



Options in Capacity Building

Underpinning the Blue Economy

Derrick R. Peyton
IIC Technologies

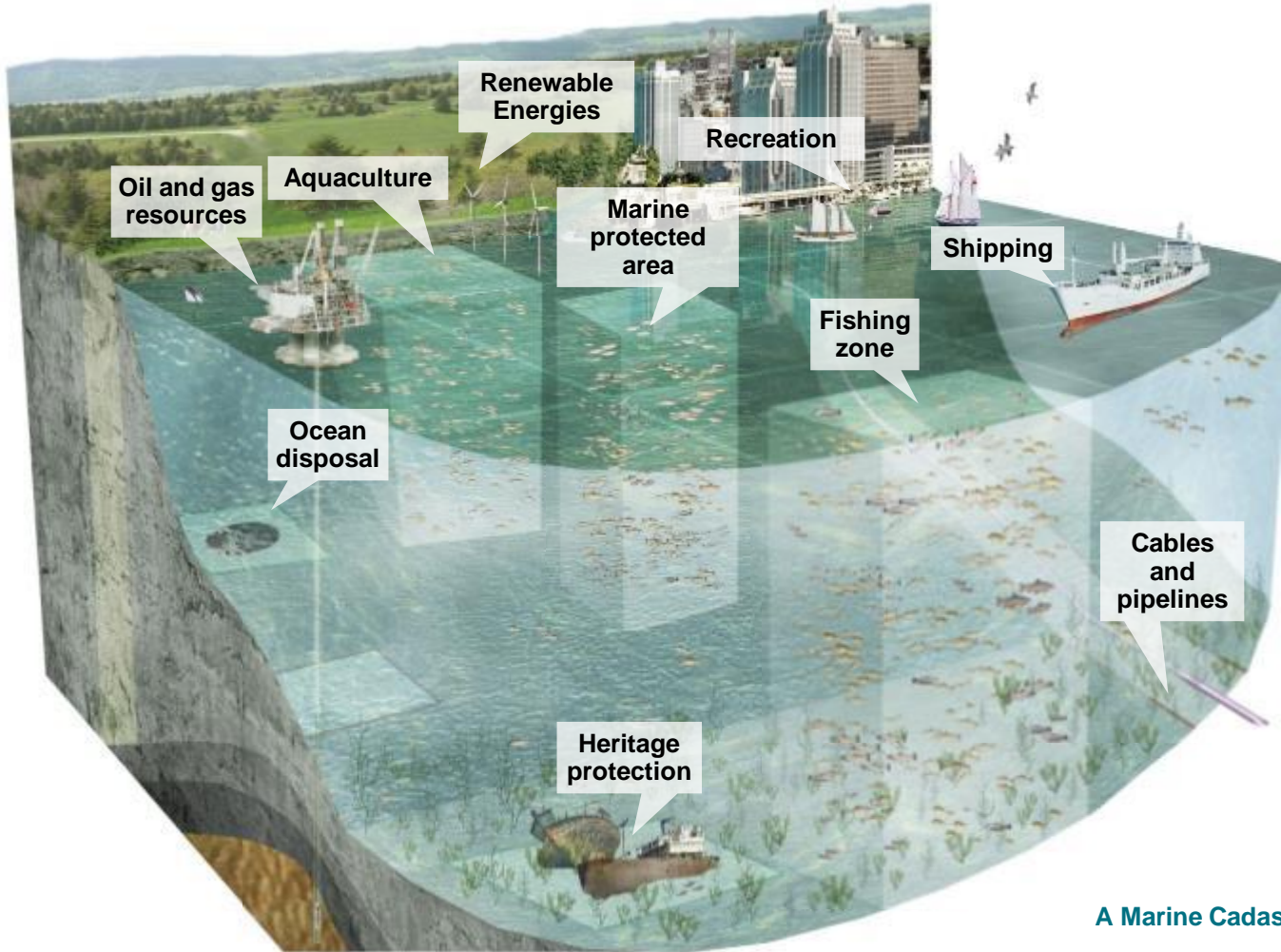
14th MACHC Meeting
December 9-13, 2013

- Blue Economy Defined
- Challenges (SDI, MSDI, Standards)
- Hydrographic Data Value Chain
- Capacity Building in support of the Blue Economy
- IIC Technologies support

