

Introduction to the second day

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EMSO ERIC Director General

Rome, 11-13 March 2025

Forewords

About 150 registered attendees
of which 70 expected on site to day

Special Guests:

Austria, Bulgaria, Canada, Denmark, Georgia, Germany, Netherlands,
Turkey, UK, Ukraine

About 15 private companies

Ministries' Delegates from Italy, France, Spain, Ireland,
And the EMSO AoM Chairman

Forewords

Some special thanks

The Executive Committee

The Central Management Office

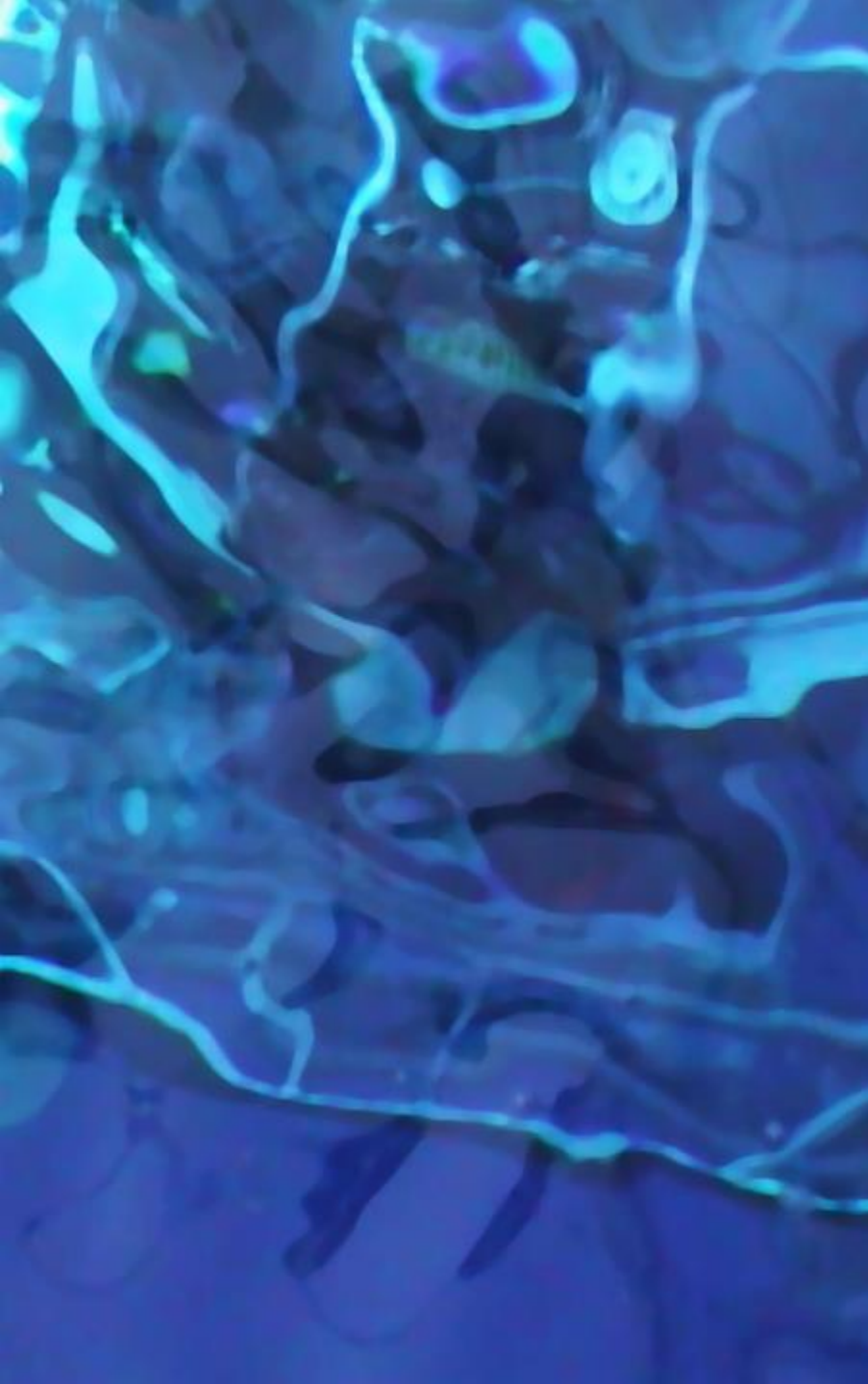
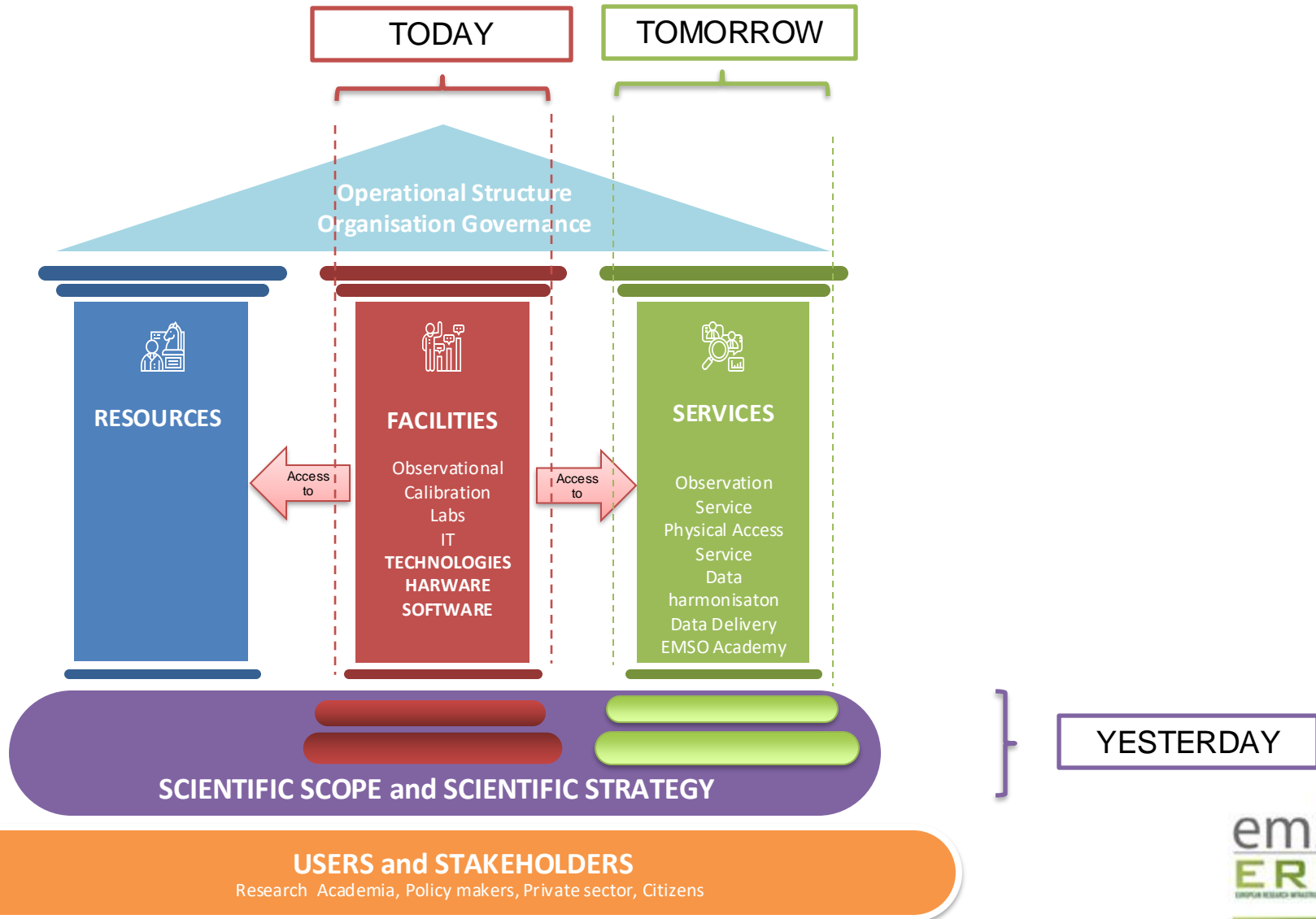


