

OCEAN INTEGRATION

Towards a transformative change on Ocean Observing to more adequately meet the grand challenges of our time

Notes for discussion

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What is the issue?

Today's biggest challenge: contribute to a sound ecosystem-based management of the ocean under climate change

For this, we need to:

- Enhance scientific understanding **across disciplines and scales**
 - Embrace a more **holistic view** of the ocean system
 - Have a more **integrated, user-focused, transdisciplinary** Ocean Observing and Forecasting System
 - Work all **together as a community**, sharing data and knowledge
- This is very challenging because it requires:**

- Moving **beyond a business-as-usual** approach
- **Transcending** the well-established disciplinary and technology **silos**
- **Surpassing** the traditional structures, norms and practices of our **academic system**

Ocean integration: a possible way forward

Ocean integration could be achieved through:

- **Building a collective impact organisation**
 - Agreeing on a common agenda & values
 - Designing a polycentric governance structure
 - Establishing clear design & implementation and business plan
- **Reaching sustainability**
 - Elaborating long-term funding strategies
 - Efficiently communicating the added-value of integration
- **Promoting a culture shift**
 - Facilitating the transition from research to operational
 - Connecting the diverse communities
 - Fostering FAIR data & TRUST data repositories, open science practices
 - Reforming the ocean research assessment system



Révelard et al. (2022)
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How to trigger this transformative change?

One size does not fit all!

Need to develop and test the approach at different scales, **pilot cases**, lead by example

- **SOCIB** will take the lead at Regional Scale: **Western Mediterranean region**, taking the Digital Twin as catalyst
- What about the other regions? All-Atlantic? Pacific? Global, ... We need a division of labor!
- At the global level, GOOS leadership is needed!

Thank you !

More information in this position paper:

Révelard A, Tintoré J, Verron J, Bahurel P, Barth JA, Belbéoch M, Benveniste J, Bonnefond P, Chassignet EP, Cravatte S, Davidson F, deYoung B, Heupel M, Heslop E, Hörstmann C, Karstensen J, Le Traon PY, Marques M, McLean C, Medina R, Paluszkiwicz T, Pascual A, Pearlman J, Petihakis G, Pinardi N, Pouliquen S, Rayner R, Shepherd I, Sprintall J, Tanhua T, Testor P, Seppälä J, Siddorn J, Thomsen S, Valdés L, Visbeck M, Waite AM, Werner F, Wilkin J and Williams B (2022) **Ocean Integration: The Needs and Challenges of Effective Coordination Within the Ocean Observing System**. *Front. Mar. Sci.* 8:737671. doi: [10.3389/fmars.2021.737671](https://doi.org/10.3389/fmars.2021.737671)



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