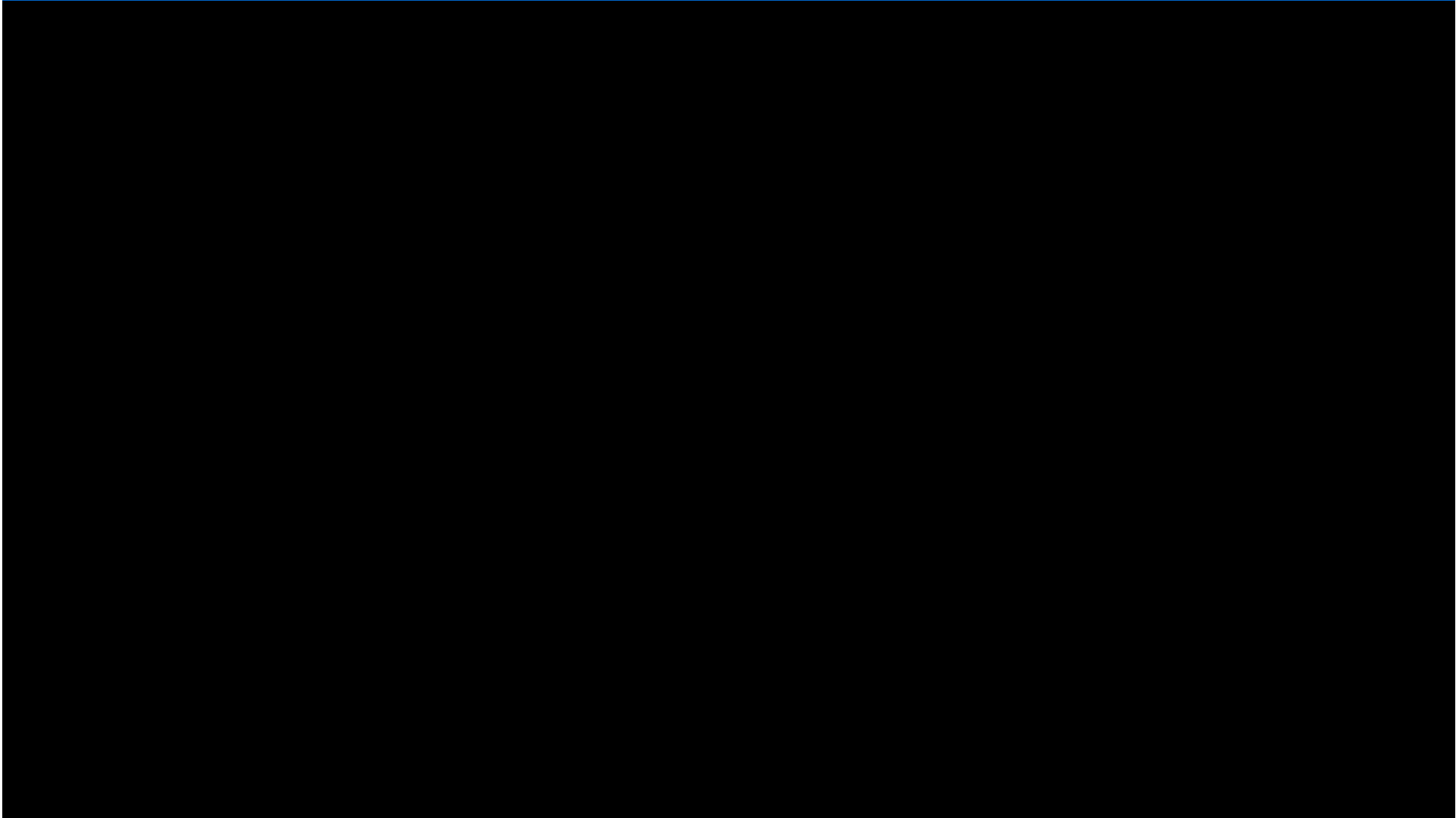


The IHO Perspective  
- the issues and the future



# Why is hydrography more important than ever ?

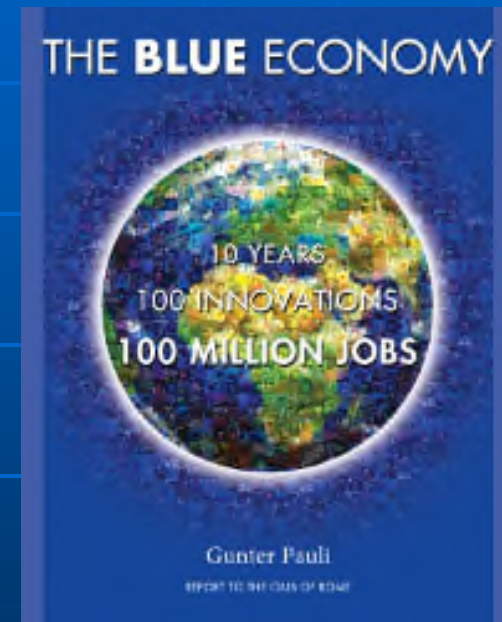




*Why should people care ?*

