


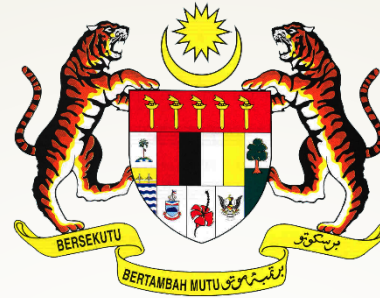
OCEAN DATA MANAGEMENT IN MALAYSIA





Presentation Overview

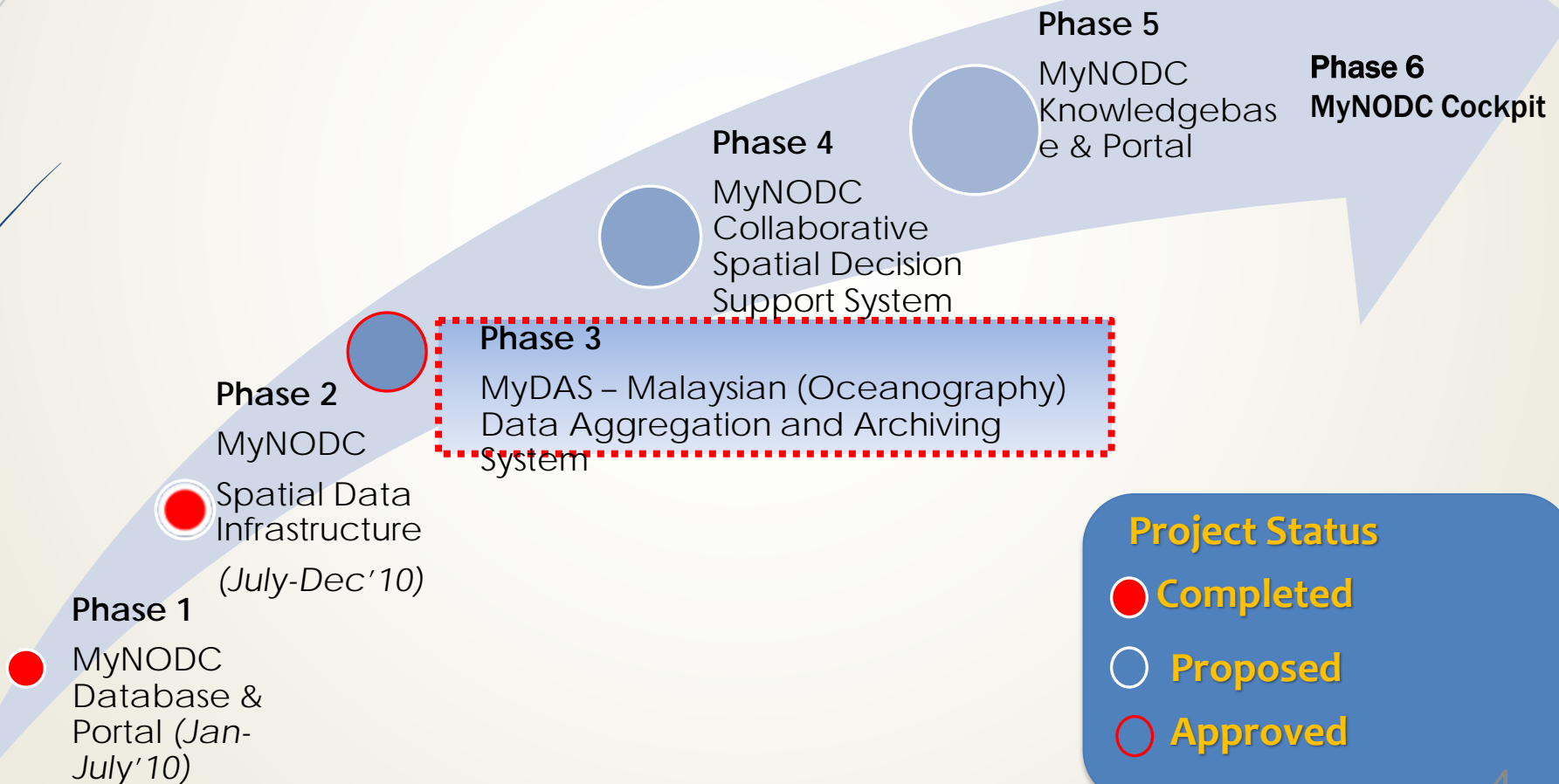
- ▶ Malaysian Oceanographic Data Aggregation & Archiving System (MyDAS)
 - ▶ Ocean Data Training
 - ▶ Ocean data collection activities
- 



Malaysian Oceanographic Data Aggregation & Archiving System (MyDAS)



MyNODC Roadmap





Project Overview

- ▶ Project Duration (3 Years)

Oct 2014 – Oct 2017

- ▶ Total Cost of Project
USD 1,000,000

MyDAS Project Leader



Ministry of Science, Technology and Innovation

- Haji Shahrudin Bin Yusof



MIMOS Berhad (National Research Center on ICT)

- Dr. Ong Hong Hoe



Universiti Malaysia Terengganu

- Prof. Madya Dr. Aidy @ Mohamed Shawal Bin M Muslim



Universiti Kebangsaan Malaysia

- Prof. Fredolin Tangang

INTRODUCTION

MALAYSIA MARITIME OVERVIEW



01

HETEROGENEOUS

+



02

DISTRIBUTED

+



03

NEED MECHANISM
FOR DATA
SHARING

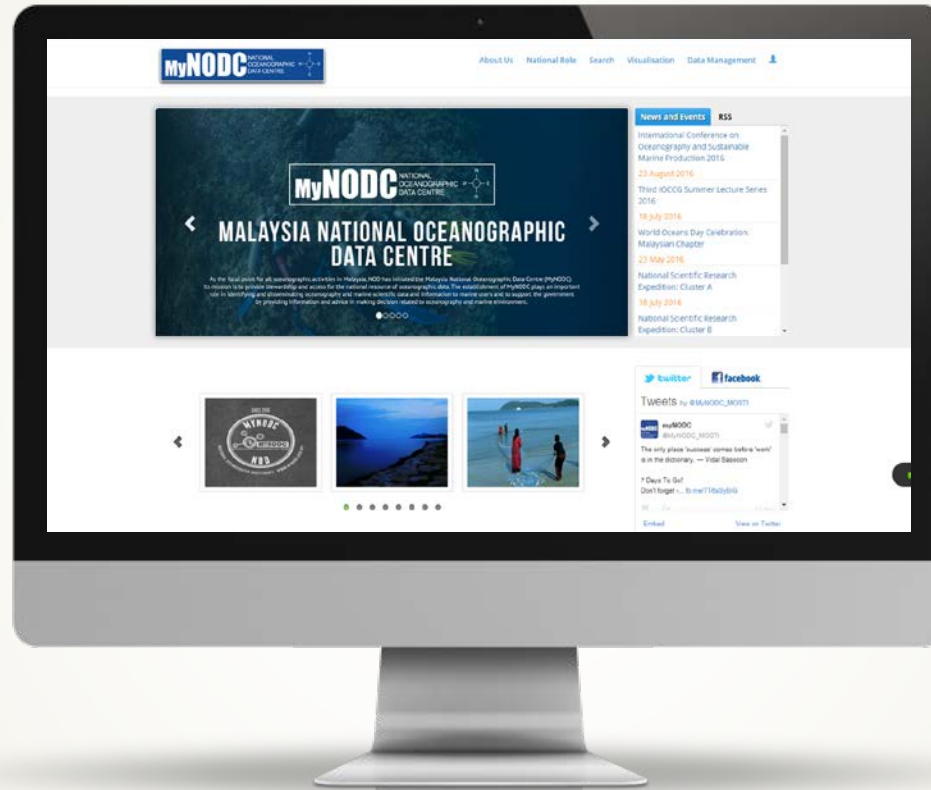


SEAMLESS SOLUTION

- Portal
- Data Centre
- Database

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

Facilitate on-going and future research in oceanography

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

OBJECTIVES

ESTABLISHMENT OF MyNODC

06



To provide data, information and knowledge to aid in decision making

07



To develop a comprehensive system of ocean data collection using various methods to support research activities