The term “*blue economy*” means... *the sum of all economic activity associated with the oceans, seas, harbours, ports, and coastal zones.*

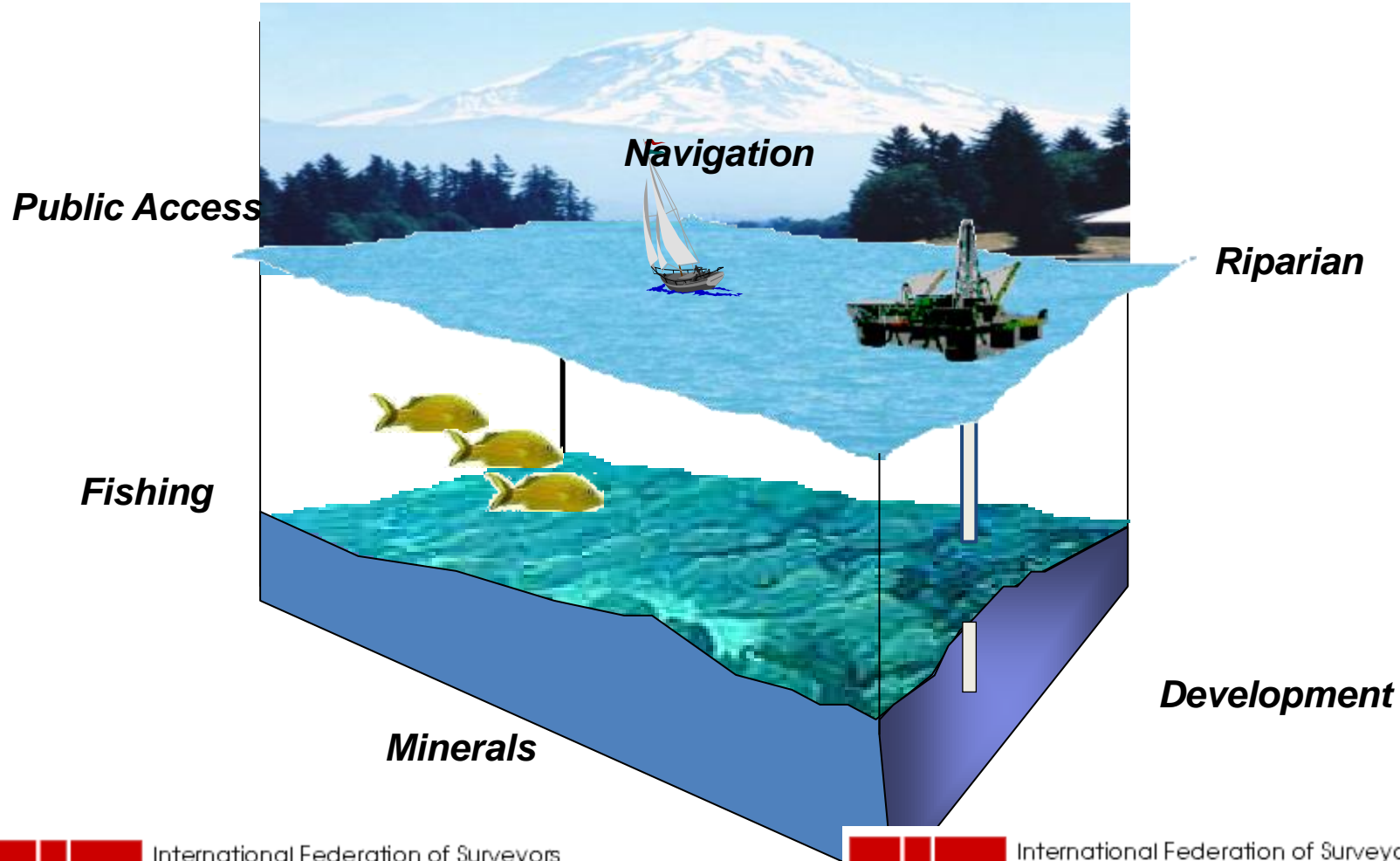
“Hydrography being the fundamental enabler...”

