




# OCEAN DATA MANAGEMENT IN MALAYSIA

The 10th GEOSS Asia-Pacific Symposium  
Hanoi, Vietnam, 18 – 20 September 2017





# Presentation Overview

- ▶ **Malaysian Oceanographic Data Aggregation & Archiving System (MyDAS)**
  - ▶ **Ocean Data Training**
- 



# Malaysian Oceanographic Data Aggregation & Archiving System (MyDAS)



# INTRODUCTION

MALAYSIA MARITIME OVERVIEW

MALAYSIA AS A MARITIME COUNTRY

329,845 km<sup>2</sup> OF LANDMASS

574,000 km<sup>2</sup> OF MARINE COVERAGE (EEZ)



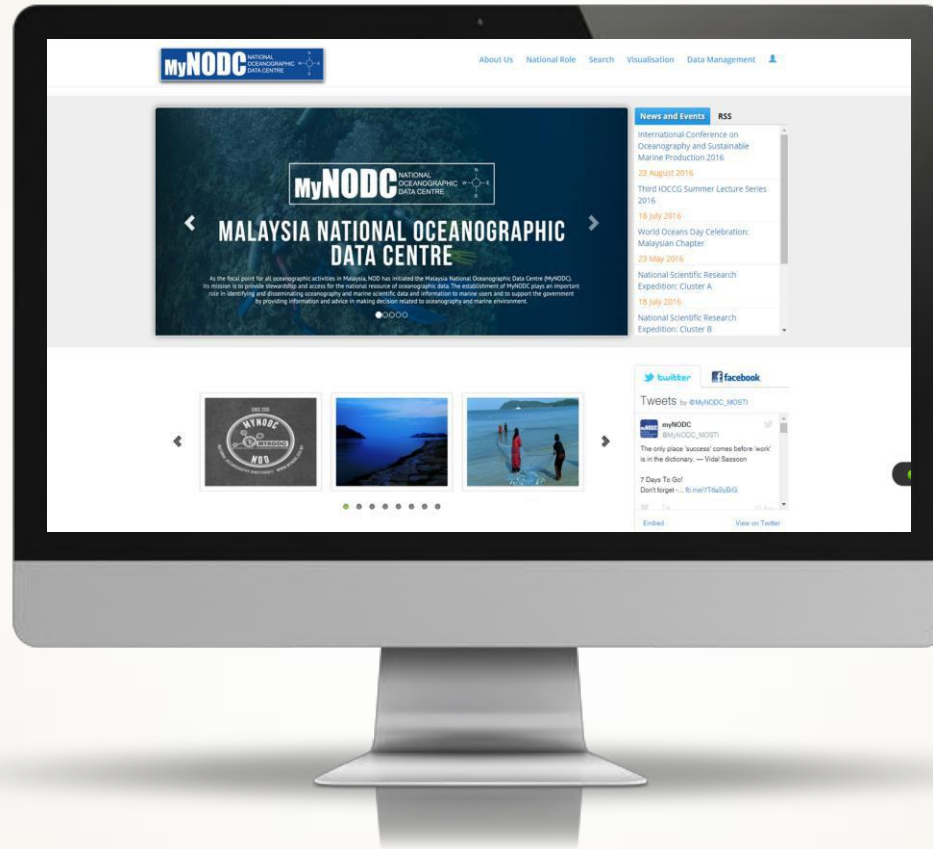
OCEAN IS  
COMPLEX



DIFFERENT JURISDICTIONS UNDER VARIOUS  
AGENCIES

# WHAT IS MYNODC?

## OVERVIEW OF MyNODC SYSTEM



## BACKGROUND

As a focal point for all oceanographic activities in Malaysia, NOD has initiated the Malaysian National Oceanographic Data Centre (MyNODC).

## PURPOSE

To provide stewardship and access for the national resource and exchange of oceanographic data. This effort requires the process of identifying, gathering, storing, archiving and disseminating oceanographic data, information and knowledge to its stakeholders.

# OBJECTIVES

## ESTABLISHMENT OF MyNODC

To establish a central repository of all data, information and knowledge repository related to oceanography in Malaysia

01



02



To facilitate the sharing of oceanography data, information and knowledge among its stakeholders

03



To normalize the representation of oceanography data

04



To integrate oceanography data from different sources to facilitate search and visualization on a common platform

05



Facilitate on-going and future research in oceanography



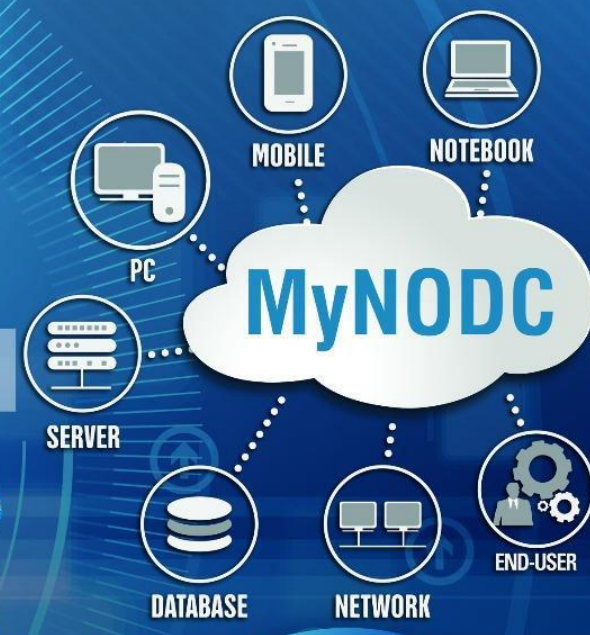
**CENTRE OF EXCELLENCES (COEs) IN OCEANOGRAPHY AND MARINE SCIENCE**



**STAKEHOLDERS**



**KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI**  
**MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION**



Strategic Technology and S&T Application Division  
 Ministry of Science, Technology and Innovation  
 Level 6, Block C4, Complex C  
 Federal Government Administration Centre  
 62662 W.P Putrajaya, Malaysia

**Malaysia National Oceanographic Data Centre**  
*Oceanographic Data Sharing Platform*

<http://www.mynodc.gov.my>

[www.mynodc.gov.my](http://www.mynodc.gov.my) | [mynodc@mosti.gov.my](mailto:mynodc@mosti.gov.my)



