



Republic of Korea

# ROK MSDI Marine Spatial Data Infrastructure & EAHC MSDIWG

WG-MGI, UN-GGIM9  
New York  
5 AUG 2019

Presented by Mr. Jun-Shik Lee



KOREA HYDROGRAPHIC AND OCEANOGRAPHIC AGENCY

# CONTENTS

Report on ROK MSDI & EAHC MSDWG



## ROK MSDI

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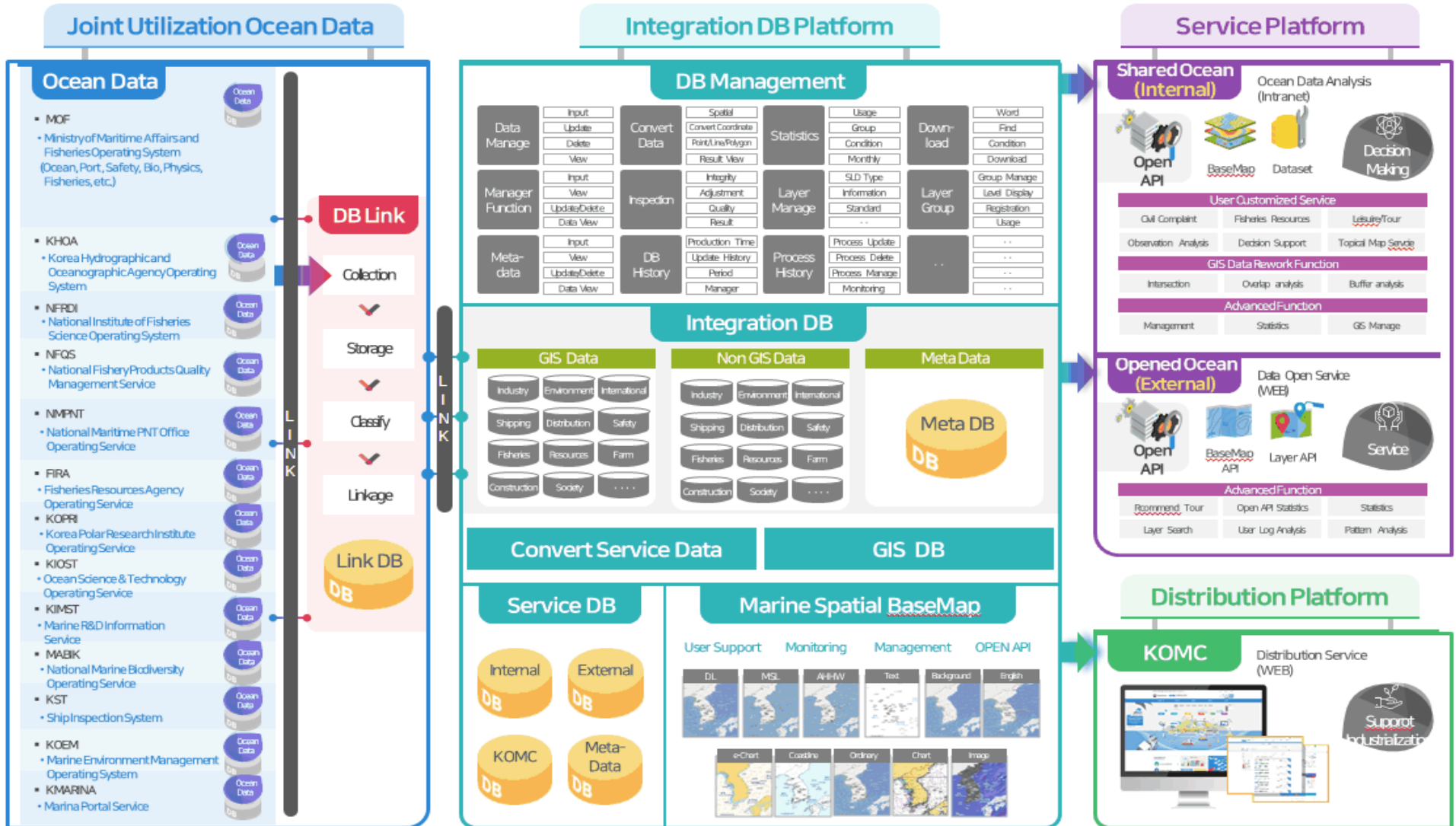
1. Current status of MSDI
2. Base map
3. Service system
4. MSDI & MSP in ROK

## 2<sup>ND</sup> EAHC-MSDIWG Meeting

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1. Venue & main agenda
2. Country report from MSs
3. Questionnaire & Work plan
4. Action items
5. Prototype of the EAHC-MSDI