*“ ... because the sea is an increasing resource for :*

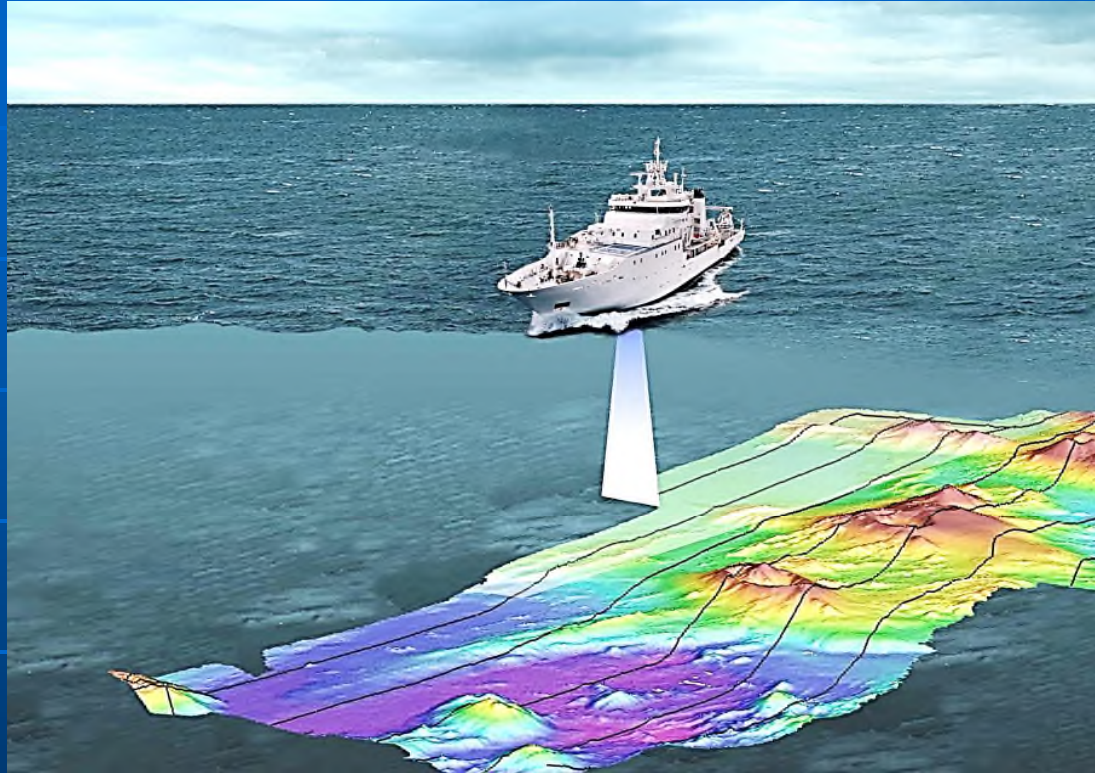
- Energy
- Food
- Medicines
- Minerals
- Recreation
- Telecommunications
- Transportation
- ...



