

EMODnet Partnership for China and Europe - Strengthening international ocean data through the EU's ocean diplomacy with China

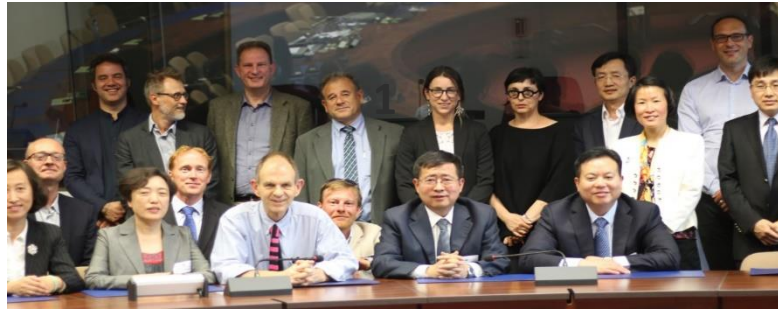
EMOD-PACE (EMODnet Partnership for China and Europe)





- 1 | How we met?
- 2 | What we want to achieve?
- 3 | Where are we now?
- 4 | What's on the horizon?

1 | How we met



EU China Blue Year Event - forecasting, data, monitoring, planning, indicators



EU delegation visited NMDIS

June 2017

July 16, 2018

September 26, 2018

China and EU signed a Blue Partnership for the Ocean



February 2020
*EMOD-PACE, **EMODnet** Partnership for China and Europe* A European project funded through the Foreign Policy Instrument: (€3.5million, 30 months)
*CEMDNET, **China-EU Marine Data Network Partnership***



2 | What we want to achieve

EMODPACE-CEMDNET

Objectives

- **Facilitate** European and Chinese engineers and scientists to build up a picture of the marine environment using data from both sources;
- **Promote** international ocean governance and support the implementation of global commitments by making ocean marine data and data products more easily accessible and by providing better data and data products.



2 | What we want to achieve

Work Package 0 - Project Coordination, Management and Communication

Work Package 1 - EU-China Web Portal, creation of interoperable information system linking EMODnet & NMDIS

Work Package 2 - Establishing data interoperability between EMODnet and NMDIS

Work Package 3 - Comparison of European and Chinese models for regional sea reanalysis

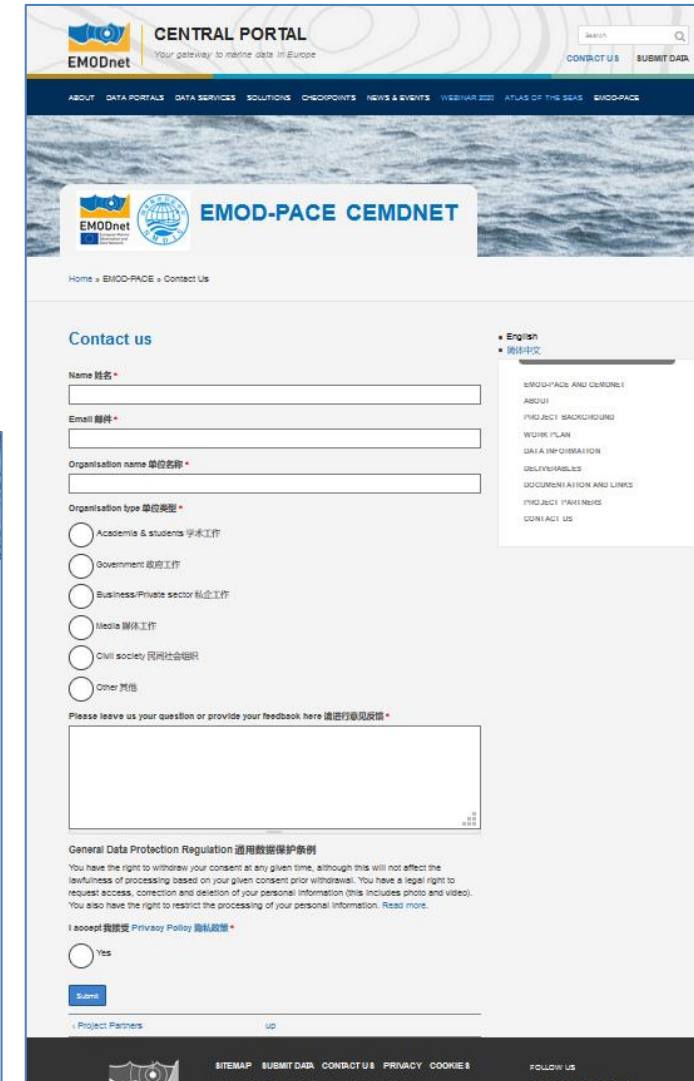
Work Package 4 - Comparison of European and Chinese models for seabed habitat and ecosystem vulnerability

Work Package 5 - Coastal Adaptation

WP1 Aims

The main aim of this work package is to create a bilingual web portal that provides visibility to the project results and gives access to data and products currently available in EMODnet, NMDIS and other Asian marine data systems, as well as those developed during the project.