## Current Status of ROK MSDI



## Current Status of ROK MSDI



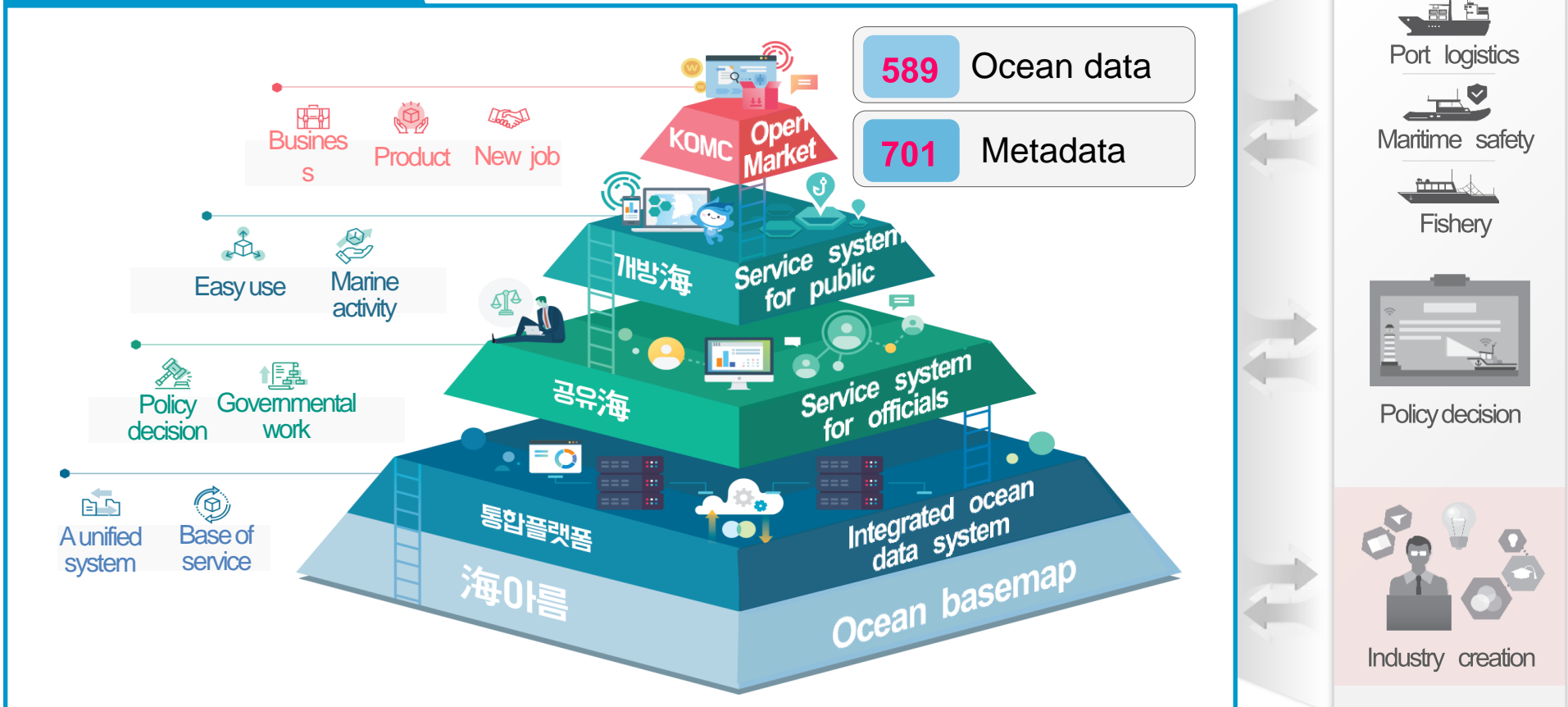
STEP

Data integration

Service

Business

### MSDI Diagram



# Marine spatial basemap



## Purpose

To provide a platform for various use of marine spatial information



UTM-K, WGS84





### Part. 2 Categories of Service

#### Marine spatial data Main List

Industry

Environment

Pelagic

Fishery

Farming

Logistics

Safety

Construction

Humanities



## Part. 2

## Categories of Service

## Marine spatial data Main List

Industry

Environment

Pelagic

Fishery

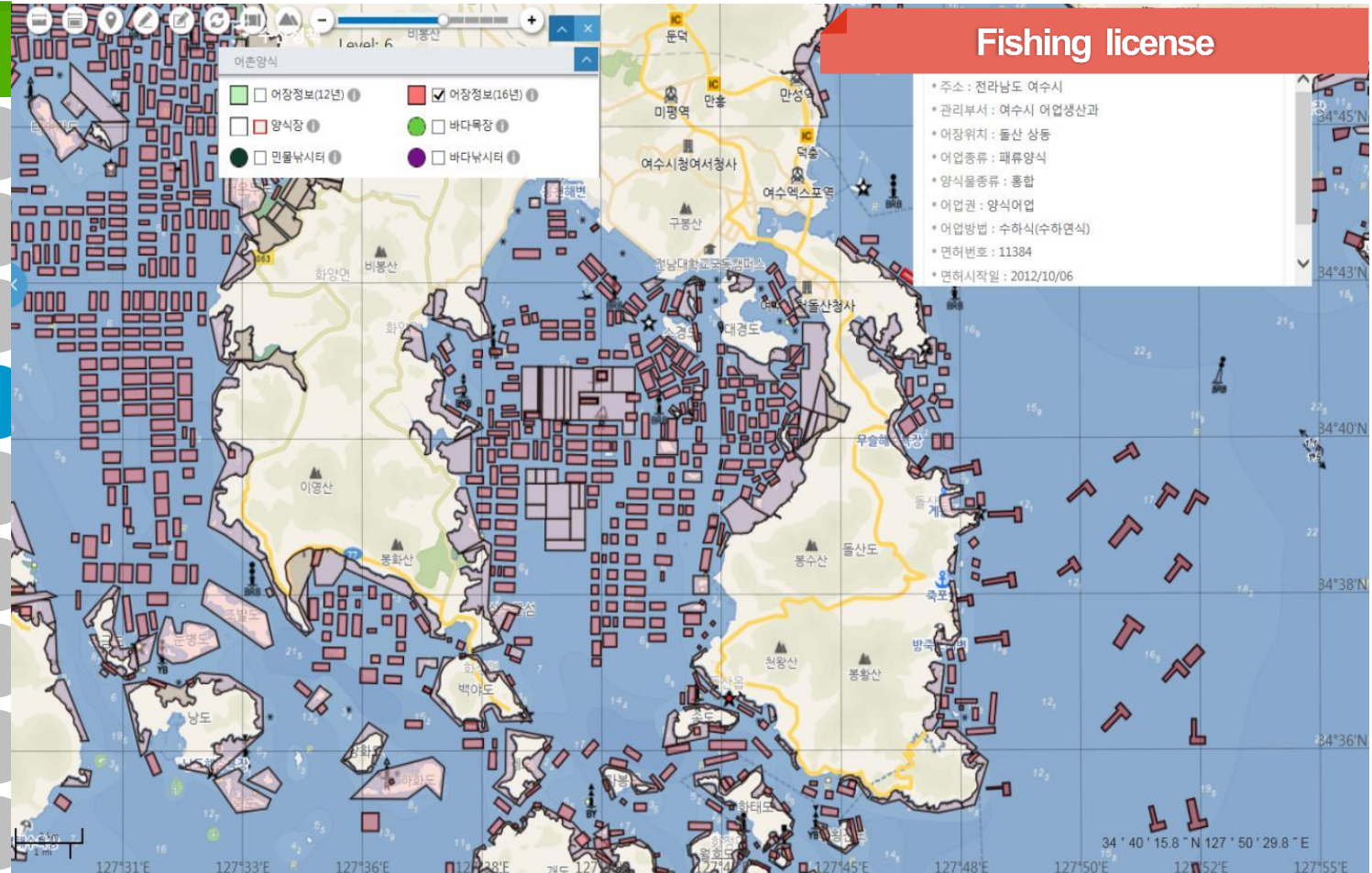
