GSDI
Global Spatial Data Infrastructure Association

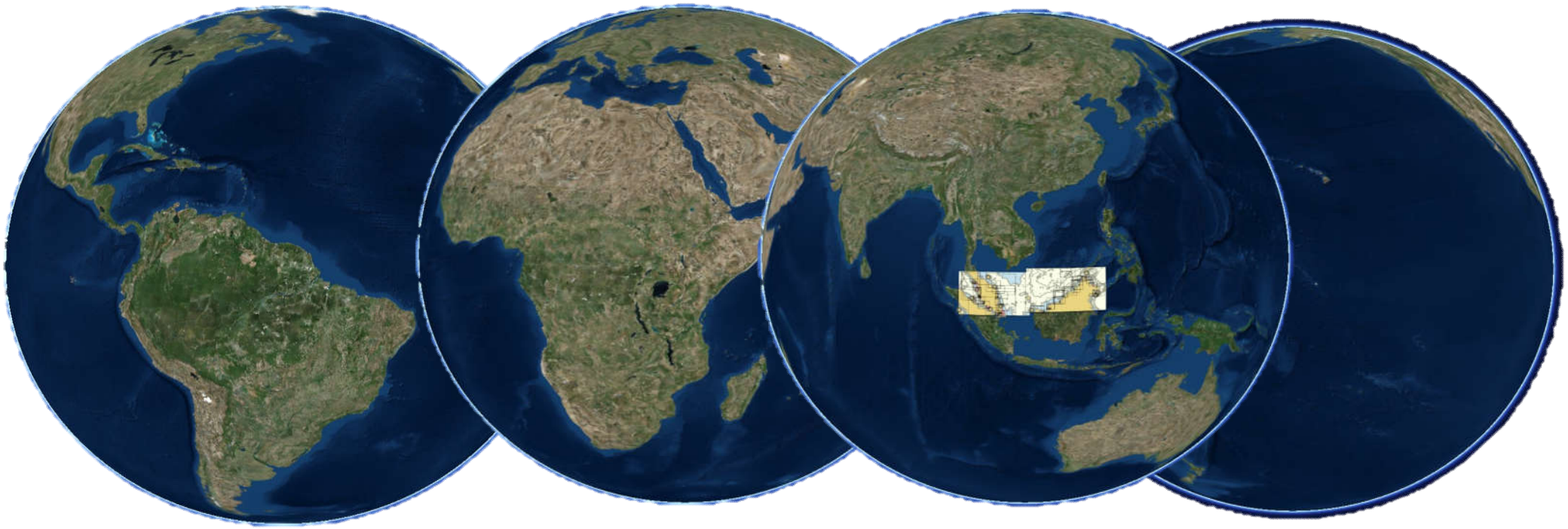
Coastal/Marine SDI Capacity Building Webinar

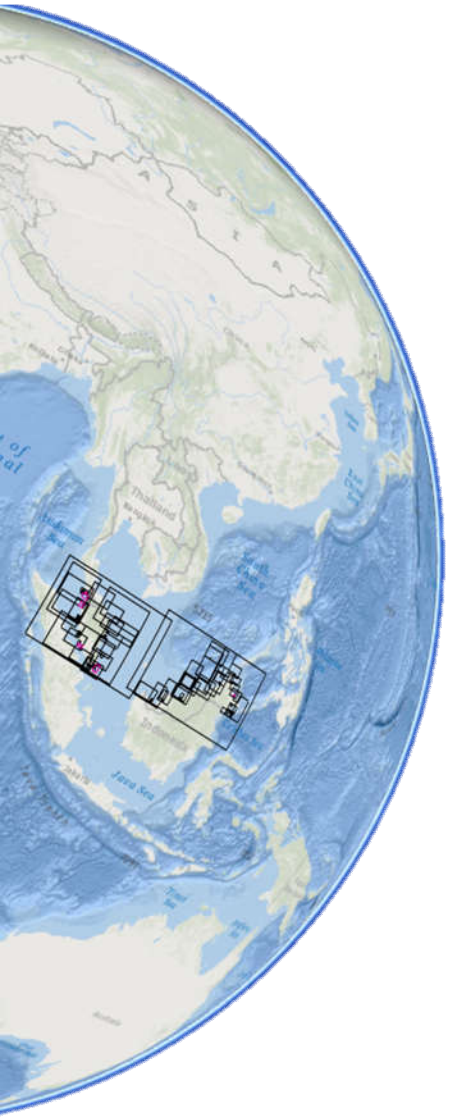
Marine SDI supporting MyGDI

29 March 2017

+60 3 3169 4400 nhc@hydro.gov.my National Hydrographic Centre NatHydroCentre

Approximately 70% of the earth is covered by water





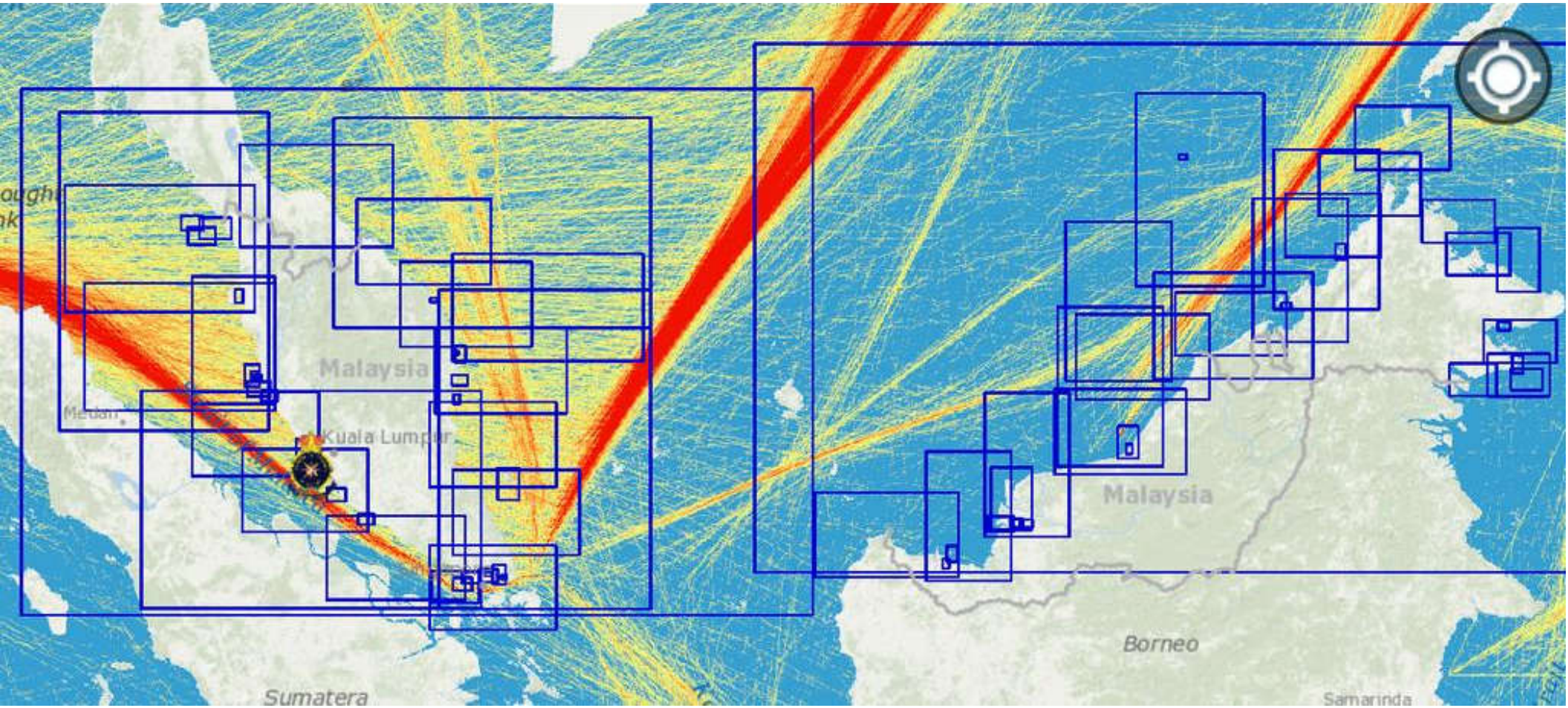
What Malaysia is the maritime nations?