The Ocean's Economic Activity



Complex
4 Dimensional
Multi Agency
Multi Science
Legal Rights
Inland Waters?

A Marine Cadastre



Marine Spatial Data Infrastructure encompasses marine geographic and business information in its widest sense and could typically include:

- seabed topography (bathymetry)
- geology and geomorphology
- marine infrastructure (e.g. wrecks, offshore installations, pipelines and cables)
- administrative and legal boundaries
- areas of conservation and marine habitats
- physical oceanography
- maritime transport and ports

Policy &
Governance
(People)

Technical
Standards
(Standards)

Information
Systems
(IT)

Geographic
Content
(Data)

Transfer Standards ??

Technical
Standards
(Standards)

Under ISO 19100/S100 Framework

S101 = Supports ENC

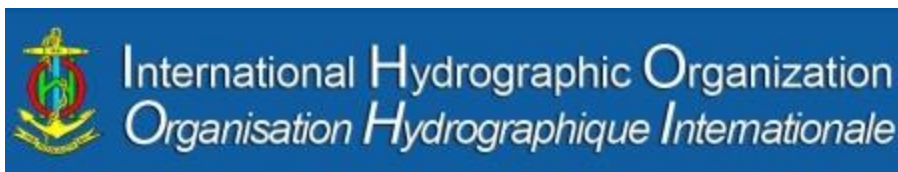
S102 = Supports Bathymetry



Under ISO 19100/S100 Framework

S??? = Supports MSDI ??

S??? = eNavigation



OGC Compliant

Out to the web...

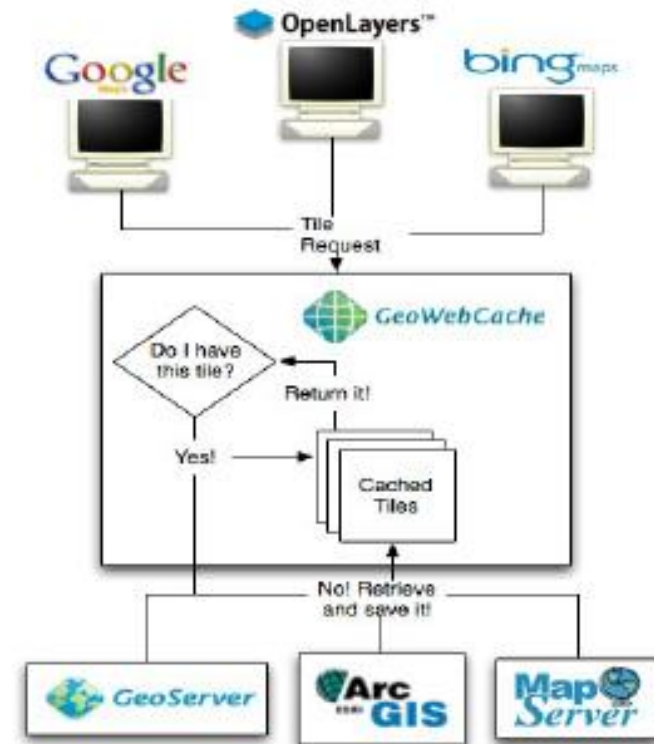
GeoRSS WMS WFS KML GeoJSON



OGC Compliant



In from datasources...



The IHO has an active program to create capacities, which helps countries to develop and improve their hydrographic capabilities. The capacity-building projects are carried out, very often, in cooperation with other international organizations and the growing involvement of the industry. All of these directly support the Blue Economy

Capacity Building is defined as the process by which the Organization assesses and assists **in sustainable development and improvement** of the States, to meet the objectives of the IHO and the Hydrography, Cartography and Maritime Safety obligations and recommendations described in UNCLOS, SOLAS V and other international instruments.