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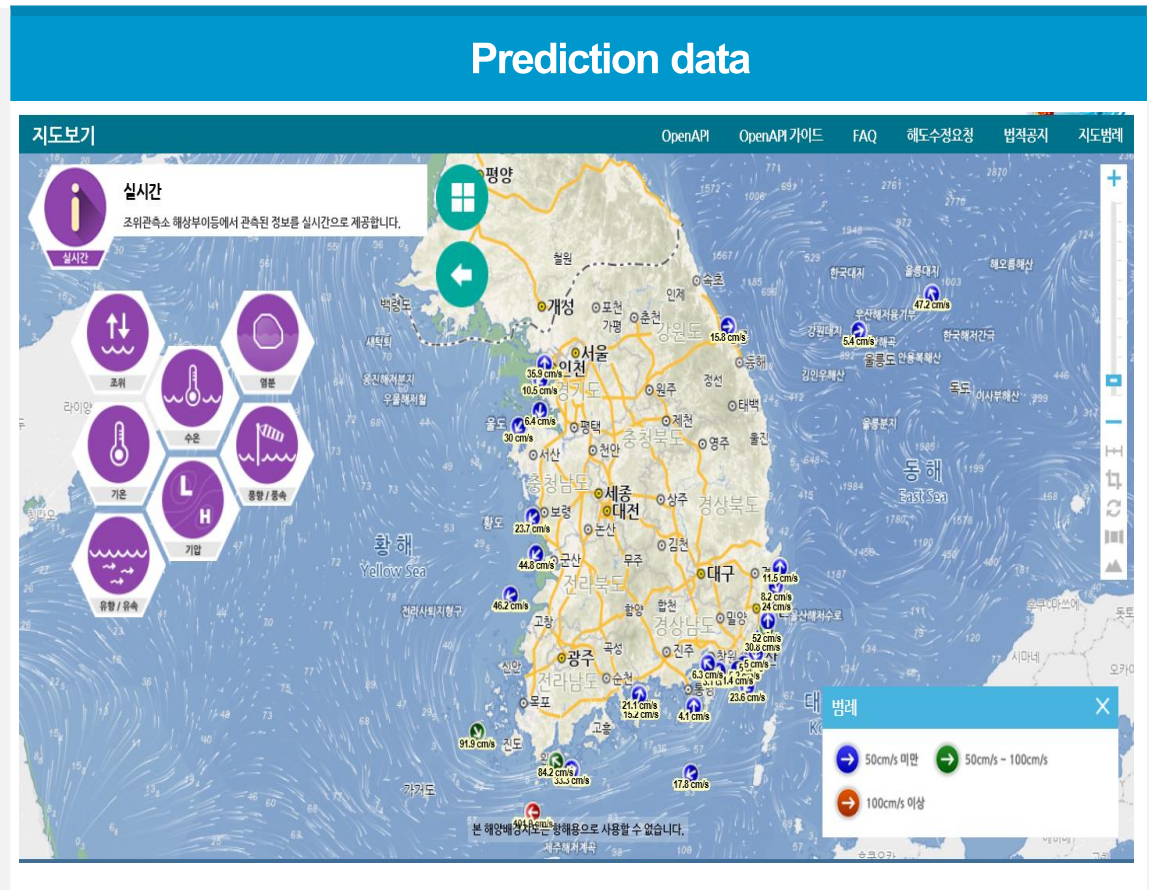
### Part. 3 Realtime & Prediction Data Service

#### Realtime data



<p><b>temperature</b></p> <ul style="list-style-type: none"> <li>☀️ 10°C 미만</li> <li>🌿 10°C ~ 27°C</li> <li>🔥 27°C 이상</li> </ul>	<p><b>salinity</b></p> <ul style="list-style-type: none"> <li>🌊 27psu 미만</li> <li>🌿 27psu ~ 33psu</li> <li>🔴 33psu 이상</li> </ul>
<p><b>pressure</b></p> <ul style="list-style-type: none"> <li>🌬️ 1000hPa 미만</li> <li>🌿 1000hPa ~ 1020hPa</li> <li>🔴 1020hPa 이상</li> </ul>	<p><b>wind</b></p> <ul style="list-style-type: none"> <li>➡️ 3m/s 미만</li> <li>🌿 3m/s ~ 8m/s</li> <li>🔴 8m/s 이상</li> </ul>