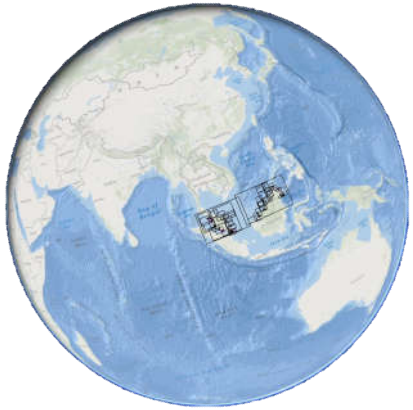
`The Making Of Malaysia As A Maritime Nation' is appropriate and relevant as it highlights Malaysia's aspiration to be a maritime nation in the true sense…..

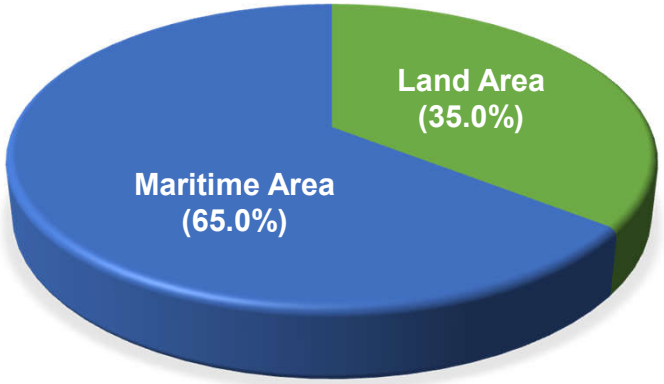
Because of our history and the close proximity of many Malaysians to the sea we are inclined to regard Malaysia as a maritime nation. We are situated on the trade routes between India and China, between Europe and the East and naturally served as a port of call between monsoons for supplies and crew for all ships plying this route.

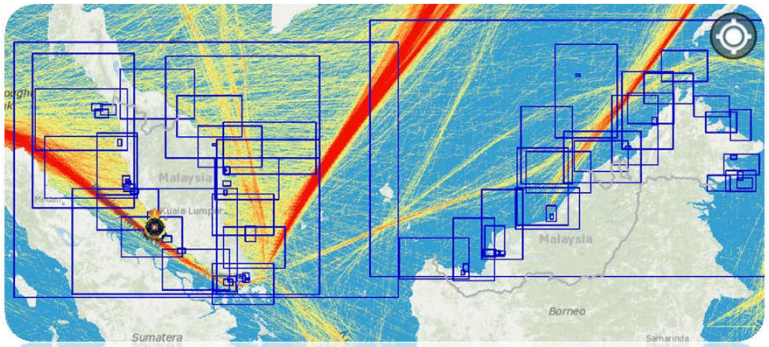
Tun Dr. Mahathir, 1997 (Malaysia‘s First International Maritime Conference**)**

Shipping Density Analysis



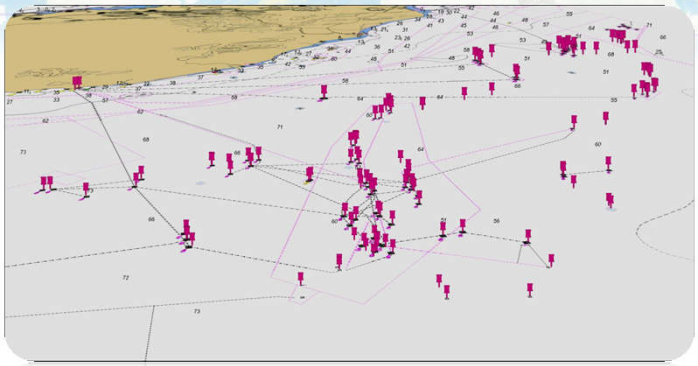






Internal Waters	94, 132 km square
Territorial Waters	65, 035 km square
EEZ	379, 820 km square
Continental Shelf	439, 373 km square

Total	598, 540 km square



Malaysia as a Maritime Country → **Marine SDI**

Marine Governance

PRIME MINISTER DEPT

- National Security Council
- Economic Planning Unit
- Maritime Enforcement Agency

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

- National Mapping Agency
- MaCGDI
- Dept of Environment
- Dept Marine Park
- Dept Irrigation & Drainage
- Dept Mineral and Geoscience
- NAHRIM
- Dept DG of Land and Mines

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

- National Oceanography Directorate
- Meteorological Dept
- Remote Sensing Agency

MINISTRY OF DEFENCE

- Royal Malaysian Navy
- National Hydrographic Centre

MINISTRY OF DOMESTIC TRADE, CO-OPERATIVES AND CONSUMERISM

- EEZ Act

MINISTRY OF AGRICULTURE AND AGRO-BASED INDUSTRY

- Dept of Fisheries
- Fisheries Development Authority

MINISTRY OF FOREIGN AFFAIRS

- Multilateral Economic and Environment Division

MINISTRY OF TOURISM AND CULTURAL

- Department of Natural Heritage

MINISTRY OF TRANSPORT

- Marine Dept
- Port Authority
- Maritime Institute of Malaysia (MIMA)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT

- Department of Town And Country Planning Peninsular Malaysia

MINISTRY OF ENERGY, GREEN TECHNOLOGY AND WATER

- Ocean Renewable Energy

Situational Analysis

Marine Data Management-Knowledge Management

Marine is Complex

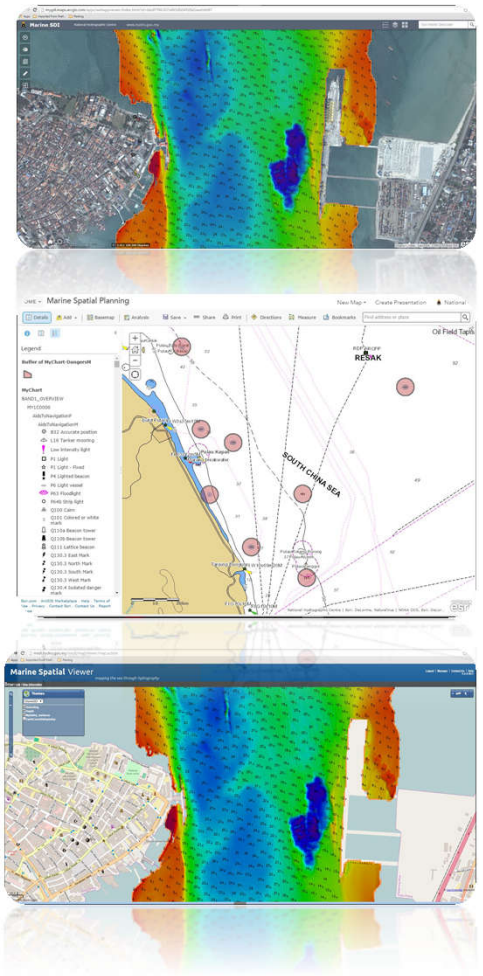
Different jurisdictions under various agencies/ministries