08



To integrate oceanographic data and information for ocean modelling and forecasting



09

To enhance innovative approaches for integration of data and information management system



10

To create awareness on the mission and vision and establish trust with stakeholders



11

To increase the capability and human resource development in ocean data management

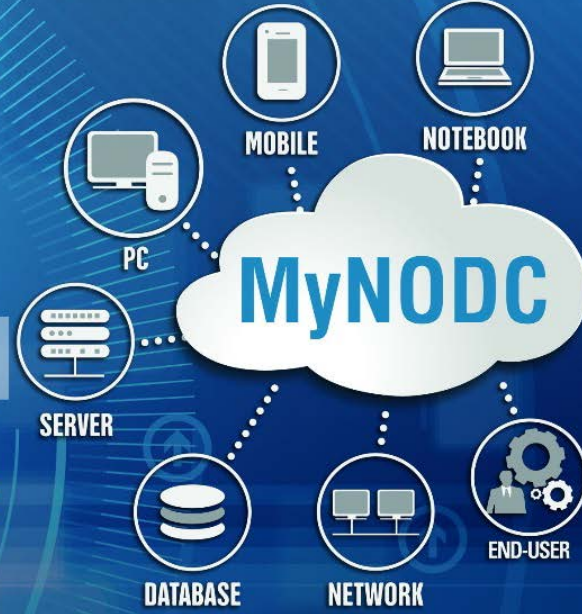
CENTRE OF EXCELLENCES (COEs) IN OCEANOGRAPHY AND MARINE SCIENCE



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 | mynodc@mosti.gov.my



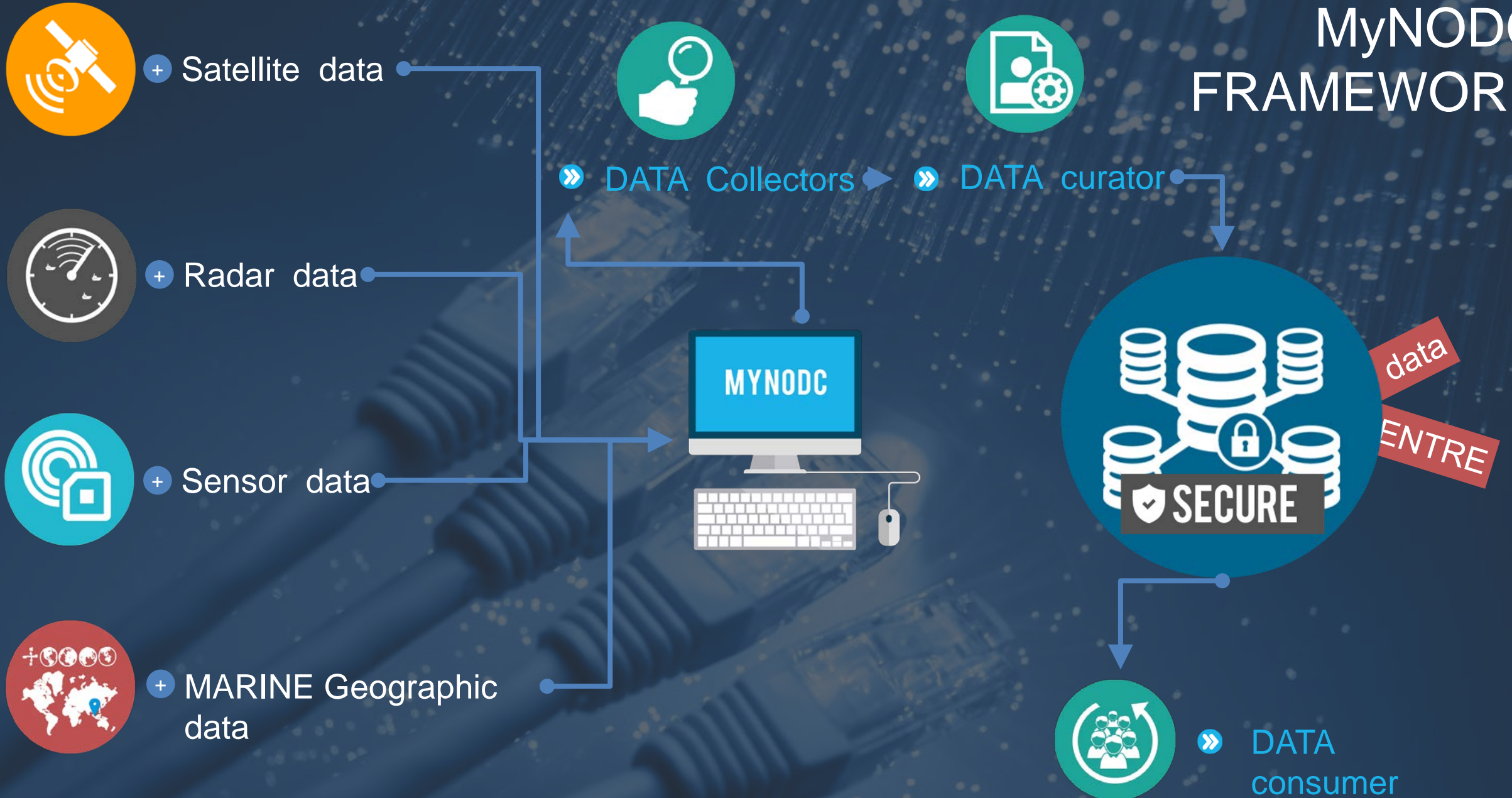


SYSTEM OVERVIEW

ABOUT MyNODC SYSTEM



MyNODC FRAMEWORK





MOSTI Responsibilities



- ▶ MOSTI acts as an Project Management Team to ensure the project meets targeted milestones and deliverables within the set duration thus reporting to Fund Section, MOSTI.
- ▶ Engage with national and international strategic cooperation to maximize the potential output of MyDAS through Human Capital Development.
- ▶ Strengthen role of MyDAS (coordinate use of human resources and infrastructure) to support MyNODC as a national database for oceanographic data



SCOPE OF WORK

UNIVERSITI MALAYSIA TERENGGANU



UNIVERSITI
KEBANGSAAN
MALAYSIA
*The National University
of Malaysia*

UNIVERSITI MALAYSIA TERENGGANU

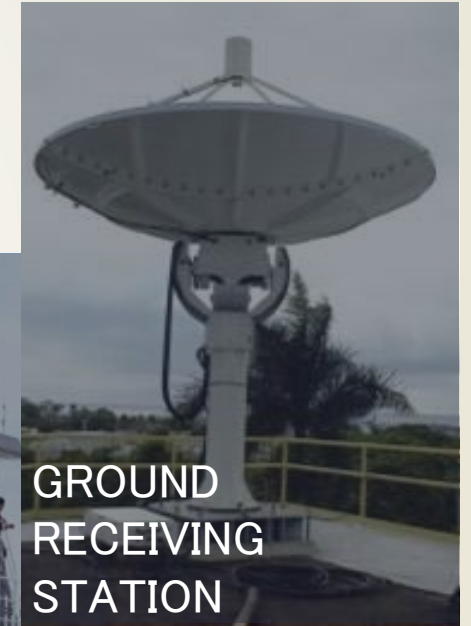
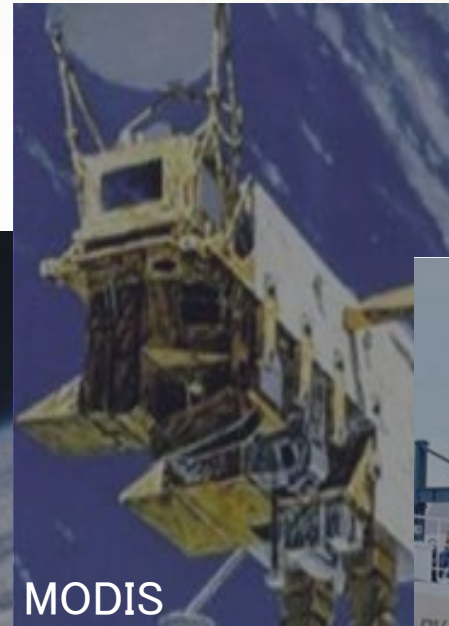
RV DISCOVERY

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.
- Generate baseline database of environmental parameters using historical satellite imagery.