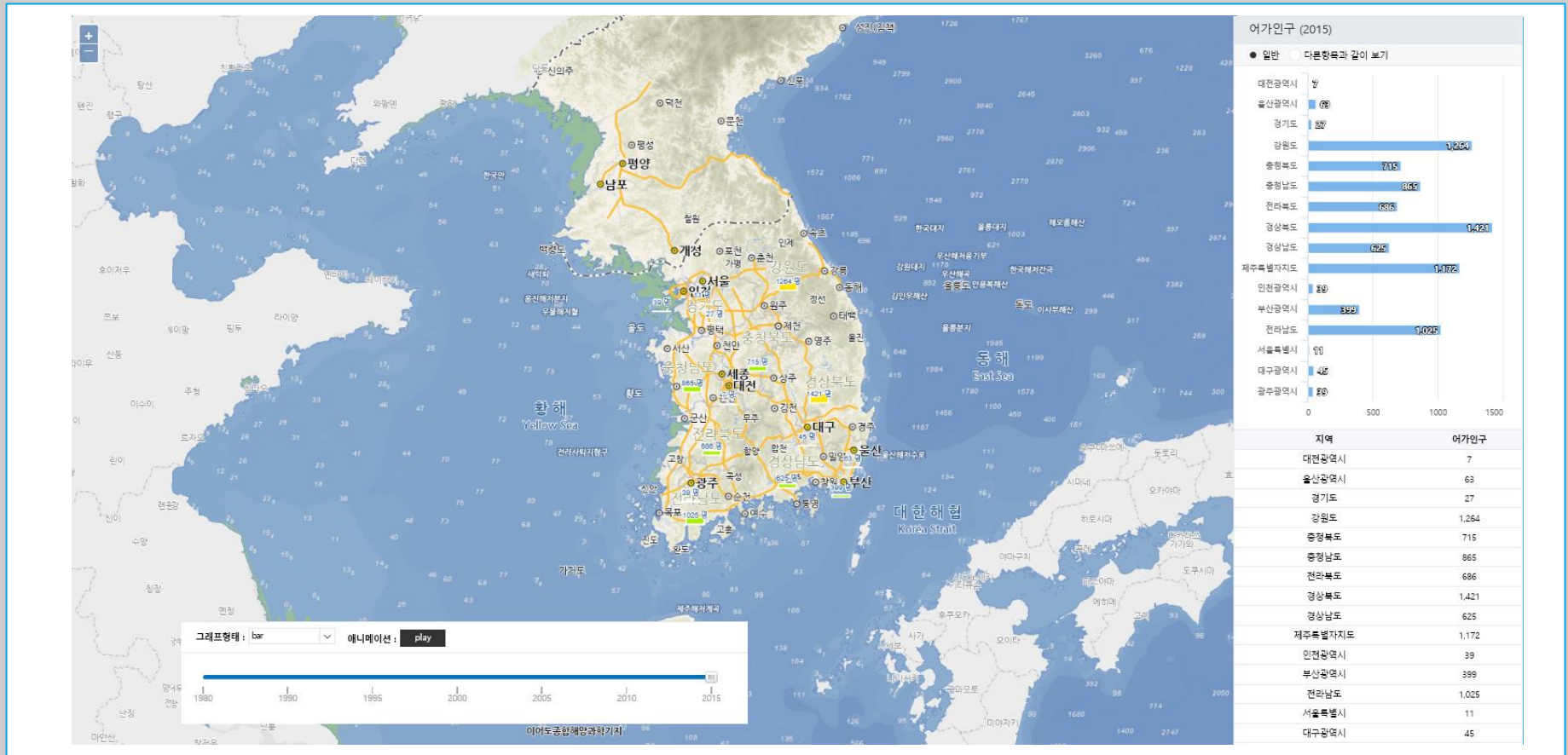
#### Tide, Current







### Part. 4 Visualization of the Statistic data





## Part. 5 Customized services related to the maritime accidents

The interface displays a map of a coastal region with various data layers and a search panel. The search panel on the left includes a search bar, a dropdown menu for accident types, and a list of search criteria. A hand cursor is shown clicking on a point on the map, which triggers a pop-up window showing detailed information about the selected point.

**1** Search Panel: Includes a search bar, a dropdown menu for accident types (e.g., '피서객 인명사고'), and a list of search criteria (e.g., '사고대응시설', '위험요소', '자연공원').

**2** Accident Type Selection: A dropdown menu showing '피서객 인명사고' (Beachgoer Fatalities).

**3** Map Interaction: A hand cursor clicking on a point on the map, which triggers a pop-up window.

**4** Search Results: A pop-up window titled '해양사고발생 정보' (Marine Accident Information) showing a list of search results (e.g., '태안군남면신호보전진로소 (6.04km)', '태안군군용보전진로소 (7.08km)').



### Part. 6 Review of restricted areas

N1	34	27	26.1
E1	127	35	10.5
N2	34	26	53.4
E2	127	35	23.6
N3	34	27	07.3
E3	127	35	41.6
N4	34	27	34
E4	127	35	33.2
N5	34	27	34
E5	127	35	33.2