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- **Towards the future: Objectives of today**

Workshop Scope

Workshop Structure



Debriefing after Yesterday

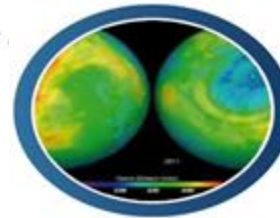
Science Service Group

SCIENTIFIC
SCOPE
and
SCIENTIFIC
STRATEGY

MARINE
ECOSYSTEMS

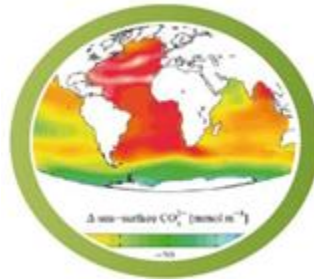
CLIMATE
CHANGE

GEO-
HAZARD



Earth interactions hydrosphere,
biosphere, lithosphere, atmosphere

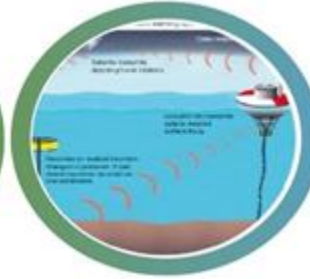
SOCIO
ECONOMICAL
CHALLENGES



Global ocean
warming and
acidification



Sustainability
of Marine
Resources



Geohazards: early
warning systems
for earthquakes &
tsunamis

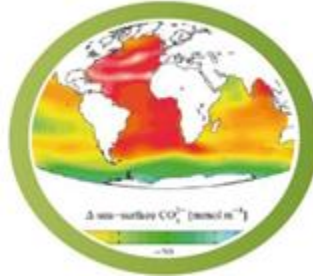


Impacts of climate
change on marine
ecosystems
& mitigation

Debriefing after Yesterday

Challenges formulation

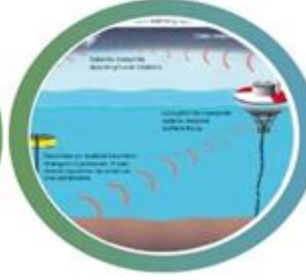
SOCIO ECONOMICAL CHALLENGES



Global ocean
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of Marine
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Impacts of climate
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Challenge 1: Open ocean temporal variability across spatial scales

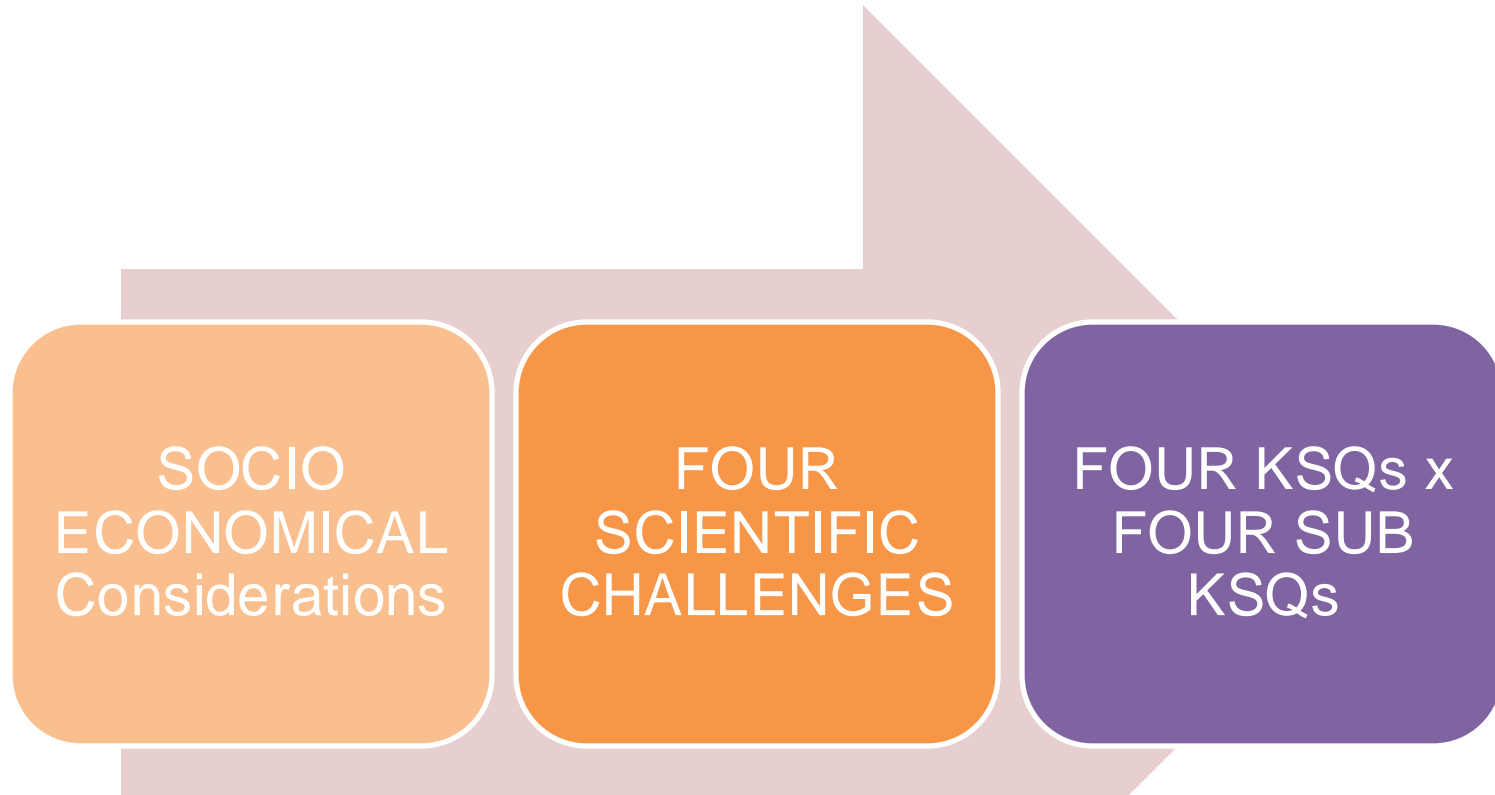
Challenge 2: Spatiotemporal process variability and natural hazards

