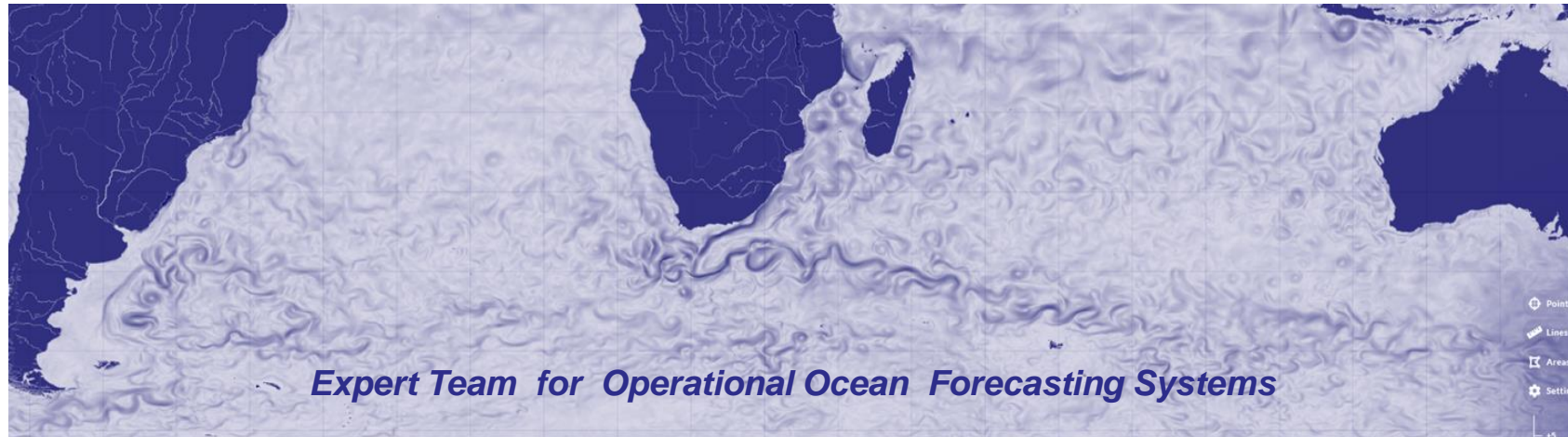




The Global Ocean Observing System
www.goosocean.org

Reports from GOOS components

ETOOFS

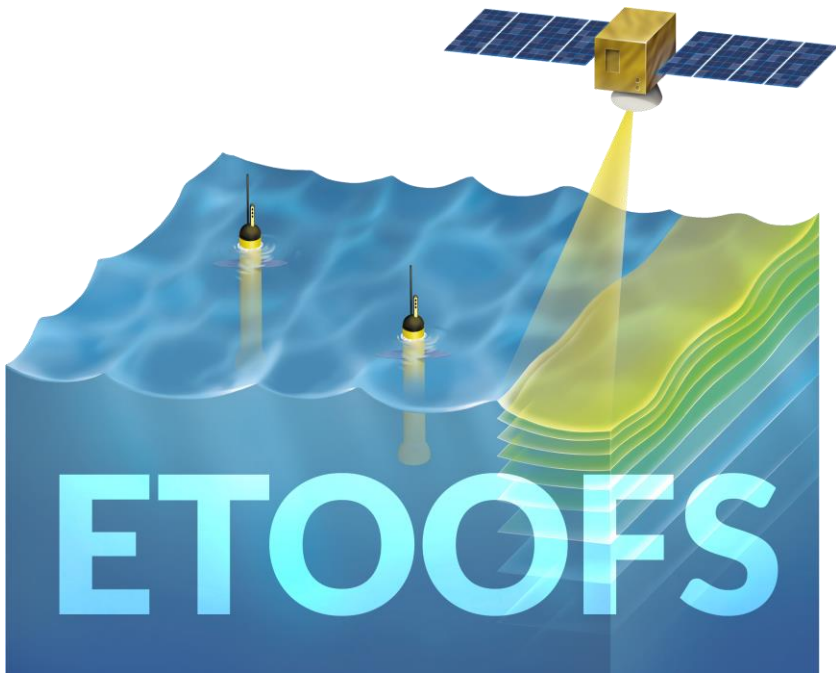


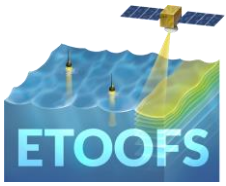
Pierre Bahurel, Chair; Enrique Alvarez Fanjul, Vice-Chair
Denis Chang-Seng, IOC officer