### Procedure

- 1 Specify area
- 2 Review Restricted Areas
 

해상훈련지역

항만배후단지

수산자원보호

환경보전해역

특별관리해역

습지보호구역

국립공원

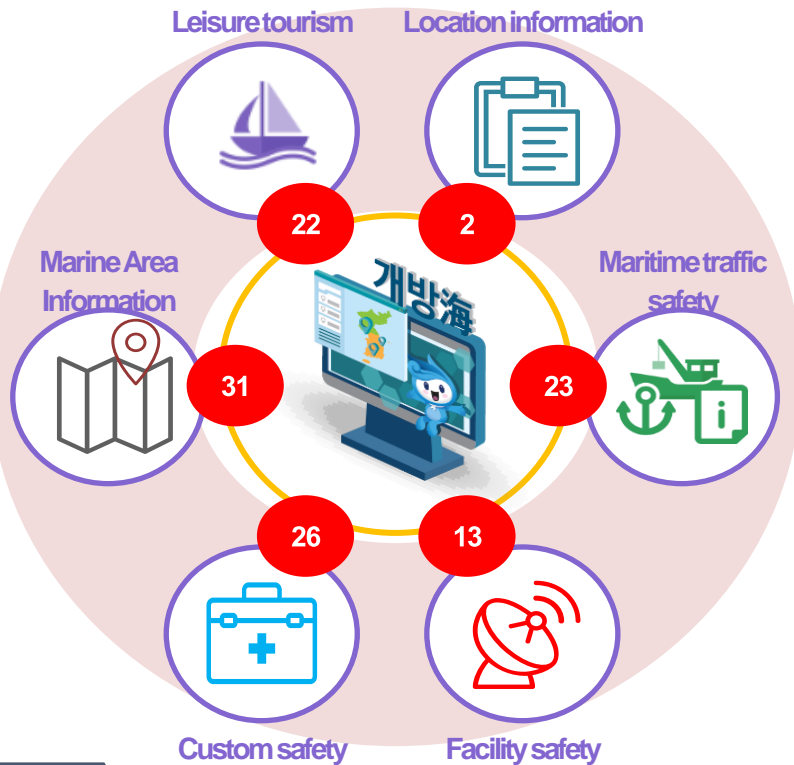
기존 어장
- 3 Report results



### Part. 5

### Open API

#### 117 types of marine spatial information



Open API Standard



#### Open API Use



WEB Browser



Tablet

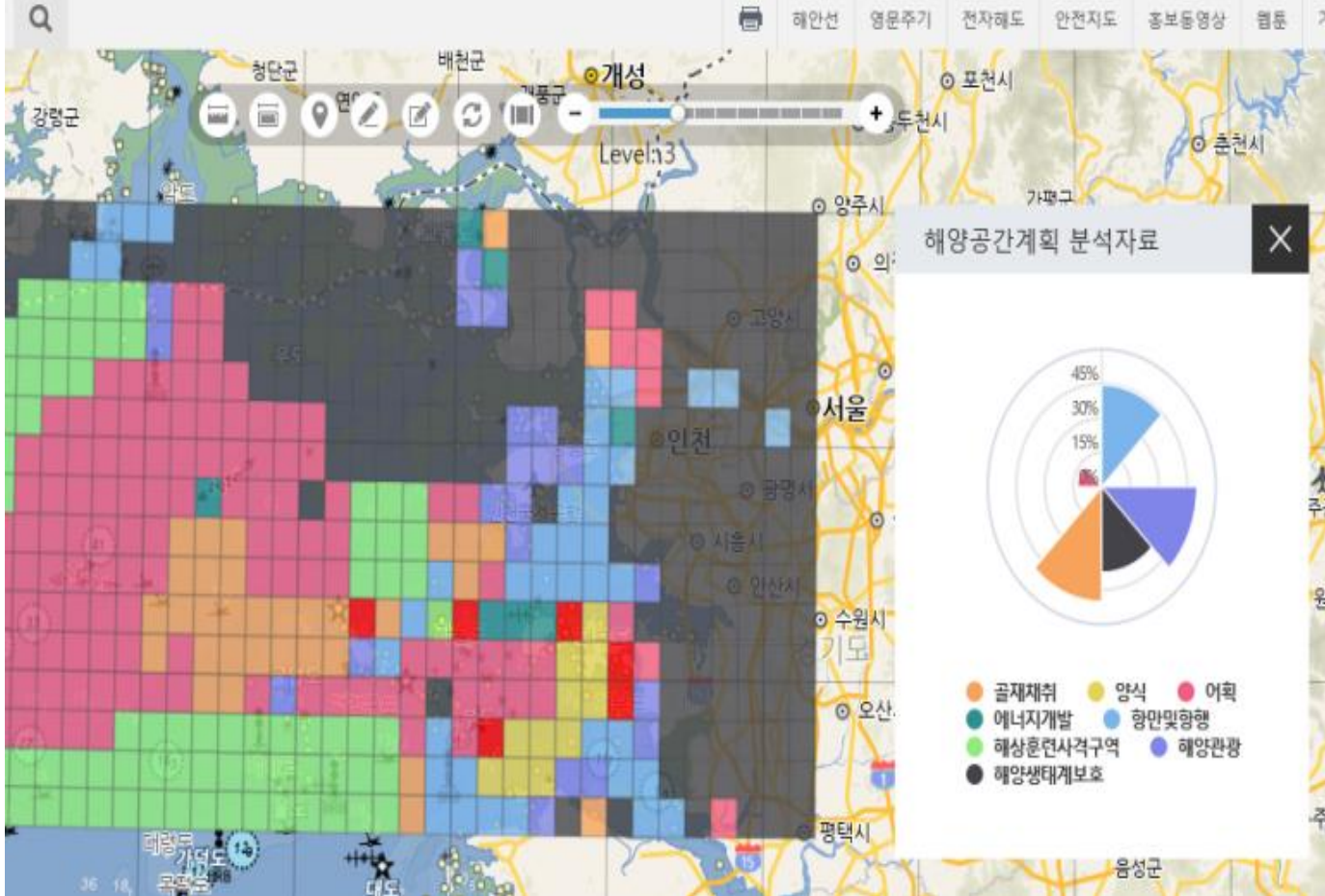


Smart Phone





### Establishment of the MSP (Marine Spatial Planning) Law in 2019



### Enactment of Regulations on the Integration and Co-utilization of Marine Information

Marine Information Co-utilization Guideline

Marine Information Quality Processing Guideline



## Zoning Scheme of Korea's Marine Spatial Planning

### Spatial Competition and Conflicts

- Fisheries
- Mining and extraction
- Energy development
- Marine tourism
- Environment and ecosystem management
- Research and education
- Harbor and navigation
- Military activity area
- Safety management