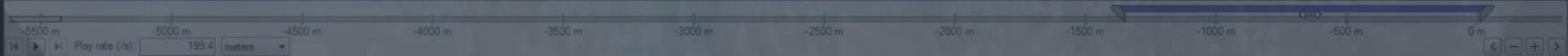


UNIVERSITI
KEBANGSAAN
MALAYSIA

*The National University
of Malaysia*

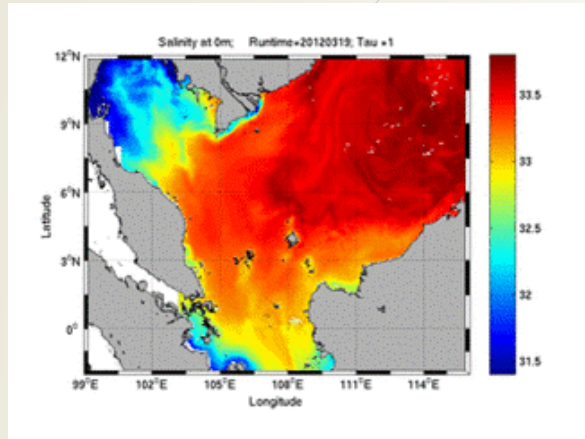
SCOPE OF WORK

UNIVERSITI KEBANGSAAN MALAYSIA

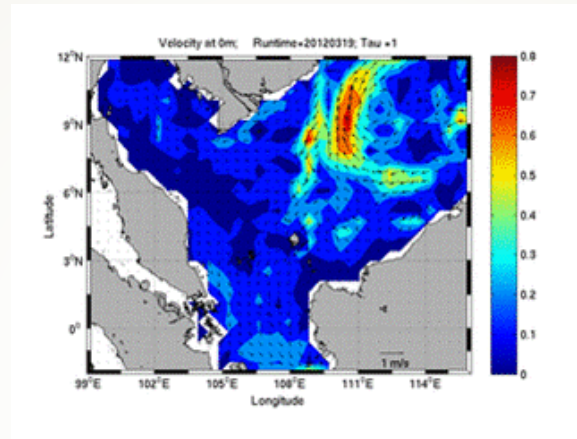


SCOPE OF WORK

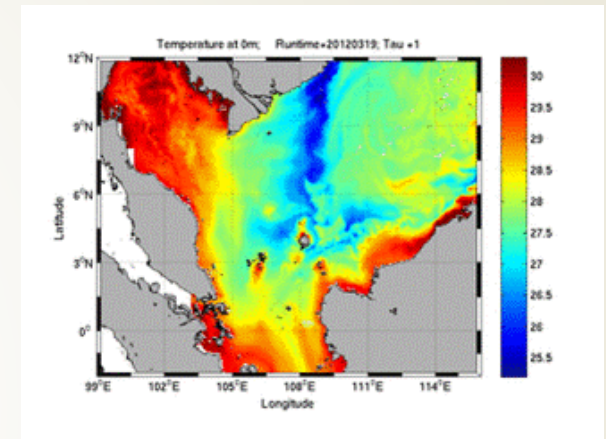
UNIVERSITI KEBANGSAAN MALAYSIA



SURFACE SALINITY



SURFACE CURRENT

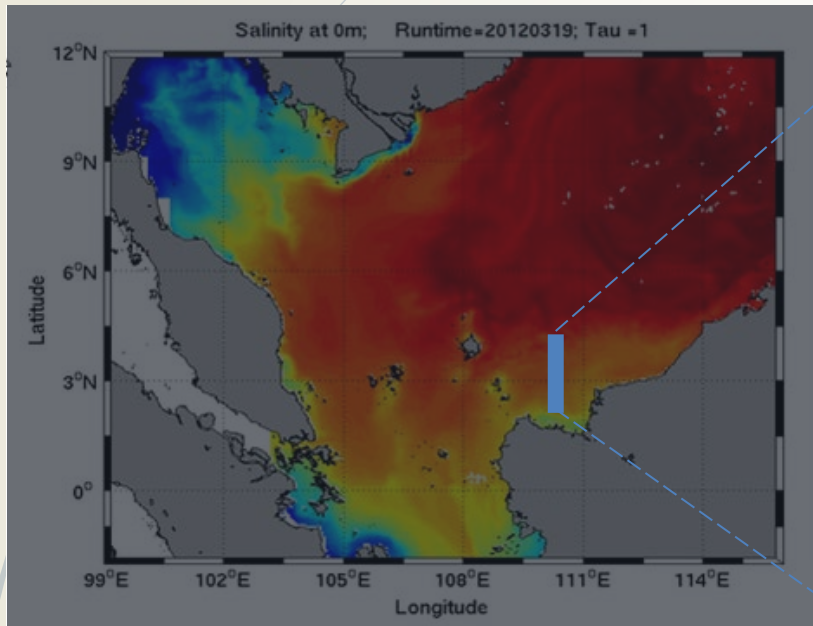


SURFACE TEMPERATURE

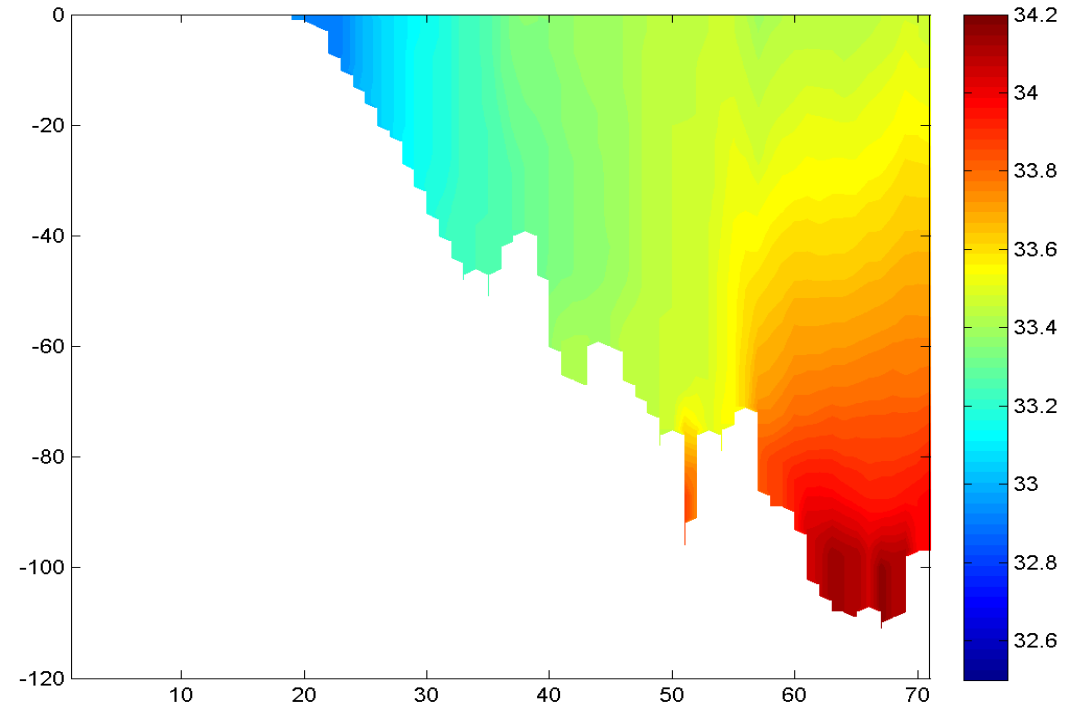
- Generate **sea-surface forecast** of Malaysian waters
- Ocean Modelling