Outlines

- Presentation of ETOOFS
- **Recent Progress**
 1. OOFS **guide**, *status*
 2. OOFS **workshop**, *outcomes*
 3. ETOOFS **evolution** plans in the Decade

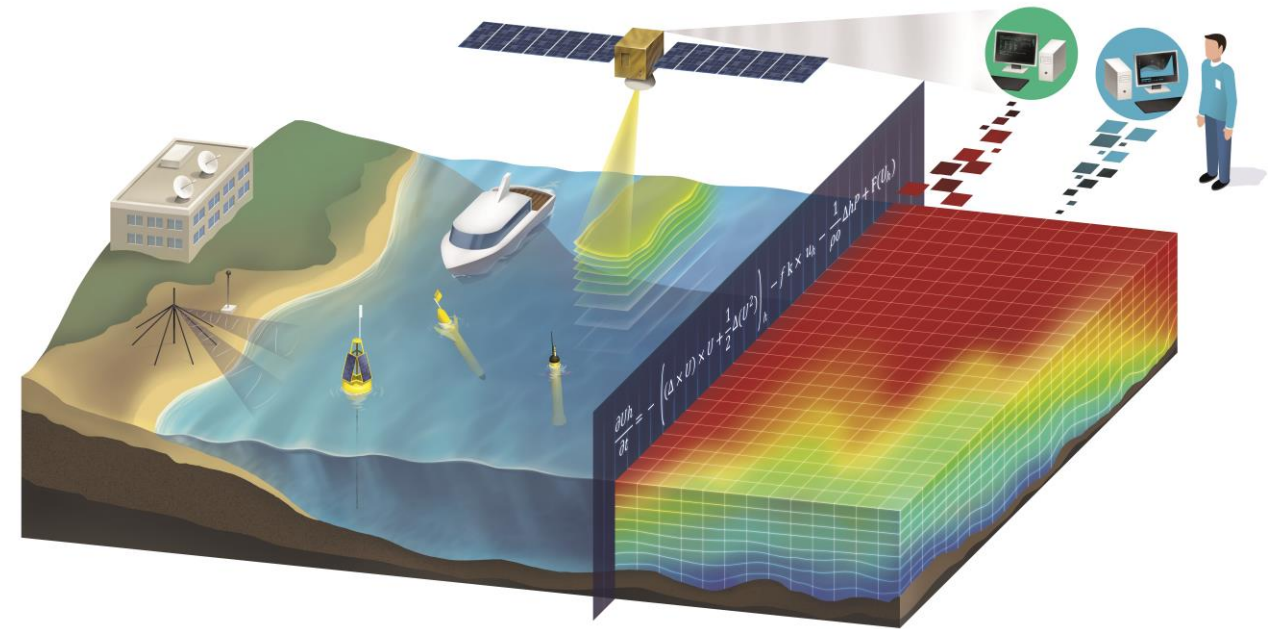


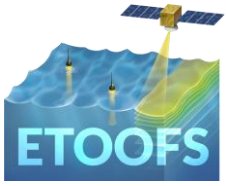


Introduction

Expert Team on Operational Ocean Forecast Systems (ETOOFS)

Objectives: To improve capacity, quality and interoperability of **ocean forecast products** to support climate, operational maritime services, biodiversity and blue economy.