- Heterogeneous
- Distributed
- Autonomous

→ Need mechanism for sharing

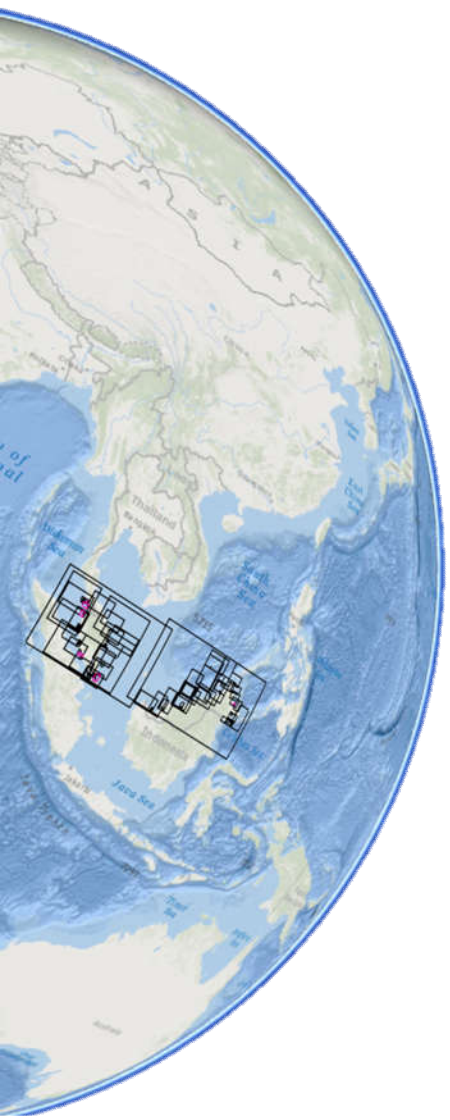
↓ Seamless Solution

Marine SDI

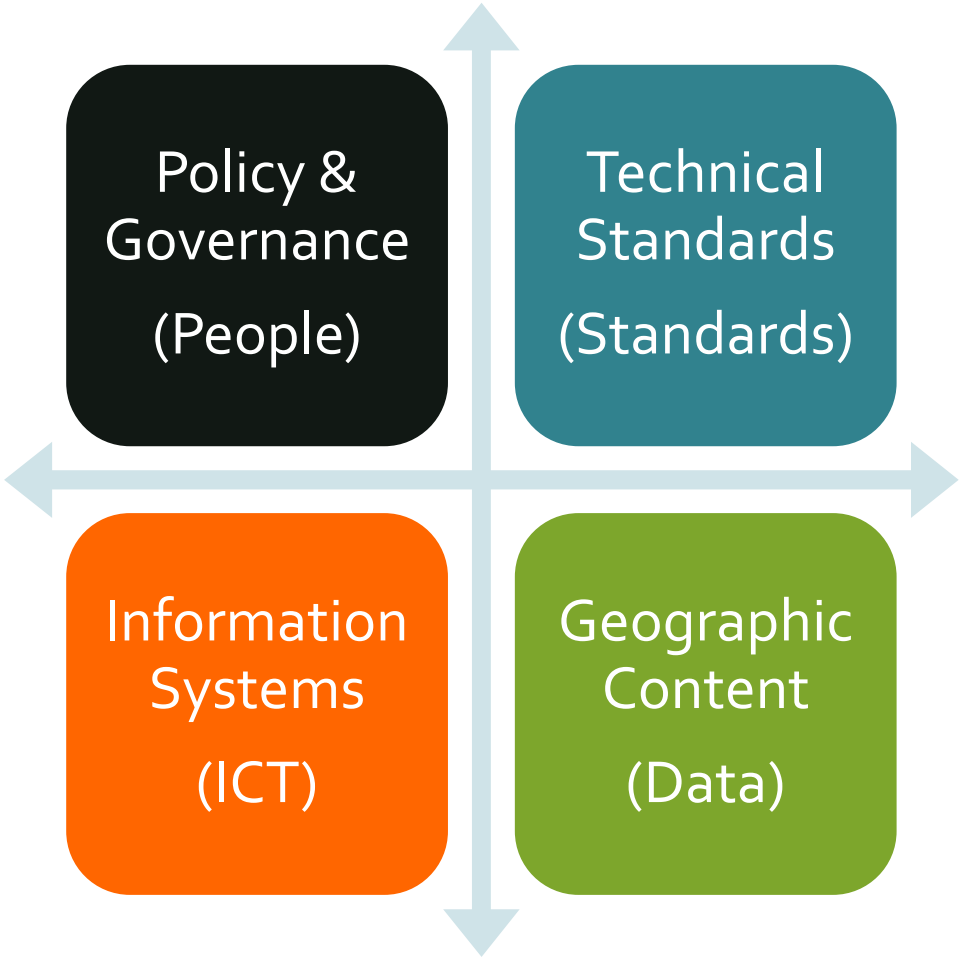


Malaysia Geospatial Data Infrastructure (MyGDI)

- MyGDI as a National Spatial Data Infrastructure (NSDI)
- Malaysian Center for Geospatial Data Infrastructure(MaCGDI) is a center under Ministry of Natural Resources and Environment (NRE)
- MaCGDI was formed in 2002 to promote the development and implementation of MyGDI
- MaCGDI plays crucial roles to spearhead the geospatial industry in Malaysia.