SEA SURFACE FORECASTING

SCOPE OF WORK – UKM



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

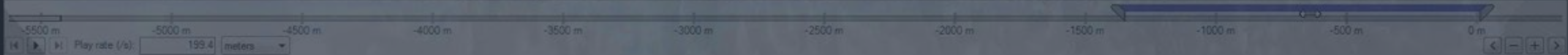


Initialized at 00UTC 19-03-2012



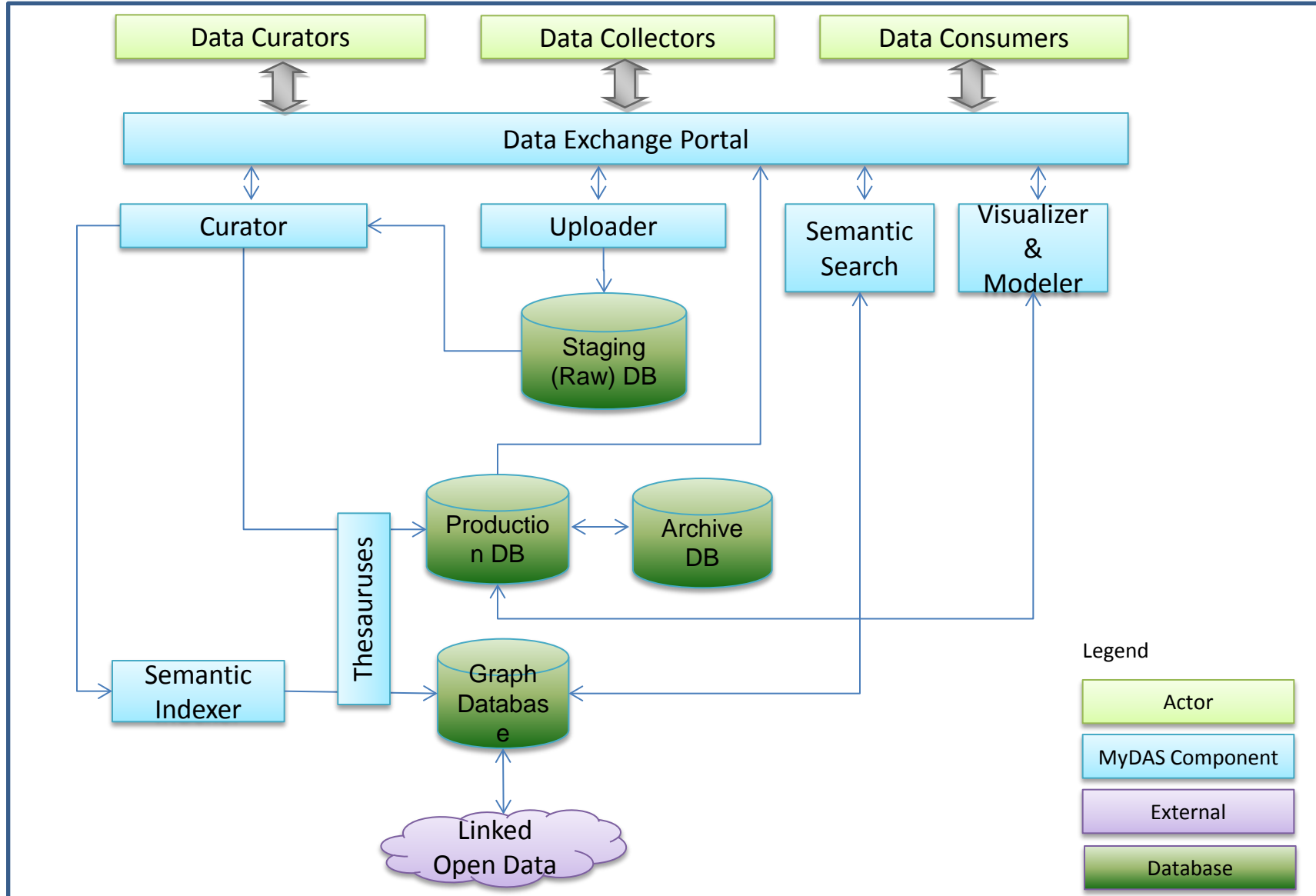
SCOPE OF WORK

MIMOS Berhad





MyDAS Components





DATA SHARING POLICIES

POLICIES OVERVIEW

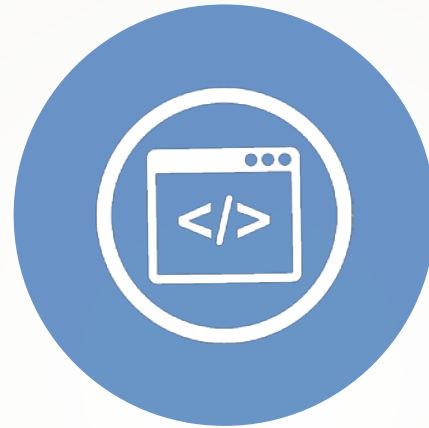
DATA SHARING POLICIES

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 DEFINITION

5-TIER SECURITY LEVEL



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

DATA SHARING BENEFIT

ADVANTAGES AMONG STAKEHOLDERS

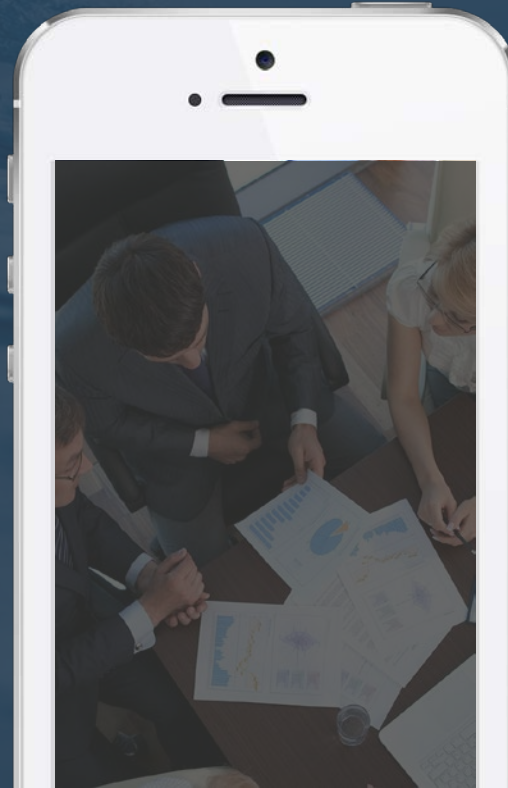
Reduces redundancy of data production in scientific research, which saves investment and time



Incentivizes researchers to produce and ensure higher quality data for sharing with peers, the scientific community, and the public



Encourages collaboration among researchers to share resources, acquire more data, and produce new findings



Assists the production of more meta-analyses, which address big picture topics



Increased visibility for NODCs producing ocean observations, and related products and services



Better products and services through data standardization



HELPS TO BETTER INFORM PLANNING AND POLICY FOR OCEAN RESEARCH AND INFORMED DECISION MAKING

WAY FORWARD

MYNODC NOWADAYS AND FUTURE

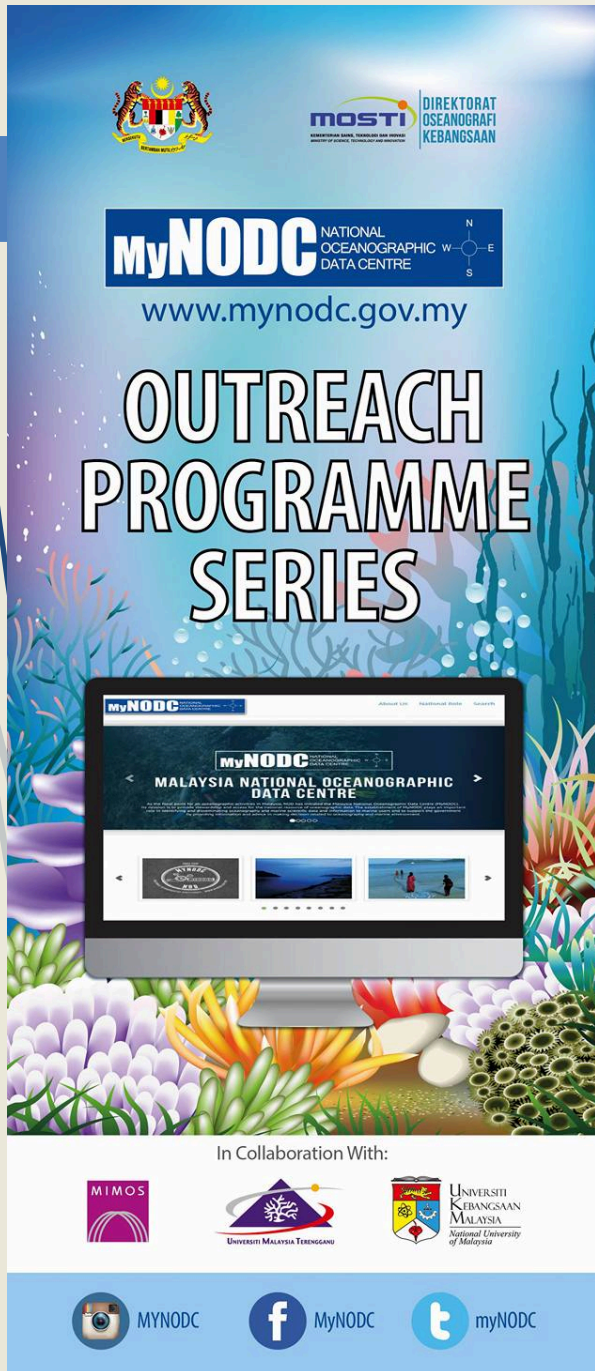
“MyNODC provides an Integrated oceanographic and marine science data management system for stakeholders and policy maker to plan, govern and sustainably use the oceans, seas and marine”