#### Fisheries & Aquaculture



#### Reclamation



#### Conservation



#### Shipping



#### Tourism & Recreation



#### Marine sand extraction



#### Tidal energy



#### Wind energy

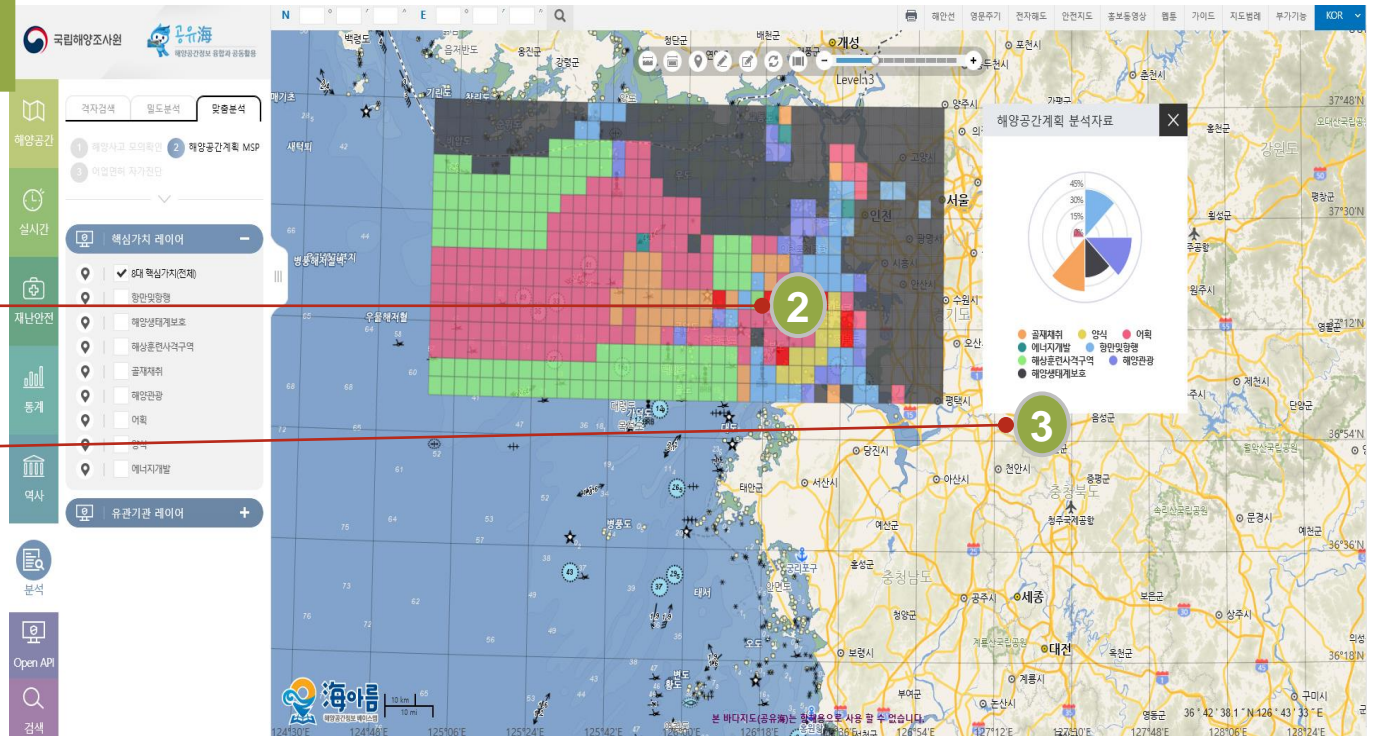




## Core activity analysis system

### procedure

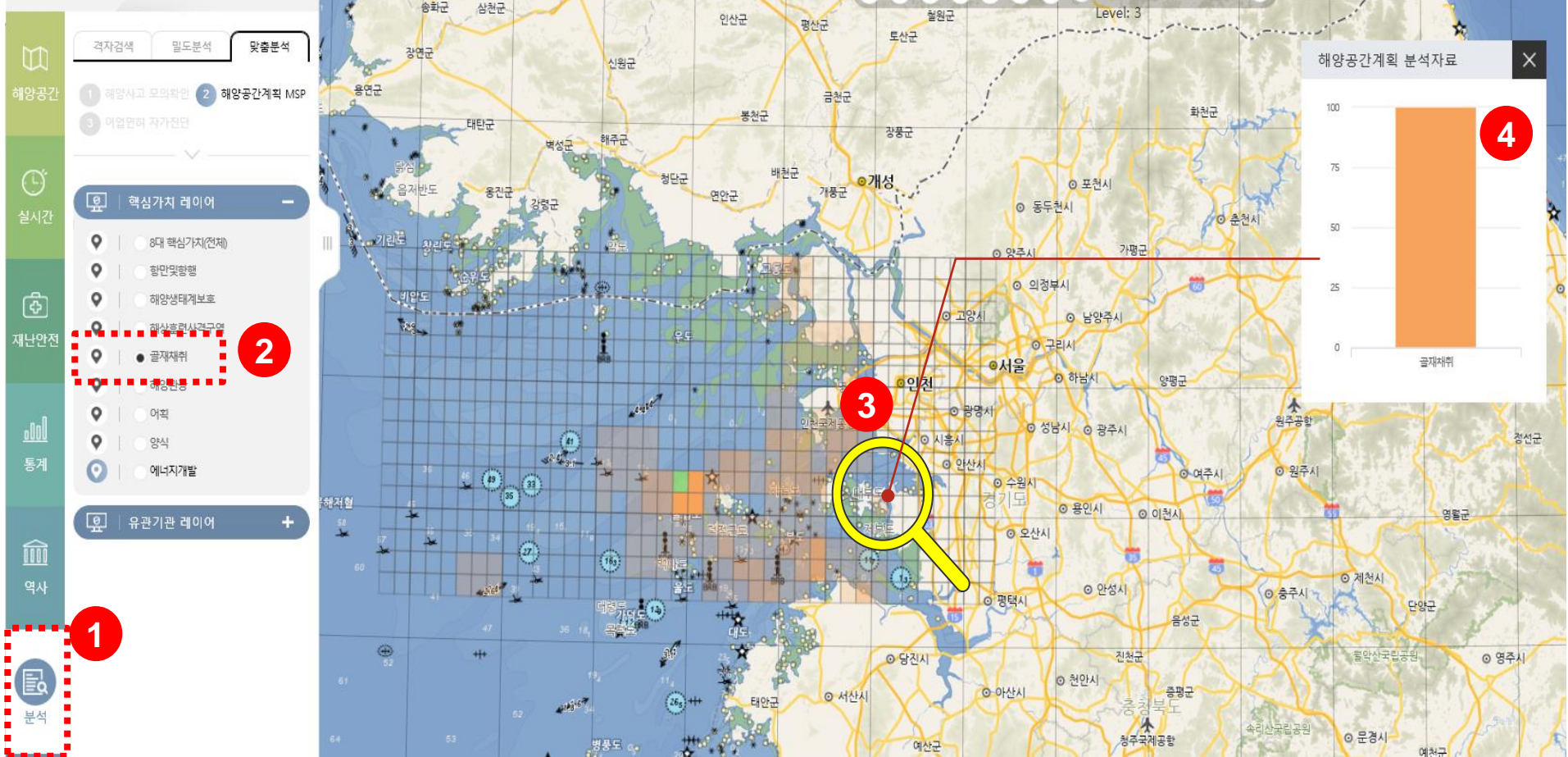
- 1 Loading the data
- 2 Select a cell
- 3 Check the result







