

**Report to the 33rd General Assembly
FIG Congress in Sydney, Australia 2010**

FIG Commission 4 – Hydrography

Report of Activities 2009

1. General

Our participation at Working Week in Israel, the Regional Meeting in Viet Nam and the IHO Conference in Monaco helped further the work of all working groups.

Working Week, Eilat

Commission 4's annual meeting and two technical sessions were well-attended, the latter featuring a total of 9 presentations from Canada, Israel, Nigeria and the UK. Topics ranged from sea level monitoring to the measurement and monitoring of shoreline, marine cadastre and the acquisition of bathymetry and sea bed morphology from multi beam sonar. Hydrographic Education in Israel was profiled during a Commission 2 session on Good Educational Practices. Commission 4 would like to extend a special thanks to Dr. John Hall (Israel), author of The National Bathymetric Survey of Israel, Almost Completed for his lively discussion, hospitality and contributions towards Commission 4's activities in Eilat.

In keeping with our MoU with the IHO, Commission 4 has sought to engage FIG delegates, hydrographic stakeholders and agencies in countries to which there is no representation in IHO. In this regard we were able to meet with the Director General of the Survey of Israel, Dr. Haim Srebro (responsible for charting Israeli waters) who subsequently agreed to enter into dialogue with the IHO on the matter of membership.

US Hydro 2009

Although there were no specific commission activities at this meeting, Jerry Mills our US delegate reported back to us on this conference. His report can be found on the FIG website.

IHO Conference

The commission continued to support the IHO on matters pertaining to promoting Hydrography as an investment (working group on the Economic Benefits of Hydrography) and hydrographic standards and training. Mr. Gordon Johnston (UK) attended this conference on behalf of FIG and Commission 4. As an FIG representative and chair of the FIG/IHO/ICA International Advisory Board on the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, Mr. Johnston submitted proposals to the IHO Inter Regional Coordination Committee (IHO-IRCC) for adoption: That the IRCC adopt the Board's decision to drop the word "Advisory" from the Board's title; that the IRCC adopt a cost

recovery mechanism for the Board; and that the IRCC agree to the introduction of Individual Recognition System elements into the M-5 and M-8 standards.

7th Regional Meeting, Hanoi

The relevance of this meeting for Commission 4 was in-line with the scope of our work on the Administration of Marine Spaces and Capacity Building – The Economic Benefits of Hydrography. Three technical sessions were offered: Coastal Zone Issues, Economic Benefits of Hydrography and Hydrographic Capacity Building. The first session on Coastal Zone Issues focused on the measurement and mapping of oil spills in Viet Nam waters. Included was a presentation on the development of a prototype marine cadastre which in summary one would note the importance of such a system for managing marine/land rights where environmental threats appear to be a serious concern. In this situation a marine cadastre would enable Viet Nam to map and assess oil spills against specific land use rights within a spatial context, using hydrographic information for base-mapping.

The second session featured invited papers on case studies on the economic benefits of hydrography from Cameroon, Canada and Ireland including a presentation on appropriate hydrographic education. The third and final session on Hydrographic Capacity Building included a contribution from the IHO, a case study on the development of a hydrographic office in Croatia from Jeppesen Marine and focus on building capacity in small island developing states. The latter touched proposed alternatives for a “made-in-the-Caribbean” approach for the region.

A general meeting was held to discuss the proposed technical program for Sydney, the development of FLASH sessions (shortened presentations of 4-5 slides) in lieu of poster presentations, specific objectives for working group 4.1 Hydrographic Surveying in Practice and proposed final publications for all working groups. The meeting was attended by commission officers: Dr. Michael Sutherland, Dr. David Neale, Mr. Gordon Johnston, and Ms. Venessa O’Connell.

2. Working Group Reports

Working Group 4.1 – Hydrographic Surveying in Practice

The chair of this working group, Mr. John McCarthy was unable to fully carry out the proposed work plan due to other professional commitments. Given the catch-all nature of the working group’s theme, we did however manage to pull together several technical sessions at various FIG meetings.

The working group did engage the International Federation of Hydrographic Societies (IHFS) on the revision and publication of a new edition of the IFHS Special Publication 3 (SP3), entitled A Career in Hydrographic Surveying. Commission 4 was interested in seeing this publication updated as it was considered to be a valuable resource to young surveyors considering a career in hydrography. To this end, the commission was willing to offer funding and WG 4.1 was willing to assist the IHFS in the interest of getting this valuable publication updated. Apparently the IHFS have moved ahead with a new edition of the publication and have kindly declined our assistance.

The chair's ongoing contact with the IHFS was attributed to renewed interest in proceeding with a best practice document. At the Regional Meeting in Viet Nam it was decided that a guide on port hydrography would be produced.

Working Group 4.2 – Standards and Guidelines

Throughout its term the working group served as the commission's liaison with the FIG Standards Network. As part of this activity, the work group contributed to a review of ISO TC211 work items: n2397 (nwip 19130 - Imagery Sensor Models) as it applied to hydrographic applications and n2424 on Production Management.

