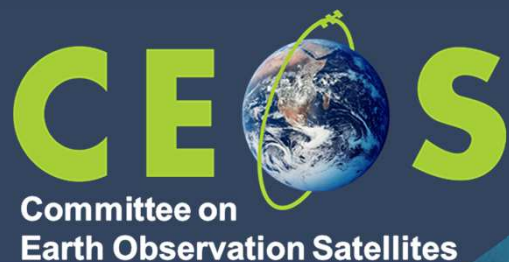




# The Space4Ocean Alliance



**Dr. Selma Cherchali,**  
**CNES**  
SIT-40 Side Meeting  
Fukuoka, Japan  
8-10 April, 2025

# OUR OCEANS AT HIGH RISK

**71%**

Ocean surface  
on Earth

**80%**

Proportion of  
Earth's unexplored,  
unmapped oceans

« A fundamental gap in understanding how humanity is affecting the ocean is our **limited knowledge about the pace of change** (...) on ocean ecosystems » *Halpern et al. 2019*

**600M**

Livelihoods depending on  
fisheries and aquaculture

**>3 B**

People depending on  
marine and coastal  
resources



**14** LIFE  
BELOW WATER

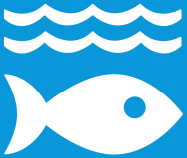


Conservation and sustainable  
use of the ocean, seas and  
marine resources



# ACTIONS TOWARDS SDG 14

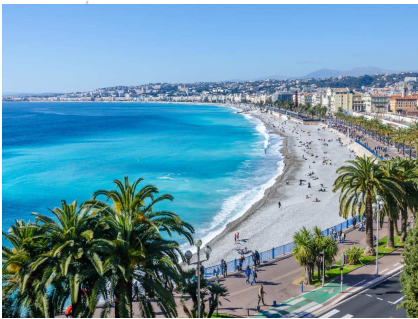
14 LIFE  
BELOW WATER



- To reduce marine pollution, ocean acidification
- To conserve marine & coastal areas
- To increase scientific knowledge, marine research and technology for ocean health
- To promote sustainable fisheries
- To reinforce international sea law

# THE SPACE4OCEAN ALLIANCE

## OUTLINE



01



Road to UNOC



02

Rationale and objectives of  
the Space4Ocean Alliance



03

Proposed Governance



04

Looking forward



# ROAD TO UNOC-3

The **United Nations Ocean Conference (UNOC)** series is dedicated to support the implementation of SDG 14

**2017**  
New York

**2022**  
Lisbon



**2021  
2030** United Nations Decade  
of Ocean Science  
for Sustainable Development

**2025**  
June 9-13, Nice



**UN OCEAN  
CONFERENCE  
NICE 2025  
FRANCE**



**June 3-6**

One Ocean  
Science Congress  
(OOSC)

**June 7**

Blue Economy  
and Finance Forum  
(BEFF)

**June 7-8**

Summit on Ocean  
Rise and Resilience  
(ORR)

# UNOC-3 SOME HIGHLIGHTS

Elaborate an action plan to address Ocean's critical condition  
(e.g. pollution, ecosystems, acidification, overfishing, etc.)

Acknowledge Mercator Ocean International as an Intergovernmental Organisation

Define and produce scalable Ocean Health indicators  
Neptune Ocean Exploration initiative  
...

Launch the Space4Ocean Alliance

UNOC 3 events are **unique opportunities** to gather marine and maritime stakeholders to act in a collective manner towards an improved Ocean and Coasts knowledge and management

**The Space Sector** is one of those important stakeholders and contributes heavily and continuously to this global and common effort

## 2025

June 9-13, Nice



UN OCEAN  
CONFERENCE  
NICE 2025  
FRANCE





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# RATIONALE FOR THE SPACE4OCEAN ALLIANCE

## WHY?

- Our Oceans are at high risk. It requires **decisive, rapid and unified efforts** to remedy to their critical condition
- Monitoring the ocean is challenging: **Oceanography and Earth Observation from space** are invaluable assets in addressing ocean and coastal challenges
- There is a **significant lack of coordination** and communication between the space sector, marine and maritime stakeholders
- **Several gaps remain** in addressing ocean challenges: data usage, applications to meet users needs, assesment indicators, space missions providing all necessary data...