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



OCEAN DATA TRAINING




The poster features a blue and purple background with an underwater scene of coral and bubbles. At the top left is the Malaysian coat of arms. To its right is the logo for MOSTI (Ministry of Science, Technology and Innovation) and the National Oceanographic Data Centre (NODC). Below this is the MyNODC logo, which includes a compass rose and the text 'NATIONAL OCEANOGRAPHIC DATA CENTRE'. The website address 'www.mynodc.gov.my' is displayed below the logo. The main title 'OUTREACH PROGRAMME SERIES' is written in large, white, outlined letters. In the center, a computer monitor displays the MyNODC website interface. At the bottom, it lists 'In Collaboration With:' followed by logos for MIMOS, Universiti Malaysia Terengganu, and Universiti Kebangsaan Malaysia. The footer contains social media icons for Instagram, Facebook, and Twitter, all labeled with 'MyNODC' or 'myNODC'.

  **DIREKTORAT OSEANOGRAFI KEBANGSAAN**




MyNODC NATIONAL OCEANOGRAPHIC DATA CENTRE




www.mynodc.gov.my

OUTREACH PROGRAMME SERIES



In Collaboration With:

   UNIVERSITI KEBANGSAAN MALAYSIA
National University of Malaysia

 MYNODC  MyNODC  myNODC

MyNODC Outreach Programme Series

Conducted MyNODC Outreach Programme Series in the following locations,

- a) Penang (March 2, 2016)
- b) Terengganu (April 28, 2016)
- c) Johor (May 12, 2016)
- d) Selangor (June 2, 2016)
- e) Sarawak (July 19, 2016)
- f) Sabah (July 21, 2016)



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

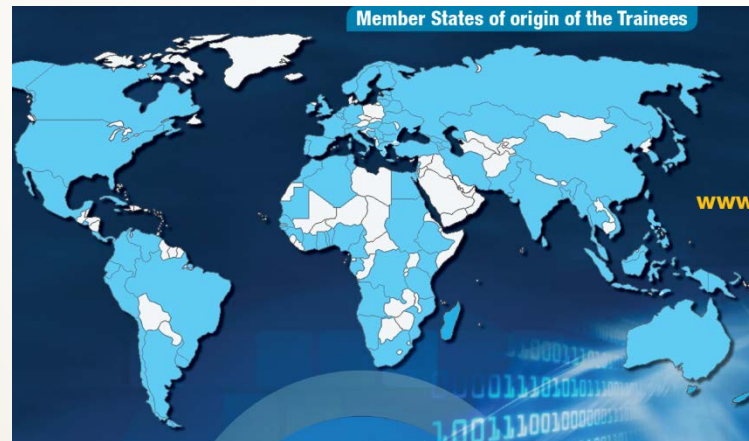
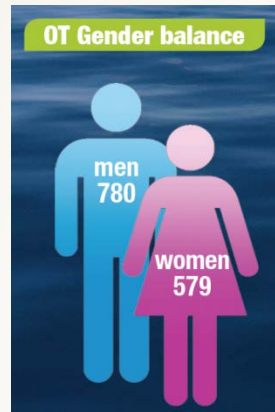
MyNODC @mynodc_msti
 @mynodc www.mynodc.com.my

MOSTI
 MALAYSIAN SOCIETY OF TROPICAL AGRICULTURE
 MALAYSIAN SOCIETY OF TROPICAL FORESTRY
 MALAYSIAN SOCIETY OF TROPICAL FISHERIES
 MALAYSIAN SOCIETY OF TROPICAL HORTICULTURE
 MALAYSIAN SOCIETY OF TROPICAL LIVESTOCK
 MALAYSIAN SOCIETY OF TROPICAL SOILS
 MALAYSIAN SOCIETY OF TROPICAL WATER RESOURCES

Regional Training Center

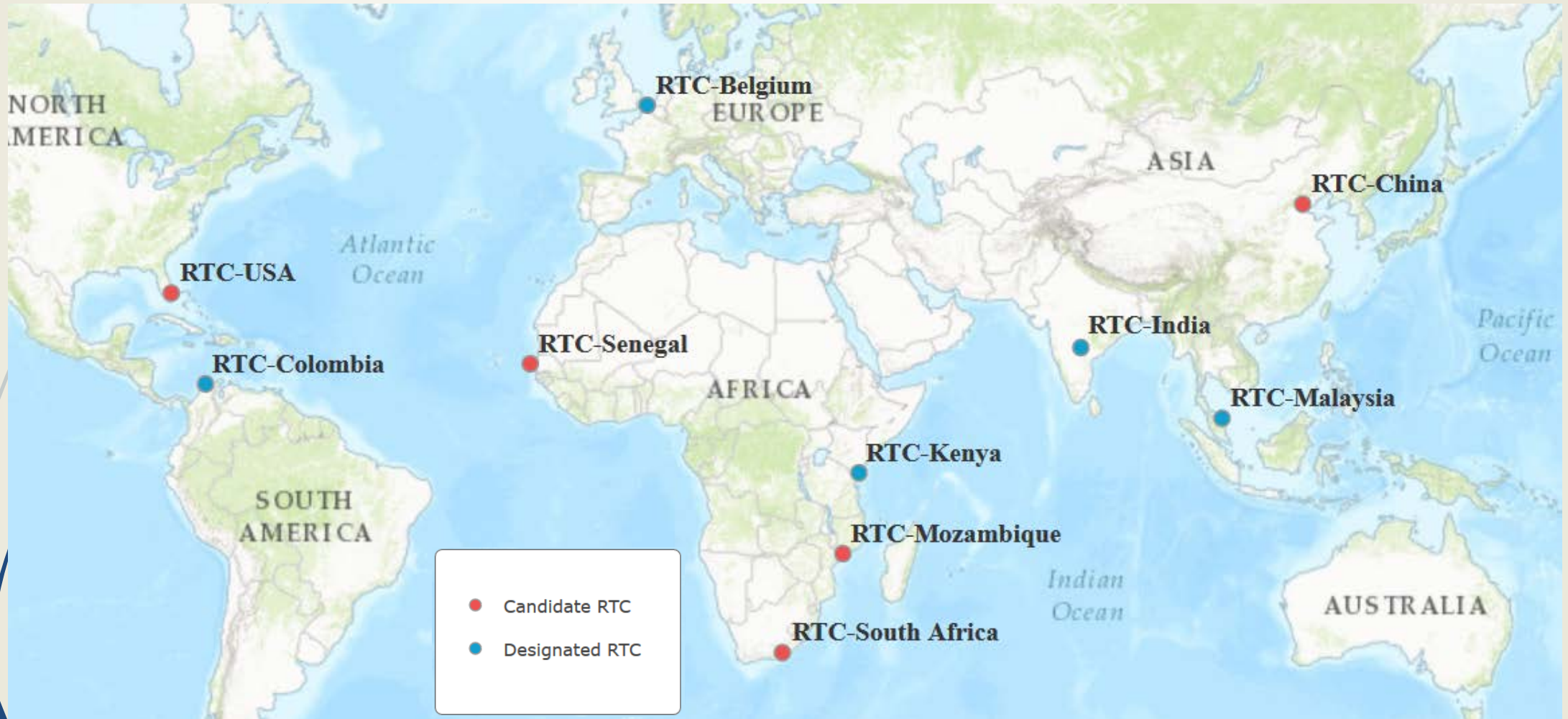
- ▶ Institute of Oceanography and Environment, Universiti Malaysia Terengganu has been established as a Regional Training Center for Ocean data management Under IODE, UNESCO
- ▶ Receives annual budget from UNESCO
- ▶ Courses Conducted :
 - ▶ OTGA Training Course: Marine GIS
 - ▶ IOC/IIOE2-OTGA and IORA Joint Training Course On Research Data Management
 - ▶ OTGA-INOS/UMT Training Course: Metadata using GeoNetwork
 - ▶ Others