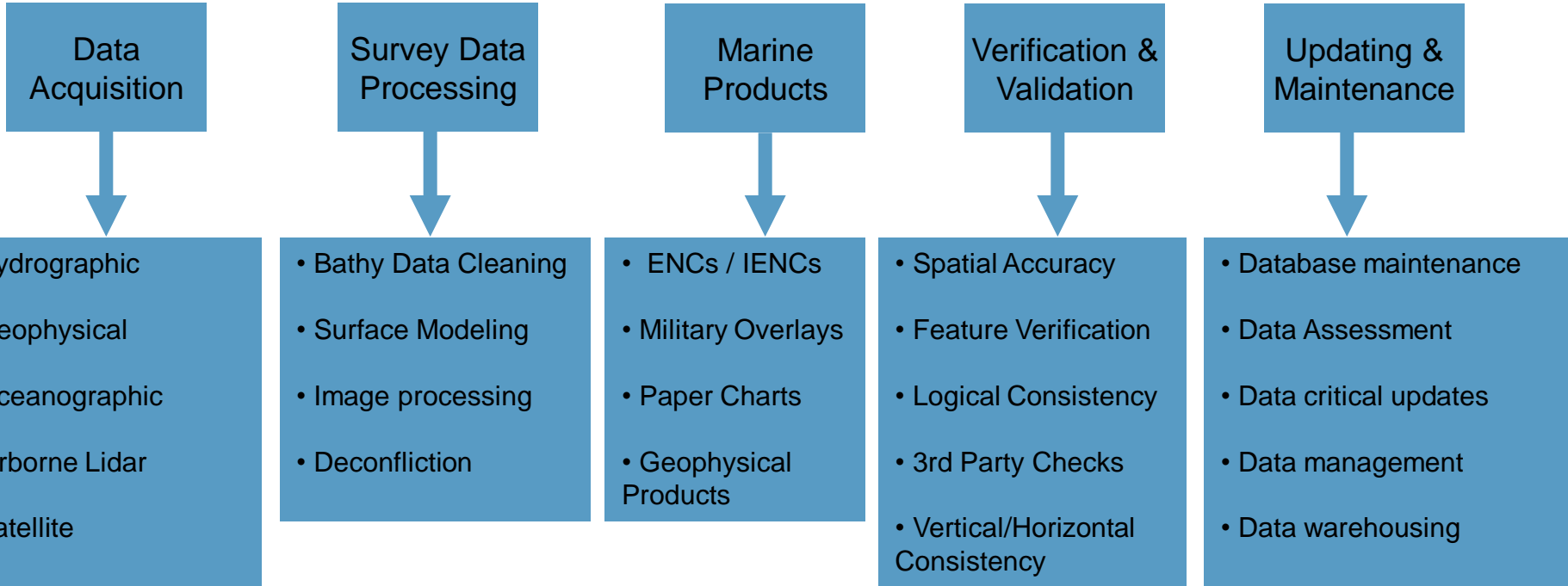
IIC Technologies provides a range of services designed to assist with sustainable capacity building including data acquisition and/or processing to field sheet and/or database deliverables marine products (ENCs, IENCs, Paper Charts, AMLs, etc) data verification and validation updating and maintenance

Other capacity building services include training programs, providing skilled resources to supplement indigenous resources and providing consultancy to assist in gaining the best from complex procurements.

Hydrographic Data Value Chain



Data Value Chain



Capacity Building

Full IHO Cat B S8 (Nautical Cartography)