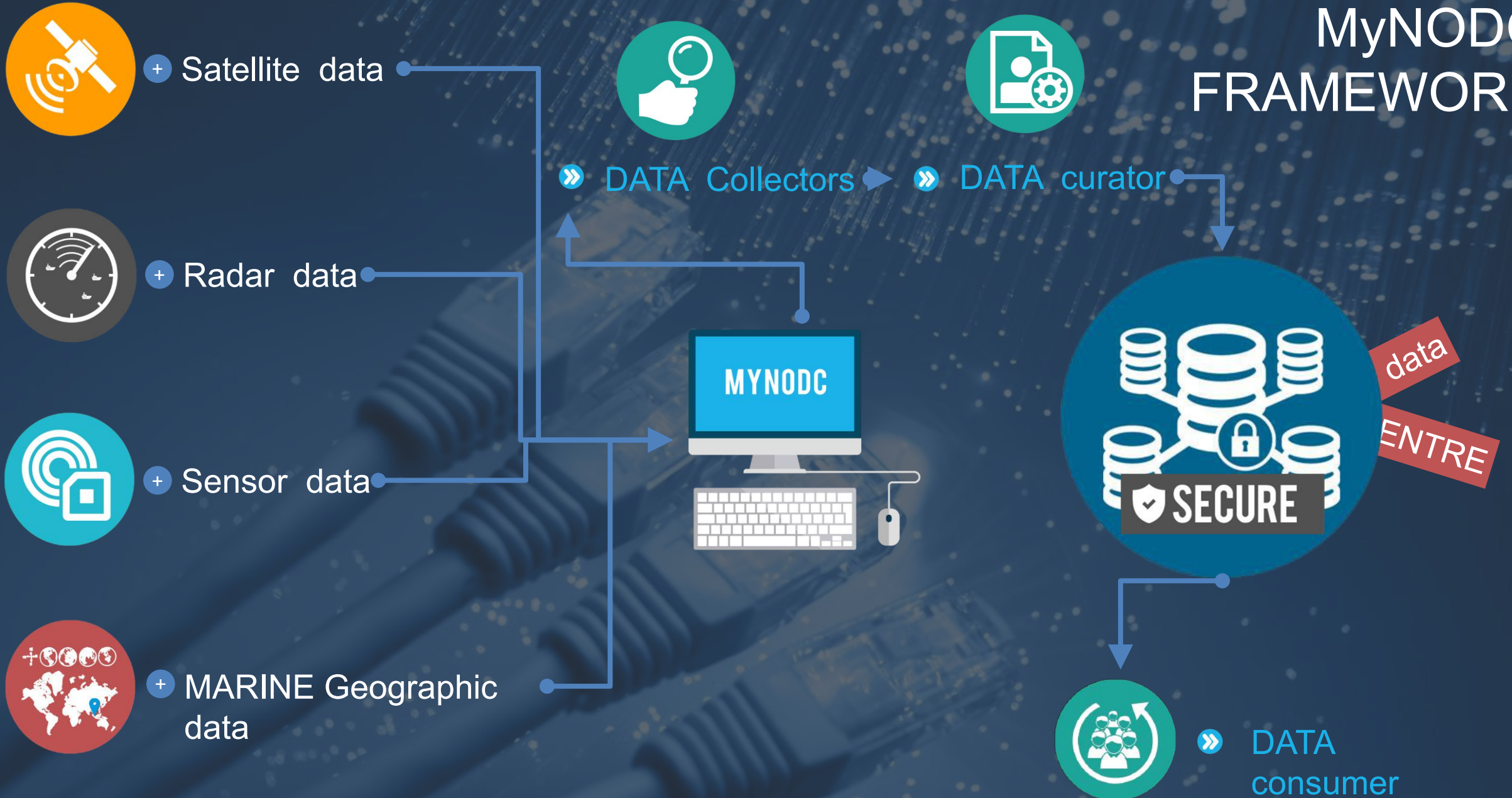


# SYSTEM ABOUT MyNODC SYSTEM OVERVIEW





# MyNODC FRAMEWORK



# SCOPE OF WORK

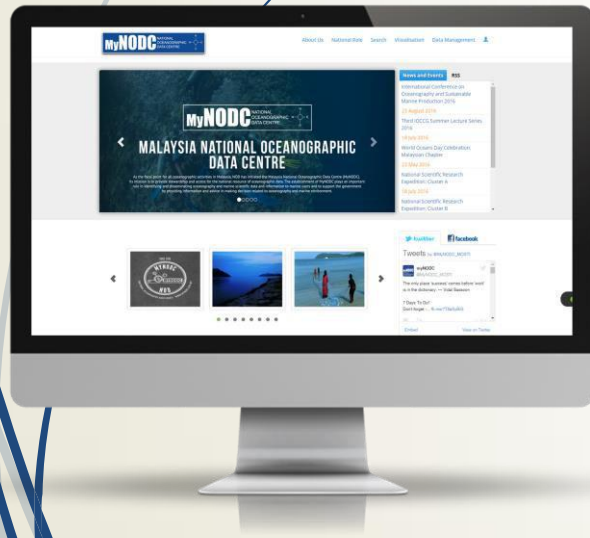


# SCOPE OF WORK

MIMOS

## DESCRIPTION

- Develop integrated data management system modules.



## Modul

1. Cloud Computing System.
2. Data collection & Assimilation
3. Oceanographic Thesaurus
4. Semantic and Search
5. Linked Open Data
6. Modelling & Forecasting
7. Ocean Data Archive Portal
8. Data Exchange Platform



# SCOPE OF WORK

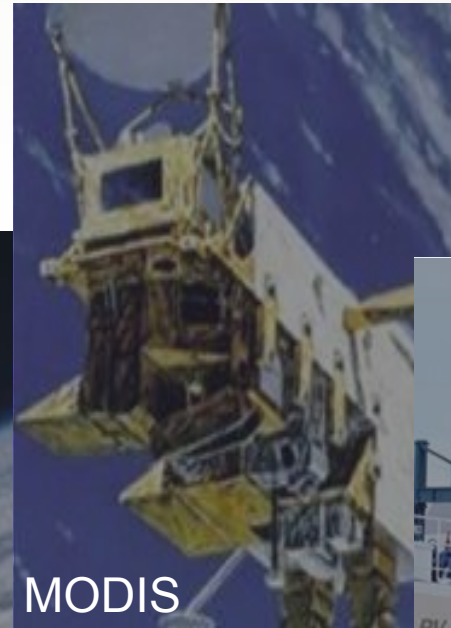
UNIVERSITI MALAYSIA TERENGGANU

## DESCRIPTION

- Collection of oceanography data through UMT ground receiving station.
- In-situ data collection and measurement through field work, ocean cruises and sensors.