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

RTC network





**Institute of Oceanography and Environment (INOS)
UNIVERSITI MALAYSIA TERENGGANU**

IOC/IOE2-OTGA and IORA Joint Training Course On

RESEARCH DATA MANAGEMENT

22 - 26 May 2016



Supported by :



Training Sessions





Ocean Data Collection Activities



Institute of Oceanography and Environment (INOS) HiCOE Program

- ▶ INOS has been recognized as The High center of excellence in Marine science by the Malaysian Government
- ▶ Provided special allocation for Oceanographic and Marine studies
- ▶ Using these funding INOS has conducted several cruises
 - ▶ Strait of Malacca expedition 2015
 - ▶ HiCOE cruises (2013-2016)
 - ▶ National Scientific Cruise Expedition (Collaboration with The Ministry of Science and Innovation)
 - ▶ HiCOE cruises (2017-2018)



RM1
MILLION

Sponsorship from MOSTI and in kind contribution from UMT and TLDM

70
SCIENTISTS

National scientists from different institutions

20
AGENCIES

National universities, institutions and government agencies

45
DAYS

Cruises will utilise 3 vessels RV DISCOVERY, KD MUTIARA and PEDOMAN

> 100
STATIONS

Sampling stations collecting various oceanographic data

ENTIRE
SOUTH CHINA SEA

Covering the whole area of Malaysia's Exclusive Economic Zone (EEZ) in South China Sea (SCS)

NATIONAL SCIENTIFIC CRUISE EXPEDITION 2016
EKSPEDISI PELAYARAN SAINTIFIK KEBANGSAAN (EPSK) 2016

"SUSTAINABILITY OF MALAYSIAN WATERS IN A CHANGING CLIMATE"

- Ministry of Science Technology and Innovation (MOSTI)
 Aras 4, Block C5, Parcel C
 Pusat Pentadbiran Kerajaan Persekutuan
 62662, Putrajaya, WP Putrajaya, Malaysia
 Website : www.mosti.gov.my
 Tel Num : +60 3 8885 8000
- Institute of Oceanography and Environment (INOS)
 Universiti Malaysia Terengganu
 21030 Kuala Terengganu, Terengganu
 Website : www.umt.edu.my
 Tel Num : +60 9 668 4391
- National Hydrographic Centre (PHN)
 Lebuhr Sungai Chandong, Bandar Amnada Putra
 42000 Pelabuhan Klang, Selangor, Malaysia
 Website : www.hydro.gov.my
 Tel Num : +60 3 3169 4400
- Marine Department Malaysia (JLM)
 Pejabat Surat 12, Jalan Limbungan
 42007 Pelabuhan Klang, Selangor, Malaysia
 Website : www.marine.gov.my
 Tel Num : +60 3 3346 7777

MAJOR OBJECTIVES

- To conduct a full oceanographic survey of Malaysian waters, with the aims of providing a high-resolution and coherent inventory on the present condition of productivity, pollution and impact of global change on the ocean ecosystem of Malaysian seas.
- To generate understanding of the current states of the seas; its health and productivity, and to determine the influence of climate change and the threats of pollution in the South China Sea (SCS).
- To gather large amount of oceanographic datasets and manage it through a well-developed Malaysian National Oceanography Data Center (MyNODC) for future reference.

01

DR. AAZANI BINTI MUJAHID
PHYSICAL OCEANOGRAPHY
Understanding the dynamics of the current circulation and high productivity area

02

PROF. MADYA DR. LIM PO TEEN
BIOLOGICAL OCEANOGRAPHY
Determine the productivity map of South China Sea (SCS) by providing information of high/low productivity area

03

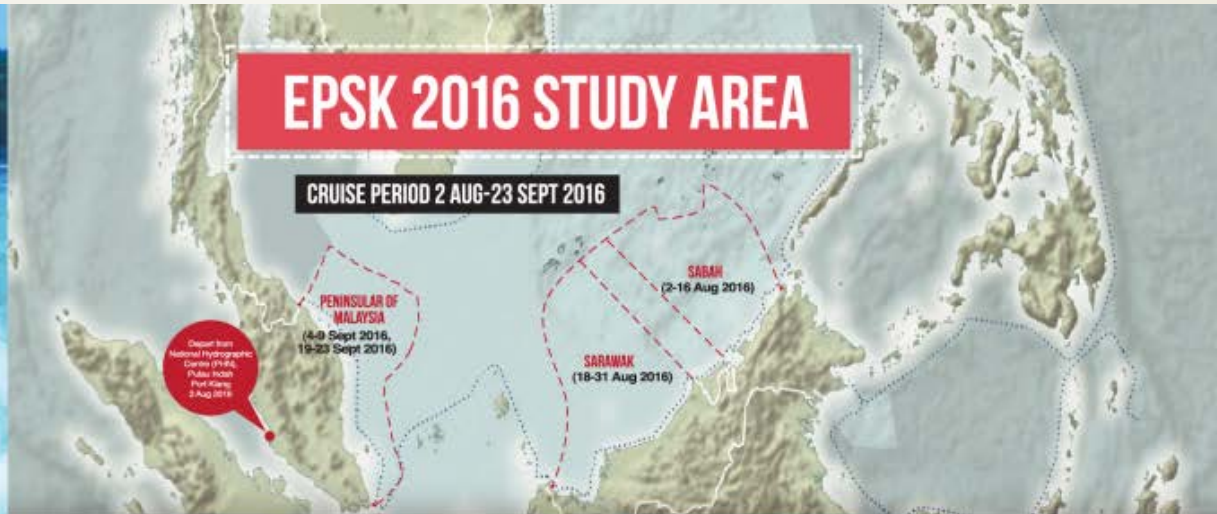
PROF. MADYA DR. SUHAIMI BIN SURATMAN
CHEMICAL OCEANOGRAPHY
Understand the nutrient cycle and its influence on the food chain and productivity

04

PROF. DR. CHE ABD. RAHIM
GEOLOGICAL OCEANOGRAPHY
Provide long term understanding of climate change and its effect on productivity

EPSK 2016 STUDY AREA

CRUISE PERIOD 2 AUG-23 SEPT 2016



SCIENTIFIC COMMITTEE

Scientific Advisor
- Professor Emeritus Dr. Noor Azhar Bin Mohamed Shazli

Chief Scientist
- Prof. Madya Dr. Mohd Fadzil Bin Mohd Akhr

Deputy Chief Scientist
- Prof. Madya Dr. Ejla Saleh
- Prof. Madya Dr. Lum Po Teen
- En. Richard Rumpet

TECHNICAL WORKING GROUPS

"Ocean processes and drivers of primary productivity"



RV DISCOVERY
UNIVERSITI MALAYSIA TERENGGANU (UMT)

SPECIFICATION

Length - 34.8 m
Beam - 7.6 m
Draft - 4.0 m
Max Speed - 12 knots
Capacity - 25 people
Year Completed - 2011

Kapten : Asmawi bin Mohamad @ Awang



KD MUTIARA
NATIONAL HYDROGRAPHIC CENTRE (NHC)