The portal will be the central entry point for the project and, by displaying the results, will promote cooperation and facilitate dialogue and/or feed into policy meetings on key ocean governance areas and topics as defined by the call.





WP1 Expected Milestones and Deliverables

Milestone 1-2.1. Publication of bilingual web portal with project information (M6)

<https://www.emodnet.eu/en/emod-pace>

Milestone 1-2.5. English user-helpdesk operational (M6);

Milestone 1-2.2. Web-site operational, including bilingual map viewer (M12);

Milestone 1-2.7. Fully operational Geo-server monitoring plugin (M12);

Milestone 1-2.3. Web-site operational including downloadable data from both NMDIS and EMODnet (M24);

Milestone 1-2.6. Operational service to remove duplicates (M24);

Milestone 1-2.4. Fully operational information system linking EMODnet with NMDIS (M30).

Deliverable 1.0 (joint WP1-WP2) The minutes of the inception, mid-term and final meetings (M20)

WP2 Aims

WP2 will aim at maximising interoperability of marine data between the EU EMODnet and Chinese NMDIS marine data systems. This will be implemented by developing and deploying an 'EMODnet – NMDIS data brokerage service' for common discovery and access to data from EMODnet Thematic portals and NMDIS portal(s). This will involve:

- Harmonising metadata and, where possible, data to common standards by building automatic translation algorithms as part of project data brokerage service to convert standards in use in EMODnet and NMDIS for selected data types;
- Development of a 'User Interface' component of the data brokerage service for discovery and access by users;
- Development of a component for automatic machine-to-machine communication so that NMDIS data can be visualised and downloaded through EMODnet and EMODnet data be available through the NMDIS system;
- Provision of a gateway to the EMODnet – NMDIS data brokerage service at the EU – China portal in cooperation with WP1.

Brokerage Main Functionalities

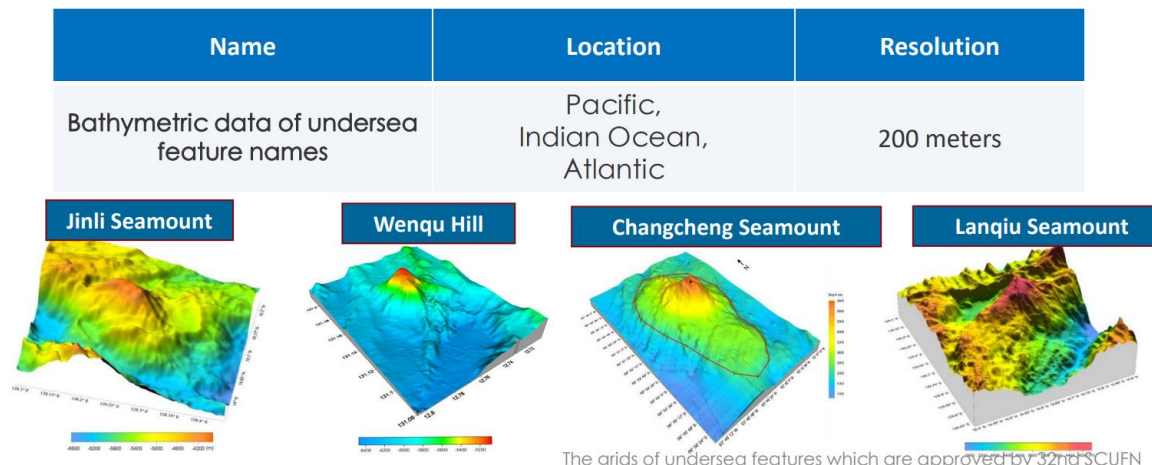
- **Discovery**
 - Metadata schemas Mediation and harmonization
- **Semantic discovery**
 - SKOS/Sparql to access external thesauri and vocabularies
- **Access: direct Download**
 - Online link to dataset
- **Access: simple transformations & download**
 - Format transformation
 - CRS transformation
 - (domain) Subsetting
 - (domain) Resolution change

Expected outcome – Milestones and Deliverables

Milestone 1-2.3. Web-site operational including downloadable data from both NMDIS and EMODnet (M24)

Deliverable 0.2 Project Interim report 1: Contribution to the giving the detailed specifications of the components of the planned EMODnet – NMDIS data brokerage service