The Space4Ocean Alliance objective is to coordinate and create more synergies, avoiding overlaps and leveraging operational solutions





# ALLIANCE MILESTONES



## Kick-off meeting

Paris - Dec 18, 2024



**100+**

Participants

Space agencies,  
embassies,  
international organizations

## Space4Ocean Alliance Event

Monaco – March 25, 2025



**15**  
Countries

**100+**  
Participants

New signatories of the  
Joint Declaration of Interest



# OBJECTIVES

1

**Better connect  
the space sector  
and stakeholders**



2

**Develop  
capacity building**



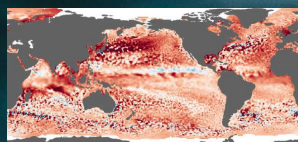
3

**Share  
good practices**



4

**Develop  
advanced  
ocean indicators**



5

**Support the  
development of  
innovative  
space missions**



6

**Design  
new applications  
and services**





# OBJECTIVES



## **Better connect the space sector and stakeholders**



- **Provide and improve a permanent dialogue** between the international space sector and the global ocean community
- **Provide a gateway** with the UN Member States to enable the use of operational solutions and reach policy targets
- **Gather user needs** to fill data and services gaps

# OBJECTIVES



## Develop capacity building



- Empower frontline countries such as SIDs and LDCs
- Expand access to observation data



# OBJECTIVES



**Share  
good practices**



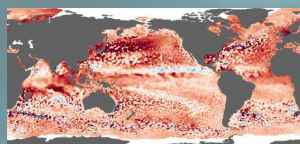
- Foster training initiatives
- Facilitate access to space data and operational services

# OBJECTIVES

- **Advocate** for the development of evidence-based, local, regional and **global ocean indicators**
- **Define and produce scalable indicators** to maintain a sustainable balance between anthropogenic maritime activities



## **Develop advanced ocean indicators**





# OBJECTIVES

- Contribute to addressing **observational and operational gaps**
- **Advance the foundational ocean science**

**5**

**Support the  
development of  
innovative  
space missions**





# OBJECTIVES

➤ Support and **promote the delivery** of operational services

6

**Design  
new applications  
and services**



# FUNDAMENTALS OF THE SPACE4OCEAN ALLIANCE



**Space  
data**



Offer a global vision from space,  
allowing to monitor and anticipate  
changes to the oceans



**In-situ  
data**



Collected directly in the field,  
like sentinels and  
warrants of the best accuracy



**Numerical  
models**



Merging all data into practical tools  
and operational solutions, providing  
scenarios and forecasts allowing  
informed decision making



# RATIONALE FOR THE SPACE4OCEAN ALLIANCE

## HOW?



**From data**

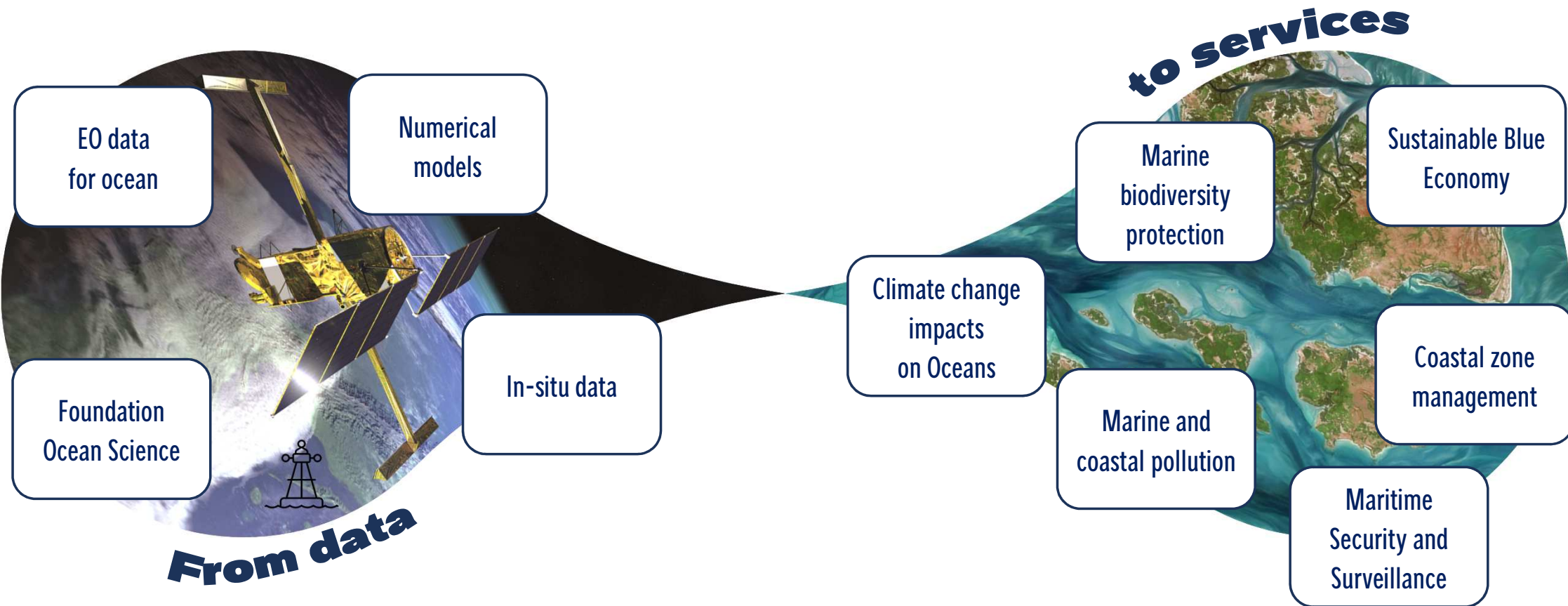
**The Space4Ocean Alliance**  
will strengthen synergies and foster  
coherence with existing frameworks,  
without duplication