- the sea is now the workplace of the blue economy
- ... but, it can't be done effectively without maps and charts



*Is there a problem ?*

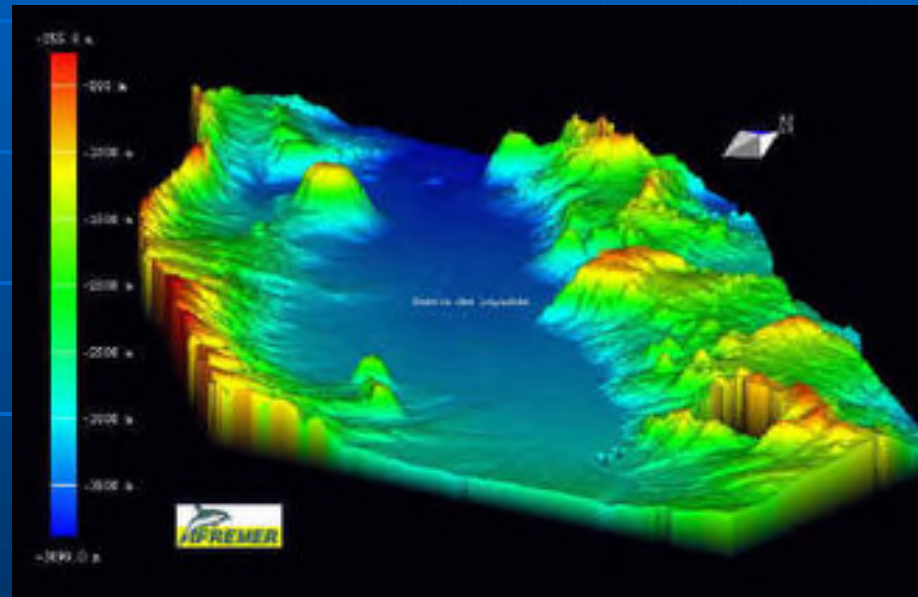


*“ ... we have significantly higher resolution maps of the Moon, Mars and Venus than most of the world’s seas and oceans ”*



# Survey and charting status 2015

Deep Ocean - less than 10% has been measured directly  
(depths from echo sounders often more than 60 miles apart)



