

FIG Commission 4 – Hydrography

Work Plan 2011-2014

1. Title

Hydrography.

2. Terms of reference

- Hydrographic surveying
- Offshore surveying in support of energy, environment, submarine telecommunications, ports and harbours
- Hydrographic education, training and Continual Professional Development (CPD)
- Marine Environment & Coastal Zone Management (CZM)
- Data processing and management of hydrographic data
- Nautical charting and bathymetric maps - analogue and digital, includes ENC's (Electronic Navigational Charts)

3. Mission Statement

The mission of Commission 4 is to:

- Promote the aims and objectives of FIG to hydrographers through the active involvement of national delegates from member associations and other interested parties in the activities of the commission.
- Foster closer links with all sister organisations currently active within the global hydrographic community.
- Develop guidelines and standards that will assist hydrographers in the provision of their services.
- Disseminate information relevant to the profession through participation in international meetings, conferences and committees.

4. General

Commission 4 strategy is focussed on (for example):

- The development of best practice guides in Hydrography.
- Active support and participation in FIG regional events.

5. Working Groups

Working Group 4.1 – Ellipsoidally Referenced Hydrographic Surveys (ERS)

Policy issues

- Study and report on the technical aspects of using GNSS to vertically reference hydrographic surveys to the ellipsoid
- Catalog the methods used to conduct a vertical datum transformation from the ellipsoid to vertical datums used for hydrographic and offshore surveying
- Develop uncertainty models for both of the above

Chair

Jerry Mills (USA), e-mail: Jerry.Mills@noaa.gov

Technical Expert:

David Dodd (Canada), e-mail: usmhydro.david.dodd@gmail.com

Specific project(s)

- Conduct study to determine methods/procedures for conducting ERS by various entities
- Identify methods used to conduct vertical datum transformation from the ellipsoid to the chart datum
- Develop a publication that summarizes the findings from the above studies

Workshop(s)

- Participation in FIG Working Weeks, regional conferences and other major Commission events (see Calendar of Events) with dedicated technical sessions and/or workshops as appropriate.

Publication(s)

- FIG Working Weeks will include technical papers on specific issues and presented by Working Group members and other invited experts.
- Handbook on “best practices” for the use of GNSS in vertical positioning relative to the ellipsoid for hydrographic surveying.
- Proposals for IHO Manual (in collaboration with WG 4.2).

Timetable

- Ongoing work will be reported at FIG Working Weeks during the term of this plan

Beneficiaries

- FIG member associations, hydrographic surveyors in government, industry, academia and the IHO.

Working Group 4.2 – Standards and Guidelines for Hydrography

Policy issues

- Assist in the development and recognition of standards of competency;
- Assist in the development of technical standards and guidelines;
- Cooperation with sister organizations and other appropriate bodies;

Chair

Andrew Leyzack (Canada), e-mail: andrew.leyzack@dfo-mpo.gc.ca

Specific project(s)

- Present and promote the use of standards and guidelines to the surveying community.
- Review Standards coming from ISO TC211 (and other reputable sources) for relevance to Hydrography.
- Assess the impact of international standards on current industry practice.
- Represent Commission 4 on the FIG Standards Network
- Promote recognition of professional pathways.
- Review IHO and other Manuals of Hydrography

Workshop(s)

- Participation in FIG Standards Network meetings and other major Commission events (see events section below).

Publication(s)

- FIG Working Weeks will include technical papers and/or reports to the FIG Standards Network on emerging standards, guidelines and specific issues.
- Ongoing contribution to the maintenance of the FIG Guide on Standardisation.

Timetable

- Ongoing work will be reported at FIG Working Weeks during the term of this plan and according to a timetable to be developed by the Working Group Chair.
- Working group to present a final report at FIG Congress, 2014.

Beneficiaries

- FIG Standards Network
- Sister organizations and other (national) agencies.
- FIG member associations, surveyors in industry and government, academia
- Instrumentation and software producers.