**to services**



# KEY ISSUES TO BE ADRESSED BY THE SPACE4OCEAN ALLIANCE

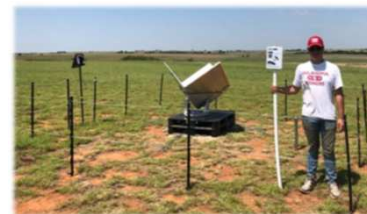


# FUNDAMENTALS OF THE SPACE4OCEAN ALLIANCE

Performance and  
gaps of EO data  
for ocean

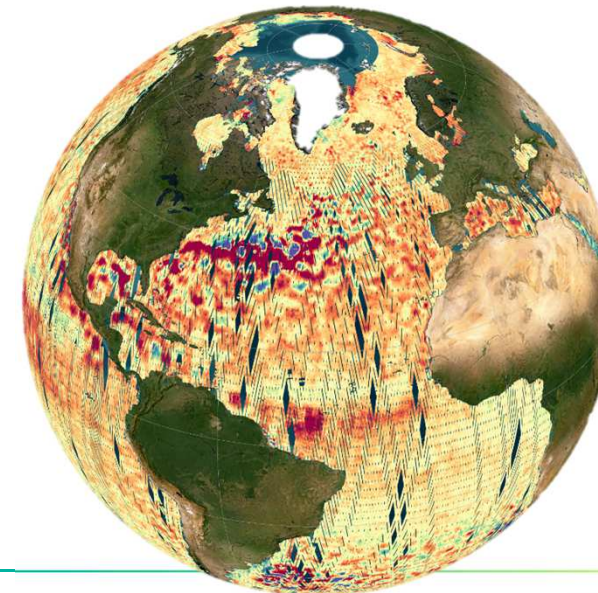
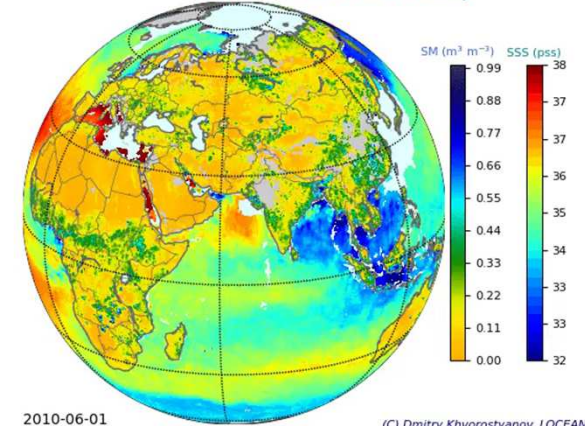
Foundation  
Ocean Science

resolution  
lidar diffusiometry  
sampling  
radar scales  
space forecast  
coverage buoys models optical gauges  
insitu altimetry  
hyperspectral



Earth seen by SMOS

Soil Moisture and Sea Surface Salinity





# FUNDAMENTALS OF THE SPACE4OCEAN ALLIANCE

Performance and gaps of EO data for ocean

Foundation Ocean Science

depth biology currents waves life ice tides interfaces coasts tsunami ocean sea health color level dynamics salinity temperature ocean