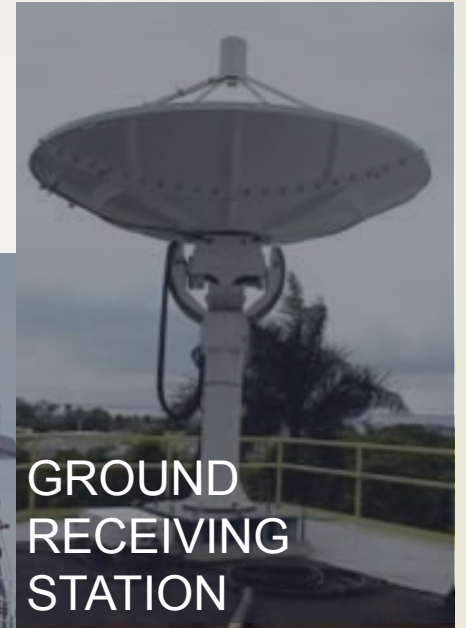
SUOMI  
NPP



MODIS



RV  
DISCOVERY

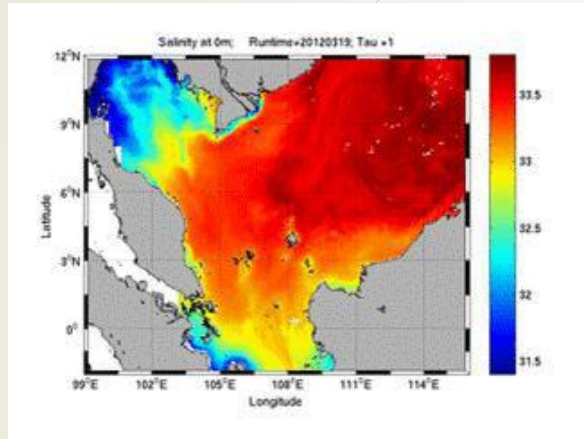


GROUND  
RECEIVING  
STATION

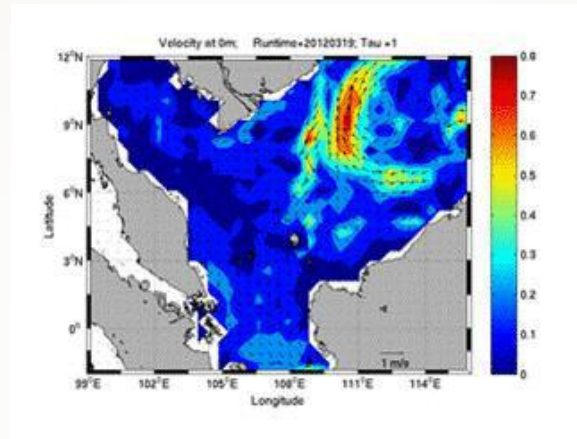


# SCOPE OF WORK

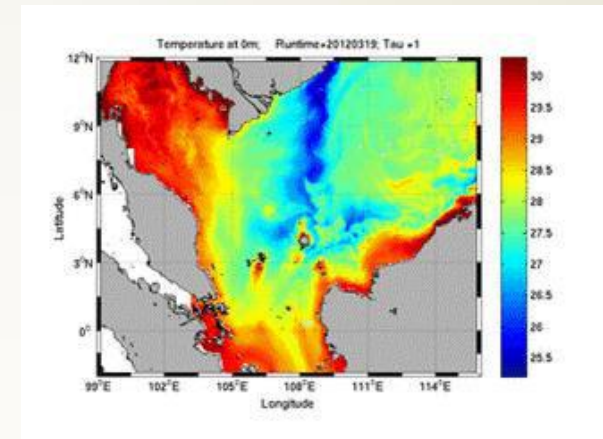
UNIVERSITI KEBANGSAAN MALAYSIA



**SURFACE  
SALINITY**



**SURFACE  
CURRENT**

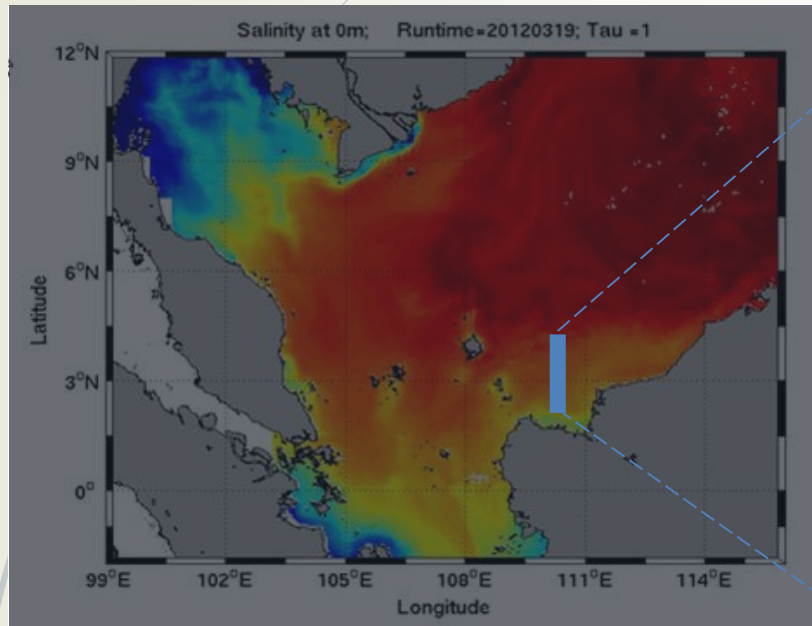


**SURFACE  
TEMPERATURE**

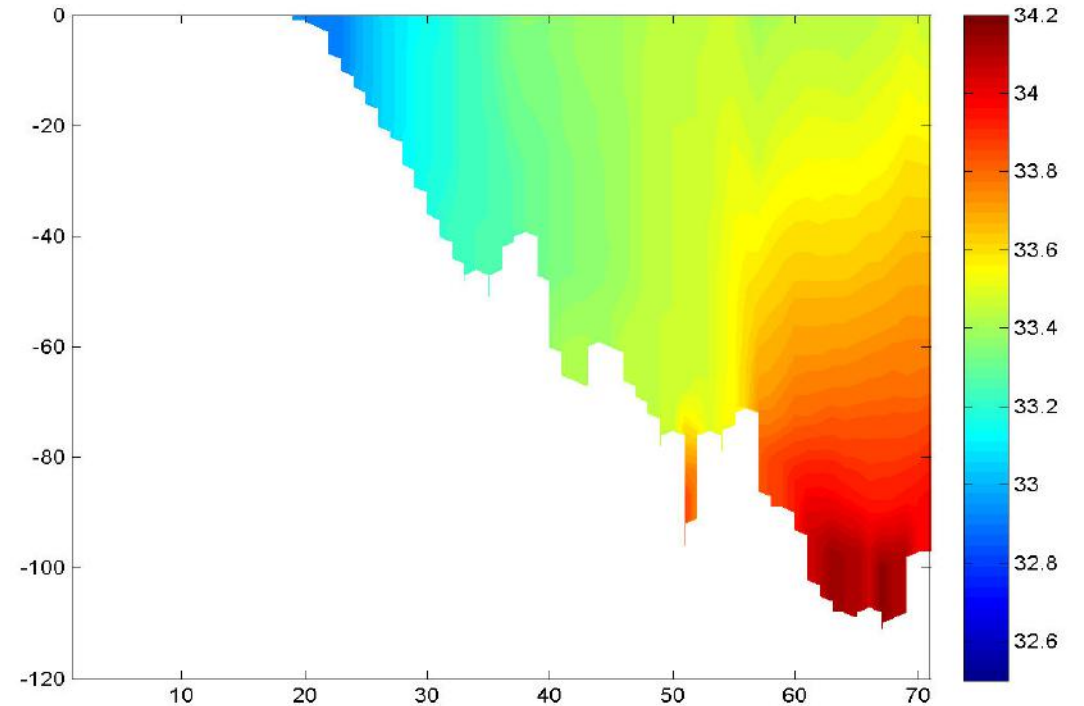
- Generate sea-surface forecast of Malaysian waters
- Ocean Modelling

# SEA SURFACE FORECASTING

SCOPE OF WORK - UKM



Cross-section of salinity field over 3 days (72 hours)



Initialized at 00UTC 19-03-2012



# DATA SHARING POLICIES

POLICIES OVERVIEW

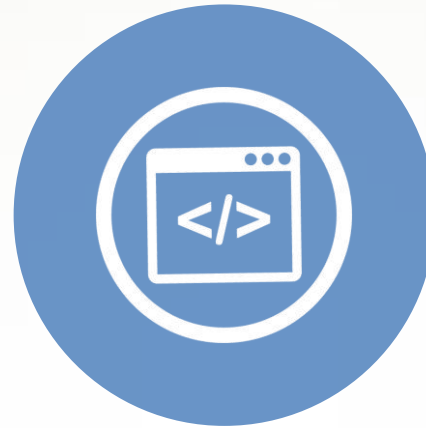
# DATA SHARING POLICIES

## POLICIES OVERVIEW



### OWNERSHIP

Ownership of the data will remain with the institution or agency contributing to the MyNODC



### DATA TYPE

Institutions and agencies agree to share metadata of all oceanographic data



### ACCESSIBILITY

Data accessibility is available via data download facility in MyNODC or request access from the data owner



# DATA SECURITY

5-TIER SECURITY LEVEL

# DEFINITION



LEVEL 1:  
UNCLASSIFIED

**Public Information:**  
Information that is  
considered public



LEVEL 2:  
RESTRICTED

Information the  
agencies/ departments  
had chosen to keep  
confidential but the  
disclosure of which  
would not cause  
material harm



LEVEL 3:  
CONFIDENTIAL

Information could cause  
risk of material harm to  
individuals or the nation  
if disclosed



LEVEL 4:  
SECRET

Information would likely  
cause serious harm to  
individuals or the nation  
if disclosed



LEVEL 5: TOP  
SECRET

Information would  
cause severe harm to  
individuals or the nation  
if disclosed

# WAY FORWARD

MYNODC NOWADAYS AND FUTURE

“MyNODC provides an Integrated oceanographic and marine science data management system for stakeholders and policy maker to plan, govern and sustainably use the oceans, seas and marine”

Build a good relationship within various Government and Non-Governmental organizations, universities and research institutes  
Centres of Excellence

MyNODC as a national data repository in the field of oceanography and marine science





# *MyNODC System Features*



**KEMENTERIAN SAINS,  
TEKNOLOGI DAN INOVASI**  
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION



# User Role Definition

## Registered User

- Able to update their profile and view their own dashboard.
- Able to search, download specific content and upload metadata based on their assigned user roles and access rights

## Organization Administrator

- Manage their organization profile, project and equipment listing associated to their organization
- Manage user accessibility on their organization
- Approves/rejects uploaded data for curation within their organization

