissemination of marine safety information. This can be met either by a state developing its own capability or through agreement with another state to provide these services on its behalf.

- Phase Two of a CB program involves the provision of advice and training assistance to support the creation of a hydrographic surveying capacity in a particular country.

- Phase Three supports further development of the national hydrographic service including production of paper and electronic charts and publications.

Underpinning the above strategy the IHO has developed a Four Step process: Awareness, Assessment, Analysis and Action. By proceeding in this coordinated manner, the CB strategy will assist states with hydrographic missions throughout the world to develop appropriate levels of

hydrographic capability. Most importantly, it will assist States and authorities without any existing hydrographic capability to begin to establish the fundamental capacity to comply with international maritime conventions and regulations which is to arrange for the collection, compilation, maintenance and dissemination of nautical information for safe navigation and protection of the marine environment.

Under the IHO Inter-Regional Coordination Committees (IRCCs) sits the Capacity Building Sub Committee (CBSC), which receives bids against its budget from the 14 Regional Hydrographic Commissions (RHCs) all of which have a standing agenda item for CB. It is recognized that not all of these RHCs require any CB but in discussion with the National Hydrographer of UK, five RHC have been identified as, but not limited to, being possible regions that could benefit greatly from an industry contribution to CB:

- The MESO American & Caribbean Sea Hydrographic Commission (MACHC);
- The South West Pacific Hydrographic Commission (SWPHC);
- The South Africa and Island Hydrographic Commission (SAIHC);
- The East Atlantic Hydrographic Commission (EAtHC)
- …and to a lesser extent the North Indian Ocean Hydrographic Commission (NIOHC)

Many resource limitations can be resolved through Industry support and cooperation to the IHO CBSC. Whilst CBSC training initiatives are well attended, wherever held, feedback from participants highlights the fact that training in hydrographic surveying would be greatly enhanced with a practical aspect. This provision of equipment and expertise to support Phase Two training highlighted where Industry contribution could bring a greater awareness and understanding to the political hierarchy of a state and clearly demonstrate the benefits of hydrography at all levels.

Three recent Industry contributions to CB in the MACHC were extremely well received by the RHC and provided an opportunity to demonstrate multi beam technology and modern processing and hydrographic data compilation techniques to over 25 personnel in Barbados (Nov 2009) and 14 personnel from over 9 nations in Antigua (Jun 2011). The latter also resulted in direct interest from Antigua and Barbuda's Prime Minister. The third was a Hydrographic Surveying and Nautical Charting Workshop in Haiti (Sep 2011). This was an excellent example of international coordination and Industry cooperation and contributions to provide two weeks of basic surveying and charting training. However, it is noted that single ad hoc training such as this is designed only to provide a limited introduction to hydrographic surveying and nautical charting. Follow-on training and support in a co-ordinated and coherent manner is required to develop an organic capability.

Resource Shortfalls/Requirements:

The primary areas of resource enhancement that industry collaboration would seek to address are:

- Funding
- Education
- Training
- Organic Capability
- Sustainability

Funding

The CBSC is required to assess the status of nations and regions where hydrography is developing and to establish and maintain close relationships with national agencies and organizations which may provide funding continuously or other support to technical assistance. The CBSC co-operates closely with the RHCs to carry out assessment studies within a five year work programme.

A Capacity Building Fund has been established to provide support for technical assistance, training and education, financial assistance for participation in IHO events and start-up funding for hydrographic elements of projects. The allocation of funds follows a procedure beginning with the identification by a RHC of a priority project. The CBSC decides on all priorities and amounts to be allocated on a case by case basis. Contributions from donor countries and institutions are welcomed and are considered an important tool for the funding of activities related to hydrography.

The CBSC meet annually with their counterparts in the IMO, IOC, WMO and IALA (all potential donor organizations) to discuss each work programme and funding mechanisms, the experience gained in provision of CB and experiences with funding agencies.

Whilst it is evident from discussions that the mechanisms are in place to bid for enhanced funding, leverage for such has yet to be fully exploited. It is not considered that the current CBSC funding or structure is intended to support this initiative; separate and substantial funding from external sources must be robustly proposed and argued. It is considered however that donor organisations, if presented with evidence of a coherent plan for development of hydrography to support both SOLAS requirements and economic generation of nations - an output focused initiative - may provide the avenue for capital funding of Industry contribution. Industry association with such donor organizations such as the World Bank, USAID, IADB and the OECD is, in many cases, long-standing and robust and the lobbying of these agencies on behalf of major national governments is a regular function. These close associations and lobbying ability could be leveraged to support the IHO in its own pursuit of funding support by supplying the key points of contact enjoyed by industry.

