

# Introduction to the OPERA Project

## Ocean Prediction Enhancement in Regions of Africa



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## Ocean Prediction Enhancement in Regions of Africa

**Objective:** Improve **Ocean resources sustainability** and **human welfare** in Sub-Saharan Africa by promoting Ocean forecasting and its applications

**How?:** Collaborate with **3 African centers** (2 specialized in regional thematic applications and one in ocean forecasting) to promote the development of "Digital Ocean Centres" (DOCs), linked to the global and European networks via the OceanPrediction DCC

**Duration?:** 4 years, started January 2025

**Budget?:** 7 million euros

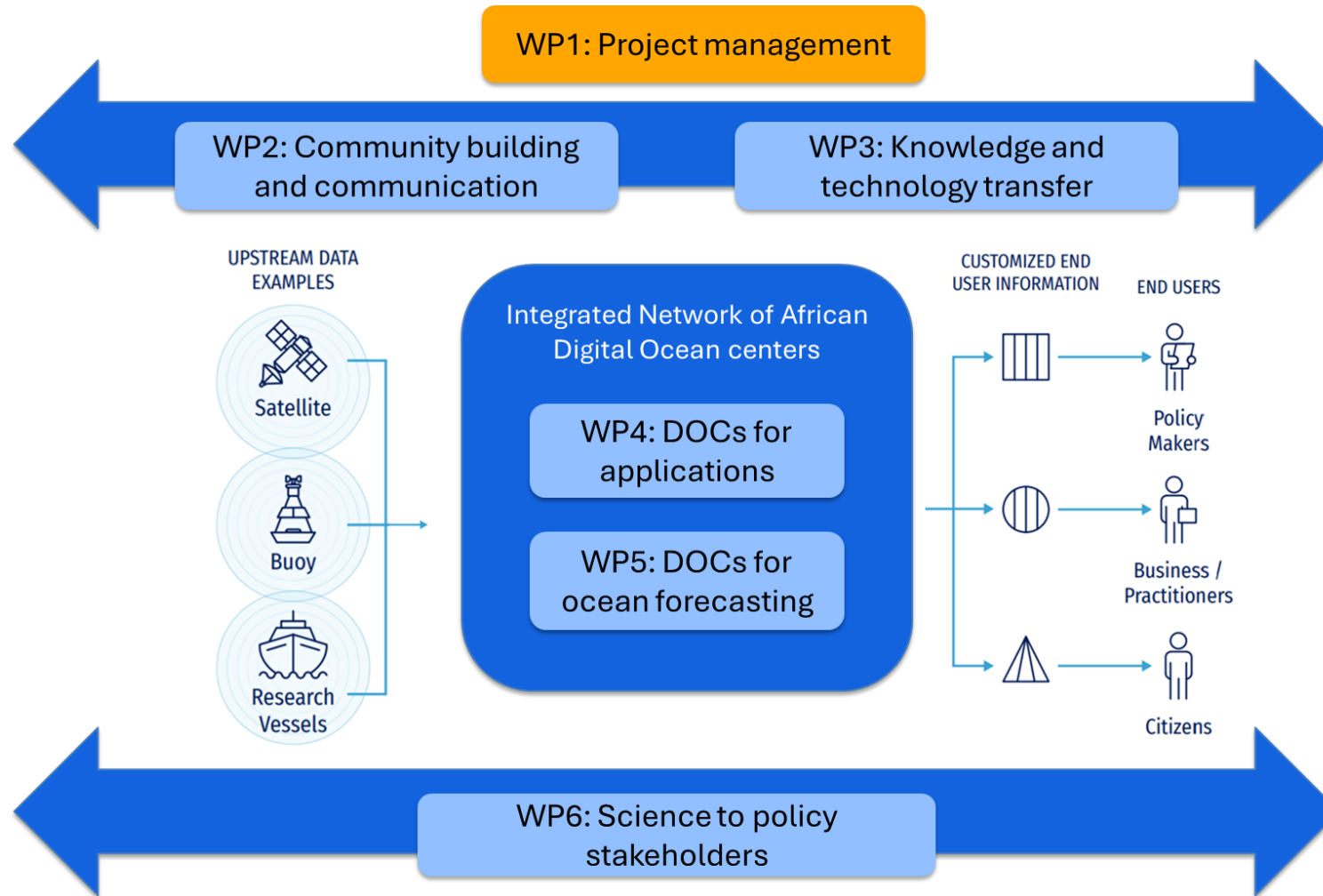
**Who is funding?:** European Union (via Directorate General for International Partnerships) – ocean component of the ArcX programme to support African Regional Centres of Excellence towards the Green Transition