Deliverable 1.0 (joint WP1-WP2 deliverable) The minutes from the inception, mid-term and final meetings (M20)



WP3 Aims

Objective

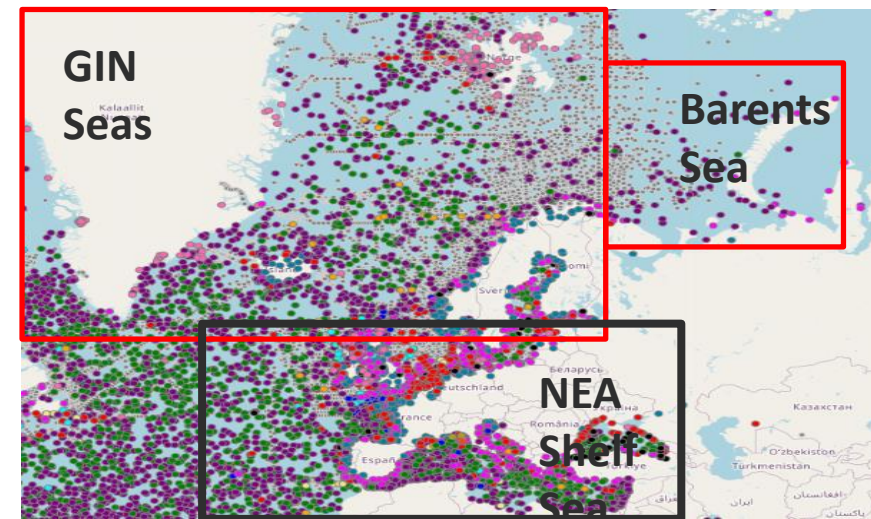
To identify reasons for similarities and differences between European and Chinese ocean circulation models and reanalysis products and also the most promising ways to improve the reanalysis.

The analysis will be carried out in one European sea-basin and one Asian basin. The same data will be used by both EU and Chinese teams for calibration and validation.

WP3 Areas in Asia



WP3 area in Europe



Expected outcome - Milestones and Deliverables

Milestone 3.1. Choice of regions of European and Asian sea-basins made and observation dataset for validation established (M12)

Milestone 3.2. Intermediate progress of comparison between reanalyses (M24)

Milestone 3.3. reanalysis of circulation models by comparison with historic data in two sea basins – one in Europe and one in Asia – is completed (M30)

Deliverable 3.1. Short report on choice of sea-basins and models made, including a list of data made available (M12)

Deliverable 3.2. Draft report on comparison between reanalyses (M24)

Deliverable 3.3. Final report on comparison between reanalyses (M30)

WP4 Aims



This work package aims to compare European and Chinese models used for seabed habitats and ecosystem vulnerability by analysing the applicability of each side's models in different areas.



WP4 Expected outcome – Milestones and Deliverables

Milestone 4.1. Choice of test areas made, identification of data requirements for the analyses and gathering of available data where possible (M12)

Deliverable 4.1. Short summary report summarizing choice of test areas, identification of data requirements and list of required data and data already gathered (M12)

Deliverable 4.2. Draft report describing the mapping method and the suitability of EUNIS approach to China, showing a single sea basin as an example (M24)

Deliverable 4.3. Draft report on the suitability of ECC approach to Europe, showing the Bay of Biscay as an example and eventually another European basin (M24)