### Search the Core activity area





# Challenges



**Harbor sea fog**

**Port traffic**

**Amount of fish catch per year**

**Economic route**

**Data integration (Link / Update)**

**Various Service (Customized)**

**Business Model (Development)**

**Maintenance Laws (For MSDI)**

# CONTENTS

Report on ROK MSDI & EAHC MSDWG



## ROK MSDI

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1. Current status of MSDI
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## 2<sup>ND</sup> EAHC-MSDIWG Meeting

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1. Venue & main agenda
2. Country report from MSs
3. WG Work plan
4. Action items
5. Prototype of the EAHC-MSDI

# Venue & main agenda



## Meeting place

- The 2<sup>nd</sup> EAHC-MSDIWG meeting was held in Singapore in June 2019.

## Participants

- 35 participants from 10 countries (Brunei, China, Indonesia, Japan, Malaysia, Philippines, Rep. of Korea, Singapore, Thailand, Vietnam).

## Main Agenda

- National presentation from Members on the status of MSDI
- Reports on IHO MSDIWG10 & UN-GGIM WG-MG11
- Direction of WG: Result of the questionnaire to be shared
- Review of the WG work plan



**EAST ASIA HYDROGRAPHIC COMMISSION**  
**10<sup>th</sup> TRDC-BOD, 2<sup>nd</sup> MSDIWG and 8<sup>th</sup> CHC Meetings**  
**25<sup>th</sup> to 28<sup>th</sup> June 2019, Singapore**



## Country report from MSs



### MSDI Country Report

#### Singapore's Sea Space

Utilisation of Singapore's limited Sea Space

Waterfront Use Planning

Aquaculture

Shipping & Navigation

Next Generation Port 2030

Sea Space Planning

M.S.P.A.

### Singapore

#### 01 Current Status of MSDI

STEP: Data integration → Service → Business

**R.O.K**

#### Indonesia

PUSAT HIDROGRAFI DAN OSEANOGRAFI TNI-ANGKATAN LAUT

**INCOMING**

- DATA HYDROGRAFI, OSEANOGRAFI, METEO (HIDROS)
- DATA HYDROGRAFI, OSEANOGRAFI, METEO (3<sup>rd</sup> PARTY)

**PROCESSING**

- ARCHIVE DB
- PULITA RIMTA (PENGUMPULAN DAN PENYERBAHAN DATA ARCHIVE -CATALOGUE DATABASE)
- BATHYMETRY DB (DATA SOURCE ANALYSIS, PRODUCT CREATION, BOB (BATHYMETRIC DATABASE))
- CHART DB (DATA SOURCE ANALYSIS, PRODUCT CREATION, HPD (HYDROGRAPHIC PRODUCTION DATABASE))
- OSEMETDB (DATA SOURCE ANALYSIS, PRODUCT CREATION, OMD (OCE-MET\_ DATABASE))

**PUBLISHING**

PRODUCT

#### Thailand's Strategy Plan 2018-2037 & UN SDG

- The 20 years national maritime strategic plan
- Established Thailand Maritime Enforcement Command Center, Thai-MECC
- IUU (Illegal Unreported Unregulated) Fishing
- Blue Economy
- Coastal Tourism
- Marine Environment

**Thailand**

**To Support three dimensions**

“Security”

“Prosperity”

“Sustainability”

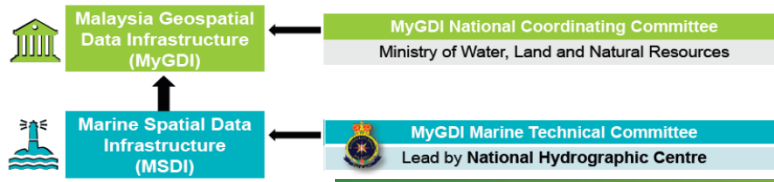
**One Marine Map**





## MSDI Country Report

Policy & Governance  
(People)



**STATUS**

- Geospatial Act in draft process
- Annual meeting conducted
- Metadata Workshop conducted between agencies



### Marine Spatial Management Tool

*The data foundation*

Key elements:

- Thematic datasets provided by the corresponding sectoral authority (data owners)
- Data available through standardized geospatial services by the individual data owner. (Mainly OGCs WMS, WMS-T, and WFS at the moment).
- Datasets and services documented by the data owner through metadata registrations in the national SDI (official announcement / productification of a dataset / service)
- Terminology and cartography harmonized and adjusted to the user needs



Brunei

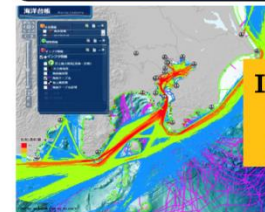
Malaysia

### Geospatial Information Provision



Year 2012~

Marine Cadaster

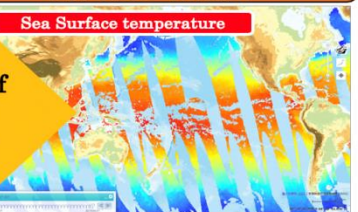


- Information surrounding Japan
- Non real-time information

- More than 100 items added
- Working with other 6 agencies and data are centralized at JCG server and provided

Year 2019~

New Web-GIS service "MSIL"



- Information of global area
- Real-time information

- More than 200 items added
- Working with other 13 agencies and providing real-time data

Integration of ArcGIS technology

Japan



## Work Plan 2019– 2021

- Task A (Leadership and coordination for policies, governances, and standards)
  - Develop a vision and mission statement of the WG
  - Communicate and liaise with relevant international organizations
  - Support to draft data policy statements of national MSDI in EAHC
  - Identify relevant standards to support the implementation and operation of MSDI
- Task B (Operational – data sharing and management)
  - Identify user's needs and requirements for MSDI
  - Establish an EAHC marine spatial data center.
- Task C (Training and education)
  - Develop and maintain training syllabi

## Action items of the last meeting



**Action 1:** Singapore to present the involvement of Institute of Higher Learnings in GeoSpace-Sea's development at the next WG meeting.