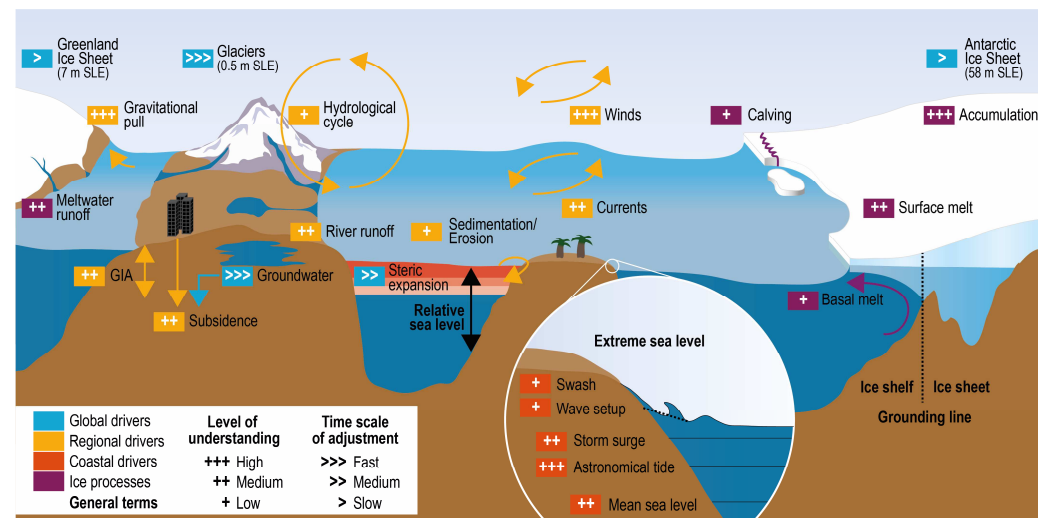


Fig 4.4 from IPCC 2019 Chapter 4 report  
Oppenheimer et al.



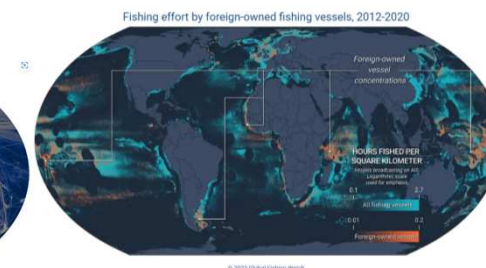
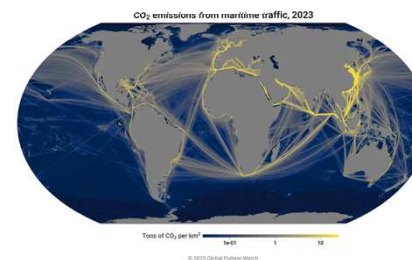
# EXAMPLES OF SERVICES



## ➤ Sustainable fishing & aquaculture

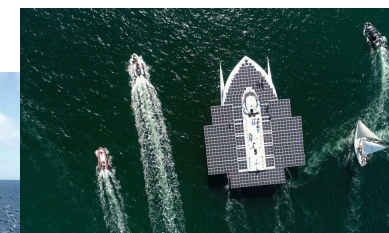


Blue Justice



## ➤ Decarbonization of the maritime world

RACE FOR WATER  
A FOUNDATION TO PRESERVE WATER



# EXAMPLES OF SERVICES



## ➤ Coastal flooding hazards

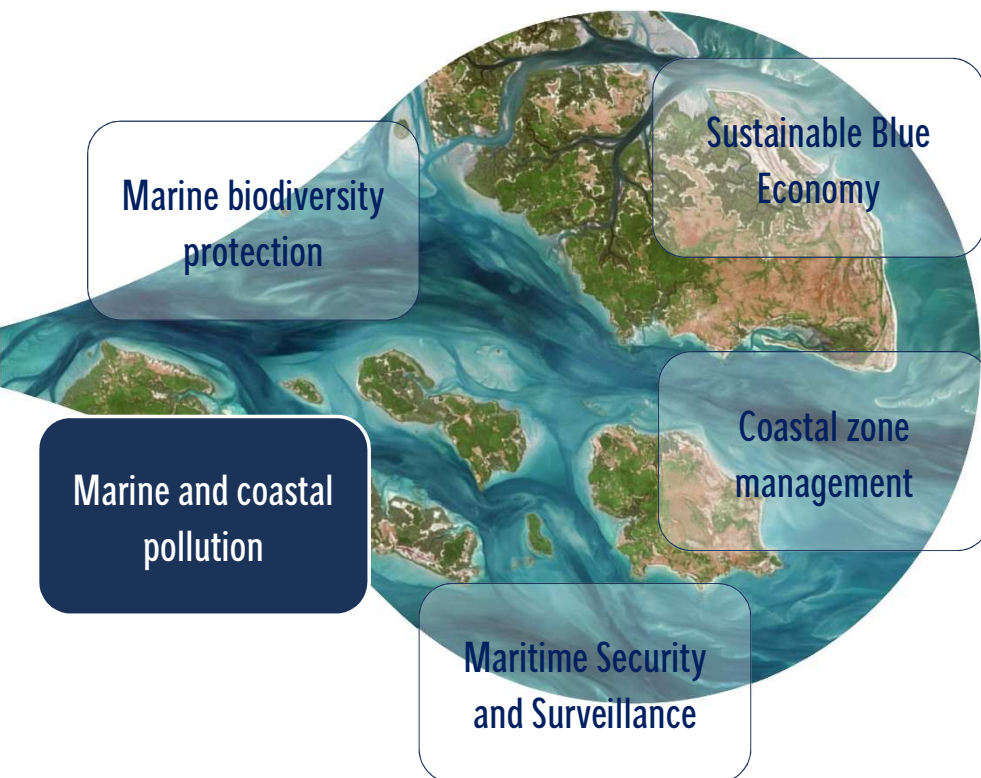
LITTOSCOPE | Space for Climate Observatory