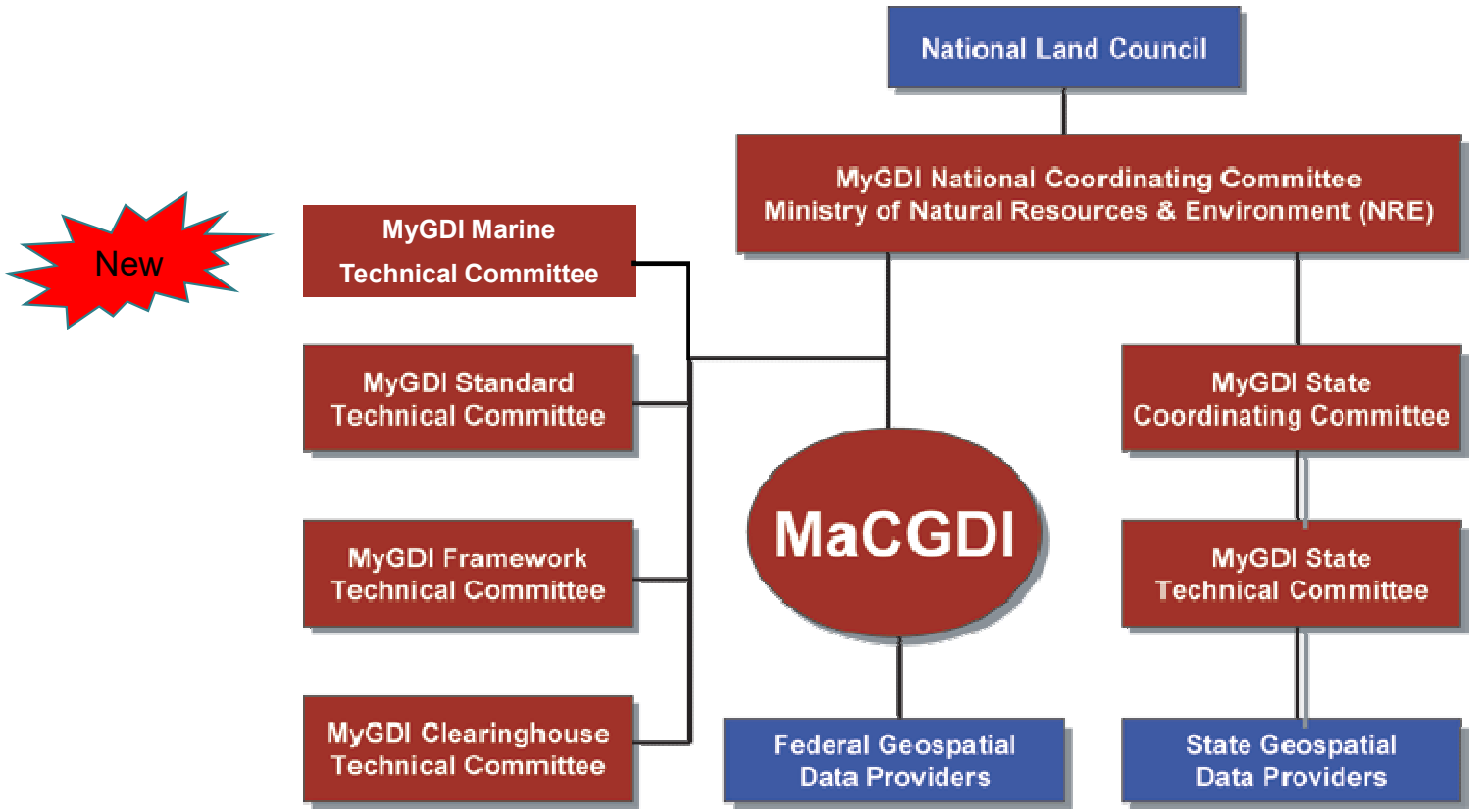


Key MSDI Components

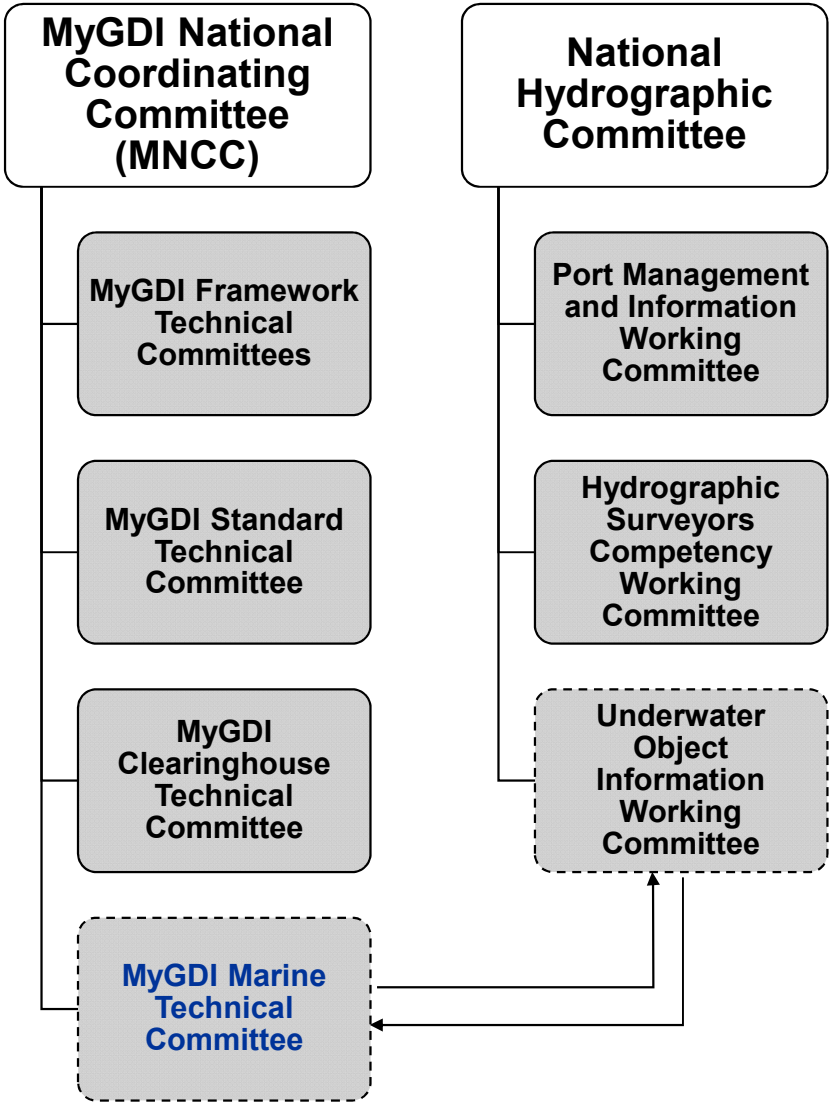


MyGDI GOVERNANCE

Policy & Governance (People)



Policy & Governance (People)



MyGDI Marine Technical Committee

Policy & Governance (People)

a. Lead Agency : National Hydrographic Centre

b. Secretariat : Malaysian Centre for Geospatial Data Infrastructure (MaCGDI)

c. Permanent Members (Data Provider/ Ownership)
(1) Department of Survey and Mapping Malaysia (JUPEM)
(2) Minerals and Geoscience Department Malaysia (JMG)
(3) Malaysian Meteorological Department (MMD)
(4) Marine Department Malaysia (JLM)
(5) Department of Irrigation and Drainage (DID)
(6) Department of Environment (DOE)
(7) Department of Fisheries Malaysia (DoF)
(8) Department of Marine Park Malaysia (DMPM)
(9) Department of National Heritage (DNH)
(10) Strategic Technology and S & T Application Division (formerly NOD), MOSTI.
(11) Ministry of Energy, Green Technology and Water (KeTTHA)
(12) National Water Services Commission (SPAN)
(13) Malaysian Communications and Multimedia Commission (MCMC)
(14) Malaysia Petroleum Management (MPM)
(15) Tenaga Nasional Berhad (TNB)
(16) Telekom Malaysia Berhad (TM)

d. Supporting Agencies
(1) National Security Council (MKN)
(2) Malaysia Remote Sensing Agency (MRSA)
(3) Ministry of Domestic Trade, Cooperatives and Consumerism (KPDNKK)

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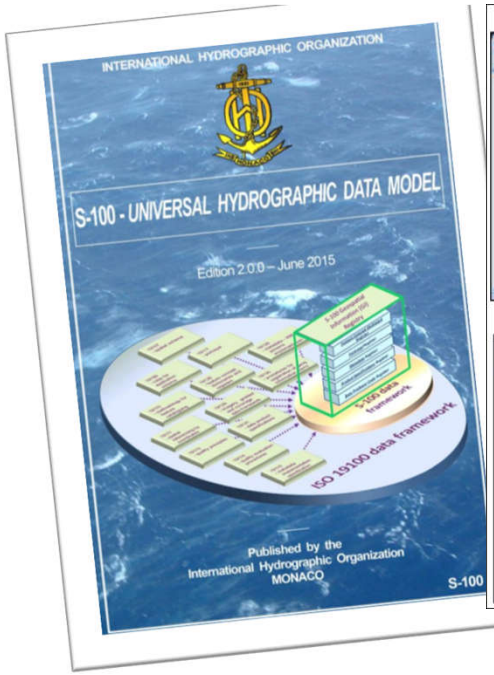
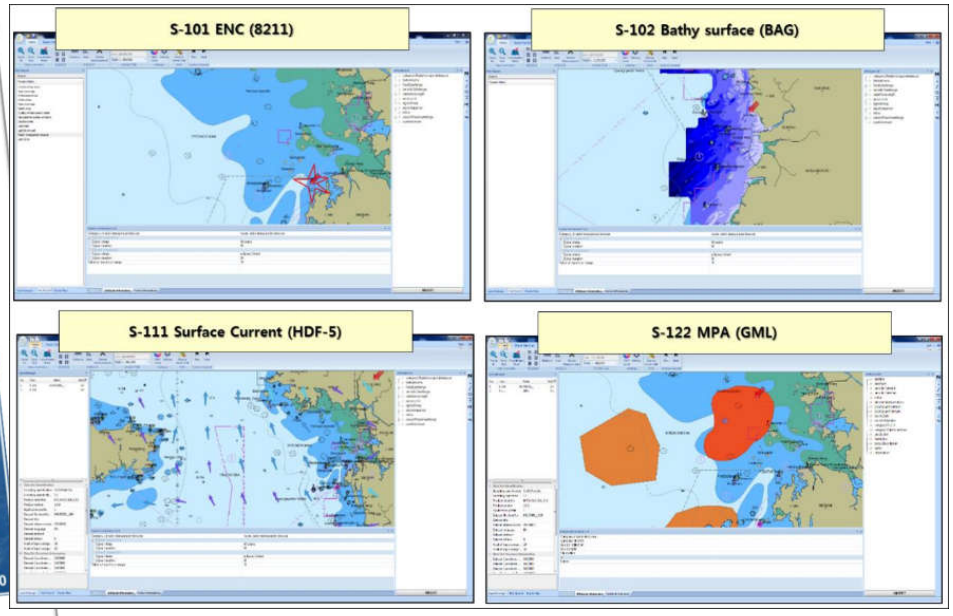
Policy & Governance
(People)

MyGDI Marine Technical Committee
6th Oct 2016

Technical Standards (Standards)





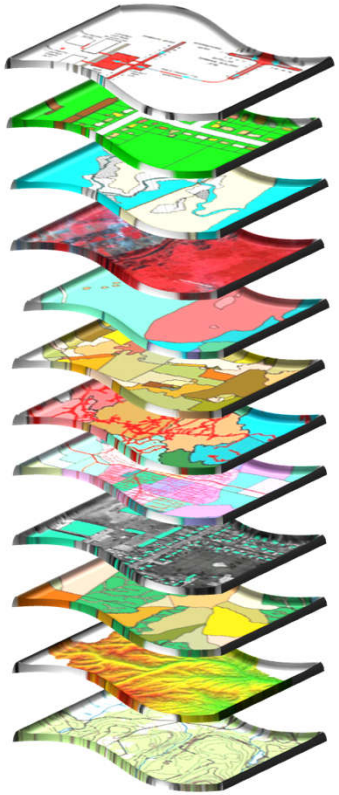
S-57 / S-100 and others product specification

OGC®
Making location count.

Data dissemination through OGC Web Service
…….WMS/WMTS/WFS/WCS etc….