Education

It is considered that IHO should fund specific modules or full CAT A and B Hydrographic courses through distance learning (i.e. the newly launched 'Hydrographic Academy' distance learning scheme or similar) to support regional and independent nation capability. This facet of CB is viewed as a fundamental element, essential for the generation and maintenance of an organic capacity at the national level.

Industry can also provide bespoke, in-country education materials pertinent to specific equipment, systems, operations or procedures over and above the fundamental level of understanding to assist in the proper functioning of a tailored hydrographic capability.

Training

Industry is able to have available a permanent equipment and training service to a regional operator as agreed by the IHO. Through this initiative, nations within proscribed IHO regions could collect critical data suitable for chart production in a planned and coherent manner under the guidance of the RHC. Industry can support the equipment and continuation training until operators

are confident and qualified to conduct these functions independently. Capital costs of equipment and training support could be raised through donor organisations to support the economic development of regions. These donor organisations could also include those that would benefit directly from improved hydrography e.g. port associations/operators, cruise ship companies and transport ministries in general.

Industry contribution to Phase 2 (the Port and Shallow Water Capacity Training Programme) has been proven and recognized as being a mechanism for proving the need for hydrography in support of SOLAS legal obligations and economic development of a nation. Industry can continue to support these initiatives on a cost plus basis.

Additionally, successfully lobbied regional survey schemes, conducted under the auspices of the IHO through the RHCs with input and guidance from the CBSC, can each contain a mandatory element of regional or national training included with each successful tender bid. In this way professional survey companies will address the ongoing training requirements of a nation until the next element of development – organic capability – is achieved.

Organic Capability

In December 2003 the United Nations General Assembly adopted Resolution A/RES/58/240 on Oceans and Law of the Sea that dealt, in large part, with safety of navigation. This Resolution welcomed the work of the IHO and the RHCs in CB and encourages intensified efforts to build capacity for developing countries, in particular for small island developing states (SIDs) and coastal African states to improve hydrographic services, including the mobilization of resources and building of capacity with support from international financial institutions and the donor community.

At an independently-assessed level of education, training and understanding, independent nations could be provided with their own equipment for maintenance of charts and expansion of quality surveys as considered appropriate by the RHC. Equipment could be funded by donor organisations as in Phase 2 but it is hoped that at this stage a healthy contribution would be forthcoming from the nation itself. It is not expected each and every nation will be able to support a full multibeam or equivalent system but may be able to support a simple single beam echo sounder and side scan sonar type survey. Once again Industry could support the nation(s) in question in the longer term through an appropriate funding mechanism.

Kongsberg Maritime and CARIS have led the Industry contribution initiative from the commencement of Industry involvement in IHO Capacity Building through the provision of equipment, software and personnel. Fugro, HYPACK, and Hemisphere have also made contributions. All the companies are leaders in their fields and many have strong links with each other and on a case by case basis have pledged commitment to this initiative. Together, they can provide the IHO with a coherent and consistent contribution to IHO aims and objectives. It is not considered that the CBSC funding contribution will require any major uplift, especially if other funding agencies become actively involved. It may, however, require the current CBSC funding profile to be reconsidered. Industry cannot lead CB: this must remain under the auspices of the IHO. Industry fully realises that this proposal will result in a long term and not a short term gain.

Sustainability

Sustainability is in effect a metric to the success of such a long-term proposal and can be monitored by the perusal of the level of activity, volume and quality of hydrographic contributions made by a host nation by the international community. In a perfect scenario the attainment of organic capability and a stable organization, workforce and programme of work will assure sustainability, but the latter elements are much more dynamic and this can erode the long term effects of such a program. To this end, therefore, it is imperative that the various elements described above are retained to some degree through mechanisms such as IDIQ (Indefinite Delivery Indefinite Quantity) contracts such that any 'top-up' of funding requests/solicitations, education, training or organic capability can be implemented, again following consultation with the nation concerned and the independent assessment body (i.e. the IHO CBSC). Industry is well placed to react to and deliver the hydrographic needs of nations in order to assure a sustainable capability.