Challenge 3 : Assessing baseline and potential changes of open ocean benthic and pelagic ecosystems

Challenge 4 : Geophysical events, climatic and anthropogenic changes and deep carbon storage

Debriefing after Yesterday

From Challenges formulation to Key Scientific Questions (KSQs)



Debriefing after Yesterday

From Challenges formulation to Key Scientific Questions (KSQs)

KSQ-1 : How does the temporal variability of open ocean EOVs impact and propagate from local to regional scales?

KSQ

prec

KSQ

geog

ben

Important synergies are in place per KSQ and across them.

Joint Research actions are the glue of the community
with
Joint publications.

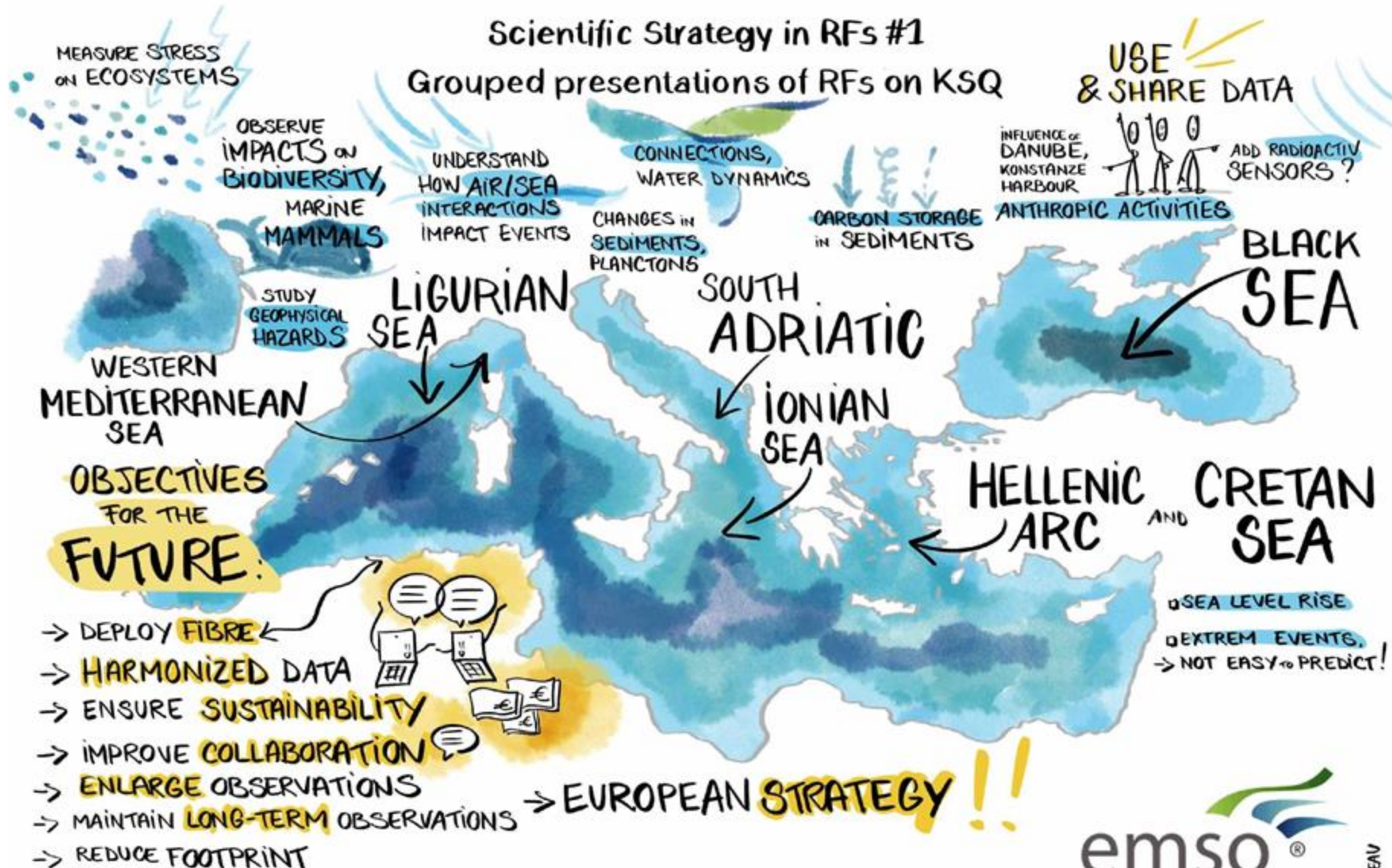
Capacity building !!!!