Expert Team on Operational Ocean Forecast Systems (ETOOFS)

MISSIONS

Manage and maintain the guide, scope and requirement documents,

Manage and maintain an overview of OOFS service portfolio

Manage and promote the adoption of an international standard to support interoperability

Guide and initiate actions at international level

Promote and facilitate the support for OOFS development

Provide advice on OOFS related matters

Liaise with and gather input from other Expert Teams

EXPERT TEAM

1. **Pierre BAHUREL**, France, *Chair*
2. **Enrique ALVAREZ FANJUL**, Spain, *Vice-Chair*
3. **Stefania CILIBERTI**, Italy
4. **Shiro ISHIZAKI**, Japan
5. **Sudheer JOSEPH**, India
6. **Guimei LIU**, China
7. **Avichal MEHRA**, US
8. **Aihong ZHONG**, Australia
9. **Lotfi AOUF**, France



IOC/GOOS

- **Denis CHANG SENG**, IOC, ETOOFS officer

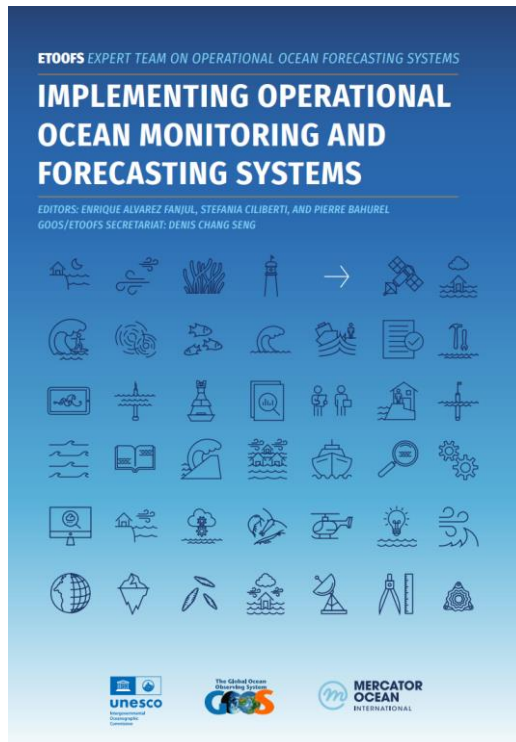
1) Release the *Guide to Operational Ocean Forecasting Systems*

THE ETOOFS GUIDE

The ETOOFS Guide is finalized, with world-class expert contributions

A community effort by recognized ocean experts

- 70+ contributing experts (authors)
 - 40+ different entities
 - 17+ different countries



<https://www.mercator-ocean.eu/en/guide-etoofs/>

A comprehensive description of ocean monitoring systems

- 12 chapters to
 - a) Explain what can OOFs do and why, their value, limitations and main characteristics
 - b) Propose expert presentations of OOF systems on Ocean Circulation, Ice monitoring, Sea Level, Wave, Biogeochemistry, Ocean/Atmosphere OOFs systems
 - c) Address the uses and expected evolutions

A professional edition, reviewed by the best experts

- Peer-reviewed text, professional edition



The ETOOFS Guide was released in June 2022 at the UN Ocean conf.



- Release as a **GOOS** document

Official kick-off at the occasion of the UN Ocean conference in Lisbon (30 June 2022)

– side-events and international recognition

Online publication

– Available online (see [here](#))

- Ongoing endorsement by **WMO**

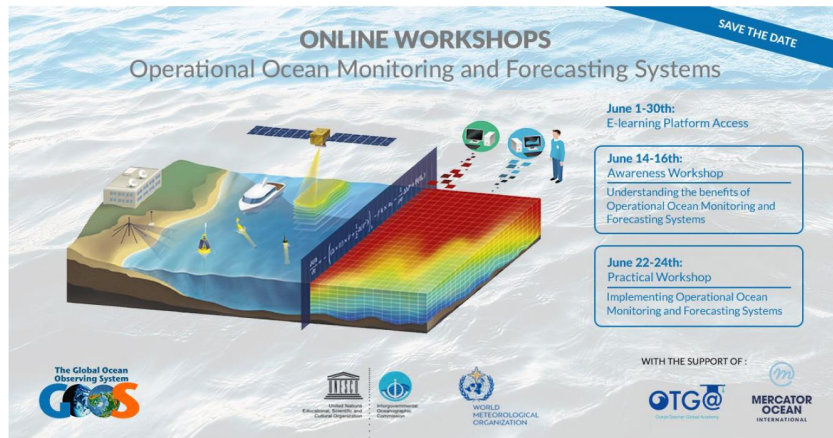
– To enter WMO & IOC document libraries



2) Promote Ocean Forecasting within the IOC community and foster capacity development