ASSUMPTIONS AND IMPLICATIONS

In order to maximize the IHO Capacity Building Programme the following need to be discussed, addressed and agreed:

ASSUMPTION	IMPLICATION
The involvement of Industry to be recognized as a collaborative approach with the IHO	Clear lines of communication have to be established and maintained between the IHO, lead hydrographic agencies and Industry in order to ensure timely, adequate and appropriate response to requirements.
Industry training costs and all incurred direct overheads are to be covered, such as travel and accommodation of personnel.	A degree of transparency and reasonable cost plus margins have to be agreed such that the IHO is satisfied that requested budgets are proper and reasonable. Industry must take a pragmatic approach and view the long term advantages of this scheme when assessing what is appropriate in terms of costs and profits.
IHO continue to lead at the political level	Intra-governmental and UN agency dialogue and requests for funding rely on this tenet.
A sustainable continuity training programme to be agreed.	Success of such a programme will result in a progressive reduction and reliance on Industry and a gradual improvement in regional abilities; in other words the very success of this proposal effectively heralds its completion, though this will be a protracted process (evolution rather than revolution). Such an approach could be marketed to cover other areas of infrastructure enhancement under UN regional objectives.
The Host Region / Nation must have: Recognized and stated requirement for data collection, charting, and other uses; Sustainable resources;	As above

Demonstrable real-term contribution in the form of personnel, facilities, and platform; Access to and permission to use existing national data both digital and analogue for use in the project; The host must become a major stakeholder.	
A minimum of CAT B certification for recipient nation personnel should be an aim but this should not be restricted to government employees where Port Authority personnel (for example) may be a better choice.	This will bolster the IHO itself by having a more capable and proactive membership, especially amongst those nations whose participation at the moment is merely procedural.
Training outside the current IHO CB Programme (Phase 1) should be aimed at one region / nation at a time.	This will focus Industry support, ensure concentrated effort and avoid dilution of resources or resolve.
Aim should be organic strength-in-depth beyond any reliance on one person in order to sustain a fit-for-purpose national hydrographic programme.	This will take time to create as some countries will be starting effectively from scratch and therefore experience and consolidation will be required for personnel identified to lead their hydrographic programme.
All training should ideally be in English	Language barriers – real or assumed – must be identified at an early stage and participating nations must carefully choose their staff based on their ability to effectively communicate in an international forum.
All training should be a combination of practical and classroom training.	This can be supported and underpinned by industry-academia initiatives such as the Hydrographic Academy for the continuity of development and education in a country or region where actual interaction is not scheduled for some time.
It is the assumption that, as a minimum, data would be released for the updating of charts. Industry will oversee the collection of data in accordance with IHO S-44 Standards and generate appropriate supporting documentation. Data ownership shall be agreed when developing the plans for surveys between the CBSC and Host Nations. Industry contributors and National Authorities able to offer similar or equal services should be given an equal chance to compete.	The largest single item in the 2011 CBSC budget was 70K Euros to UKHO for Marine Cartography training. Given the limited funds available for this global effort, all data collection over and above minor surveys undertaken as part of the education and training elements of CB should be separately funded and awarded to the best value provider. 'Best value' infers meeting IHO standards for hydrographic data collection and charting standards.

SUMMARY

Industry cannot undertake CB alone. This proposal relies upon the IHO recognizing the potential of an Industry contribution to Capacity Building. Through active engagement with both national and international agencies for funding contributions, the IHO is aware of the real and viable mechanism for output-focused Capacity Building that industry engagement provides. Industry can contribute through technology development, innovation and professional services in

ways that cannot be initiated and/or supported by a national hydrographic agency alone. This derived capability and engagement through Industry participation has the potential to release future funding for regional/host nation organic capability. Any strategy would have to be in line with IHO guidelines but could be either with individual nations, collective nations (Island groups) or at RHC level. Industry expects that stakeholders and recipients will contribute to CB effort, building on previous experience to deliver success and value for money. Sustained support, education and training must be included in any package.

Provision of end-to-end training in a local environment with an IHO identified and supported output (usable chart data in a critical area) – an IHO aim – is the primary deliverable of such a scheme. The execution of this function should be such as to allow Industry to recover costed outlay and to develop further business opportunities with the participating nations, again under the regional IHO schema.

Kongsberg, CARIS and Fugro are willing to cooperate on a case by case basis with RHC CB building coordinators to support the IHO in further delivery of CB at the behest of the IHO. We, the partners, can provide a unique portfolio of experience, resource and flexibility to deliver hydrographic CB under submitting RHCs.

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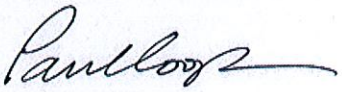

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References (all documents sourced from the IHO website and considered extant):

A. IHO Strategy & Objectives
B. IHO CB Strategy
C. IHO CBSC Strategy