## Data Curator

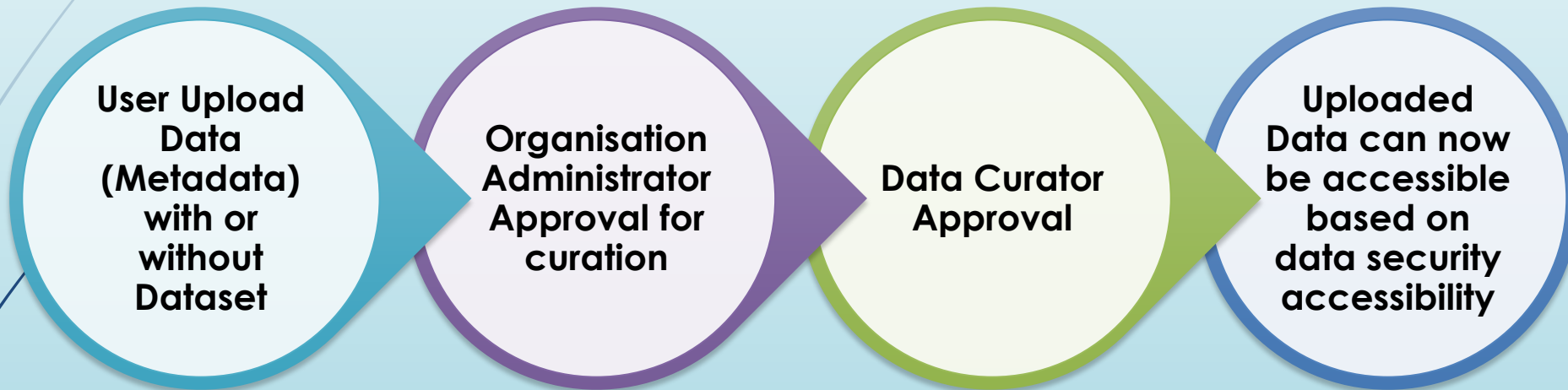
- Validate, verify and cleanse uploaded data
- Approves/rejects uploaded data

## System Administrator

- Manage user-role accessibility and monitor the overall health of the MYNODC system.
- Manage all static contents of the system.



# Data Upload Flow



# Landing Page



[About Us](#) | 
 [National Role](#) | 
 [Search](#) | 
 [Visualisation](#) | 
 [Data Management](#)



## MYNODC ROADMAP

"MyNODC" provides a friendly platform for stakeholders to interact, publish and share data on recent findings that cover all aspect of scientific and non-scientific research of oceanography and marine sciences.



**News & Events** RSS

« < 1 / 3 > »

- Sustainable Ocean Summit (SOS) 2016  
30 November 2016
- National Research Scientific Expedition: Cluster C  
05 September 2016
- International Conference on Oceanography and Sustainable Marine Production 2016  
23 August 2016
- 37th IAHR World Congress  
13 August 2016







**Malaysia National**

Like Page 1K likes

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**Malaysia National Oceanographic Data Centre - MyNODC**

on Saturday

**Contact Us**

Strategic Technology and S&T Application Division,  
Ministry of Science, Technology and Innovation,  
Level 6, Block C4, Complex C, Federal Government Administrative Centre,  
62662 W.P Putrajaya, Malaysia.  
Tel: +603-8885 8201/02 Fax: +603-8889 3308  
Email: mynodc@mosti.gov.my

**Agencies**



**Partners**



[Terms and Condition](#) | [Disclaimer](#)

Copyright 2017 Ministry of Science, Technology and Innovation MyNODC App-FAT-Fixes-Build-20170801

# Directory of Experts




Semantic Search   **Advanced Search**   **Directory of Experts**   Natural Language Query

Enter Expert Name:

Filter by Expert Group:

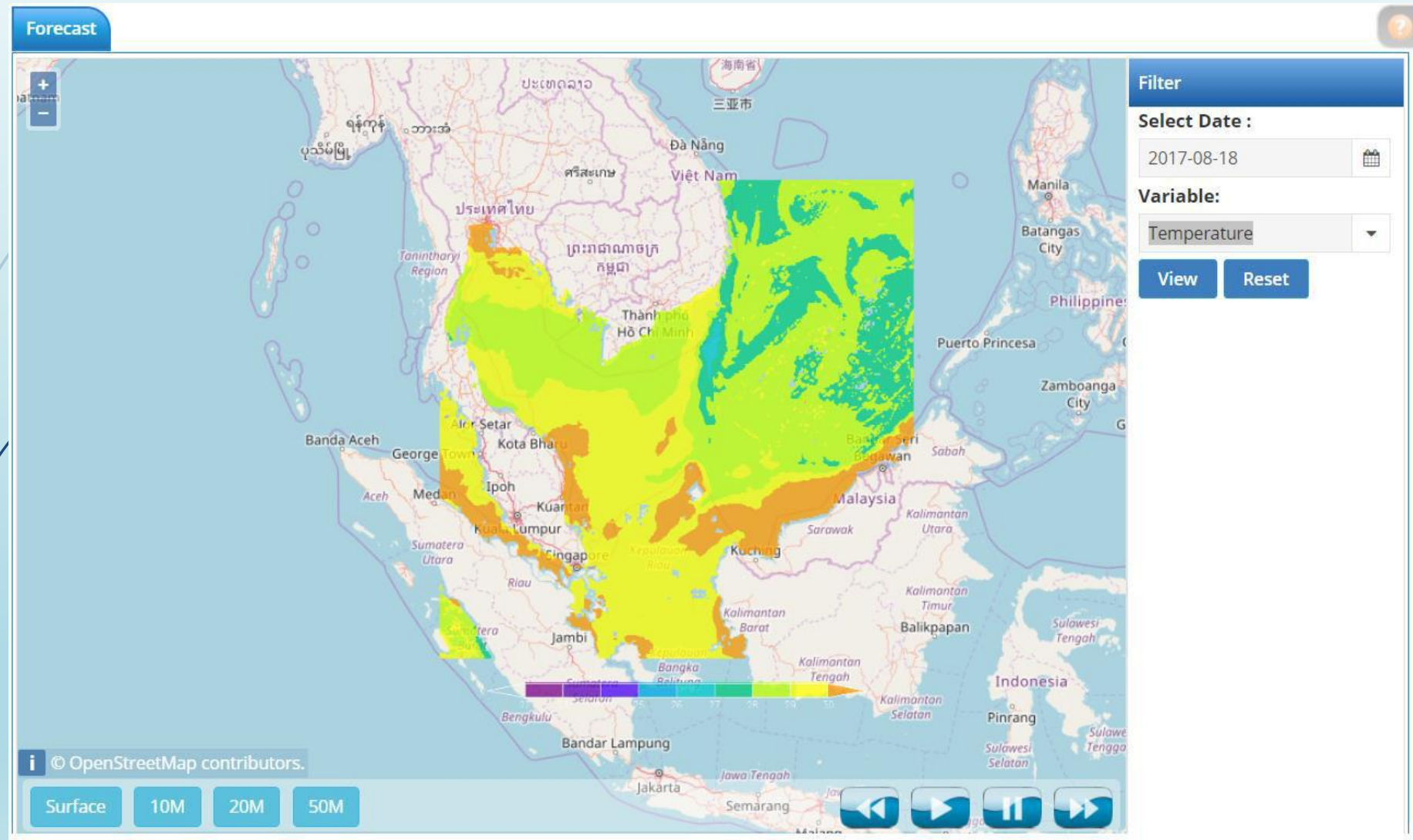
[Search](#)   [Reset](#)   [Show All](#)

**Results (205)**

 <p>AZANI MUJAHID <b>Others</b> Universiti Malaysia Sarawak</p>	 <p>AB. SAMAN ABD. KADER <b>Others</b> Universiti Teknologi Malaysia</p>	 <p>ABDUL HAMID YAHAYA <b>Others</b> University of Malaya</p>
 <p>ABDULLAH HISAM BIN OMAR <b>Others</b> Universiti Teknologi Malaysia</p>	 <p>ABDULLAH SAMAT <b>Others</b> Universiti Kebangsaan Malaysia</p>	 <p>ABENTIN BIN ESTIM <b>Others</b> Universiti Malaysia Sabah</p>
 <p>ABU HENA MUSTAFA KAMAL <b>Others</b> Universiti Putra Malaysia</p>	 <p>ADI MAIMUN BIN ABDUL MALIK <b>Others</b> Universiti Teknologi Malaysia</p>	 <p>AFFENDI YANG AMRI <b>Researcher</b> University of Malaya</p>
 <p>AHMAD ALDRIE AMIR <b>Others</b> Universiti Kebangsaan Malaysia</p>	 <p>AHMAD BIN ABAS KUTTY <b>Others</b> Universiti Kebangsaan Malaysia</p>	 <p>AHMAD BIN ISMAIL <b>Others</b> Universiti Kebangsaan Malaysia</p>
 <p>AHMAD FUAAD BIN AHMAD SABKI <b>Others</b> Universiti Teknologi Malaysia</p>	 <p>AHMAD KHAIRI BIN ABD WAHAB <b>Others</b> Universiti Teknologi Malaysia</p>	 <p>AHMAD SHAMSUDDIN BIN AHMAD <b>Others</b> Universiti Malaysia Terengganu</p>