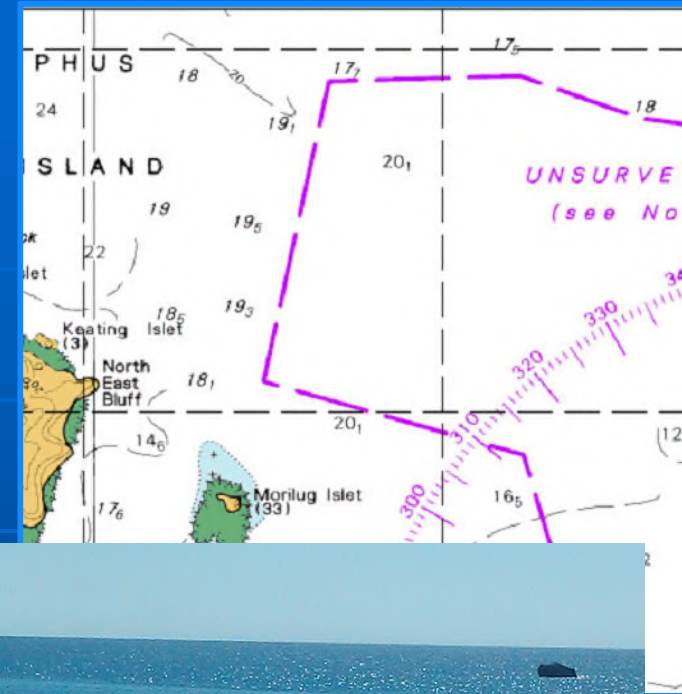
Coastal waters > 50% is unsurveyed



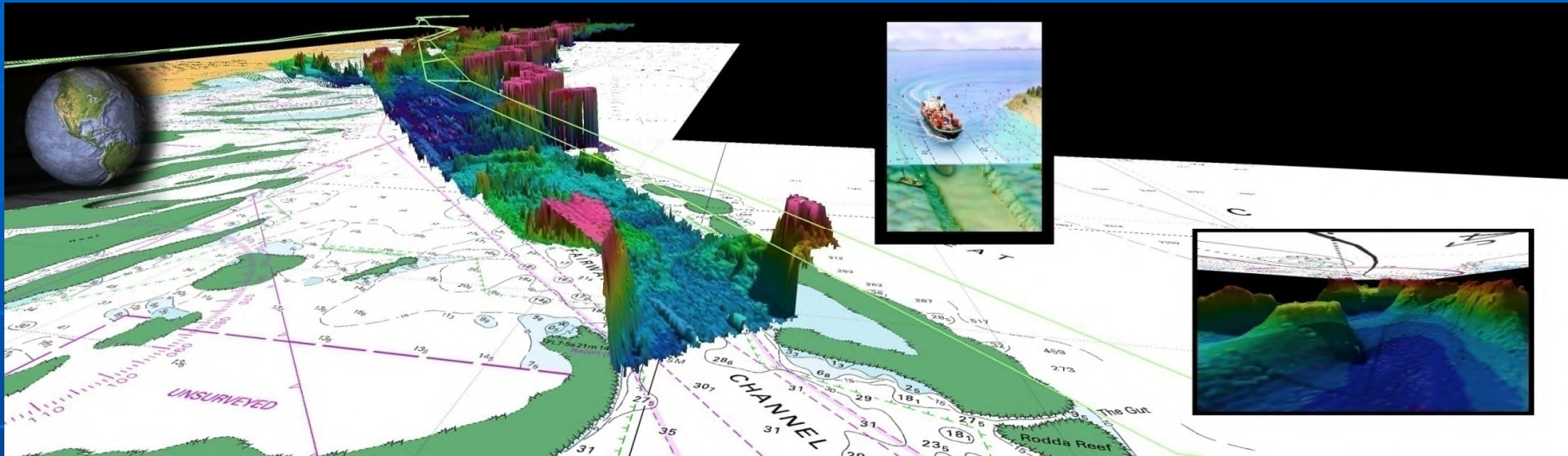
# Global Survey Status - Coastal waters

## Un-surveyed :

- SW Pacific > 95%
- Polar regions > 95%
- Caribbean > 80%
- W. Africa > 80%
- Australia ~ 50%
- USA ~ 40%
- UK ~ 30%



# What is the role of the IHO ?



through the collaborative efforts of its 85 Member States  
seeks to ...

... ensure that the world's seas, oceans and navigable  
waters are adequately surveyed and charted





# IHO Programmes



- setting international standards and guidelines
- coordinating regional and global nautical charting services
- delivering hydrographic capacity building



## Some IHO standards that could affect you ...

- S-5 *Standards of Competence for Hydrographic Surveyors*
  - *Cat A and Cat B now split*
- S-44 *Standards for Hydrographic Surveys*
  - *Does S-44 cover your work?*
- S-100 *IHO Universal Data Model*
  - *based on ISO 19100*
  - *mix and match geodata*
  - *baseline data transfer standard in e-Navigation services*
  - *other uses ?*



# IHO representation

- Countries are represented by the national Hydrographer
- Observer organizations provide input and feedback at all levels -
  - IFHS
  - THSOA
  - IMarEST
  - FIG
  - WOC
  - ...
- Industry and academia can participate directly in WG's



# Current topics and plans for the future

## New and revised standards -

- S-100 - ongoing development
- S-5 and S-8
  - revised concepts for competence and training

## Marine Spatial Data Infrastructures

- open data
- move from maps to geodata

## Satellite Derived Bathymetry

## Crowd-Sourced Bathymetry



# Crowd-Sourced Bathymetry

Nothing new -

- GEBCO, hydrographic notes, port surveys, ...



# Crowd-Sourced Bathymetry

what is new ...