KSQ 4: How does climate change affect the carbon storage in the open ocean along the water column?

Debriefing after Yesterday

Scientific Strategy in RFs #1

Grouped presentations of RFs on KSQ



EMSO Strategic Workshop

11 March 2025 - Rome - ITALY

Debriefing after Yesterday

Scientific Strategy in RFs #1

Grouped presentations of RFs on KSQ



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Debriefing after Yesterday

Key discussion points

- When expanding towards regional scales of observation: The idea of deploying other technologies of which mobile platforms and submarine cables
- Push towards smart and SMART cable and DAS as ways for extending the observational network
- A lot of interest for biological sensors, eDNA and metabarcoding, AI deployment and machine learning, sediment traps
- More real time data
- Sustainability of the operational capability related to maintenance: cruises and ships availability
- Reduction of footprint by collaborating in regions to integrate systems and capacities across ERICs => Collaboration with Other ERICs driven by the scientific strategy

Towards the Future

EMSO Facilities



FACILITIES

Observational
Calibration
Labs
IT

TECHNOLOGIES
HARWARE
SOFTWARE

- **Until Today**

- Facilities and testing
- Distribution

Do we need
new facility
types?

- **Food**

- Excellent research needs to be supported by metrology and calibration services and labs

It depends!

On the purpose :

- ⇒ On the user needs
- ⇒ On the Scientific Strategy

Towards the Future

ESFRI Monitoring 2024

Key Recommendations on e-Needs and Data Portal

- The **EMSO Data Portal**: a valuable resource with multiple applications for different sectors (e.g. maritime industry, environmental consultancies and marine technology companies).
- **EMSO Data Portal should become a top priority** and the EMSO should increase its investment to the EMSO backbone infrastructure. This priority is not evident from the current strategy and financial documents.
- The absence of an **authorization infrastructure (AAI)** limits its ability to determine what scientific output its data helps to support.
- The visibility and traceability of the data use is expected to become higher and stronger with more formal links with designated data identifiers to European and global marine data systems.
- More systematic efforts should be undertaken to identify downstream use of EMSO data in scientific publications which are not authored by either researchers affiliated with the EMSO operators (which are currently not captured in the KPIs, which is a major gap in their scope), or by physical access users which are known to the RI.



Technology Goal

Reduce EMSO environmental impacts with technologies dedicated to improve the EMSO efficiency

EMSO aims to develop capacities to:

1

Sustain its own technologies and methodologies to ensure the delivery of high-quality of data and services

2

Advance the development of its e-infrastructure (cloud-computing facilities with VREs and Labs in collaboration with the existing national and EU initiatives)

3

Implement new technologies that help Reduce EMSO's environmental footprint and increase infrastructure efficiency (lower cost technology, less energy consuming, easier to deploy and retrieve, greener, well-designed decommissioning plan)

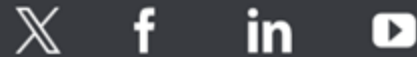
Strategic Objectives

- SO.2.1 Redesign a smart, greener and lower cost infrastructure
- SO.2.2 Leveraging emerging technologies
- SO.2.3 Set the EMSO harmonisation technology as a key asset for its expansion
- SO.2.4 Upgrade e-EMSO to be part of the European Digit landscape

Thank you for your attention



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