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Introductory Remarks before the
UN Informal Consultative Process on Law of the Sea
Regarding
Capacity Building for the Production of Nautical Charts

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Thank you Mr. Chairman for the opportunity to relate to this important gathering the efforts of the International Hydrographic Organization in capacity building for the production of nautical charts. Mr. Chairman, distinguished delegates, ladies and gentlemen, one might ask why the IHO is addressing this gathering, or why this key Ocean Affairs and Law of the Sea forum is focusing on capacity building for the production of nautical charts, or indeed, what is so essential about a nautical chart in the context of Ocean Affairs and Law of the Sea.

The International Maritime Organization (IMO) in the Convention for the Safety of Life at Sea (SOLAS) defines a 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."[1] Surely, the presence of accurate, up-to-date nautical charts should contribute to the Safety of Life at Sea. The highlighting of hazards to navigation, the identification of aids to navigation, and the depiction of oceanographic features of interest to the mariner are essential components of the nautical chart because they are important factors in sailing a vessel safely and efficiently along its intended route. But there are many more benefits derived from a nautical chart and the data used to construct it. Accurate nautical charts and information lessen the occurrence of maritime accidents that result in loss of life or discharge of fuel and hazardous cargo into a fragile ecosystem. Accurate nautical charts for the intended voyage reduce insurance premiums for shippers, potentially increase loading of ships for a given port of call and enhance economic development for the coastal state. Using modern hydrographic techniques, the data collected to support the generation of a nautical chart provides the fundamental geospatial framework from which a host of coastal zone management issues, marine pollution response plans, marine habitat mapping and extended claims to a Coastal State's continental shelf under Article 76 of UNCLOS can be referenced.

[1] International Maritime Organization, *International Convention for the Safety of Life at Sea (SOLAS),1974, Consolidated Edition 2001,* Chapter V, Regulation 2, Paragraph 2, London, 2001

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The SOLAS Convention further obligates "Contracting Governments to 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."[2] Therefore, the capacity to produce nautical charts is more than of benefit to the coastal state – it is a requirement! There are three significant parts to this requirement.

- The collection of hydrographic data using modern techniques to established standards – *Hydrography,*
- The compilation and production of nautical information consistent in content and appearance – *Nautical Cartography,* and
- The dissemination and maintenance of this information –*Maritime Safety Information Network.*

While a developing Coastal State may rely upon another State for the provision of some or all of these components, they should be under the management of a properly constituted and resourced maritime safety authority. Beyond the initial satisfaction of these requirements, effective long-term maintenance necessitates the developing Coastal State acquire a certain minimum capacity in each area. Therefore, capacity building is essential to the realization of adequate nautical charts.

SOLAS, further states, in a desire to achieve the greatest degree of uniformity and standardization in collection techniques, data management and product display, that the Contracting Governments should "take into account, whenever possible, relevant international resolutions and recommendations"[3] adopted by the International Hydrographic Organization (IHO). Hence, the IHO, a consultative, technical Intergovernmental Organization is here as the relevant and competent organization on this subject.

The IHO secretariat, the International Hydrographic Bureau (IHB) was founded in 1921 at the instigation of Prince Albert 1st of Monaco to make "Navigation easier and safer throughout the world by improving nautical charts and documents."[4] An explicit function of the IHB is "To tender guidance and advice...to countries engaged in setting-up or expanding their hydrographic services,"[5] i.e. capacity building. The IHB and the Member States of the IHO are seriously committed to increasing the capacity of developing States to produce nautical charts through functional assessments, technical assistance, project development and project donor identification. The IHO provides technical forums that evaluate, recommend for implementation and develop standard applications for technical advances in data gathering, processing and display. Additionally, an objective of the IHO is the coordination of activities of National Hydrographic Offices so that the existing capacity is put to effective use and duplication of effort minimized. Pivotal to the effective execution of the IHO's global objectives are its fourteen Regional Hydrographic Commissions. These Commissions provide a regional focus on opportunities for cooperation, sharing of resources, and coordination of projects enhancing the capacity of countries within the region. It is important to note that the active involvement of non-member States is strongly encouraged in their respective Regional Hydrographic Commission.