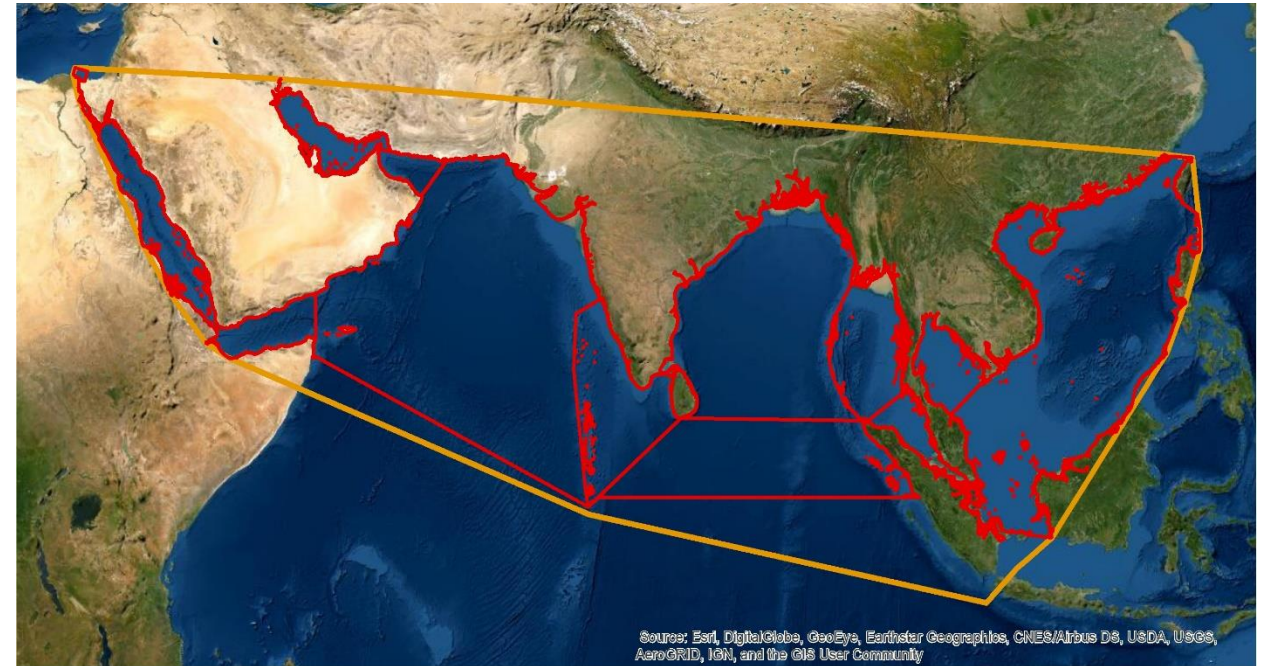
Deliverable 4.4. Final report describing the mapping method and the suitability of EUNIS approach to China, showing a single sea basin as an example (M30)

Deliverable 4.5. Final report on the suitability of ECC approach to Europe, showing the Bay of Biscay as an example and eventually another European basin (M30)

WP5 Aims

The aim of WP5 is to provide data/information products covering the Seas crossed by the maritime silk road on:

- Relative sea level changes;
- Absolute sea level changes;
- Coastal erosion;
- Wetland degradation;
- Vessel traffic density.



WP5

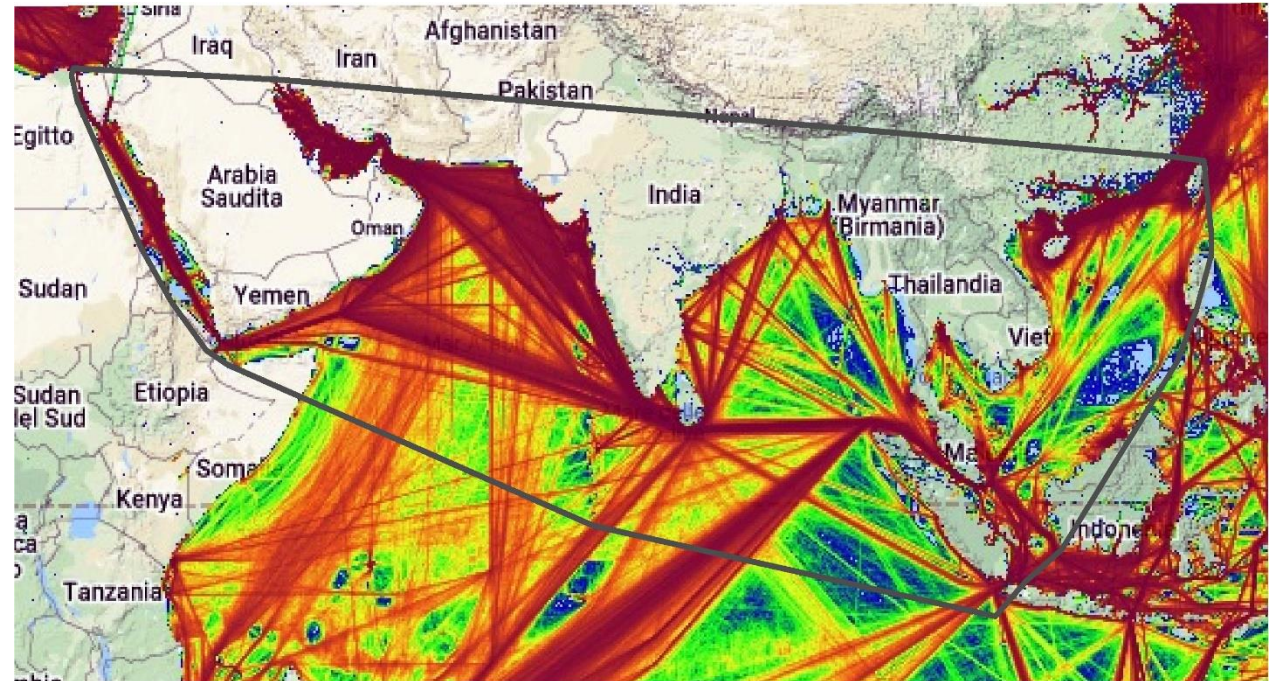
Expected Outcome – Milestones and Deliverables