SPECIFICATION

Length - 71.15 m
Beam - 13.56 m
Draft - 4.75 m
Max Speed - 16 knots
Capacity - 41 people
Year Completed - 1977

Kapten : Kdr Khairul Anuar bin Abdul Aziz (TLDM)



MV PEDOMAN
MARINE DEPARTMENT MALAYSIA (JLMD)

SPECIFICATION

Length - 49.9 m
Beam - 10.8 m
Draft - 3.3 m
Max Speed - 14 knots
Capacity - 23 people
Year Completed - 2002

Kapten : Mohamed Azlan Aziz



UNIVERSITI MALAYSIA TERENGGANU Scientific Expedition Series I : THE MAIN ROUTE AND PORTS OF CALL 2015

Pulau Perak
Located at the northern entrance to the Strait of Malacca is a rocky outcrop west of Langkawi

Pulau Segantang
An outcrop consisting of two smaller islands separated by a narrow channel and part of Malaysia's marine park system

Pulau Sembilan
Located of the coast of Kedah is now no longer inhabited but houses a significant diversity of coral species

Pulau Jarak
West of Pangkor with its unmanned lighthouse is a part of the Pulau Sembilan group

Pulau Besar
An inhabited island of Melaka in the middle portion of the Strait of Malacca



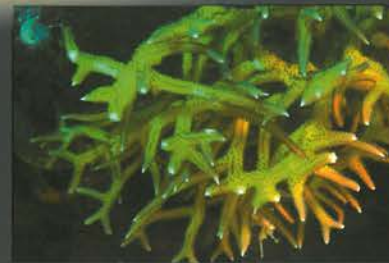
The Research Vessel
RV DISCOVERY

- Gross tonnage: 300 tonnes
- Length: 35 metre
- Range: 4000 nautical mile
- Date of commissioning: 2008
- Main equipment on board:
CTD, Electronic navigation, multibeam sonar, SCUBA equipment, current profiler, wet laboratory

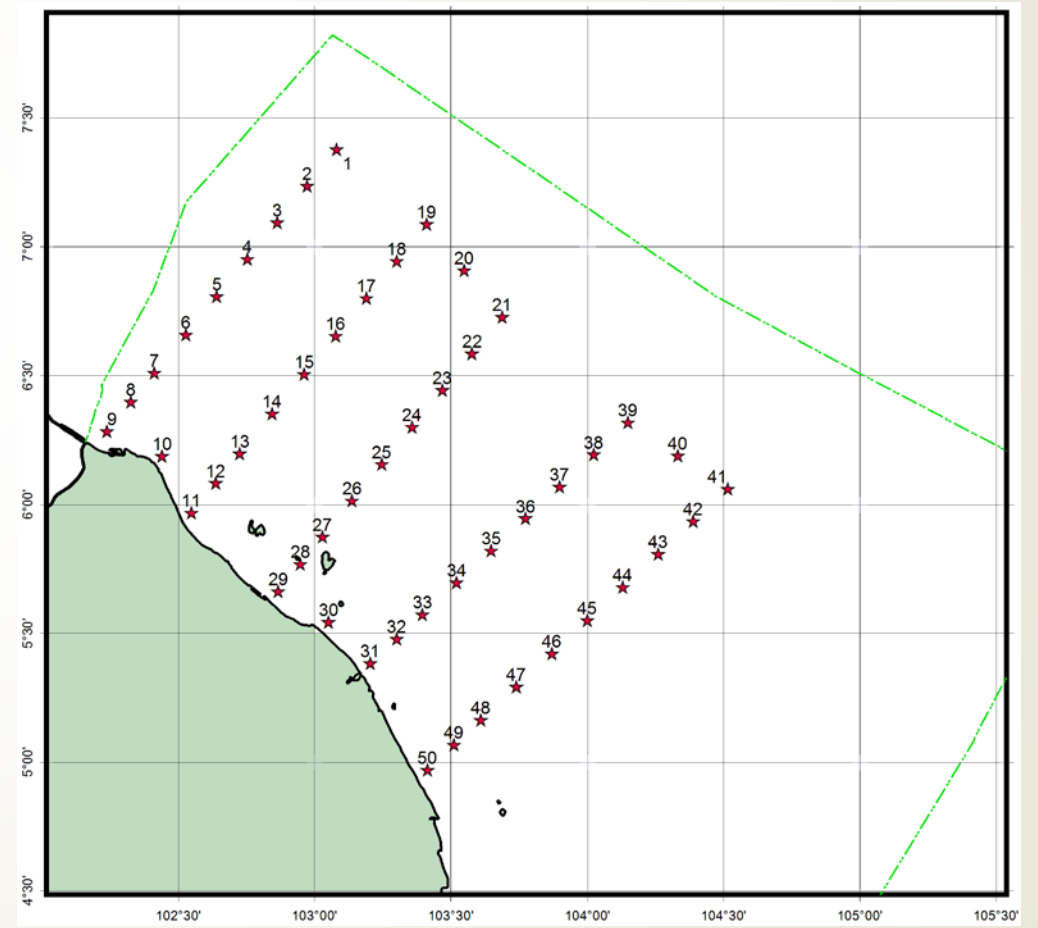
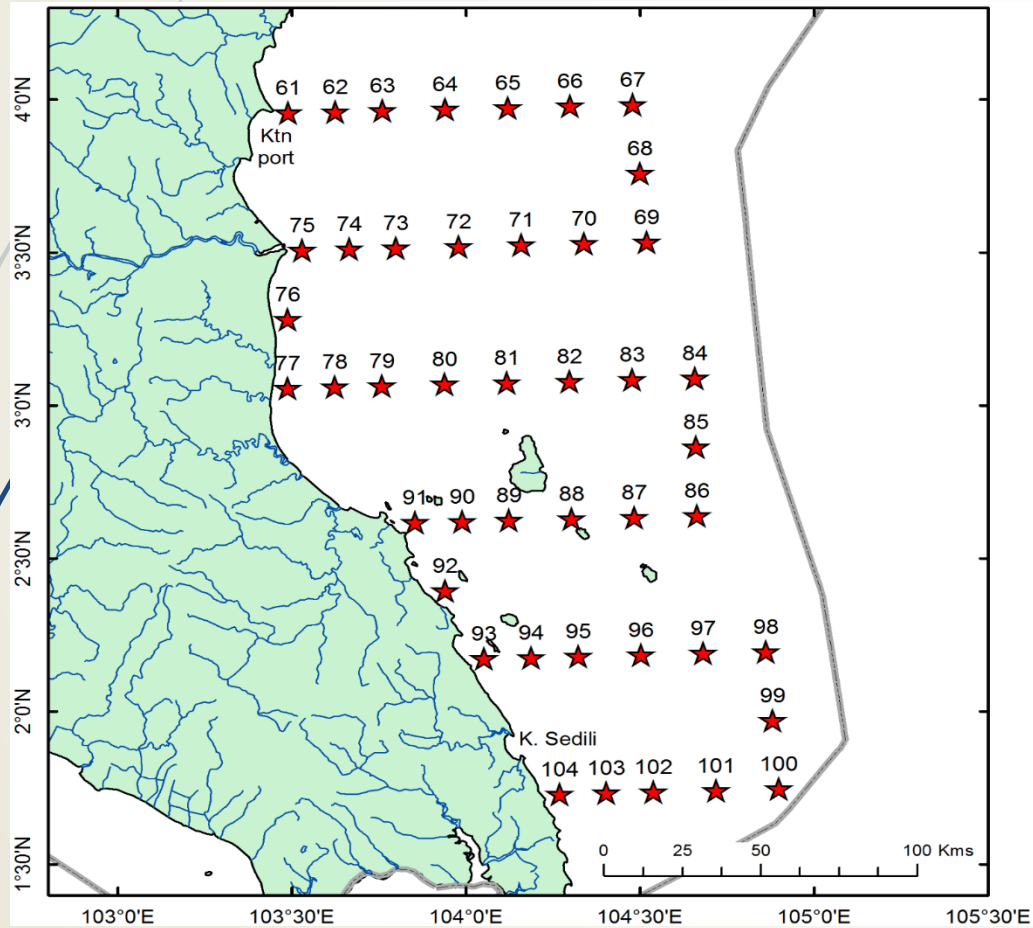