**Who is eligible?:** Sub-Saharan Institutions

**A project implemented by Mercator Ocean International through its role in the OceanPrediction Decade Collaborative Center (DCC), leveraging its expertise in Copernicus Marine and the European Digital Twin Ocean**

1. Strengthen cooperation and community in Africa around ocean forecasting
2. Strengthen capacities to develop, access, and use digital ocean resources (technology transfer and knowledge sharing)
3. Co-design and develop tailored digital ocean services and applications built and operated by Digital Ocean Centers (DOCs) in Africa
4. Co-design and develop African ocean forecasting systems for Essential Ocean Variables (EOVs) operated by DOCs in the region
5. Strengthen science-to-policy connections, user uptake, and sustainability of the action, with a focus on the development of a knowledge hub

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## WP2: Community building and communication

### *Main concept:*

- Build a community around ocean forecasting in Africa, starting with the DCC Africa Regional Team

### *Expected work:*

- Link with other communities (MarCOSIO and MarCNoWA), Africa Ocean Decade Task Force, IOC Sub Commission for Africa, UNEP African Sea conventions
- Mapping of Ocean forecasting activities in Africa (OceanPrediction DCC Atlas)
- Activate a forum for communication on the OceanPrediction DCC website
- Communication & dissemination



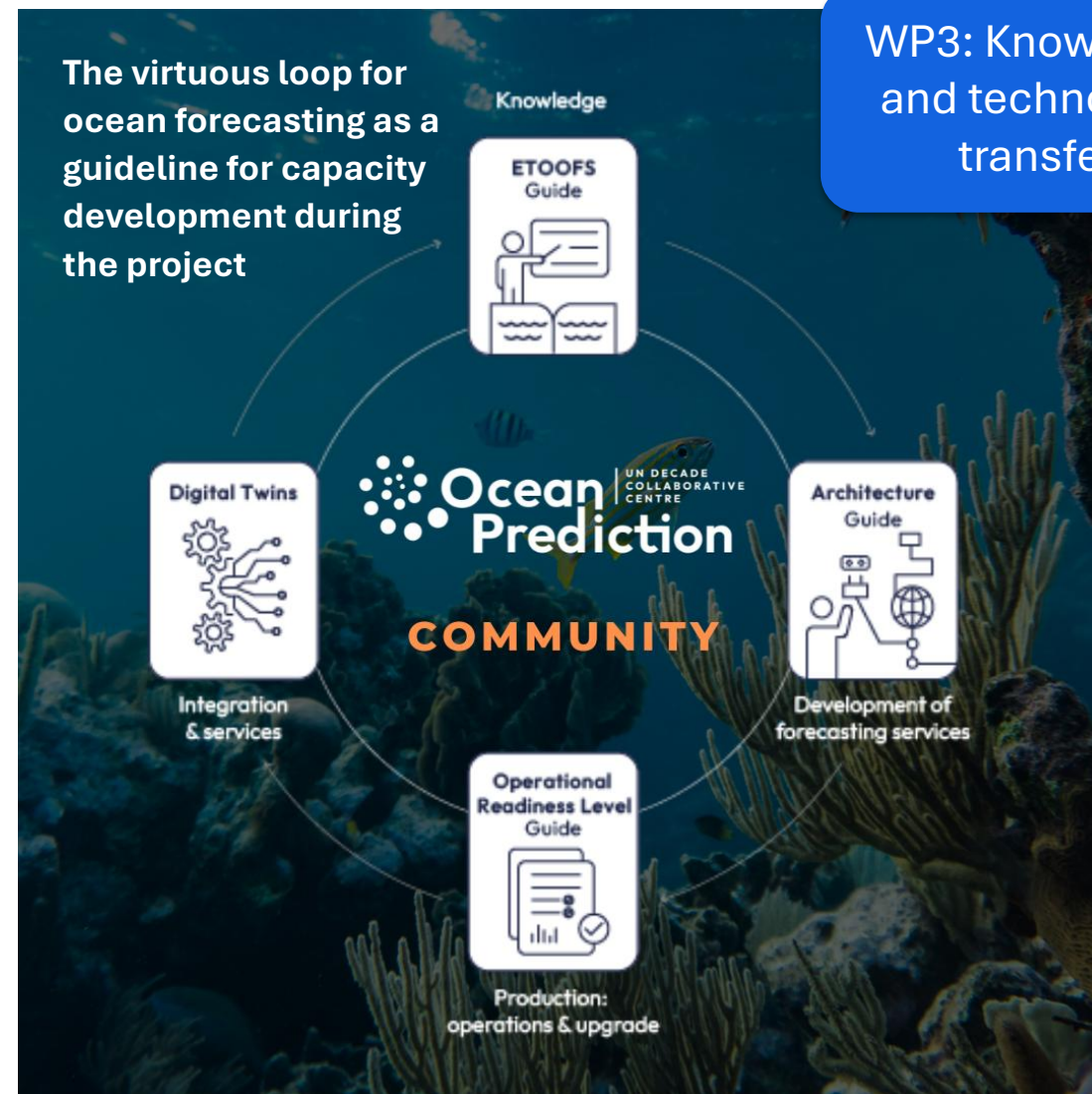
IOC Sub Commission for Africa  
and the Adjacent Island States