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[2] *ibid* Chapter V, Regulation 9, paragraph 1
[3] *ibid* Chapter V, Regulation 9, paragraph 3
[4] Convention of the International Hydrographic Organization, Preamble, Monaco, 1967
[5] *ibid,* Article VIII (e)

Special Publication 55, *The Status of Hydrographic Surveying and Nautical Cartography Worldwide,* Second Edition July 1998 provides a dated insight into where capacity-building efforts should be focused. The IHB is currently updating both the currency and the scope of S-55 with a view to make this publication a comprehensive and dynamic appraisal of the status of hydrographic surveys and nautical cartography. The IHB believes such an appraisal is a fundamental element in an assessment of the marine environment as called for in General Assembly Resolution A/RES/57/141 of 12 December 2002. A more recent study conducted by the IHB focused on areas where Electronic Navigational Charts (ENCs) are available. The results of this later study would be indicative of modern cartographic capabilities and, in some instances, modern hydrographic surveying techniques. Both S-55 and the ENC study reveal several areas where capacity building is required and these results have guided the program of the IHO. The IHO has identified the Coastal States of Central and Western Africa, the Red Sea, Central America and Southeast Asia as areas requiring greatest emphasis for capacity building efforts. Although several States in the area have well-established hydrographic services, the Island States of the Southwest Pacific and the Archipelagic States of Southeast Asia face an immense and complex task.

The IHB together with the IHO Regional Hydrographic Commissions and the IHO Committee on Capacity Building have conducted technical assist visits in the last year and one half to the following countries:

- Albania
- Lithuania
- Libya
- Bangladesh
- Guatemala, Panama, Colombia, Mexico
- Gabon, Nigeria, Ghana, Mauritania, Senegal, Cape Verde, Guinea Conakry, Sierra Leone, Democratic Republic of Congo, Republic of Congo, Guinea Equatorial, Benin and Togo.

These technical assistance visits are conducted with the local port authorities, the National Hydrographic Office (if established) and the appropriate government ministry. These technical assistance visits are essential first steps in assessing the existing infrastructure, technical education level, legislative mandates, coordination amongst government agencies and the scope of the requirements. Critical objectives of the visits at the ministerial level are the acknowledgement of the minister's responsibility for providing these safety of navigation services and a commitment to institutionalize and adequately resource a maritime safety authority. An output from these assist visits are reports detailing the current status of the infrastructure, the number and training of personnel, the adequacy of maritime safety services and the existence of marine safety legislation. From these initial reports, a plan to address the prioritized and sequential needs of the Coastal State can be produced.

An effective plan begins with the establishment of a maritime safety administration or authority. It is the legislative empowerment of this authority that will ensure the adequacy and maintenance of the services. Coincident with the legislative initiatives, donor funding or cooperative ventures with established hydrographic offices can provide for the development of action plans for the conduct of hydrographic surveys, the positioning of navigational aids, the compilation and

production of nautical charts and information, the establishment Search and Rescue capabilities and formation of a Maritime Safety Information network.

A critical, yet straightforward activity is the collection and dissemination of nautical information necessary for the maintenance of charts and publications. The organizational construct of this activity coordinates the efforts of various maritime institutions, provides immediate benefit to international shipping and enables integration into the World-Wide Navigational Warning Service.

The training of personnel can be accomplished at a number of institutions recognized by the IHO for accredited training programs in hydrography and/or nautical cartographers. Many of these institutions offer this training free of charge, such as the International Maritime Academy in Trieste and the Indian National Hydrographic School in Goa. The Japanese International Cooperation Agency provides Official Development Assistance for hydrographic training to developing states. The navies of the United States, United Kingdom, France, Spain and others provide training through bilateral agreements and military assistance programs. In support of the Commission on Limits of the Continental Shelf (CLCS), the United Kingdom Hydrographic Schools, the Indian National Hydrographic School in Goa and the Hydrographic Office of Brazil have conducted training in their regions as specified in the CLCS syllabus. Arrangements for on the job training with commercial contractors or cooperative hydrographic offices are also important training opportunities.