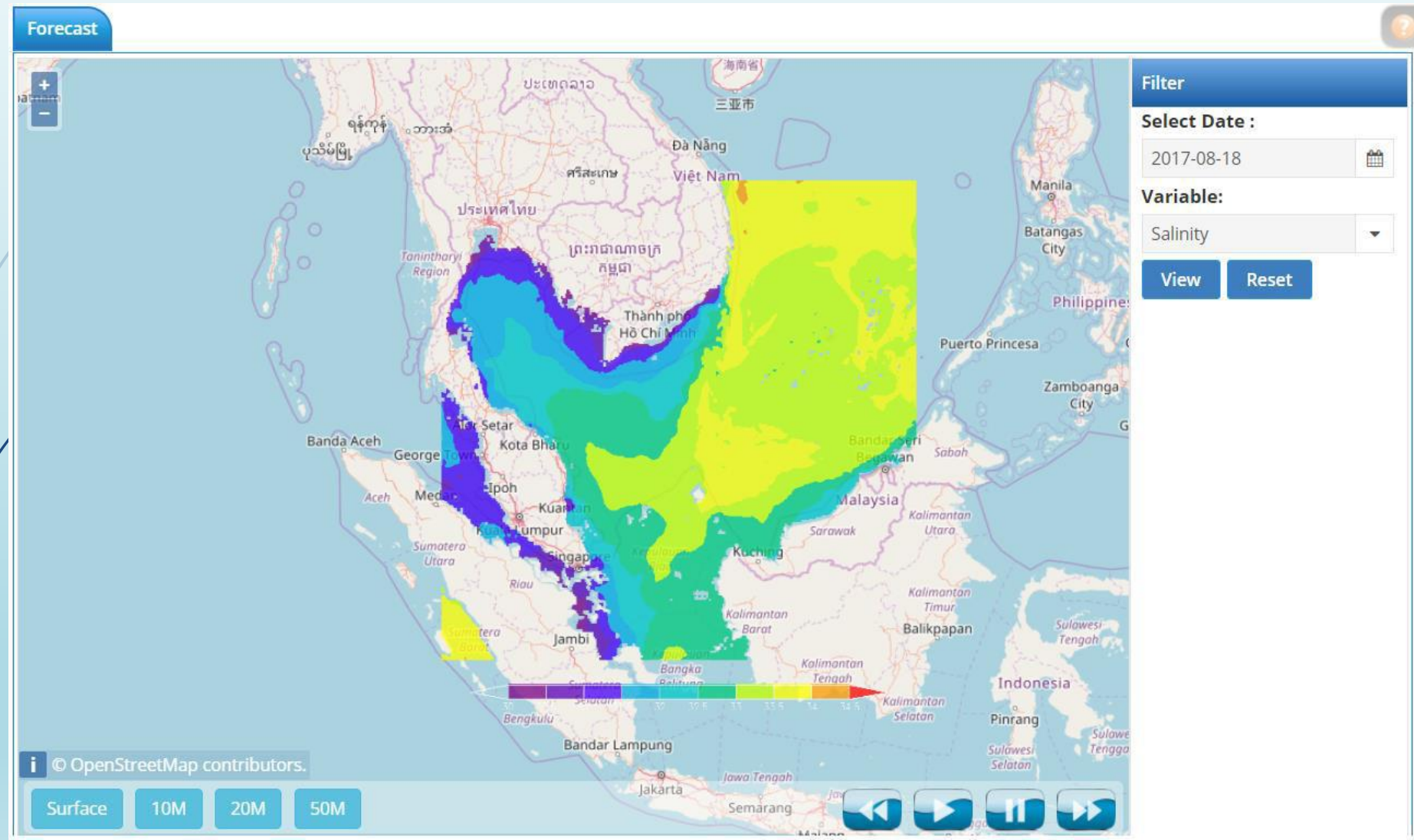


# Visualisation – Forecast Temperature

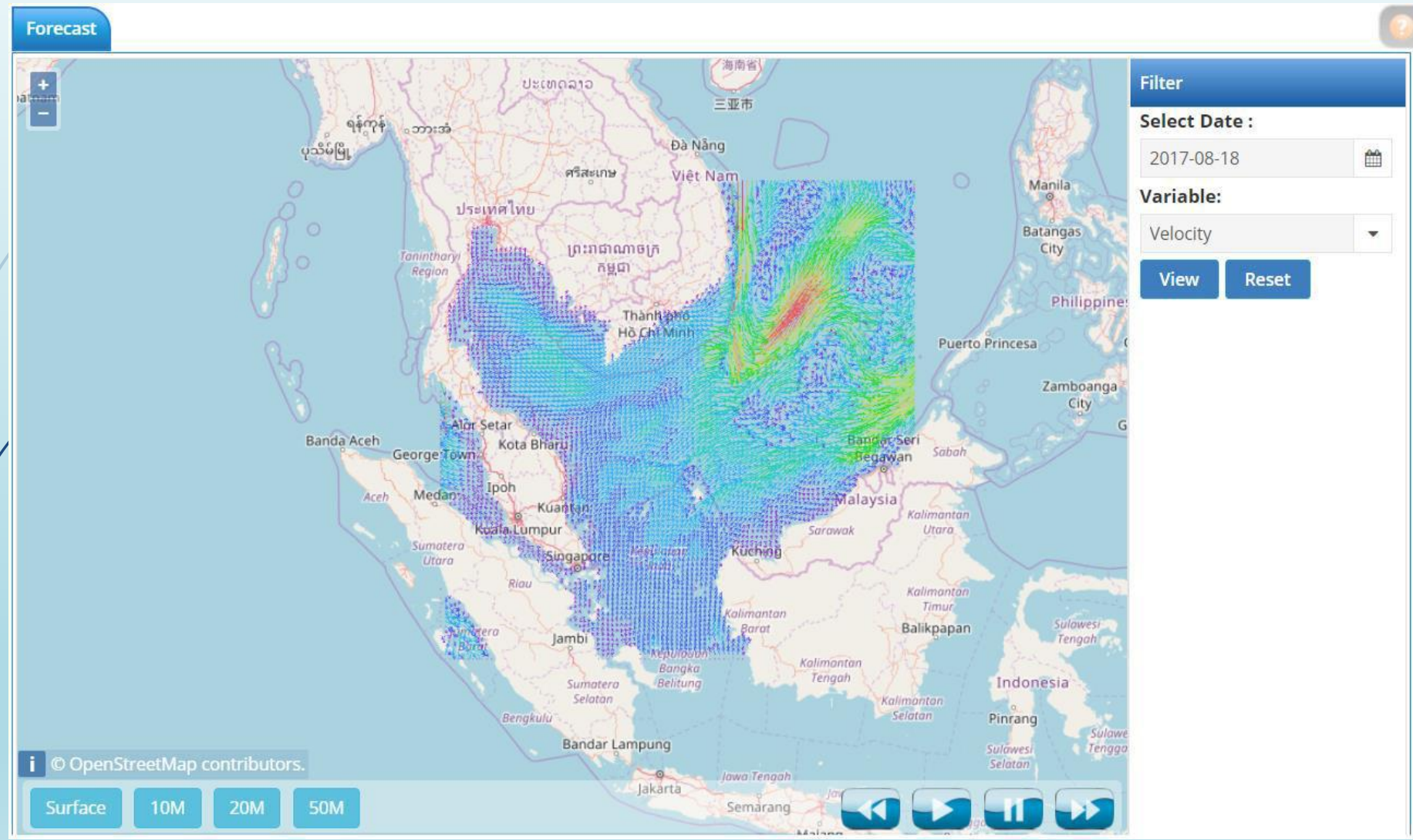




# Visualisation – Forecast Salinity



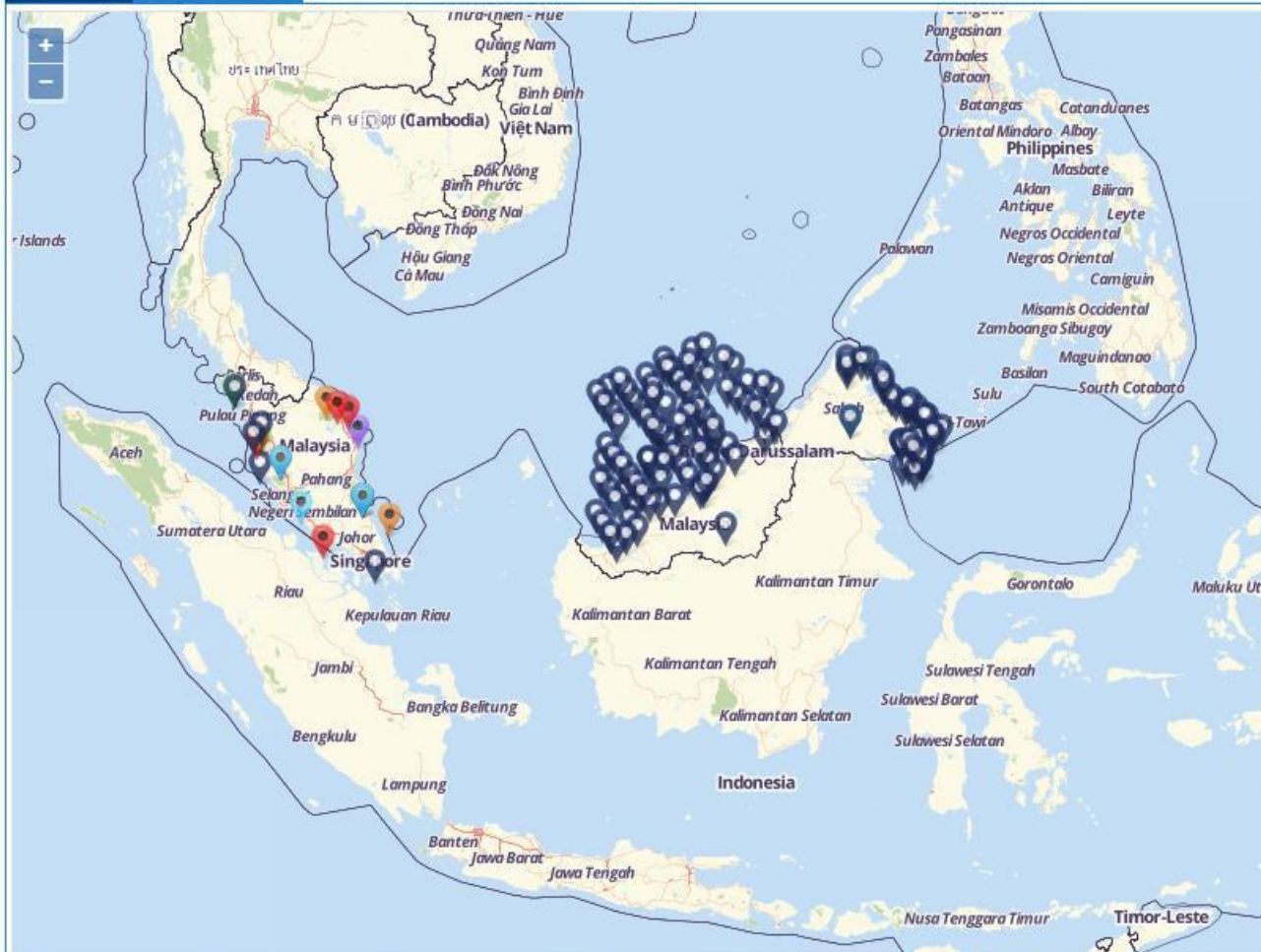
# Visualisation – Forecast Velocity





# Visualisation - Observation

Forecast
Observation
?



Filter

Select Time Frame

From  To

Select Oceanography Type

- Chemical
- Geological
- Physical
- Satellite

Select Organisation

Minimum 3 characters

Select Location

Please enter location with min 3 characters

Latitude  Longitude

Enter Geographic Area  Choose By Location

Choose By Location

- Locations
- Andaman Sea
- Celebes Sea
- Gulf of Thailand

View
Reset

📍 Biological
📍 Chemical
📍 Geological
📍 Physical
📍 Satellite
📍 Combination (Rin/Chem/Geo/Phy/Sate)

# Data Details Page

**Data Details**

**Project Detail**

Project Title	:	Project Kerepek Ubi - Saniah - 30th Sept
Organisation Name	:	Universiti Kebangsaan Malaysia
Project Leader	:	SHARIMAN BIN MOHD GHAZALI
Team Members	:	A. Aldrie Amir JOY JACQUELINE PEREIRA MAIMON ABDULLAH MYNODC test
Funded By	:	Science fund under RMK10
Description	:	Project Kerepek Ubi - Saniah - 30th Sept - keterangan
Location	:	Kuala Api Api
Latitude	:	3.303
Longitude	:	103.4303
West Bound Longitude	:	10
East Bound Longitude	:	20