Using the “crowd” to get more data

Upload to the IHO Data Centre for Digital Bathymetry (DCDB)

- the global, common good, reference bathymetric data set
- upload data or metadata - remain anonymous if you wish
- supporting the safe, sustainable, cost effective use and management of the seas and oceans ⇒ SDG14

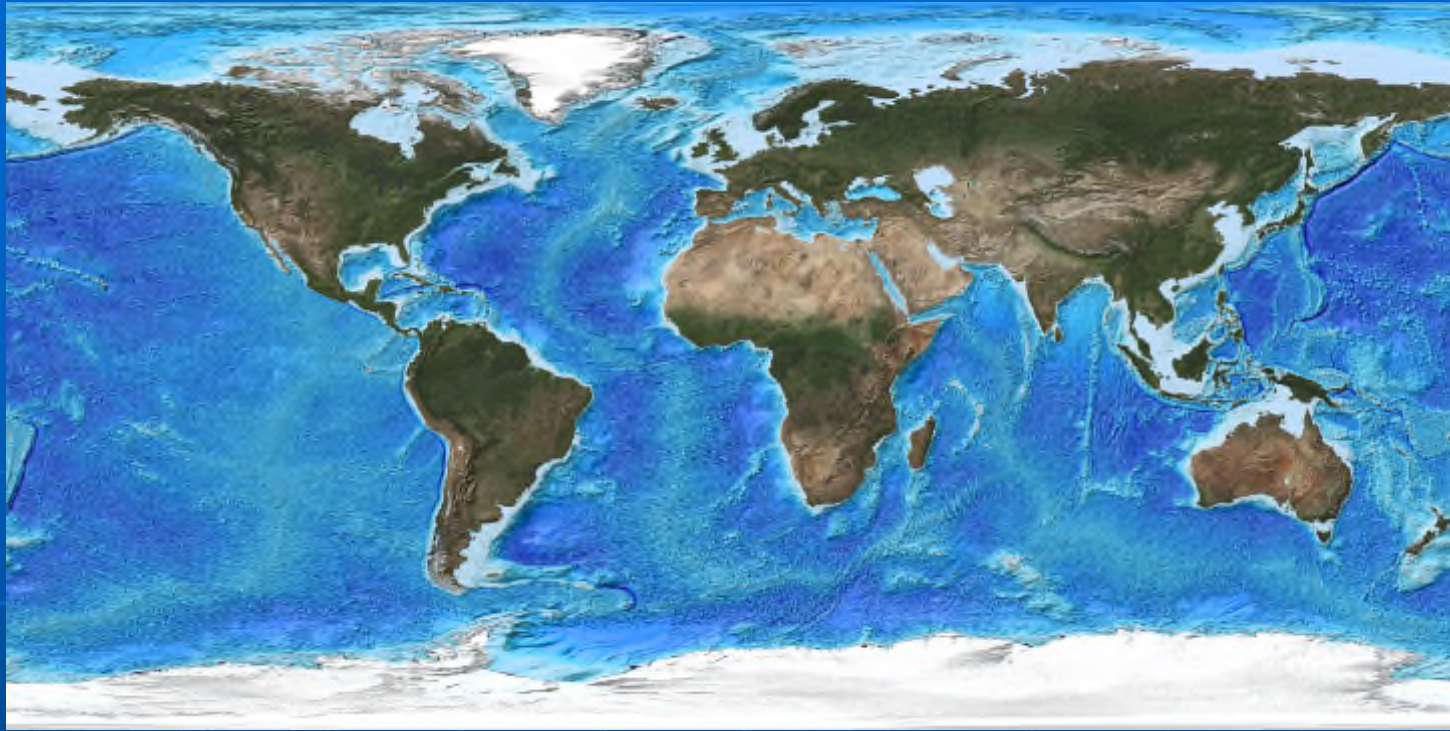


# Crowd-Sourced Bathymetry

## Who can do it ?

- ships and boats on passage - using standard E/S and GNSS + lost-cost loggers
- Commercial and scientific sector by providing data or metadata for the common good
  - new data, and
  - data already collected for scientific or commercial purposes