THE ETOOFS WORKSHOP

Foster OOFs capacity development

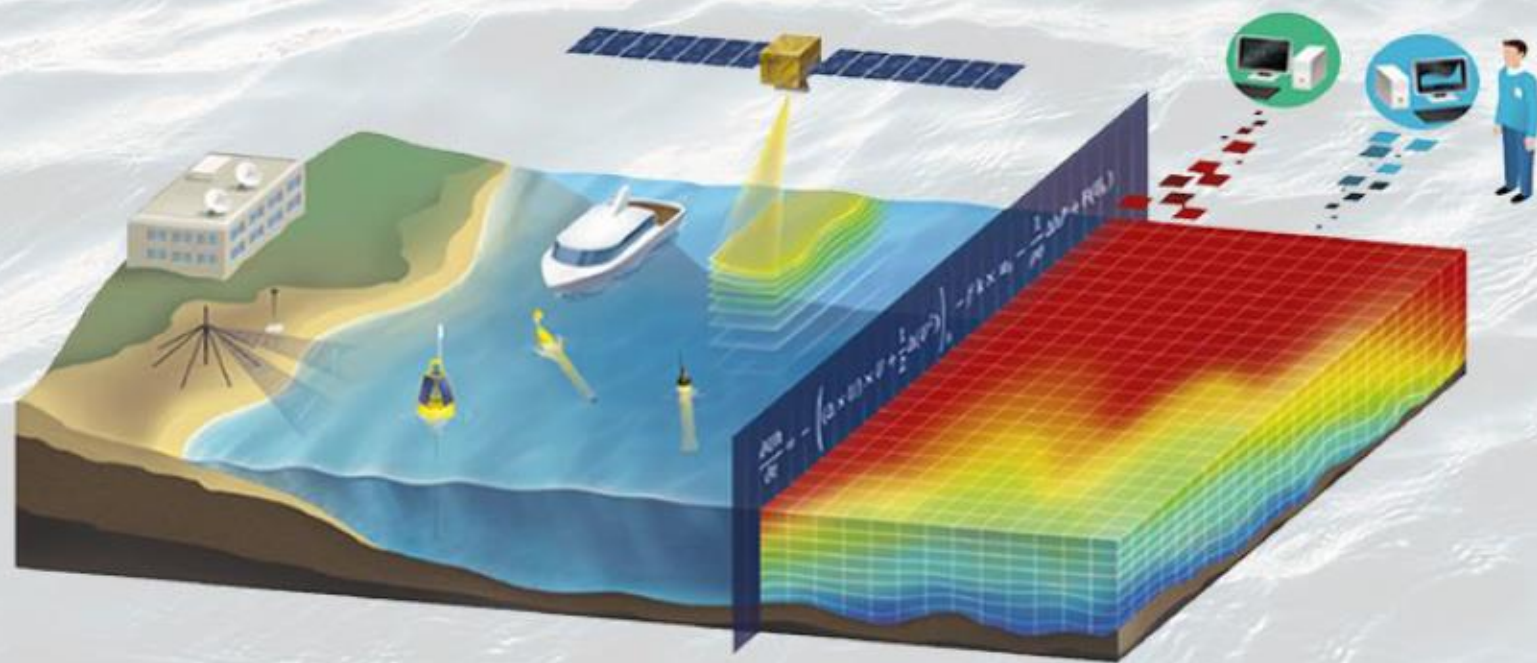


- A booklet + A video + ETOOFS Communication material to explain Ocean Forecasting and reach out to interested stakeholders worldwide
- A first and very successful try in June 2021 with an online ETOOFS workshop
 - To connect the authors of the ETOOS Guide with their future readers and users
 - To engage with new stakeholders and get their guidance

SAVE THE DATE

ONLINE WORKSHOPS

Operational Ocean Monitoring and Forecasting Systems



June 1-30th:
E-learning Platform Access

June 14-16th:
Awareness Workshop

Understanding the benefits of
Operational Ocean Monitoring and
Forecasting Systems

June 22-24th:
Practical Workshop

Implementing Operational Ocean
Monitoring and Forecasting Systems



WITH THE SUPPORT OF :