Working Group 4.3 –Multi-Sensor Systems for Hydrographic Applications

Policy issues

- Assist in the development of technical guidelines for sensor integration (best practises).
- Cooperation with sister organizations and other appropriate bodies (e.g., IHO, IMO).
- Cooperation with other FIG Commissions (e.g., Commission 5).

Chair

Prof. Dr. Volker Böder (Germany), Email: volker.boeder@hcu-hamburg.de

Specific project(s)

- Liaise with working group 4.2 to upholding the standards of hydrography.
- Report on the development, possibilities and limitations of new technologies
- Organization of a Symposium with the working title "Integrating Sensors in Hydrography"

- Assist in the development of technical guidelines for sensor integration (e.g. - hydrographic sensors and their characteristic descriptions (e.g., function, accuracies, etc.):
 - sensor coordinate systems;
 - algorithms;
 - calibration procedures;
 - interoperability of sensors for surveying
 - quality management.

Workshop(s)

- Participation in FIG Meetings and other major Commission events.
- Organization of a Symposium with the working title "Integrating Sensors in Hydrography".

Publication(s)

- FIG guidelines/statement for/on Multi-Sensor Systems.
- Proposals for IHO Manual (in collaboration with WG 4.2).

Timetable

- Draft publications will be presented at FIG Working Weeks during the term of this plan and according to a timetable to be developed by the Working Group Chair.
- Symposium "Integrating Sensors in Hydrography" (working title) 2012.
- Working group final report: dedicated session, FIG congress, 2014.

Beneficiaries

- FIG member associations, manufacturers and users of survey equipment, governments, standardisation organisations, decision makers, surveying businesses, individual surveyors.

Working Group 4.4 – Maritime and Marine Spatial Information Management

Policy Issues

- Assist in the development and promotion of marine and coastal spatial information management issues supported by hydrography and hydrographic data and information.
- Cooperation with sister organizations and other appropriate bodies.
- Cooperation with other FIG Commissions.

Chair

Professor Dr. Jonathan Li, E-mail: junli@uwaterloo.ca

Specific project(s)

- Cooperate with, and represent the interests of FIG Commission 4 to, IMO in the development of an e-Navigation data framework (e.g., harmonization of data models among stakeholders).
- Cooperate with IHO on the continuing development and expansion of S-100 to support hydrographic- and hydrographic-related spatial information management.
- Cooperate with appropriate stakeholders (e.g., IHO-MSDIWG) on the development of concepts and principles that impact and are impacted upon by hydrography (e.g., MSDI,

marine spatial planning and management, marine data models and applications, marine cadastre etc.).

- Present and promote the above concepts, principles and outcomes to the international surveying community.

Study Groups

Study Group 4.4.1 Marine Spatial Data Infrastructure

Chair: Dr. Bheshem Ramlal, MRICS

Senior Lecturer and Chartered Land Surveyor

Head of Department

Department Geomatics Engineering and Land Management

The University of the West Indies

St. Augustine

Email: Bheshem.Ramlal@sta.uwi.edu

Study Group 4.4.2 Remote Sensing of Coastal and Marine Waters

Chair : Professor Dr. Jonathan Li, PEng, SMIEEE, OLS/OLIP

Professor of Geomatics

Department of Geography & Environmental Management

Interdisciplinary Centre on Climate Change

Faculty of Environment, University of Waterloo

200 University Avenue West, Waterloo, Ontario, Canada N2L 3G1

Tel: +1-519-888-4567 ext. 34504

E-mail: junli@uwaterloo.ca

Workshop(s)

Participation in / contribution to:

- FIG Working Weeks, regional conference with dedicated technical sessions and/or Workshops as appropriate;
- International hydrography-related workshops and events.

Publication(s)

- Possible publication(s) on MDSI, and marine spatial information management.

Timetable

- Working Group Chair will make reports at FIG Working Weeks (2011-2013).
- Working group to present a final report at FIG Congress, 2014.

Beneficiaries

- International maritime community;
- Sister organizations and other (national) agencies;
- FIG member associations, surveyors in industry and government, academe;
- Marine spatial information management community.