South Bound Latitude	:	40
North Bound Latitude	:	30
Supplemental Information	:	Project Kerepek Ubi

**Identification Information**

Title	:	Saniah Data1 28th Sept - Biological
Abstract/Description	:	Saniah Data1 28th Sept - Abstract
Collection Date	:	01-09-2016
Collection Method	:	Coastal or island station
Keyword	:	Saniah
Status	:	Active

**Data Owner**

Name of Owner	:	MYNODC test	Organisation	:	Universiti Kebangsaan Malaysia
Position	:	---	Address	:	---
Email	:	mydastest@gmail.com	City	:	Bangi
Telephone Number	:	603123456789	State	:	Selangor
Fax Number	:	6038888000	Postal Code	:	---
Contact Website	:	www.ukm.my	Country	:	Malaysia

**Dataset 1**

**Satellite Data**

**List of Collectors**

#	Collector Name	Collector Email	Collector Organisation
1	MYNODC test	mydastest@gmail.com	Universiti Kebangsaan Malaysia

**List of Documents**

#	Document Type	File Size	File Format	Actions
1	Dataset	0.024491310119628906MB	jpg	<a href="#">Download</a> <a href="#">View</a>
2	Supporting Document	1.239776611328125E-5MB	txt	<a href="#">Download</a>

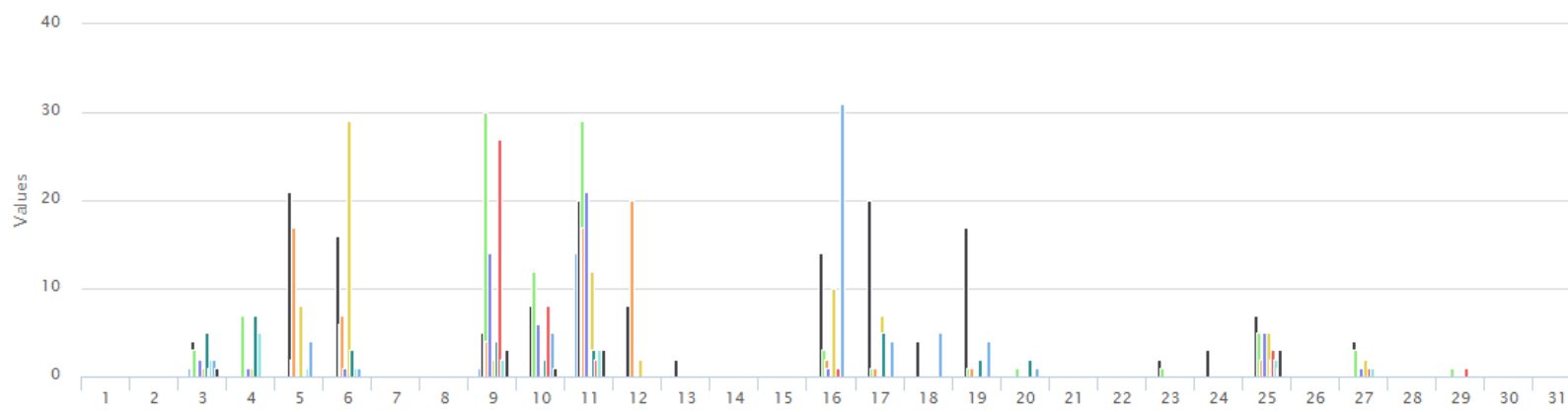


# Organisation Administration – Reports

[Reports](#) | [User Management](#) | [Organisation Information](#) | [Project Management](#) | [Equipment Management](#) | [Data Approval](#)

