



NIOHC CL 03-2016  
25<sup>th</sup> January 2016

## Annex A

### COURSE OUTLINE

A course that helps students explore the wider uses of marine data and the linkages with other forms of geospatial information. It will answer the question as to how hydrography fits into the world of geospatial data. Designed by practitioners for practitioners, it combines background on standards and theory with practical demonstrations and hands on experience of data reconciliation, data manipulation and how to enable your data to be part of the MSDI.

It adds detail to the ideas given within the IHO Policy Framework within IHO Publication C-17. It draws upon the recommended syllabus set out by the IHO/FIG/ICA in the Standards of Competence for Nautical Cartographers, with content drawn from IIC's recognised course. And it goes beyond the traditional world of hydrographic services into the wider application of data types from other marine science branches and from the land.

At the end of the course students will have a greater appreciation of the role of hydrographic information within the wider local, regional, national and international spatial data infra-structure. Through hands on experience, attendees will be better equipped to apply the knowledge in the workplace with a greater understanding of standards and techniques use in data manipulation and management.

All attendees are encouraged to bring with them, or gain access to datasets from their own organisation that can be used guided by tutors in the lab work.

### COURSE CONTENTS

#### DAY 1 – EXPLORING DATA: FINDING AND SHARING DATA

Tutor led presentations and demonstrations

- Exploring the wider uses of marine data by others.
- Discovering how other datasets can complement traditional products.
- Crowdsourced data and its role.

Tutor led demonstration and discussions

- Applying GIS to access data.

Case Studies

- How geospatial data can be used in port management
- How geospatial data assist coastal zone management

## **DAY 2 – TECHNIQUES FOR RECONCILING AND FUSING DATA**

Tutor led presentations

- Formats and standards including S-100.
- Vertical and horizontal de-confliction.
- The available toolsets.
- Selecting and collecting external data.

Tutor led practical demonstrations and lab work

- Preparing data; format conversions, datum reconciliation and geo-referencing.
- Practicing merging datasets, identifying the issues that arise.

## **DAY 3 – The MSDI AND HYDROGRAPHY**

### **Part 1 – The Context of an MSDI**

Tutor led presentations

- Why an SDI? The reasons behind an SDI and the benefits.
- Putting the “M” into MSDI: the relationship between the land and the sea.
- Frameworks and guidelines including those of the IHO.
- Standards: international and national.
- Spatial layers: base and thematic.
- Understanding the bathymetric layer.
- How hydrography fits into an SDI.

Tutor led demonstration and discussions

- Case Study: a national SDI exemplar.
- Case study: a regional SDI exemplar.

### **Part 2 – Practical Considerations**

Tutor led presentations

- Data models and data dictionaries.
- Infrastructure requirements for hosting SDI's: the hardware and software.
- Cataloguing data holdings; meta-data standards.
- Designing access to data repositories.

- Facilitating data exchange and retrieval.

Tutor led practical demonstrations and lab work

- MIOs – the IHO Standards.
- Designing an MIO.

## **DAY 4 – CONTRIBUTING TO A MSDI**

### **Part 3 – Presenting Your Data**

Tutor led practical demonstrations and lab work

- Preparing data and data harmonization.
- Validating the data or caveating the data?
- Preparing data for presentation and sharing.
- Presenting the data; techniques for visualization.

### **Part 4 – Data Management: keeping track – keeping control**

Tutor led presentations and discussions

- Data Management
- Workflow management
- Copyright and controlling data usage and access.

## **DAY 5 – MSDI IN ACTION: CASE STUDIES**

### **Part 1 – Case Studies**

Tutor led demonstrations and lab work

- Built on the experiences and issues of attendees, tutors will lead the group through demonstrations based on appropriate case studies and analogous situations that may help collective problem solving.

### **Part 2 – Conclusion**

Tutor led discussions

- Re-visiting the benefits
- Re-visiting the issues
- Where next for MSDI?