## ➤ Resilience to extreme events



# EXAMPLES OF SERVICES



## ➤ Ocean Plastic Pollution

**EXPEDITION  
7<sup>e</sup> CONTINENT**  
septiemecontinent.com | seventh-continent.com

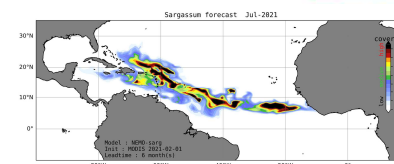


## ➤ Oil Pollution prevention



## ➤ Sargassum forecast and warnings

**Interreg  
Caraïbes**  
Fonds européen de développement régional  
**SARG'COOP**  
Programme caraïbéen de coopération de  
lutte contre les algues sargasses



SeSaM | Space for Climate Observatory





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# MEMBERS OF THE ALLIANCE

## AS OF APRIL 7, 2025

### Founding Members



### Steering Committee Members



**Confirmed Interest  
pending internal process approval**





# PROPOSED GOVERNANCE

## Founding Members



## Blue Justice



## Steering Committee Members up to date

## Membership

- The Alliance is open to all Member States of the United Nations, national/regional/international institutions and organizations, public and private stakeholders
- A focal point is designated for each signatory member of the Alliance
- UNOC-3 is an opportunity for stakeholders to join the Alliance

## Role of the Steering Committee

- Will designate a Member in charge of the Alliance Secretariat
- Will design, approve and follow a multi-annual Implementation Plan

## Meetings

- Steering Committee meetings at least twice a year to oversee progress on the Implementation Plan
- Annual event to follow-up on Alliance achievements and way forward
- Future UNOCs dedicated events and technical workshops



# JOIN THE SPACE4OCEAN ALLIANCE NOW !



**Declaration of interest sent by CNES CEO on April 4<sup>th</sup>**  
**RSVP requested by the end of April**

Please send us:

- **Confirmation of Interest and intention to sign the Declaration**
- **Intention to participate in the June events (UNOC3), with a list of expected participants**

Expected level of representation:

- For June 9 : at least heads of agencies, organizations, institutes with authority to sign
- For June 10: higher level desired



**Selma Cherchali**

[selma.cherchali@cnes.fr](mailto:selma.cherchali@cnes.fr)



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# 2-YEAR PERSPECTIVE (2025-2027)







## Success criteria

- **Structure** and enlarge the Alliance  *Number of new members*
- **Identify** user needs  *Publish a Users Requirements Document*
- **Provide** the state of the art of existing services and applications
- **Define** ocean health indicators  *TBD*
- **Identify** observation gaps, if any, and establish a roadmap to fill those gaps  *TBD*
- **Identify** missing operational services, if any, and implement 5 new operational services
- **Promote** Earth Observation for ocean science and applications at international level  *TBD*
- **Provide** dedicated training on Ocean Science  *TBD*
- **Define** a « capacity building package » and move on with a first implementation
- **Organize** and coordinate the space contribution at UNOC-4  *TBD in the UNOC declaration*



# 5-YEAR PERSPECTIVE (2030+)

## Success criteria

- **Further enlarge** the Alliance  *Number of new members*
- **Update** Users Needs  *Update the Users Requirements Document (URD)*
- **Implement** the ocean health indicators and inform the community about the results  *Publication of indicators*
- **Start implementing** the roadmap of projects and services  *TBD in the roadmap, e.g. 25 new projects/services provided to the community*
- **Assess the impact** of the Alliance  *Number of new members*
- **Organize and coordinate** the space contribution at UNOC-5, UNOC-6  *TBD in the UNOC declaration*