OPERA capacity development activities will serve two communities:

- **Open to all:**
  - Ocean Literacy activities
  - Massive Online Open Courses to understand and learn to use the virtuous loop components for applications and forecasting services
  - Advanced training with specialised tools
- **OPERA Consortium institutions**
  - Ad-hoc capacity building for the systems they will operate (both applications and forecast services)
  - Summer courses and long-term visits to Europe

WP3: Knowledge and technology transfer

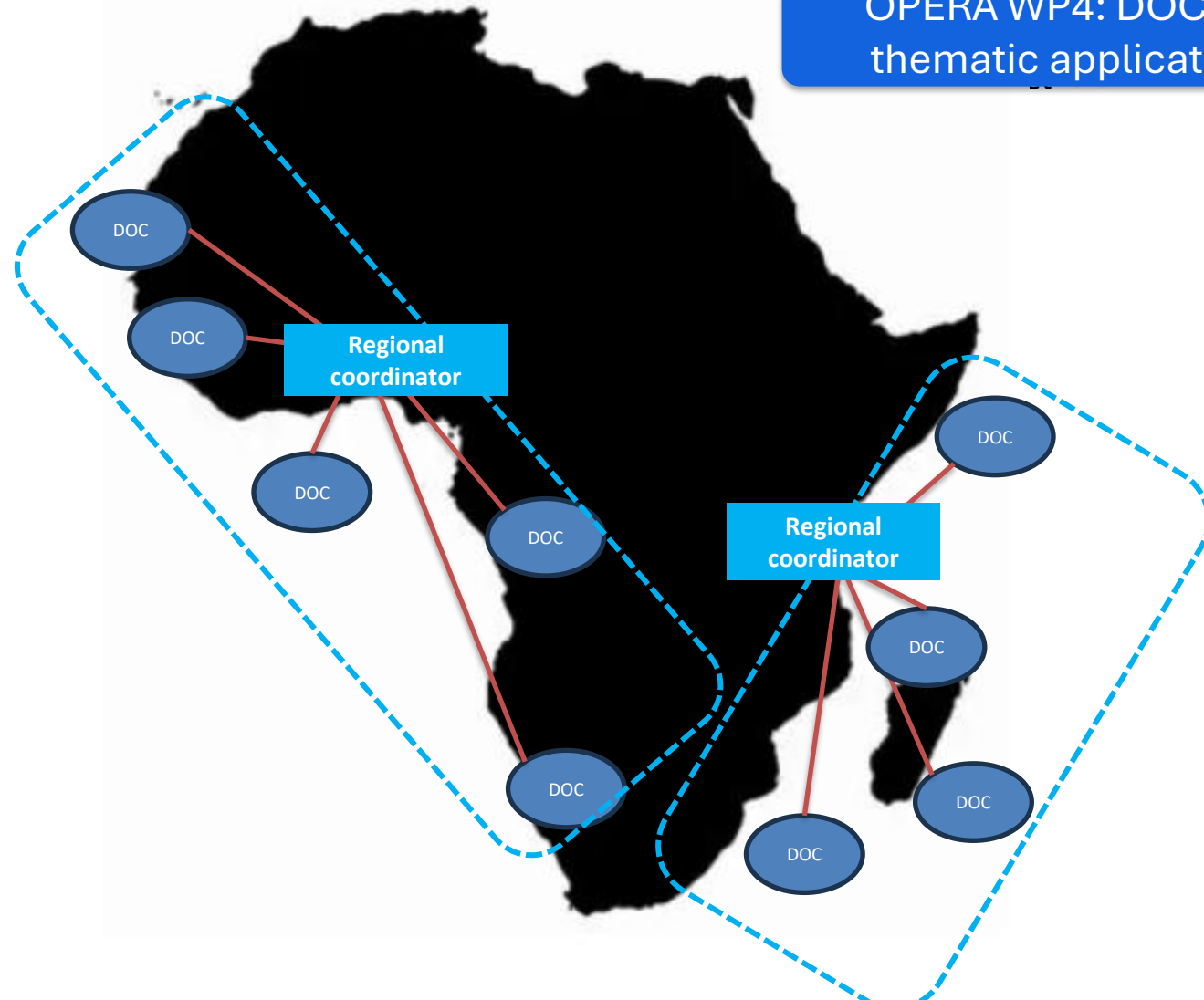