Milestone 5.1. Digital map available on line. Formats and standards agreed for parameters (M12)

Milestone 5.2. Digital map available with all parameters available for feedback (M24)

Milestone 5.3. Fully operational digital map incorporated in project web-site (M30)

Deliverable 5.1. Online discussion paper on the translation of mapped coastal behaviour into mapped coastal resilience, an applied data product with clear added value because it can be used in decision making (M30)





WPO Aims

At the operational level, the coordination and management activities will be developed and implemented using the same approach as for the other strands of actions in the project by breaking down the work into tasks and sub-tasks combined referred to as Work Package 0 (WPO).

Besides internal communication, this WP will also entail external communication and dissemination of results to the wider European and global community of marine data and information users and stakeholders to ensure maximum impact of the outputs of the project.

Partnership



Expected Outcome – Milestones and Deliverables

Milestone 1-2.5.2. Technical Support Facility operational (M6);

Milestone 6.1: Presenting project progress at marine knowledge expert group (M12);

Milestone 6.2: Presenting project progress at marine knowledge expert group (M24);

Milestone 6.3: Feedback from marine knowledge expert group incorporated into the final report (M30).

Deliverable 0.1 Inception report to describe e.g. initial findings, project quality assurance plan, progress in collecting data, any difficulties encountered or expected in addition to the work programme and staff travel (M2);

Deliverable 0.2 Interim report 1 including a technical report on achieved value of indicators to date. and with corresponding invoice and the financial report (M12);

Deliverable 0.3 Interim report 2 including a technical report on achieved value of indicators to date. and with corresponding invoice and the financial report (M24);

Deliverable 0.4 Draft final report to be submitted no later than one month before the end of the period of implementation of tasks (M29);

Deliverable 0.5 Final report with the same specifications as the draft final report, incorporating any comments received from the parties on the draft report (M30);

Deliverable 0.6a-c Minutes of inception, mid-term, WP1-WP2 specific and final meeting (M2, M11, M20, M30);

Deliverable 0.7a-c Minutes of Steering Committee meetings (M1, M12, M24).

Deliverable 0.8. Report on the Performance Monitoring System Methodology and Approach, including fine-tuning of indicators and log frame, responsibilities, timeframes and resources needed for monitoring (M2);

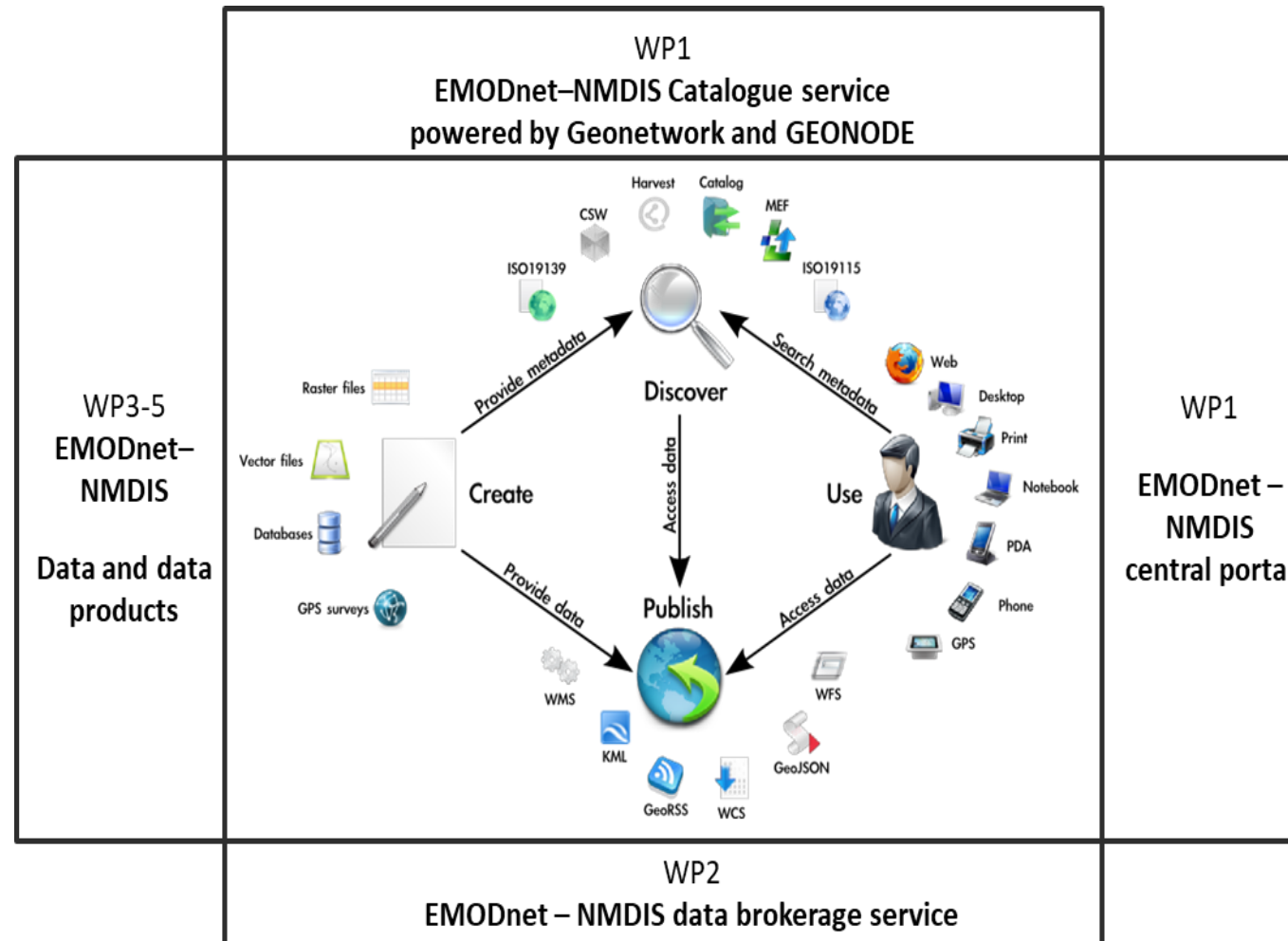
Deliverables 0.9a-i. Three-monthly performance monitoring summary reports using performance indicators (M6, M9, M12, M15, M18, M21, M24, M27, M30)