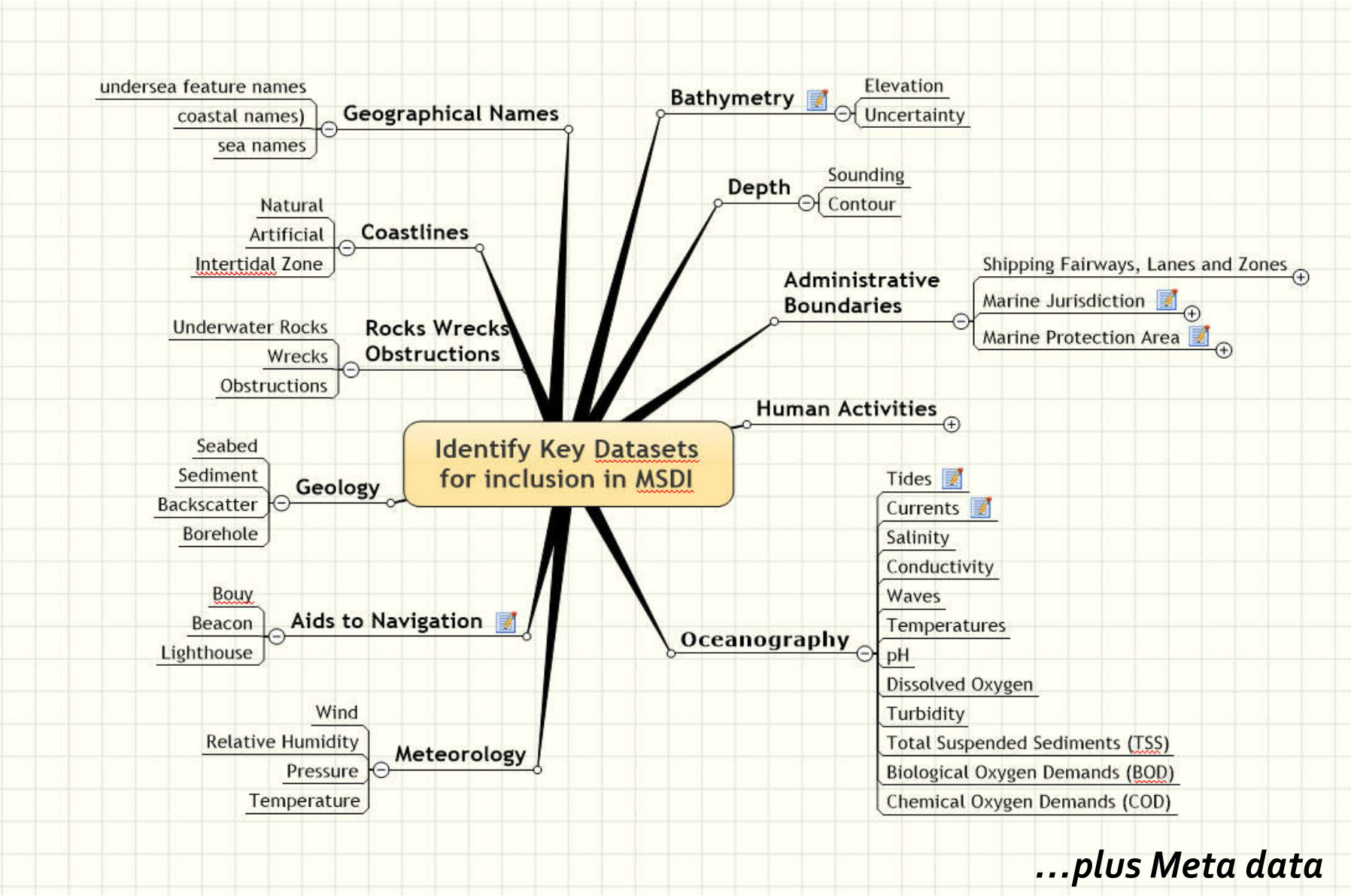
Geographic Content (Data)

Framework Data Categories



CATEGORIES	LEAD AGENCIES
Aeronautical	DCA
Built Environment	JUPEM
Demarcation	JUPEM
Geology	JMG
Hydrography	NHC
Hypsography	JUPEM
Soil	DOA
Transportation	JKR
Utility	JUPEM
Vegetation	DOA
Special Use	JUPEM
General	JUPEM

Geographic Content (Data)

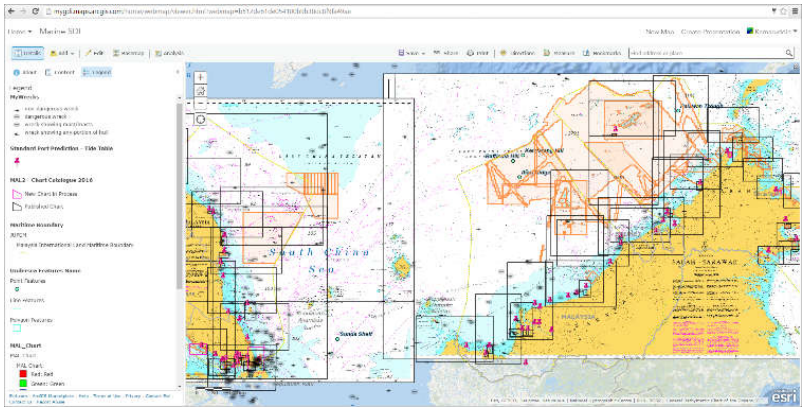


...plus Meta data

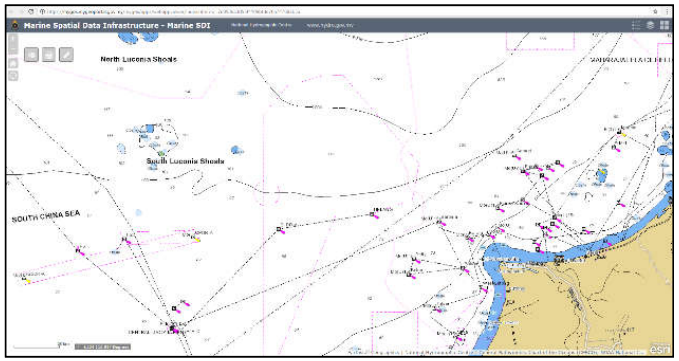
Geographic Content (Data)