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**Main concept**

- Implementation via 2 Regional coordinators for thematic applications development (ideally to be linked to MarCOSIO and MarCNoWA):
  - Each one serving, from the project development point of view, a regional network of Digital Ocean Centers (DOCs) at African Regional Centres of Excellence
  - Applications could be hosted at the regional center, and/or at the DOCs, and/or at the EU-Digital Twin Ocean (following DOCs preferences for each case)

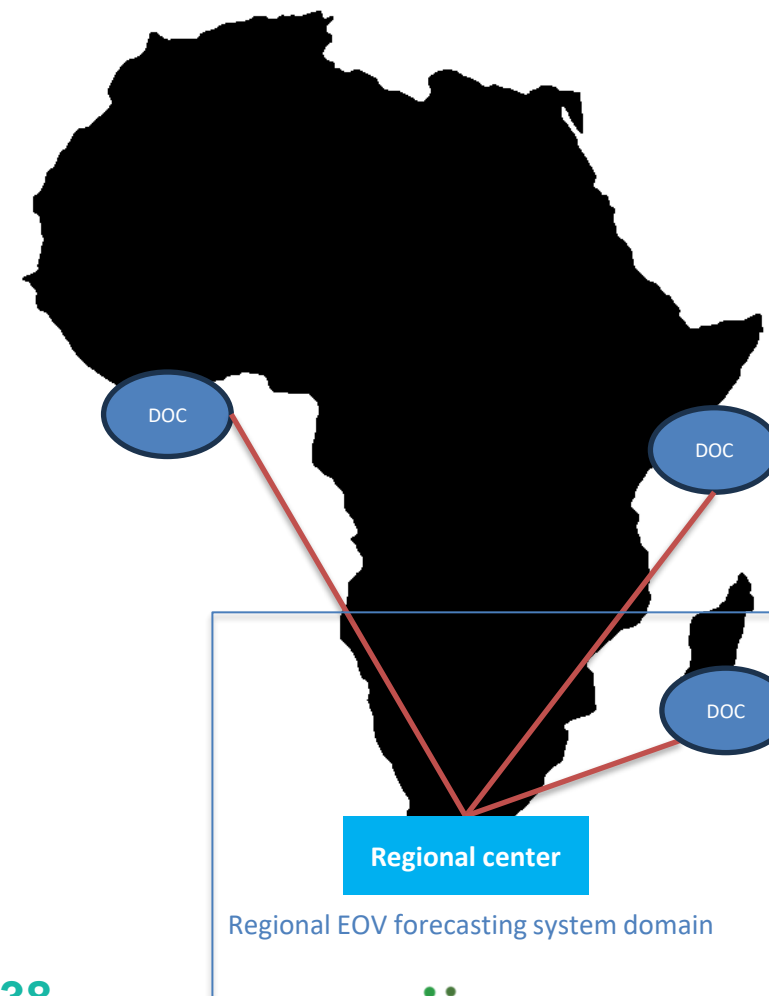
OPERA WP4: DOCs for thematic applications