Category:  By:  Month:  Year:  [Go](#)

### Number of User Hits Per Day In January 2017



■ OBSERVATION    ■ HOME    ■ SEARCH    ■ USER PROFILE    ■ VISUAL SEMANTIC QUERY    ■ VISUALISATION    ■ ORGANISATION ADMIN    ■ DATA MANAGEMENT  
■ NATURAL LANGUAGE QUERY    ■ ADVANCED SEARCH    ■ DASHBOARD    ■ DIRECTORY OF EXPERT

[«](#) [<](#)  / 31 [>](#) [»](#) [ 5 - 5 / 31 ]

Day	Page	User Hits
5	OBSERVATION	0
	HOME	21
	SEARCH	2
	USER PROFILE	17
	VISUAL SEMANTIC QUERY	0
	VISUALISATION	0
	ORGANISATION ADMIN	8
	DASHBOARD	0

[Download PDF Table](#)



# OCEAN DATA TRAINING

MYNODC OUTREACH PROGRAMME SERIES II  
APRIL 28TH, 2016 (THURSDAY)  
8:30 AM - 4:30 PM  
TH HOTEL & CONVENTION CENTRE TERENGGANU



# MyNODC OUTREACH PROGRAMME SERIES IV

*"Action is the foundational key to all success"*  
-Pablo Picasso

**THU** THURSDAY  
02 JUNE 2016  
8:30 AM - 5:30 PM  
FACULTY OF SCIENCE AND TECHNOLOGY  
UNIVERSITI KEBANGSAAN MALAYSIA

**1 DAY TO GO**

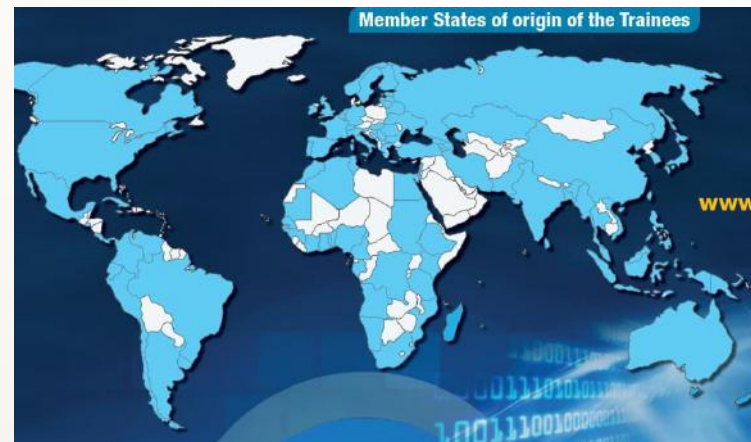
MyNODC @mynodc www.mynodc.com.my

# Regional Training Center

- ▶ Institute of Oceanography and Environment, Universiti Malaysia Terengganu has been established as a Regional Training Center for Ocean data management Under IODE, UNESCO
- ▶ Receives annual budget from UNESCO
- ▶ Upcoming Courses:
  - ▶ **OTGA/INOS-UMT: OBIS Asian nodes and Coral Reef Training Course**  
22-26 Oct 2017
  - ▶ **OTGA/INOS-UMT: Integrated data analysis for upwelling studies Training Course**  
12-16 November 2017
  - ▶ **OTGA/INOS-UMT: Marine GIS Applications (using QGIS) Training Course**  
3-7 December 2017



# OceanTeacher Achievements



- ▶ 45 training courses and workshops organized at the IODE Project Office in Ostend, Belgium
- ▶ 15 training courses hosted at other locations
- ▶ Over 1500 participants from 110 Member States
- ▶ Special attention given to gender balance for training activities beneficiaries
- ▶ Increasing number of women attending OTA courses

# Regional Training Centres

11 RTCs established:

## Designated RTC

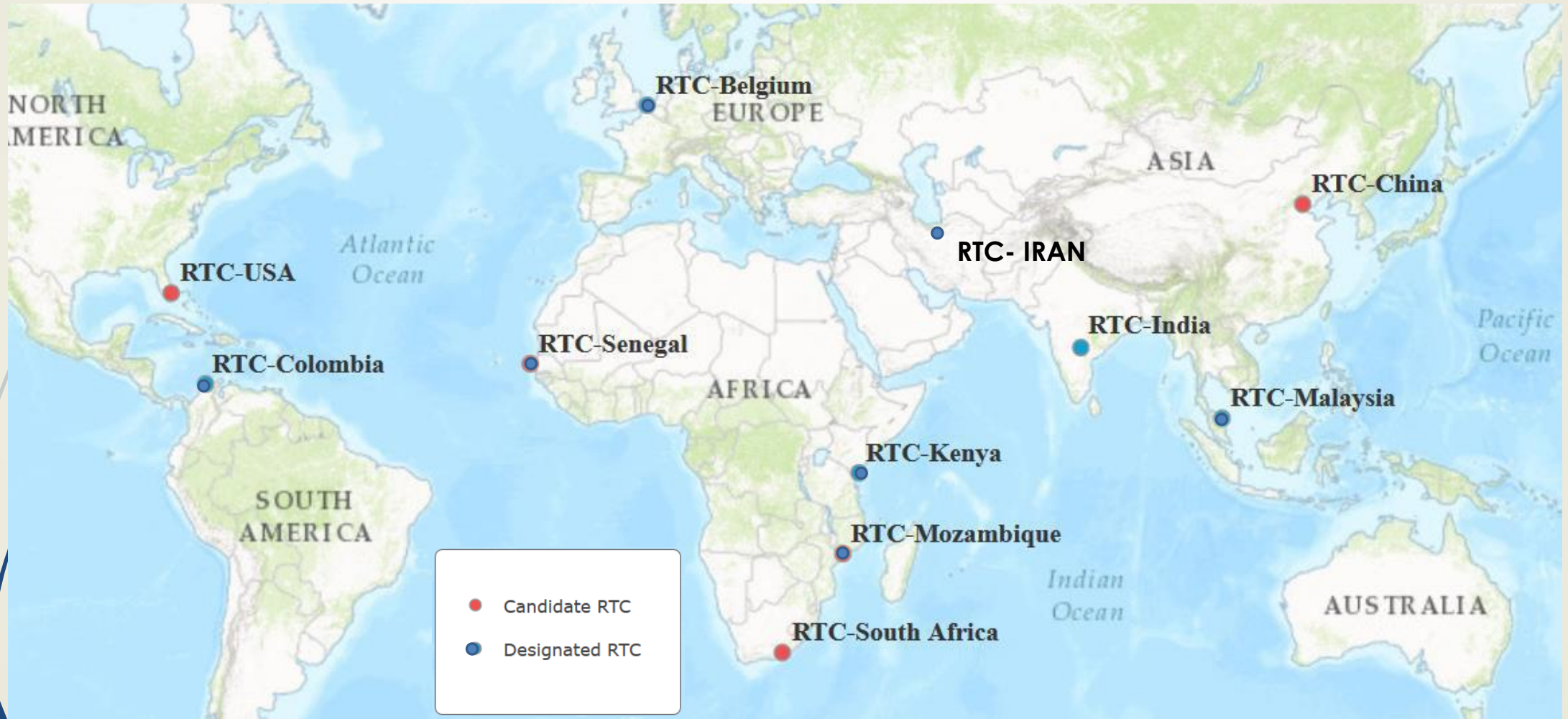
- **Colombia.** Instituto de Investigaciones Marinas y Costeras (INVEMAR)
- **Kenya.** Kenya Marine and Fisheries Research Institute (KMFRI)
- **India.** Indian National Centre for Ocean Information Services (ESSO - INCOIS)
- **Malaysia.** Institut Oseanografi dan Sekitaran (INOS), UMT
- **Belgium.** UNESCO/IOC Project Office for IODE
- **Mozambique.** Universidade Eduardo Mondlane - Escola Superior de Ciencias Costeiras e Marinhas (ESCCM)
- **Senegal.** Centre de Recherches Océanographiques de Dakar-Thiaroye -CRODT (CRODT-ISRA)