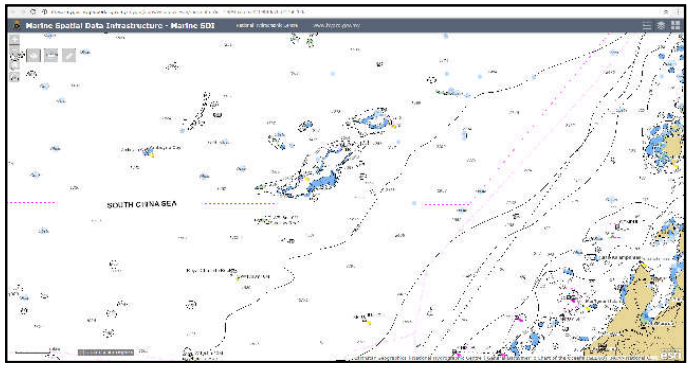
Hydrographic data and its role in MSDI

- **Raster charts as basemap**



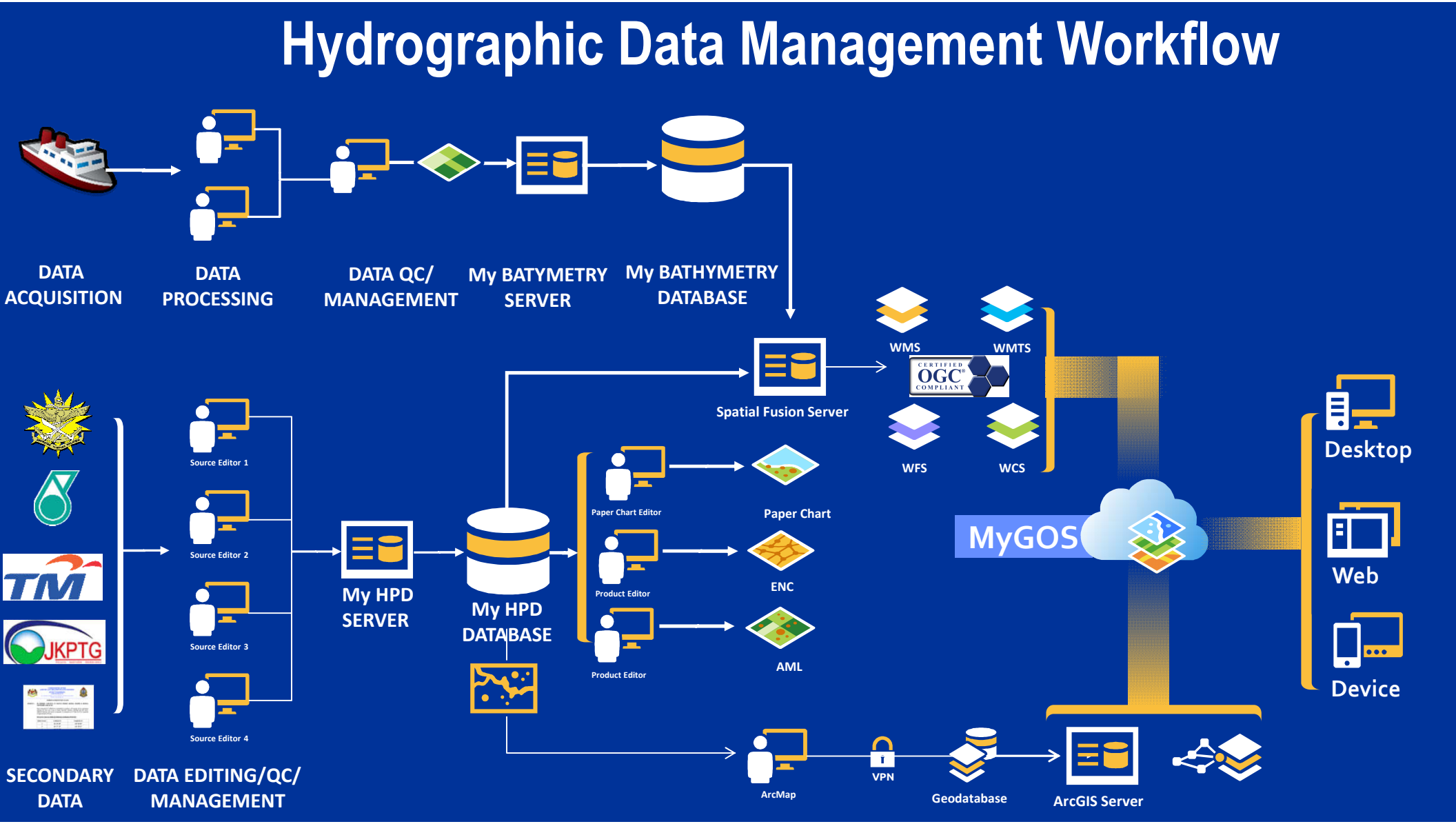
- **ENC - S57 data as operational /additional layer**





Hydrographic data sets and data infrastructure

Hydrographic Data Management Workflow



Information Systems (ICT)

MyGEOPORTAL

- Malaysia Geoportal is the visible front-end to MyGDI, the gateways through which users access the geospatial information services
- Access and distribution of geospatial information is at the heart of MyGDI project.
- This portal allows Users to explore, view and access the implementation of MyGDI, initiatives and its related applications

www.mygeoportal.gov.my

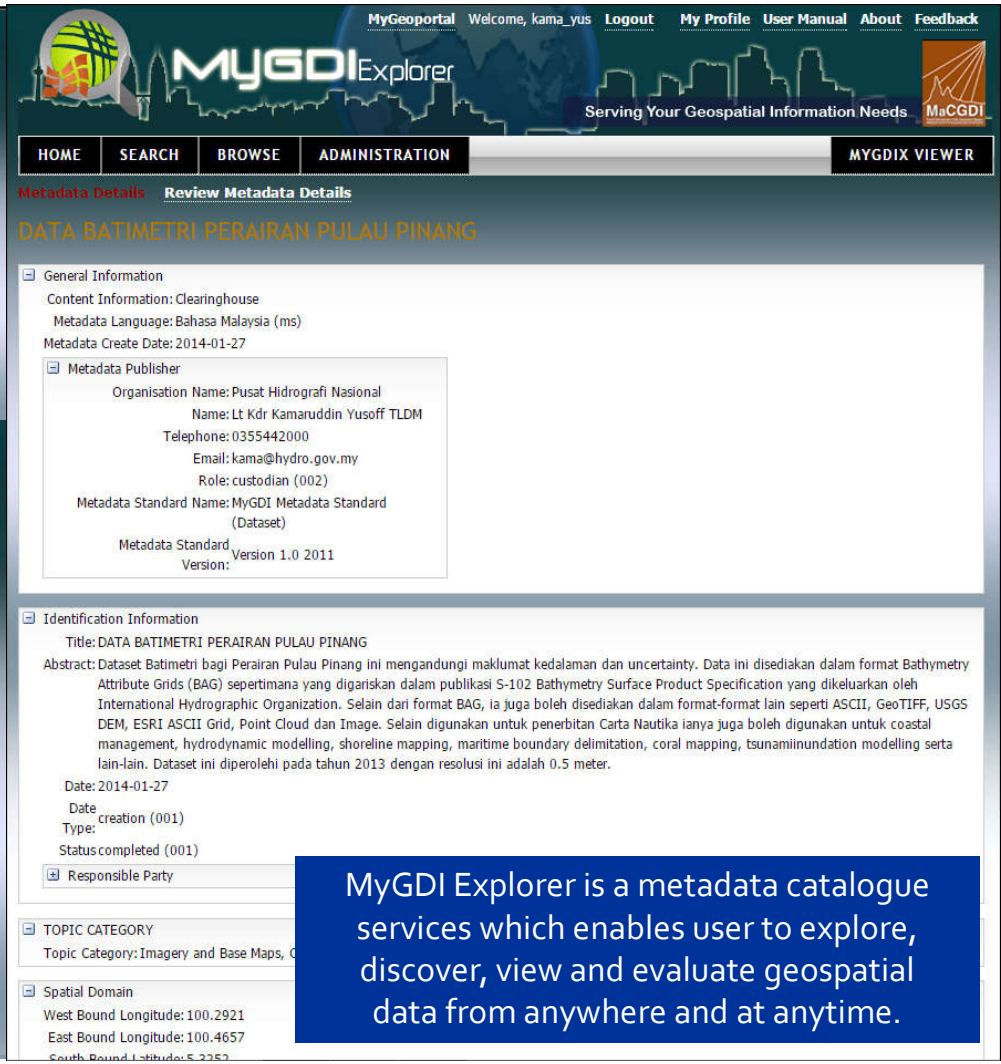
Information Systems (ICT)

MyGDI Applications

http://www.mygeoportal.gov.my/data-services

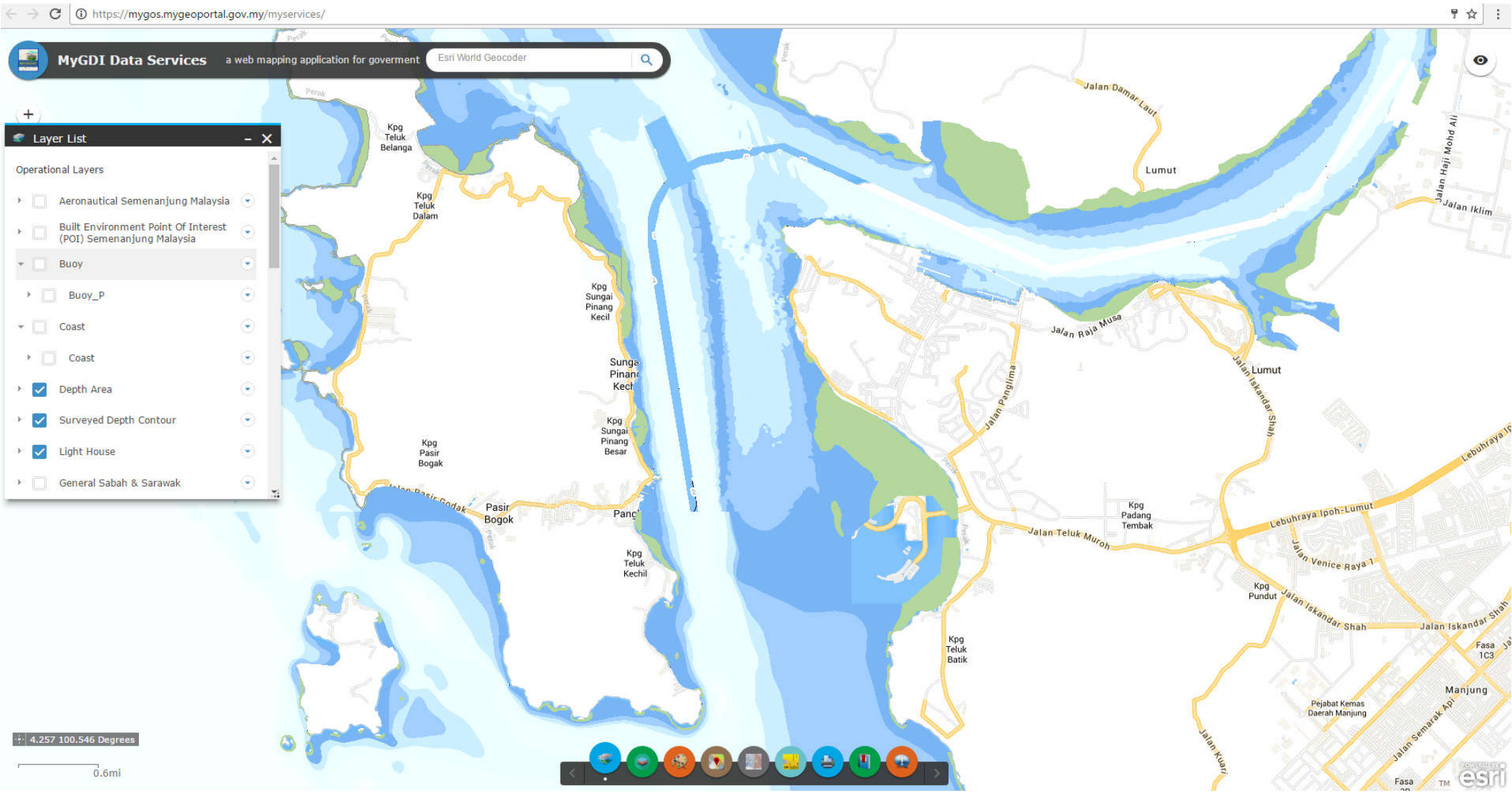
Information Systems (ICT)