Working Group 4.5 – Hydrography in Africa

Policy issues

- To raise the awareness of hydrography in all African countries.
- To make available its potentials to various countries (Africa).
- To enunciate its potentials as a vital component and catalyst to nation building.
- To promote free exchange of information among all those engaged in Hydrography.

Chair

Angela Etuonovbe (Nigeria), e-mail: aetuonovbe@yahoo.com

Specific project(s)

- Organize seminars and workshops on the potentials of hydrography in several countries.
- Promote recognition of hydrography by organizing charity walks.
- Communicate the activities of Commission 4 and other FIG events to African member countries.
- Liaise with working group 4.2 to uphold the standards of hydrography.

Workshop(s)

- Represent working group 4.5 and introspect FIG in world hydrographic events.
- Work with FIG Task Force on Africa, as agreed with its leadership, and represent the interest of Commission 4.

Publication(s)

- Report all events / activities carried out by the working group.
- FIG working weeks will include technical papers on specific issues and presented by working group members and other invited experts.

Timetable

- Ongoing work will be reported FIG Working Weeks during the term of this plan and according to a timetable to be developed by the Working Group Chair.
- Working group to present a final report at FIG Congress, 2014.

Beneficiaries

- FIG member- and Sister Associations involved in hydrography.
- Policy makers and Hydrographers
- Surveyors in industry and Government
- Universities and educational Organizations.

6. Co-operation with Sister Organisations

6.1 FIG and IHO¹

Commission 4 currently represents FIG on the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)² jointly with IHO and ICA. The commission will also support the IHO in its Capacity Building Initiatives with representation on the IHO Capacity Building Committee (CBC). Commission 4 will also support the IHO on any appropriate technical initiatives.

6.2 FIG and the International Federation of Hydrographic Societies (IFHS)³

Commission 4 continues to cooperate with the IFHS and will continue to lend its support towards sponsoring IFHS conferences and other initiatives. It is important for Commission 4 to maintain contact with all national Hydrographic Associations (whether members of the IFHS or not) to foster communications and cooperation for the betterment of the profession.

7. Co-operation with the United Nations agencies

Commission 4 will participate in co-operation with the United Nations agencies on topics that are related to commission expertise (e.g. marine cadastre, data framework for e-Navigation etc.) and on guidance by FIG Council.

8. Cooperation with other FIG Commissions

Commission 4 will, for example, collaborate with Commission 5 to review and revise (where required) FIG Publication 37, Vertical Reference Surface for Hydrography. Commission 4 will also collaborate with other FIG Commissions as appropriate.

9. Representation to FIG Networks and Task Forces

Commission 4 will appoint representatives to the following FIG initiatives:

- Africa Task force

¹ FIG and IHO cooperate under a Memorandum of Understanding (MOU) which was signed in Athens, May 2004. Our liaison is IHB Director, Hugo Gorziglia.

² The role of the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) is to develop and up-date international standards of competence for Hydrographic surveyors and to review the academic programme of educational institutions that are seeking IHO accreditation of their Hydrographic training courses. The IBSC is composed of 4 representatives from FIG, 4 from IHO and 2 from the ICA. Our liaison officer with the IBSC is Gordon Johnston.

³ FIG and the International Federation of Hydrographic Societies (IFHS) cooperate under a MoU which was signed in Cairo, April 2005. The task has been mandated to Commission 4. FIG liaison with the IFHS is Simon Ironside.

- Standards Network
- Climate Change Task Force
- National and International Boundaries

10. Other Activities

Commission 4 will maintain and develop the commission's web page, with linkages to other relevant home pages and new pages or other networks for special projects, to keep commission delegates, the Hydrographic community and the public involved in and informed about the work of the commission. Commission 4 will also contribute editorials, reports and articles to Hydrographic publications including but not restricted to the Hydrographic Journal, Hydro International, The Hydrographic Review, Sea Technology and Lighthouse. Commission 4 will publish a newsletter at least once a year.