Deliverable 0.10. Short communication and dissemination plan including (M3);

Deliverable 0.11. Leaflet (bilingual in English and Chinese) on project communicating key objectives, partnership (M14).

2 | What we want to achieve

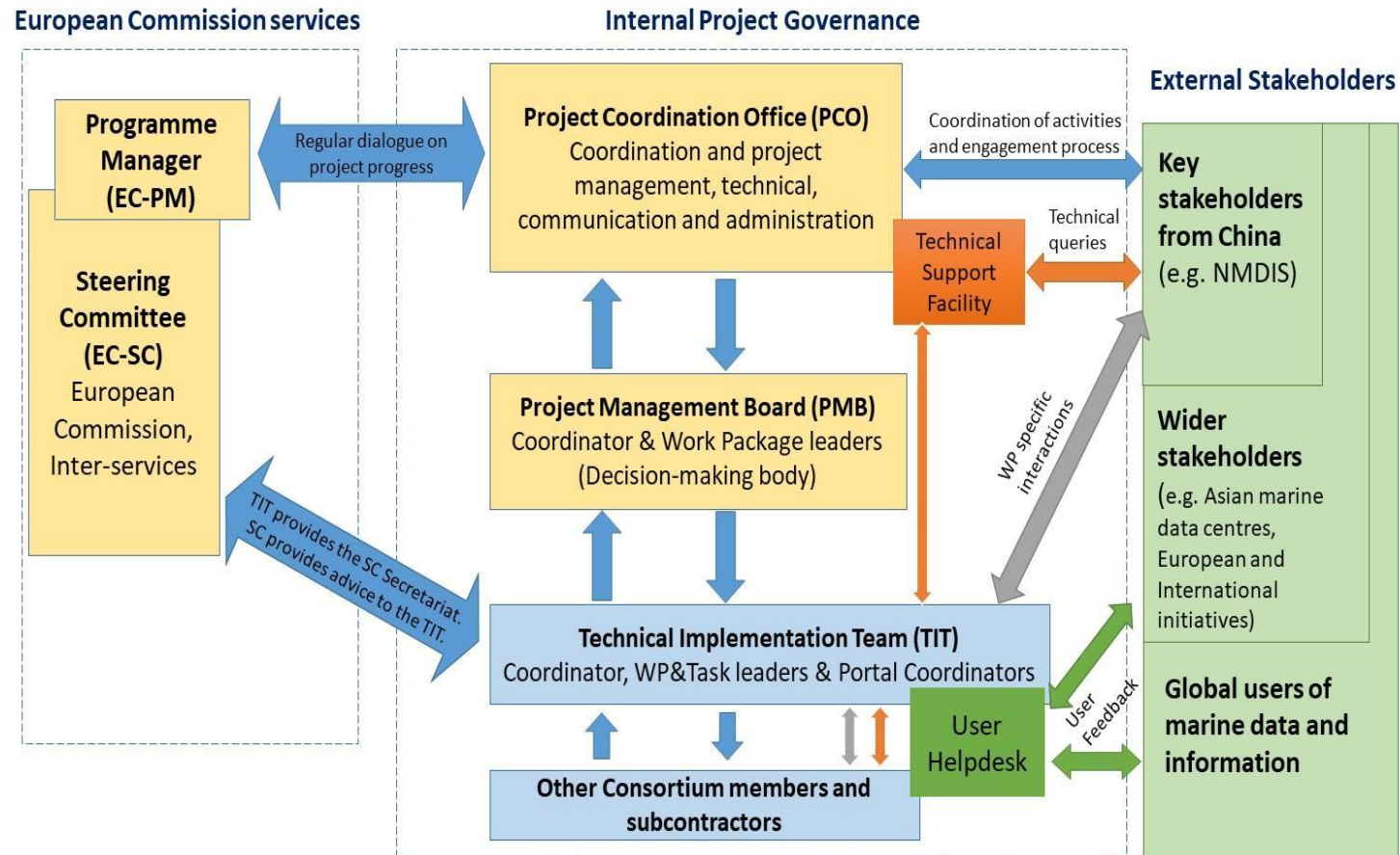
Vision



3

Where are we now

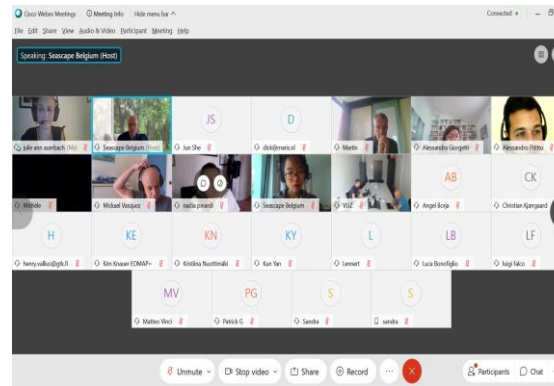
Organization & Management



Governance components of the project and the internal and external communication flows at EU

3 | Where are we now

- Establish contact
- Identifying the gaps/ resolution possible
- Assigning “homework”
- Defining and validating common work plans
- Launch thematic studies



EMOD-PACE WP2 kick-off meeting

Monday 11 May 2020 - 08:00 hrs - 12:00 hrs Amsterdam time (14:00 hrs - 18:00 hrs Tianjin time) + Tuesday 12 May 2020 - 08:00 hrs - 12:00 hrs Amsterdam time (14:00 hrs - 18:00 hrs Tianjin time)

Web Conference using Webex

AGENDA

Time	Description	Speakers
08:00 - 08:10	Welcome	MARIS
08:10 - 08:15	Short introduction participants	All
08:15 - 08:45	General introduction of NMDIS	NMDIS
08:45 - 09:00	General introduction of EMODnet	SSBE
09:00 - 09:20	Approach for WP2: Establishing data interoperability between EMODnet and NMDIS	MARIS
09:20 - 10:20	Theme: Chemistry (15 minutes presentation per infrastructure + 15 minutes questions time per infrastructure and general discussion about interoperability options / issues)	OGS
10:20 - 10:35	EMODnet Chemistry	OGS
10:35 - 11:10	NMDIS Chemistry and Biology	NMDIS
10:35 - 11:10	Short break	
11:10 - 11:30	Theme: Biology (15 minutes presentation per infrastructure + 15 minutes questions time per infrastructure and general discussion about interoperability options / issues)	VLIJZ
11:30 - 11:50	EMODnet Biology	VLIJZ
11:50 - 12:00	SeaDataNet - European network of NODCs	MARIS
12:00 - 12:00	General discussion about first day	All