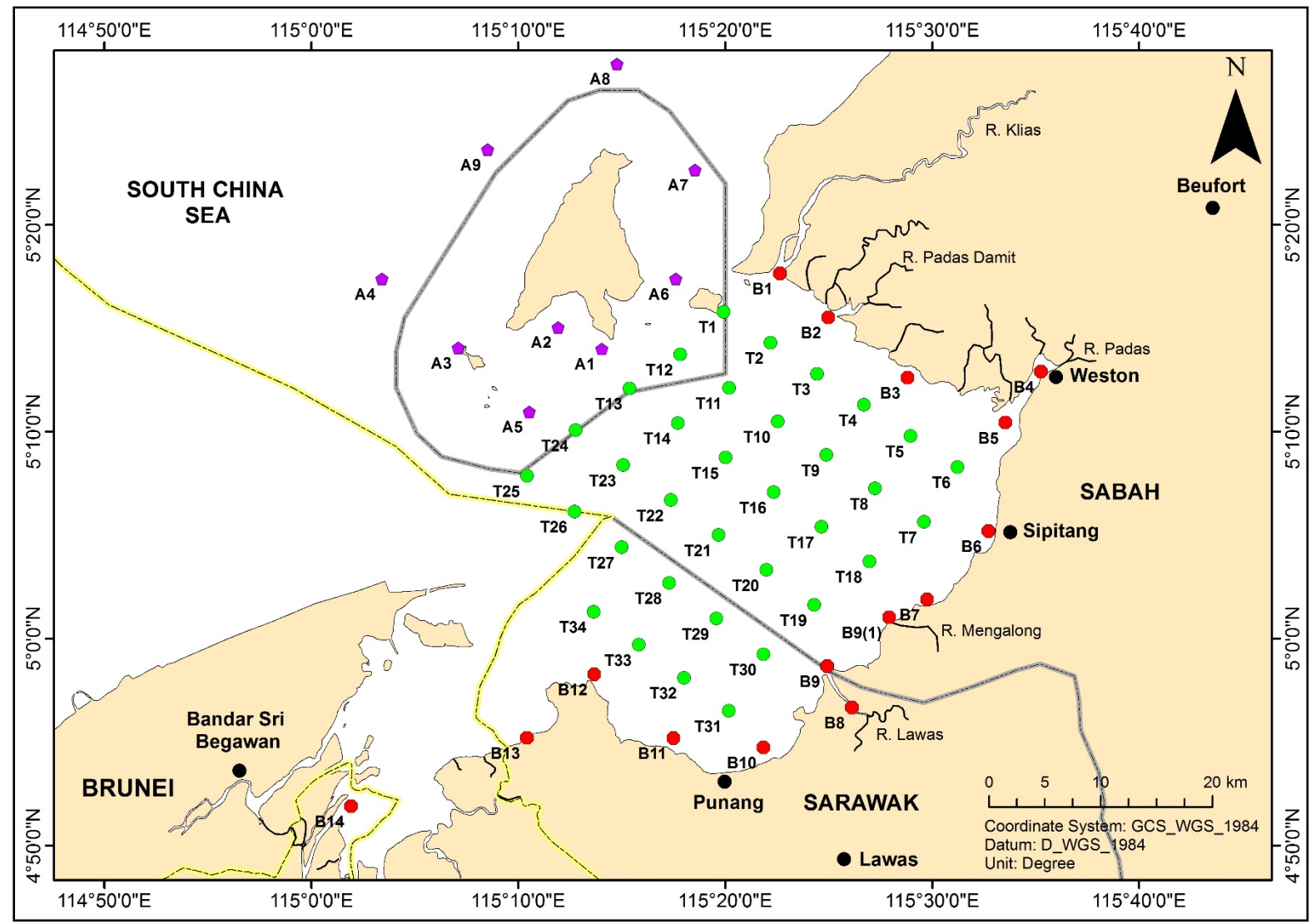
For further information contact:
Director
Institute of Oceanography and Environment (INOS)
Universiti Malaysia Terengganu
Malaysia 21030
Tel: +(609) 668 3101

www.umt.edu.my

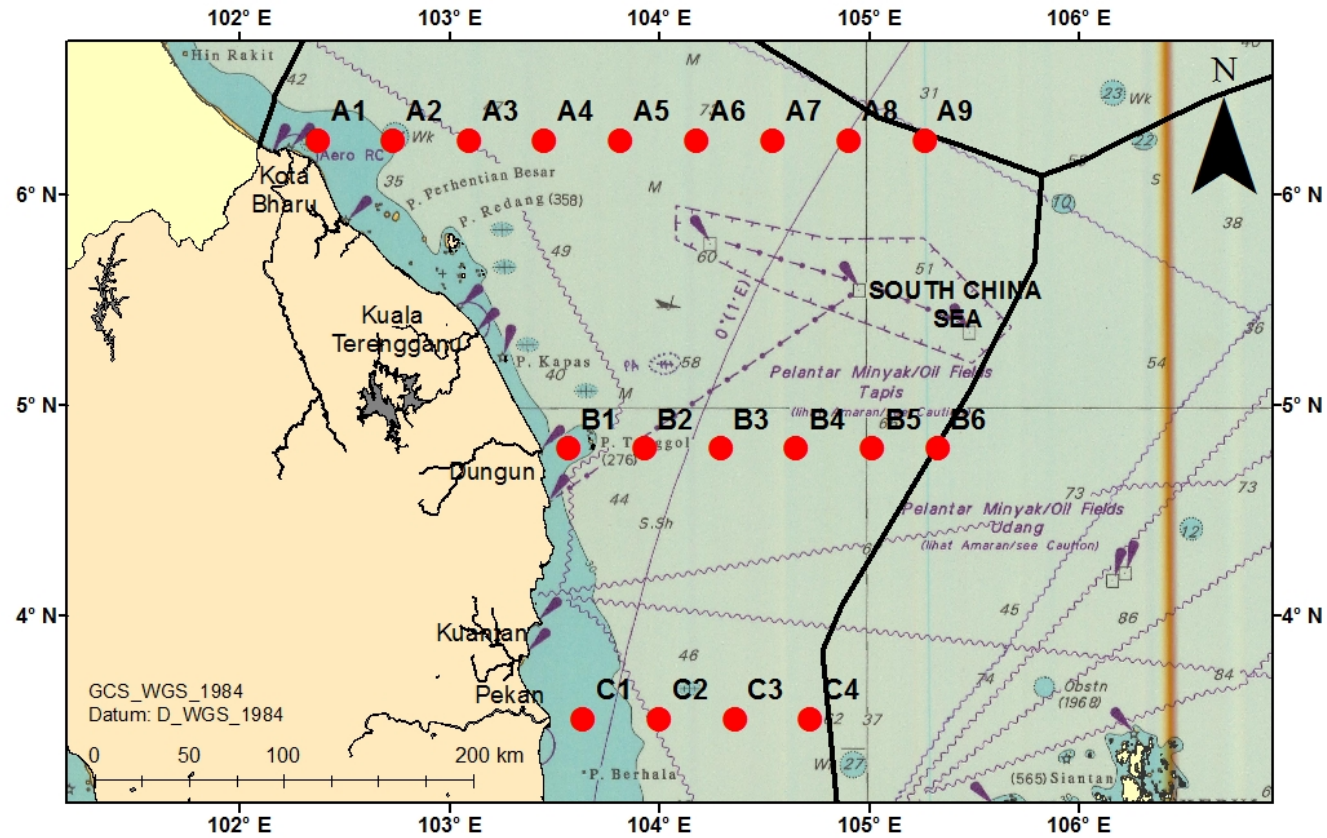


HiCOE phase 1





HiCOE Cruise 2017



A decorative graphic on the left side of the slide. It features a solid blue vertical bar on the far left. From the right edge of this bar, a thick blue arrow points horizontally to the right. Several thin, curved blue lines of varying lengths and shades (some darker, some lighter) originate from the area around the arrow and curve upwards and to the right, creating a sense of movement and design.

THANK YOU...