Equipment for the collection and processing of hydrographic data and the production of nautical charts is complex and expensive. However, there are innovative solutions for its acquisition by Developing States. Several donor agencies are prepared to make these equipments available to States displaying a commitment to developing their hydrographic capacity.

Now let us look at some specific programs that are furthering the capacity of developing countries to produce nautical charts.

- The MEDA Project 7 is a Technical Cooperation project developed by the IHO, IMO and IMA with funding from the European Commission to develop hydrography in the countries in the South and Southeast Mediterranean. A Steering Committee, formed of representatives from France, Spain, Greece, Italy, IMO, IHB, IMA and the EC oversees the project objectives and progress. Thus far, Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Palestinian Authority, Syria, Tunisia and Turkey have received training and equipment under this phase of the project. The Steering committee has approved and submitted to the European Commission a second phase of the project, MEDChartNet, aimed at developing the cartographic capability of the States involved.

- The Central American Commission for Maritime Transport (COCATRAM), the IHO and the IMA prepared a joint project aimed at developing the hydrographic capability of the Central American region for submission to the Plan Puebla Panama Project and the

European Commission. Closely aligned is the Environmental Protection and Maritime Transport Pollution in the Gulf of Honduras Project that is seeking funding through the Global Environmental Fund. The project managers have acknowledged the fundamental importance of hydrographic capacity to these projects and are supporting a hydrographic component. In total these projects will provide Mexico, Guatemala, Honduras, Nicaragua, El Salvador, Panama and Costa Rica support in training for hydrographers and cartographers, the procurement of hydrographic and cartographic equipment and technical assistance from established hydrographic offices for the production of nautical charts.

- The IHO, IMO and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) have sponsored the Safety of Navigation on Lake Victoria Project within the East African Community (EAC) and the countries of Kenya, Tanzania and Uganda. Initial funding from the French Ministry of Foreign Affairs has focused on efforts to establish a Lake Victoria Marine Safety Authority laying the administrative and training groundwork for future donor agencies participation in infrastructure development and implementation of a maritime safety program.

- To improve the capacity of countries on the Black Sea to install and maintain aids to navigation the IHO, IMA and IALA have assisted the countries of Bulgaria, Romania, Ukraine, Russia, Georgia and Turkey with program development and submission to the European Commission for funding.

- The Marine Electronic Highway Project seeks to integrate high resolution hydrographic surveys, Electronic Navigational Charts, a comprehensive set of aids to navigation, oceanographic modelling of currents and tides, Automatic Identification System and Marine Safety Information networks through the Straits of Malacca and Singapore Straits. This IMO/IHO project is applying to the World Bank and Global Environmental Fund for assistance.

- The Western Africa Assistance Team composed of representatives of the Hydrographic Offices of France, Portugal, United Kingdom and United States visited thirteen countries in western Africa. The initial assessment has formed the basis for the development of action plans to implement Marine Safety Information networks, focus technical education opportunities and explore cooperative hydrographic efforts.

These examples reflect the most recent initiatives of the IHO, IHB and the Regional Commissions of the IHO. Additionally, many IHO Member States have extensive bilateral agreements and vigorous programs of cooperative hydrographic data collection and/or nautical chart compilation and production. These bilateral arrangements represent an excellent indication of the viability and validity of the developing Coastal State's hydrographic program. Furthermore, these bilateral

investments form a basis from which other donor agencies may assess and leverage their participation.

I reiterate that the programs that contribute to the capacity of a developing Coastal State to produce and maintain nautical charts and services have broad impact. The capacity of a Coastal State to provide adequate navigational products and services contributes directly to the sustainable development of that Coastal State. Additionally, improved nautical charts and navigation information for a given area enhance the safety and efficiency of all maritime States using that area. And ultimately, the data collected to produce nautical charts can be used to assess and manage the rich ocean environment on which all life depends.

Thank you Mr. Chairman for this opportunity. The IHO looks forward to contributing further to this Informal Consultative Process and to the Global Marine Assessment.