Joint work plan for WPS Coastal Asia	
EMOD-PACE	
EU-CN cooperation (network activities)	
T8.0	Activities and tasks defined in WPO MI-M12. Design detailed joint working plan for implementation of WP5 tasks: M3-M4. Contribute to meetings (M2, M12, M4, M30), reports (M2, M12, M4, M30), and feed into WPO.
T8.1	Relative and absolute sea level changes. Provide relative and absolute sea level TREX interest.
T8.1.1	Methodology. Develop a best practice methodology for evaluation of sea level rise at different time and space scales in Europe and China and estimating uncertainties in trends. Review references in Chinese on sea level change, including annual national reports on sea level change.
T8.1.2	Web-GIS map. Design and implement the Web-GIS map that will contain all information linked to source data such as EMODnet Physics and equivalent data bases for the Chinese partners.
T8.1.3	Relative sea level trends. Apply the methodology to tide gauge data and estimate relative sea level trends with uncertainties for the whole area of interest. Data both from PSN/SL services, GLOSS and other open source tide gauges should be used. Different length of the estimates should be given (10-20-50 and 100 years) together with acceleration estimates, if possible.
T8.1.4	Absolute sea level trends. Estimate the absolute sea level trends in the near-shore and open ocean areas of the target area from CN/EMIS sea level anomaly satellite data along track and gridded data sets. Estimation of sea level contributions (mass and steric) in the area will also be produced.
T8.1.5	Numerical model estimates. Estimation of absolute sea level trends from numerical model reconstructions, reanalyses and projections at the same stations of tide gauges and/or in relevant available observation data. Sea level rise.

EMOD-PACE WP2 Proposed way forward for analysis of interoperability

From: Dick M.A. Schaap and Michele Fichaut - WP2 Coordinating team
To: NMDIS
After consultation of: EMOD-PACE European team
Date: 19 June 2020

Approach:
At the WP2 kick-off meeting (11 - 12 May 2020) the WP2 partners have learnt a lot from each other about their marine and ocean data m and practices. However, from the meeting we also have learnt that it early to work already on bridging online portals and services for exchange and NMDIS as originally planned in the WP2 description.

It seems better to approach the interoperability challenge from the basic detailed analysis and comparison of **basic elements per data discipline**.

- metadata formats
- data formats
- vocabularies
- QA-QC procedures
- available data sets
- available data products
- workflows for generating data products
- data policies for sharing and publishing of data and data products
- existing services
- use of IT standards (OGC, ISO, W3C)
- use of specific software tools

of course, making use of as of the information as provided and discussed meeting as an initial starting point for the discussions, analyses, and bra

The idea is that by getting a more detailed understanding and comparing at both sides, WP2 partners per data discipline can identify options between the two sides, such as:

- mapping exercises concerning metadata formats
- adopting and further populating common vocabularies to code w with controlled terms for semantic interoperability and also c barriers, as coded terms can refer to both English and Chinese t
- further detailing and comparing inventories of available data

Common work plan on EMOD-PACE WP3: Intercomparison of regional ocean reanalysis

The work plan is based on outputs of the kickoff meeting of EMOD-PACE WP3 in 8 May 2020.

1. Objectives

The objectives of this common work plan is to i) define EU-CN cooperation framework on ocean reanalysis and modelling; ii) inter-compare European and China regional ocean reanalysis and modelling using a collective way, and make joint deliverables; iii) make recommendations for future EU-CN cooperation in ocean reanalysis and modelling.

2. Define a EU-CN cooperation framework on ocean reanalysis and modelling

2.1 Definition of a collected approach of EU-CN cooperation

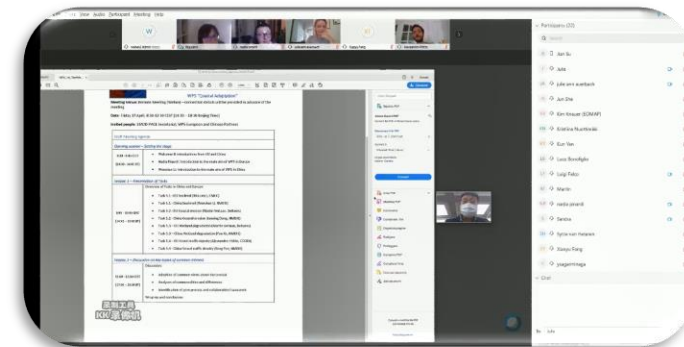
A collective approach of EU-CN cooperation in EMOD-PACE (WP3-WP5) should be defined, which focuses on common objectives and deliverables. Both sides will follow this approach. A draft version can be referred to Appendix 1.

2.2 Identification of the European basin and Asian basin, observation data, ocean models and reanalysis to be used

Primarily one European basin and one Asia area should be chosen for performing the intercomparison. Corresponding models, products and observation datasets for validating the models and products should also be identified. A preliminary result can be found in Appendix 2.

3. Joint activities

3.1 Literature review:



4 | What's next?

- Accomplish the cooperative projects with desired deliverables which include:
 - Well operated data interoperable system between EMODnet & NMDIS
 - Safe and fast access to wider range of data and data products
 - Continuously updating and sharing of marine information products
 - Collaboratively verified and improved methods and standards
 - Jointly developed and published reports and papers
- Establish sustained China-EU partnership on ocean data exchange and service, to benefit the larger regions