## Candidate RTC

- **China.** National Centre of Ocean Standards and Metrology (NCOSM)
- **South Africa.** African Centre for Capacity-Building in Ocean Governance (AFRICOG) / Rhodes University
- **United States.** Nova Southeastern University (NSU)
- **Iran,** Iranian National Institute for Oceanography and Atmospheric Science



# RTC network



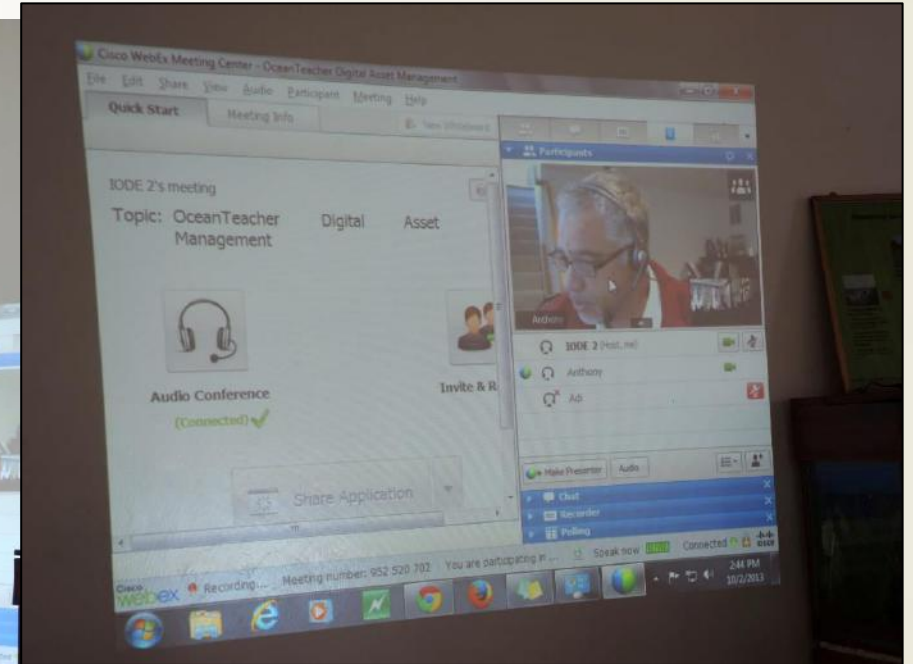


# Training Sessions





# Remote teaching from USA to Kenya



# Simultaneous training India - Belgium





# www.oceanteacher.org

The screenshot shows the OceanTeacher website homepage. At the top left is the OceanTeacher logo. To the right is a navigation menu with links: ABOUT, ALL COURSES, UPCOMING COURSES, APPLY, INSTRUCTORS, VIDEOS, CONTACT US, and LOG IN. Below the navigation is a language selection bar: "Browse by Language: English | Français | Español". Underneath is a "Browse by Subject:" section with four subject cards. Each card has an icon, a list of subjects, and a brief description of topics. The subjects are: Data Management (Database icon), Information Management (Document icon), Marine Spatial Planning (Globe icon), and OBIS (Leaf icon). Below the subject cards is a "HEADQUARTERS" section featuring a photo of the UNESCO/IOC Project Office for IODE in Oostende, Belgium, with a text block explaining its establishment and a link to "Recent Courses". The "DESIGNATED REGIONAL CENTRES" section follows, with four cards for COLOMBIA, KENYA, INDIA, and MALAYSIA. Each card includes a photo of a local center, the center's name, and a link to "Recent Courses".

**OceanTeacher**

ABOUT ALL COURSES UPCOMING COURSES APPLY INSTRUCTORS VIDEOS CONTACT US LOG IN

Browse by Language: English | Français | Español

Browse by Subject:

- Data Management**
  - Marine Meteorology
  - Ocean ObservationTopics include Marine GIS, Bio Geography, Cruise Planning and Oceanographic Sampling
- Information Management**
  - Disaster RecoveryTopics include Digital Asset Management, E-repositories, Disaster Planning and Recovery.
- Marine Spatial Planning**
  - Tsunami
  - GISTopics include Coastal and Marine Spatial Planning and Management
- OBIS**
  - Harmful Algal BloomsTopics are related to marine biodiversity data and information management.

**HEADQUARTERS**

UNESCO/IOC Project Office for IODE, Oostende, Belgium

In order to respond to new challenges faced by the IODE Programme, an "IOC Project Office for IODE" has been established in Oostende, Belgium, with substantial support from the Government of Flanders (Belgium) and City of Ostend. With the opening of the IOC Project Office for IODE on 25 April 2005, the IODE programme entered a new era of capacity building and ocean data/information services.

[Recent Courses](#)

**DESIGNATED REGIONAL CENTRES**

- COLOMBIA**  
Instituto de Investigaciones Marinas y Costeras (INVEMAR)  
[Recent Courses](#)
- KENYA**  
Kenya Marine and Fisheries Research Institute (KMFRI)  
[Recent Courses](#)
- INDIA**  
Indian National Centre for Ocean Information Services (ESSO - INCOIS)  
[Recent Courses](#)
- MALAYSIA**  
Institut Oseanografi dan Sekitaran (INOS)  
[Recent Courses](#)



# YouTube Channel

The screenshot shows the YouTube channel page for OceanTeacher Global Academy. The browser address bar displays the URL: <https://www.youtube.com/channel/UCI9bCuLFIDJ6fb7tCCW4EIQ/videos>. The channel name is "oceanteacher" and the profile picture is a blue graduation cap with an @ symbol. The channel banner features the text "OceanTeacher GLOBAL ACADEMY" with a blue graduation cap icon. A "Subscribe" button shows 97 subscribers. The "Videos" tab is selected, displaying a grid of 15 video uploads. The left sidebar includes navigation options like Home, My Channel, Trending, Subscriptions, History, Watch Later, Library, Liked videos, Favorites, Subscriptions (listing Stein van Oosteren), Browse channels, Manage subscriptions, and YouTube Red.

**Channel Name:** OceanTeacher Global Academy

**Channel Description:** OceanTeacher website

**Subscribers:** 97

**Navigation:** Home, Videos, Playlists, Channels, Discussion, About

**Uploads:** Date added (newest), Grid

Video Title	Views	Time Ago
GTSP Training Course 2014- Students' Presentations and...	1 view	1 month ago
GTSP Training Course 2014- GTSP Data Visualization, by...	2 views	1 month ago
GTSP Training Course 2014- Unique Data Tagging Scheme, ...	1 view	1 month ago
GTSP Training Course 2014- GTSP Data QC Procedure, by...	1 view	1 month ago
GTSP Training Course 2014- GTSP Data Format Descriptio...	1 view	1 month ago
GTSP Training Course 2014- GTSP Code Tables Descriptio...	No views	1 month ago
GTSP Training Course 2014- GTSP Overview, by Bob Keeley	1 view	1 month ago
GTSP Training Course 2014- GTSP Data Format, by Bob...	1 view	1 month ago
OTA- GTSP Training Course 2014- Open Source Software -...	6 views	1 month ago
GTSP Training Course 2014- Perl Basics, by Charles Sun	No views	1 month ago

A decorative graphic on the left side of the slide. It features a solid blue arrow pointing to the right, with several thin, curved blue lines extending upwards and outwards from its base. The background is a light beige gradient.

THANK YOU...