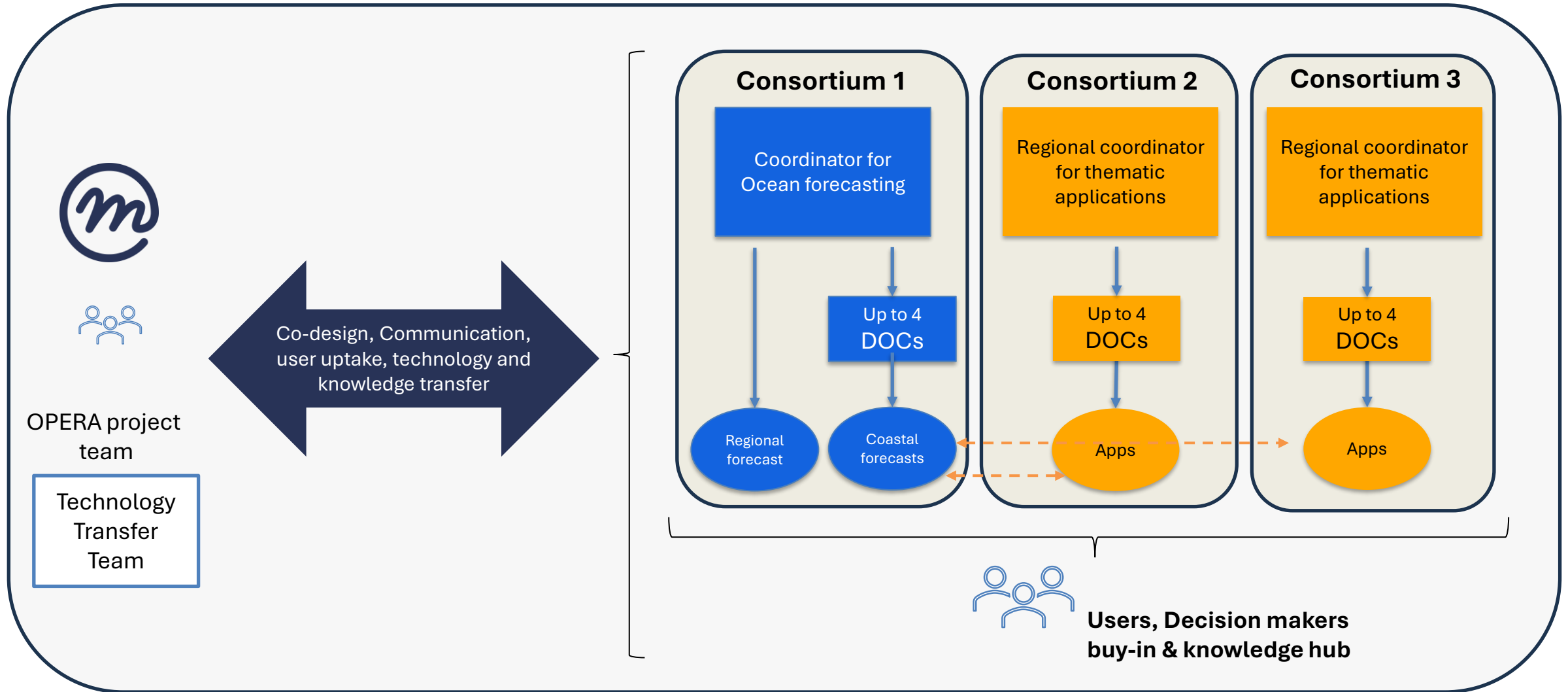
## OPERA WP5: DOCs for Ocean forecasting