11. Calendar of Events

2011

- 11th International LiDAR Mapping Forum 2011, 07-09 February, New Orleans, Louisiana, USA
- Ocean Business 2011, 5-7 April, Southampton, UK
- U.S. Hydrographic Conference 2011, 25-28 April, Tampa, Florida U.S.A
- FIG Working Week, 18-22 May, Marrakech, Morocco
- 11th South East Asian Survey Congress, 22-24 June, Kuala Lumpur, Malaysia
- Second International FIG Workshop on 3D-Cadastres, 16-18 November 2011, Delft, the Netherlands
- Hydro 2011, 7–10 November, Fremantle, Western Australia.

2012

- Shallow Survey Conference 2012, 20-24 February Wellington, New Zealand
- Oceanology International 2012, March 13 -15, Excel Centre, London, UK
- IHO, April 2012, Rainier Centre, Monaco
- FIG Working Week, 6-11 May, Rome, Italy
- Canadian Hydrographic Conference, 14-17 May, Niagara Falls, Canada

2013

- FIG Working Week, April/May, Abuja, Nigeria

2014

- FIG XXIV Congress, May/June, Kuala Lumpur, Malaysia

12. Commission Officers

Commission Chair

Dr. Michael Sutherland, MRICS
Department of Geomatics Engineering and Land Management
University of the West Indies, St. Augustine
TRINIDAD & TOBAGO
Email: michael.d.sutherland@unb.ca

C-FOAM Associate
Canadian Fisheries, Oceans, and Aquaculture Management (C-FOAM)
Telfer School of Management, University of Ottawa
55 Laurier Avenue East, Ottawa, Ontario
CANADA K1N 6N5
Email: michael.d.sutherland@unb.ca

Vice Chair – Administration & Communication

Mr. Gordon Johnston, MRICS
67 Devon Road
Cheam
Surrey SM2 7PE
UNITED KINGDOM
Tel. + 44 208 661 1650
Fax + 44 208 643 1890
Mob:+44 7966 937369
E-mail: gordon.johnston1@orange.net

Working Group 4.1 – Ellipsoidally Referenced Hydrographic Surveys

Mr. Jerry Mills
NOAA/NOS - Office of Coast Survey
SSMC 3, Room 6842 - N/CS3x2
1315 East-West Highway
Silver Spring, MD 20910-3282
USA
Tel. + 1 301-713-2780 x116
Fax: + 1 301-713-4533
Email: Jerry.Mills@noaa.gov

Working Group 4.2 – Standards and Guidelines

Mr. Andrew Leyzack, C.L.S.
Canadian Hydrographic Service
Central and Arctic Region
867 Lakeshore Road
P.O. Box 5050, Burlington, Ontario L7R 4A6
CANADA
Tel. + 1 905 336 4538

Fax + 1 905 336 8916
E-mail: andrew.leyzack@dfo-mpo.gc.ca

Working Group 4.3 – Optimizing Multi-Sensor Systems for Hydrographic Applications

Prof. Dr. Volker Böder
HafenCity University Hamburg (HCU)
Hebebrandtr. 1
D - 22296 Hamburg
GERMANY
Tel. +49 (0)40 428 27 5393
Email: volker.boeder@hcu-hamburg.de

Working Group 4.4 – Maritime and Marine Spatial Information Management

Jonathan Li, PhD, PEng, SMIEEE, OLS/OLIP
Professor of Geomatics
Department of Geography & Environmental Management
Interdisciplinary Centre on Climate Change
Faculty of Environment, University of Waterloo
200 University Avenue West, Waterloo, Ontario, Canada N2L 3G1
Tel: +1-519-888-4567 ext. 34504
E-mail: junli@uwaterloo.ca

Working Group 4.5 – Hydrography in Africa

Angela Etuonovbe
AnGene Surveys & Consultants
37 NNPC Housing Complex Rd
Ekpan Effurun
332101 Delta State
NIGERIA
Email: aetuonovbe@yahoo.com

Michael Sutherland
Chair, FIG Commission 4
www.fig.net/commission4
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