MyGDI EXPLORER



MyGDI Explorer is a metadata catalogue services which enables user to explore, discover, view and evaluate geospatial data from anywhere and at anytime.

MyGDI Data Services

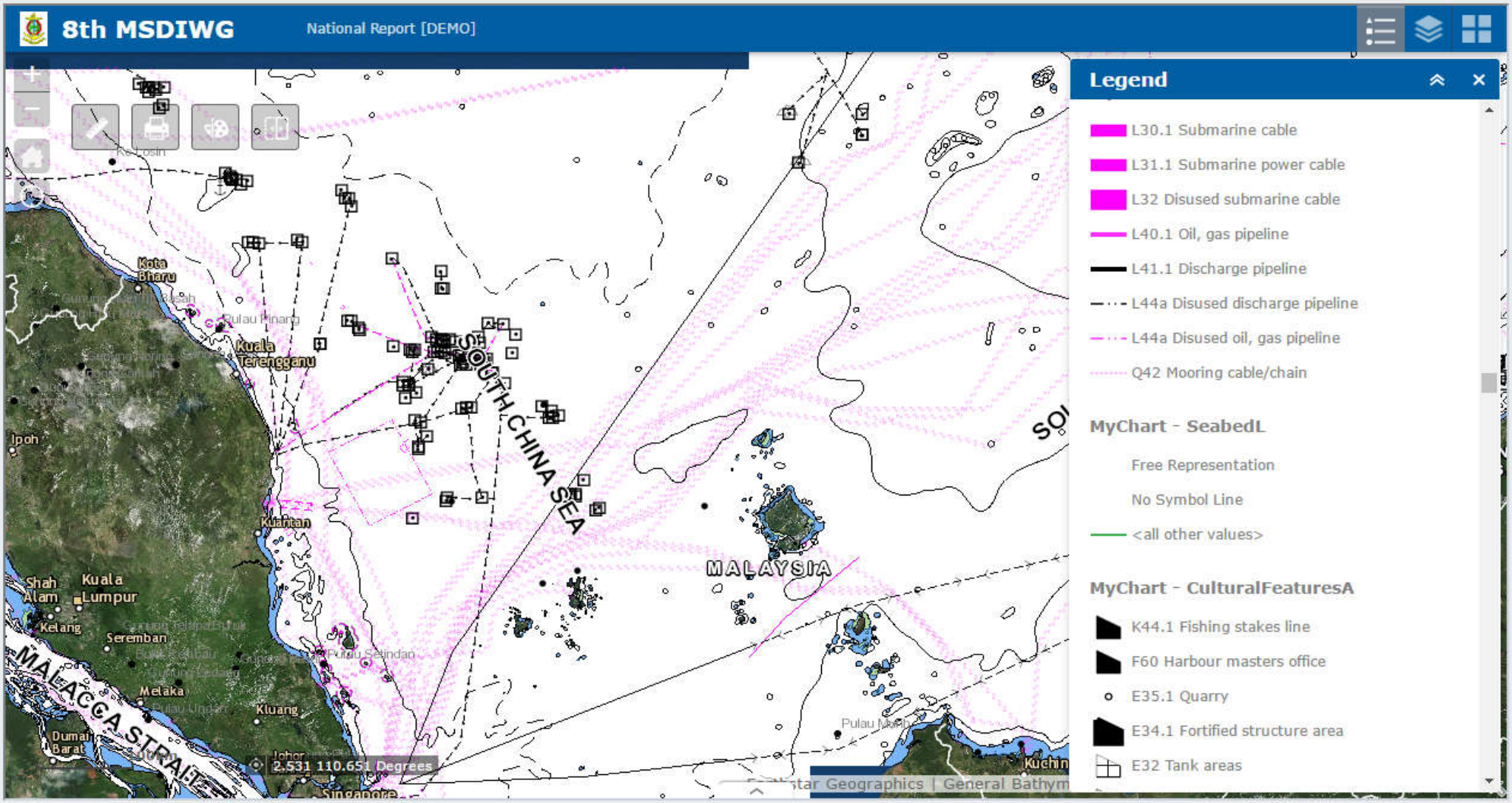


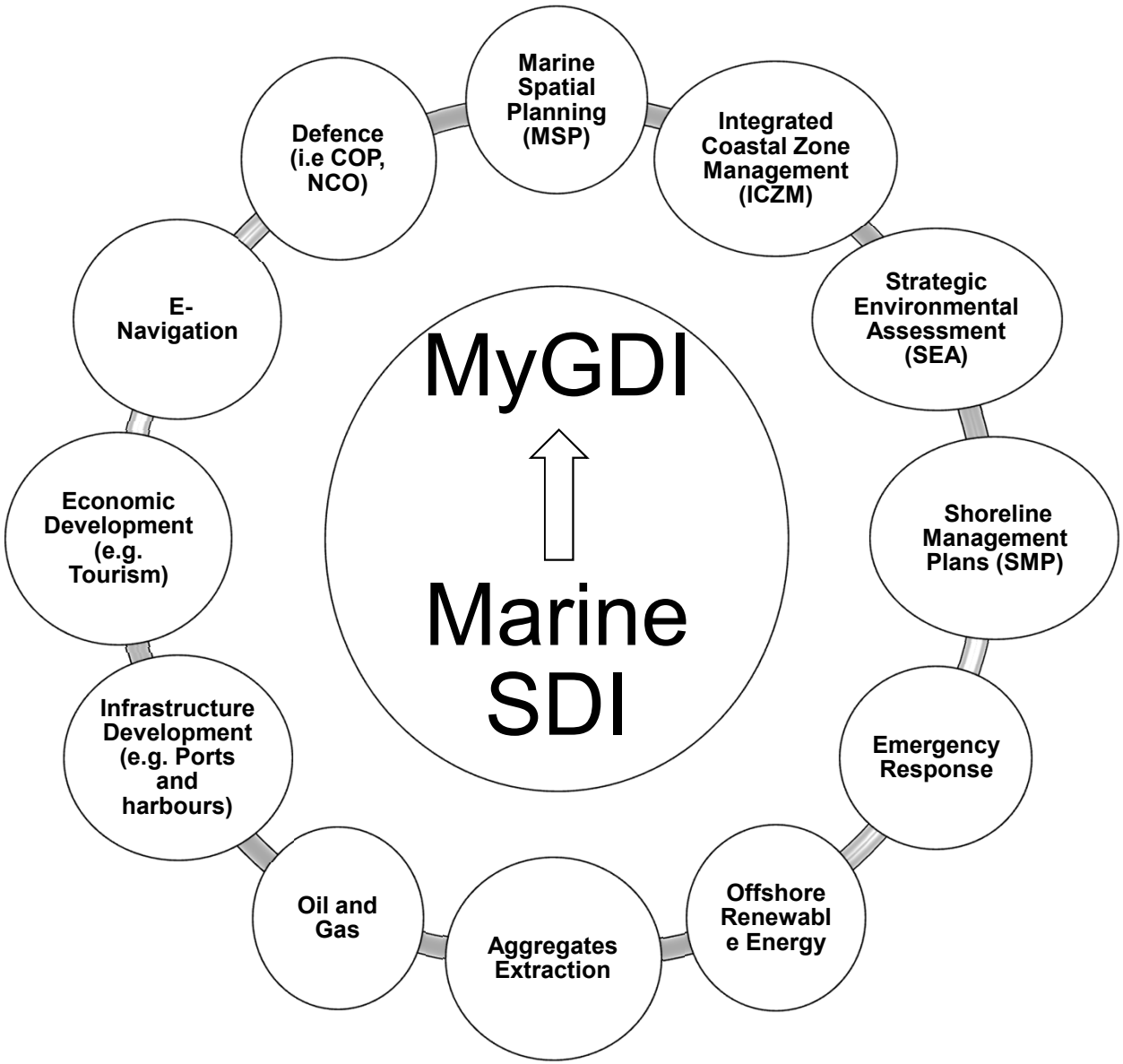
Information Systems (ICT)