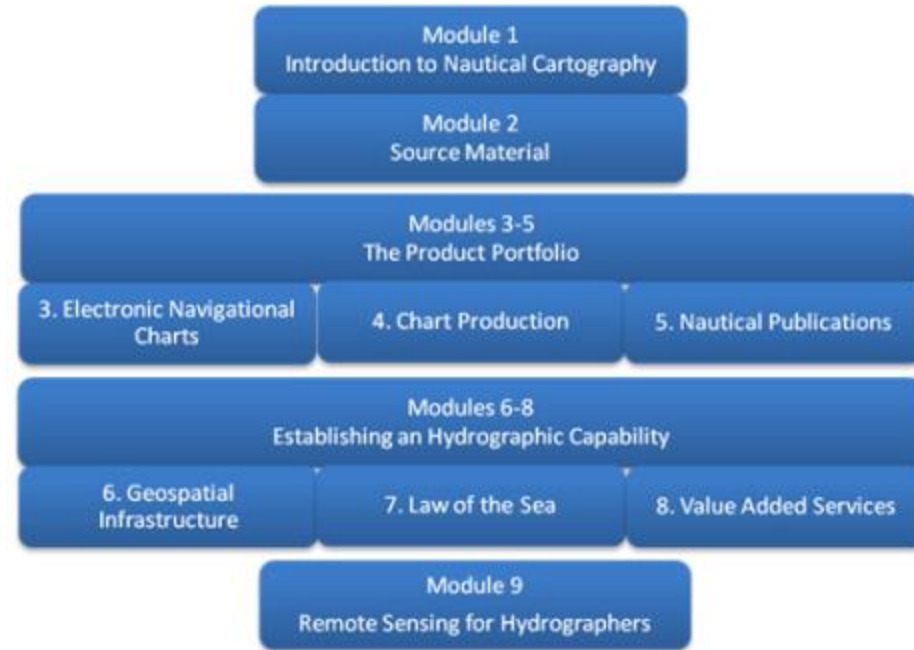


Figure 2. The modular design of IIC's S8 nautical cartography course.

Planned for 2014 - IHO Cat B S8 (Nautical Cartography) (Portable)....
(recognition pending)

New Graduates !



S8 Cat 'B' course for Royal Navy Oman



S8 Cat 'B' course for IIC Technologies

Marine Spatial Data Infrastructure and MIO Production

Day 1: Introduction to SDI and MSDI

MSDI Content, Development and Results

Day 2: Bathymetric Database Systems

Toolsets, Functionality, Workflow, Case Studies

Day 3: Hydrographic Production Databases

Workflow, External Source Data Import

Servers Software and Hardware

Project Management

Day 4: Production Generation

Workflow and Options

Data Validation and History Tracking, Validation Workflow

Tracking Changes, Data Dissemination

Day 5: MSDI Challenges

Final MSDI Implementation

Training Capacity - Surveying



Planned for 2014 - Full IHO Cat B S5 (Hydrographic Surveying)
(recognition pending)



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MARINE CHARTING SOLUTIONS

A map is the greatest of all epic poems. Its lines and colors show the realization of great dreams.

- Gilbert Grosvenor

PROGRAMS

- GEOSPATIAL
- MARINE
- GEO SURVEYS

Welcome to the IIC Academy

IIC Academy seeks to be an "International centre of excellence" in geospatial sciences and is the training arm of IIC Technologies, which brings over two decades of global expertise in geospatial projects and services. The Academy's industry-focused programs are flexible, customizable and range from short term fundamental to long term advanced levels.

Using best practices, the academy empowers its learners to be industry-ready and succeed at the workplace. The academy also supports interdisciplinary applied research that has a

A photograph of a modern, multi-story building with a glass facade and a prominent entrance, likely the IIC Academy building.

Supplementary Capacity



Secondments of skilled staff to provide onsite, on the job training and mentoring

Customised training drawn from the full range of course content within the S5 and S8 syllabi.

Brazil, DHN	2 Data Production Cartographers	3 Months
LINZ, New Zealand	1 Data Production Cartographer	9 Months
GCS, Saudi Arabia	6 Hydrography, 10 Cartography	1+ Years
KIOST, Korea	Establish Cat B S8 Program	2 year



S8 MI & M3 (AHO Australia)



S5 & S8 (GCS Saudi Arabia)

Module M4 (Courtesy of LINZ)

Hydrography, as being an fundamental enabler to the Blue Economy, may be expected to play a larger role than what is traditional expected of it.

Capacity Building involve more than training. It should be a strategy that involves a long time vision towards the development of human resources to support a regions own Blue Economy.

Thank You

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