**Action 2:** Indonesia to share marine data themes once refined at the next WG meeting.

**Action 3:** Chair to send a template to request MSs to provide NMSDI governance structure and to present the results at the next WG meeting.

**Action 4:** Singapore, with support from Indonesia, Japan, ROK and any other interested MSs, to develop a draft guideline on EAHC-MSDI standards and present at the next WG meeting.

**Action 5:** MSs are requested to complete the IHO MSDI questionnaire (MSDI & MSP) if and when circulated, and to provide a copy of the completed questionnaire to EAHC-MSDI WG Chair for information.

**Action 6:** ROK to inform TRDC-BOD Chair of the IHO MSDI training materials when it is completed.

**Action 7:** Vice-chair to collate a list of potential key users of NMSDIs from MSs

**Action 8:** As part of the WG Work Plan ROK to develop a prototype EAHC-MSDI portal and to report at the next WG meeting.

**Action 9:** The proposed WG Work Plan will be reported by Chair in the next EAHC SC Meeting in Japan for endorsement.

**Action 10:** EAHC-MSDI WG Chair, Singapore and host country to coordinate the MSDI Workshop Programme.





# EAST ASIA MSDI

Marine Spatial Data Infrastructure Working Group Data Center





## Main Visual

### Documents +

#### Next meeting

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#### Past meeting

- =====
- =====
- =====

MSDI WG  
banner

Organization

IMO  
banner

EAMSDI  
Services

### Access to Data +

#### Member States

R.O.K

Japan

etc


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**EAMSDI**  
Portal Service  
Banner



# Organization

## Sub Visual

### Upcoming Events +

**YEAR**

Date To-From

Country

**YEAR**

Date To-From

Country

NATION	MSDI	HYDROGRAPHIC BUREAU	COAST GUARD
Republic of Korea	---	---	---
Japan	---	---	---
Philippines	---	---	---
Indonesia	---	---	---
Thailand	---	---	---
China	---	---	---
Brunei	---	---	---
Malaysia	---	---	---
Singapore	---	---	---
DPRK	---	---	---
Vietnam	---	---	---

### Related Site





# Documents

## Sub Visual

< Today Month, Year >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
5	6	7	8	9	10	11

Upcoming Events +

YEAR

Date To-From

Country

YEAR

Date To-From

Country

### Next meeting

🕒 Last Documents Updated  
21 July 2019

• 26<sup>th</sup>, June, 2019

Singapore

## EAMSDIWG2

### Past meeting



○ 29<sup>th</sup>-30<sup>th</sup>, November, 2018  
Thailand

**EAMSDIWG1** 📄

● 29<sup>th</sup>-30<sup>th</sup>, November, 2018  
Thailand

**EAMSDIWG1** 📄

● 29<sup>th</sup>-30<sup>th</sup>, November, 2018  
Thailand

#### Related Site





# Capacity building

Sub Visual

## Upcoming Events



**YEAR**

Date To-From

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Country

**YEAR**

Date To-From

\_\_\_\_\_

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\_\_\_\_\_

Country

## MSDI



## SDI / MSDI training materials



**IHO**  
International Hydrographic Organization  
Organisation Hydrographique Internationale



**UNGGIM**  
United nations Initiative on Global  
Geospatial Information Management

## Standards



**OGC**  
International Hydrographic Organization  
Organisation Hydrographique Internationale

### Related Site



**IHO**  
International Hydrographic Organization  
Organisation Hydrographique Internationale



**ISO**  
International Organization  
for Standardization



**OGC**  
Making location Count



**RHC**  
Joining Continents For  
A Better World



**UNGGIM**





# EAMSDI services

## Sub Visual

### Upcoming Events +

**YEAR**

Date To-From

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Country

**YEAR**

Date To-From

\_\_\_\_\_

\_\_\_\_\_

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Country

### Access to Data

#### Member states

R.O.K	Tide	Bathymetry	Tide current	Nautical	Publication
Japan	Tide				
etc					

### EAMSDI portal



**EAMSDI**  
Portal Service

Date. Month. Year

**Sample Version**

\_\_\_\_\_

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Go to >

#### Related Site





MENU



[Terms of Use](#)

[Data Sources](#)



HOME



SEARCH



MAP LAYERS



SELECTED LAYERS



MY DATA



MAP PUBLISHING

Location

Metadata

Search locations by typing a name of a place



## Map Area

Scale Bar



# Main Visual

## Documents +

Next meeting

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Past meeting

- =====
- =====
- =====



MSDI WG  
banner



Organization



IMO  
banner



EAMSDI  
Services

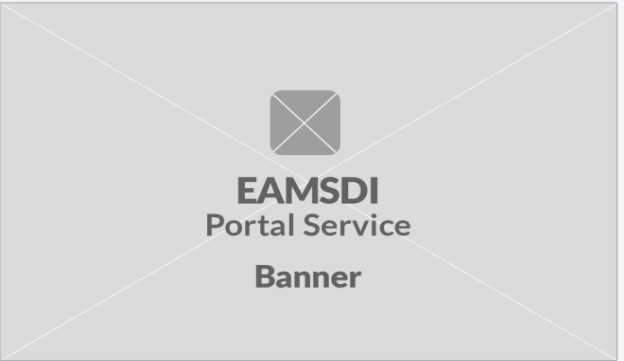
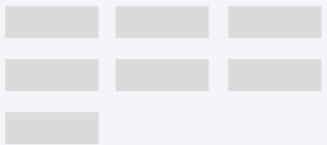
## Access to Data +

Member States

R.O.K

Japan

etc



EAMSDI  
Portal Service  
Banner



# Thank you

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