Malaysia Geospatial Online Services (MyGOS)

Malaysia Geospatial Online Services (MyGOS) A platform for user to promote sharing of geospatial information. It enables you to turn your data into web-enabled services that your whole organization members can use.

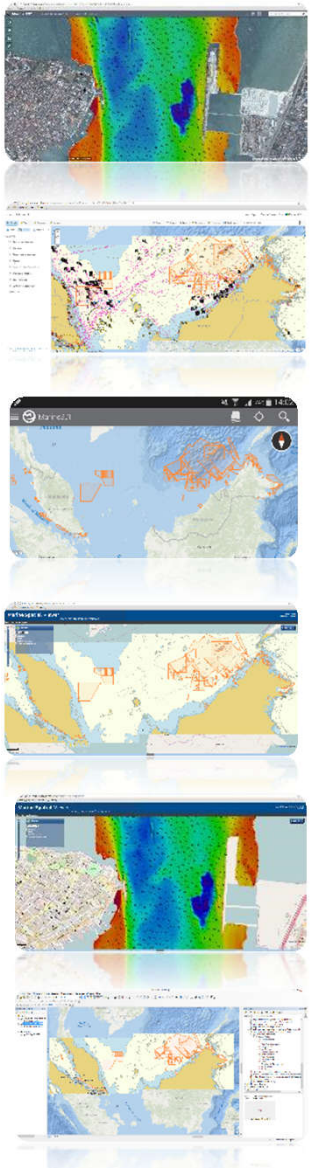
- **Online mapping platform**
- **Content management platform**
- **Collaborative and sharing platform**


8th MSDIWG
National Report [DEMO]
Legend
L30.1 Submarine cable
L31.1 Submarine power cable
L32 Disused submarine cable
L40.1 Oil, gas pipeline
L41.1 Discharge pipeline
L44a Disused discharge pipeline
L44a Disused oil, gas pipeline
Q42 Mooring cable/chain
MyChart - SeabedL
Free Representation
No Symbol Line
<all other values>
MyChart - CulturalFeaturesA
K44.1 Fishing stakes line
F60 Harbour masters office
E35.1 Quarry
E34.1 Fortified structure area
E32 Tank areas
SOUTH CHINA SEA
MALAYSIA
MALACCA STRAIT
Kota Bharu
Kuala Terengganu
Ipoh
Kuantan
Shah Alam
Kuala Lumpur
Kelang
Seremban
Melaka
Kluang
Dumai
Barat
Johor
Singapore
Kuchin
2.531 110.651 Degrees

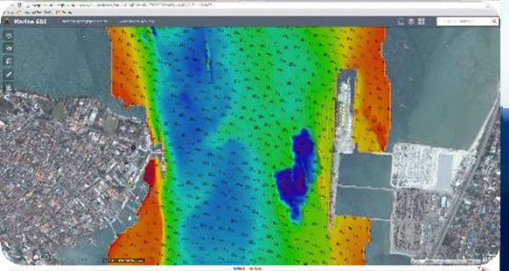

MyGDI
Marine SDI
Marine Spatial Planning (MSP)
Integrated Coastal Zone Management (ICZM)
Strategic Environmental Assessment (SEA)
Shoreline Management Plans (SMP)
Emergency Response
Offshore Renewable Energy
Aggregates Extraction
Oil and Gas
Infrastructure Development (e.g. Ports and harbours)
Economic Development (e.g. Tourism)
E-Navigation
Defence (i.e COP, NCO)

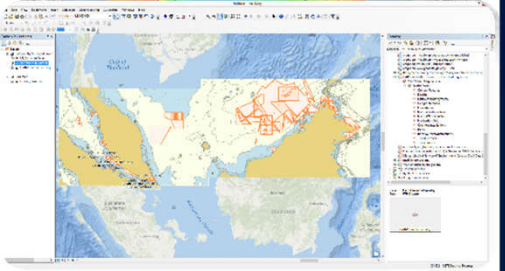
CONCLUSIONS

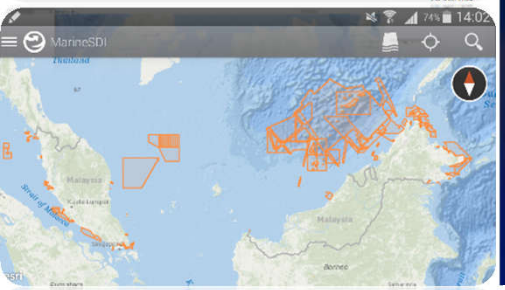
- MSDI is about “best practise”
- The biggest challenge is “people” and “organisations” (culture)
- There are many benefits to be realised from MSDI
- National Hydrograhic Centre – the right agency to develop Marine SDI
  - Hydrography data - provides the fundamental backdrop
  - The IHO standards are aligned with ISO and OGC standards
  - ICT ready
  - Good governance through National Hydrographic Committee
- Marine SDI ready by end of 2018!



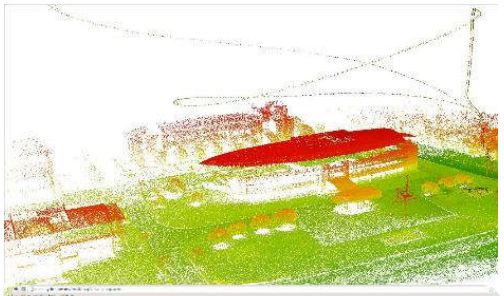
Mapping the sea through hydrography
www.hydro.gov.my

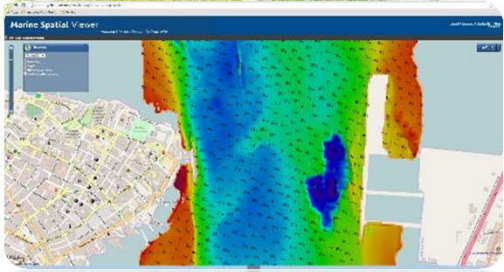
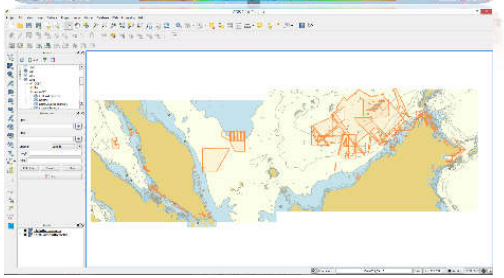
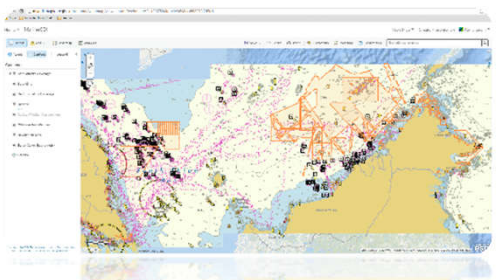





MarineSDI
14:02

Thank you for your attention




Marine Spatial Viewer