### Main concept

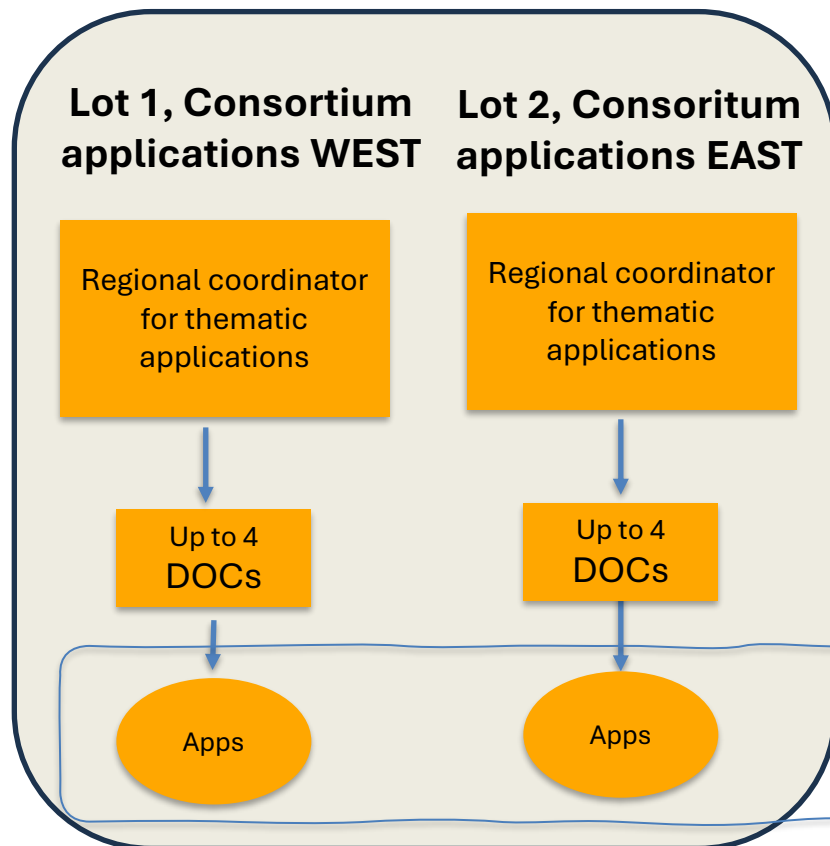
- Implementation, via a thematic coordinator, a network of DOCs for Ocean Forecasting operating:
  - A state-of-the-art regional ocean forecasting system for essential ocean variables (EOV)
  - 3 coastal ocean forecasting centers for EOV
- Results interoperable, following data standard established by the DCC, and integrated into African Data Lake (as part of African Hub and future African DTO)



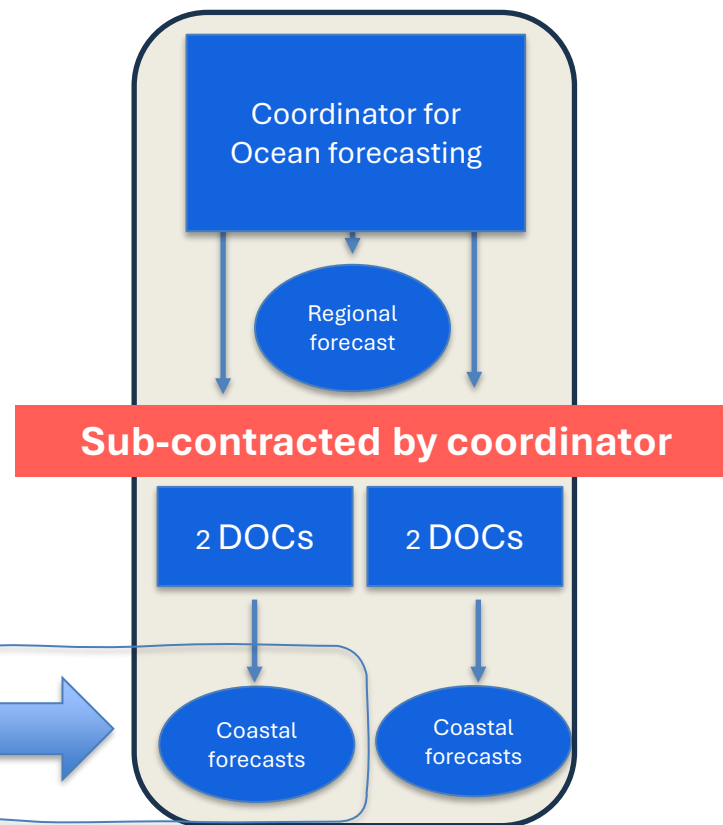
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## Call A, Applications