The working group also monitored new and emerging hydrographic standards: reviewed the new edition of IHO S44, International Hydrographic Survey Standards (version 5) in 2008 and performed a partial review of the IHO's New Manual of Hydrography. Comments on the latter document were submitted to the IHO for consideration in a future edition.

The development of standards for individual recognition and occupational certification has been an ongoing. Some jurisdictions (US and Australasia) have already implemented programs and the matter has been brought to the attention of the FIG/IHO/ICA International Advisory Board on the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IAB). Beginning with a 2006 workshop entitled "Pathways to Professionalism"; commission 4 has endorsed the concept of an occupational certification for hydrographers. The workgroup informed FIG Council of this concept and in turn the IAB was encouraged by FIG to study the matter. Further to the approval of the IHO Inter-Regional Coordination Committee (IHO-IRCC) in 2009, the IAB will introduce guidelines for individual recognition in the 2010 editions S-5 and S-8, standards for education and training.

Working Group 4.3 – Administering Marine Spaces

The working group's included academic publications by working group members, participation in Conferences and workshops and ongoing cooperation with other Commissions.

Publication of academic work related to the objectives of Commission 4.3, by members of Working Group 4.3:

1. Sutherland, M., D. Lane, Y. Zhao and W. Michalowski (2009). "A spatial model for estimating cumulative effects at aquaculture sites". In *Aquaculture Economics & Management* 13:4, 294 — 311.
2. Sutherland, M., P. Dare and K. Miller (2008). "Monitoring Sea Level Change in the Caribbean." In *Geomatica*, Vol. 62, No. 4, pp. 428-436.
3. Sutherland, M. (2008). "Laying claim to marine spaces in the Caribbean." In *The Journal of Ocean Technology*, Vol. 3, No. 1, pp. 18-23.

Members of the working group participated in the following conferences/meetings:

1. Sutherland, M. (2009). "Developing a Prototype Marine Cadastre". FIG 6th Regional Conference, Hanoi, Viet Nam, October – Oral presentation.

2. Sutherland, M. (2009). "Developing a Prototype Marine Cadastre for Chedabucto Bay, Nova Scotia". Presented at the International Federation of Surveyors' (FIG) Working Week, Eilat, Israel, May, 11 pages.
3. Sutherland, M. (2009). "The environmental benefits of hydrography". Presented at the Nigerian World Hydrography Day Celebrations, Abuja, Nigeria, 22nd June – Invited Speaker.
4. Sutherland, M. (2008). "Spatial information support for climate change adaptation and mitigation: some Canadian experiences". Presented at the CASLE Workshop on Risk Assessment for Climate Change, University of the West Indies, St. Augustine, Trinidad and Tobago, June – Invited Speaker.
5. Sutherland, M. (2007). "Coastal zone management as strategy for pro-poor land management and administration". Presented at the 6th FIG Regional Conference, San Jose, Costa Rica, November – Plenary Speaker.

In 2008 Commission 4.3 collaborated with other Commissions in the publication of FIG Publication No. 43, *The Costa Rica Declaration*. Commission 4.3 is working in conjunction with Commission 8 to publish a FIG document on coastal zone issues in relation to coastal communities. The publication is earmarked for release at the FIG Congress in Sydney, Australia.

Projects:

- The Chair of Working Group 4.3 is part of a project that has received CAD\$990K approx. in funding for a 5-year period to do research on developing mitigation and adaptation strategies to deal with the effects of climate change on coastal communities in the Caribbean and Canada. Hydrographic and GIS Geomatics are part of the project. The project is being executed by researchers from the University of New Brunswick, University of Ottawa and the University of the West Indies. Outcomes from this project informed [and will inform] activities of the Working Group.
- The Chair of Working Group 4.3 was part of a project with the University of New Brunswick that developed a prototype marine cadastre. Outcomes from this project informed activities of the Working Group.

Working Group 4.4 – Capacity Building and the Economic Benefits of Hydrography

From the outset the concept was to develop links between Hydrography and the benefits of having good quality up to date Hydrographic data, charts and coverage. Initially there was a definite lack of publications, papers and articles that made the link and so the initial plan was to generate papers to promote the concept. In 2007 and 2008 a number of papers were written and delivered at FIG events including the Working Week in Hong Kong and the Regional meeting in Costa Rica. At this time it became clear that simply publishing some papers in proceedings would not be sufficient and so aim for a full FIG publication that would cover the topic and include a number of the papers and presentations in a compilation booklet.

At the time of writing this report, this final phase is now underway with the papers and articles having been reviewed again for their possible use in an FIG publication. It is the aim of the WG to complete this phase in the next few weeks and to then submit a final draft for acceptance.

3. Communication

Commission 4 Newsletter

Five newsletters were published in Hydro International and the publisher continued to provide a free subscription to all Commission 4 delegates.

Mr. **Andrew Leyzack**
Chair of Commission 4
January 2010

Web site: www.fig.net/commission4