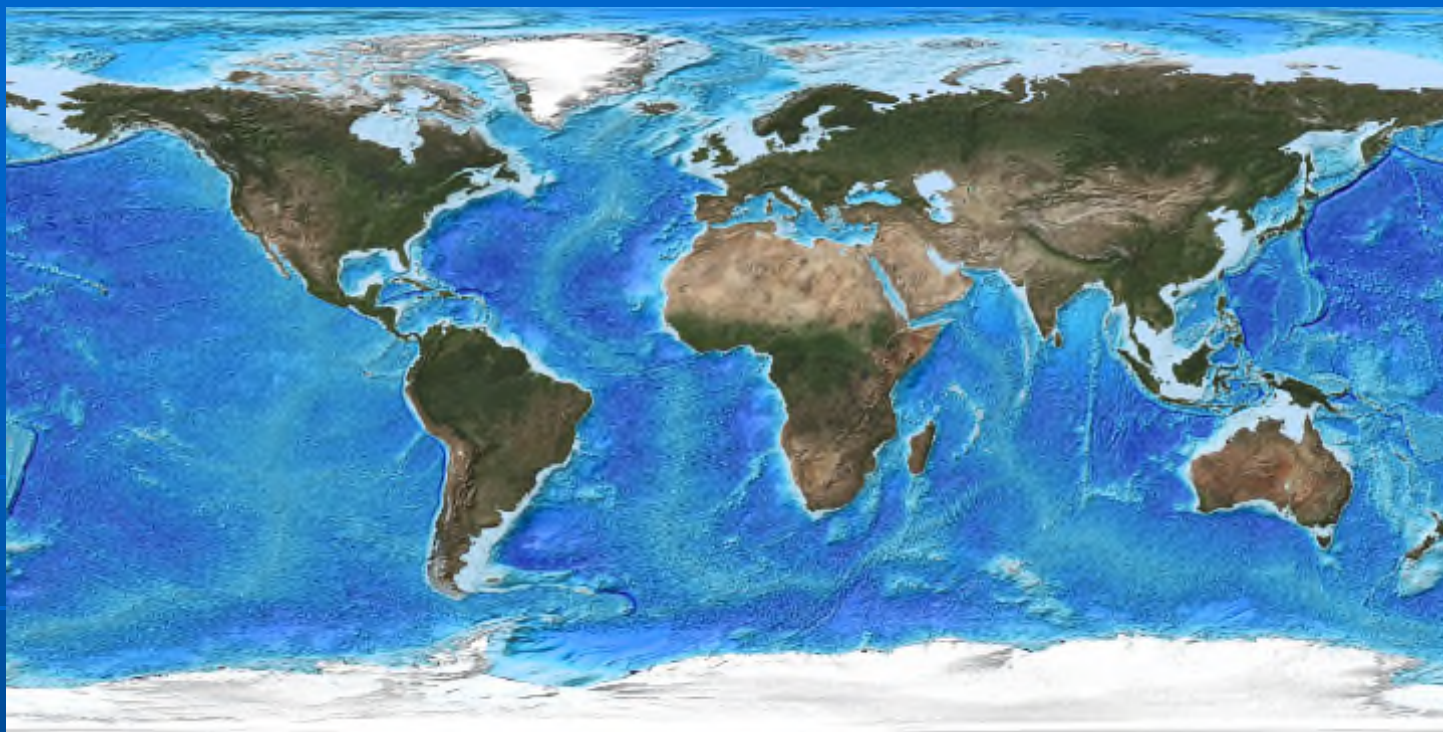
My take-home messages:

*... the IHO may well be affecting you*

*... are you happy with what is changing?*







My take-home messages:

*... hydrographic data is useful for much more than just  
the first customer*

*... existing depth data, collected for whatever reason,  
should be discoverable*



World Hydrography Day theme - 2017

*Mapping our seas, oceans and  
waterways - more important than ever*