## Call B, Ocean forecasting



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## *Main concept:*

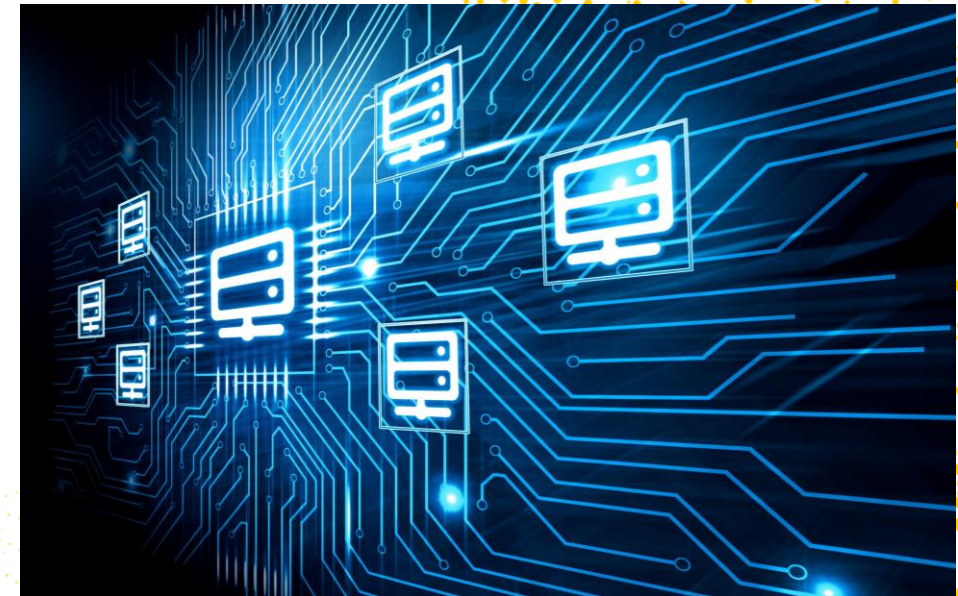
Ensure uptake and sustainability of the action

Contribute, in the Ocean Decade Framework, to a pan-African technical infrastructure to improve data and knowledge sharing in the continent (African Ocean Knowledge Hub)

## *Expected main work:*

- Co-design with the key African Stakeholders: Ocean Decade Africa Task Force, IOC AFRICA, GMES & Africa Implement the “forecasting component” of the Africa Hub, including a data lake (future African DTO) to share the data from all the systems developed at the project and include data from global models following OceanPrediction DCC data standards description
- Promotion of sustainability of systems developed on the project

OPERA WP6: Science to Policy  
Stakeholders



## Phase 1: Definition/ preparation (2025)

- 3 Consortia building and identification of the applications to be developed
- Work with the African Ocean Decade Task force to define the characteristics of the forecasting component of the African knowledge Hub
- Start of capacity development activities

## Phase 2: Development: (2026-2028)

- tasks related to developing Regional centers for the applications, ocean forecasting, and the Africa Hub will be launched.

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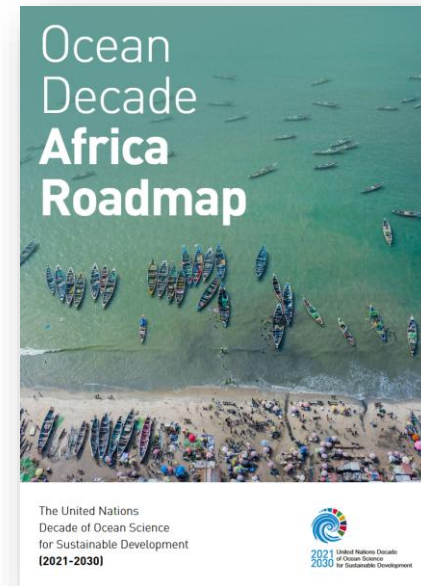
# Final remark... Co-design is in the core!

- Co-design will be at the core of the project:
  - On the community-building and the capacity-sharing activities
  - On the needed applications and Ocean Forecasting services
  - And very specially on Governance and contribution to the Decade African Ocean Knowledge Hub
- To ensure user uptake and sustainability

**AN OPPORTUNITY TO CONTRIBUTE TO THE AFRICA ROADMAP**

# Thank you!

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