PARTICIPATION



188

PARTICIPANTS PER DAY
ON AVERAGE



170



ACTIVE PARTICIPANTS
ON THE OTGA PLATFORM

65

COUNTRIES



166

THANK YOU



178

QUESTIONS
ASKED

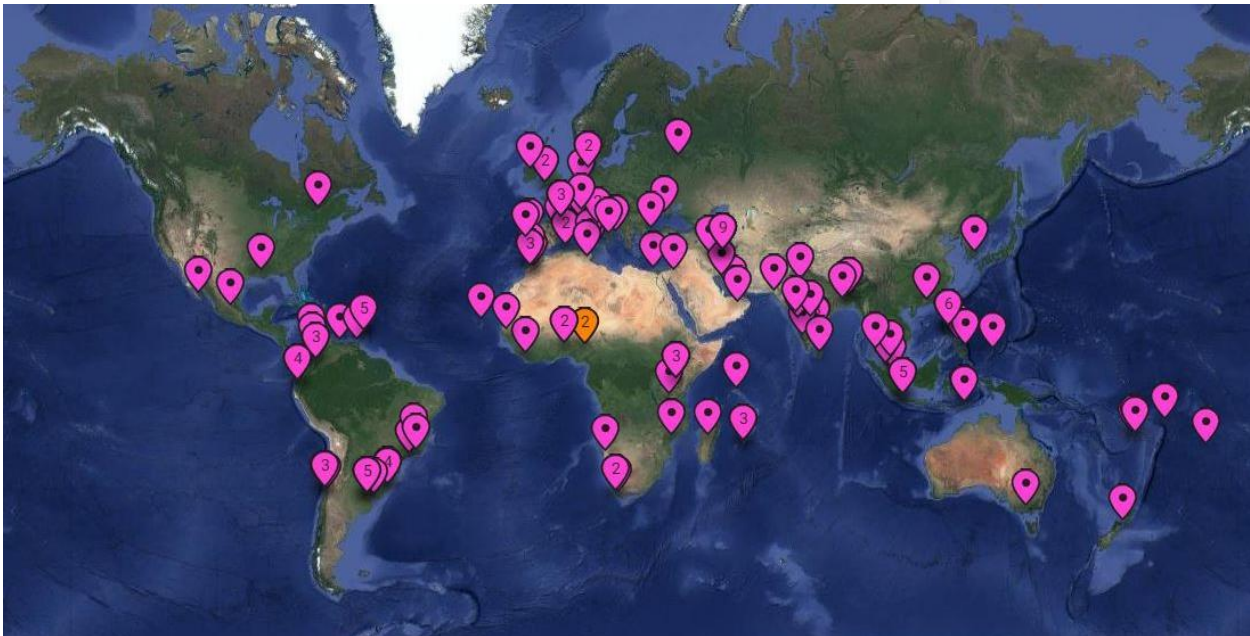


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VOTES IN LIVE-POLLS



What will the future
of OOFs look like?



Survey



What content would you like/need to be addressed in a future OOFS workshop?

TECHNICAL ASPECTS

Data assimilation

Hurricane Warning System

Forecast verification and validation exercises

forecasting of wave models in coastal areas

Validation of numerical modelling

Ocean data processing and quality control techniques

experiences of downscaling of global models in the Southern Hemisphere, particularly in South America

MARINE POLLUTION

Oil spills

Ocean Acidification, Global Warming

REGIONAL PERSPECTIVE

More of OOFS activities on the Africa context, where the develop regions are and how Africa is moving. Technical assistance to Africa in the context of OOFS

how to enable small-scale OOFS in developing countries

How to take into account (or to consider) local / traditional made tools by coastal communities in OOFS

More focus on regional basis

OOFS IMPLEMENTATION

estimation of financial cost of materials using in OOFS

Challenges, how to overcome the ocean data observation in all part of the ocean

Practical aspects of each of the steps involved in an OOFS implementation

“I think it's good, you just need to practice”

3) Partner with OceanPredict and integrate ETOOFS in the UN Decade of Ocean Sciences

THE NEW ETOOFS FRAMEWORK

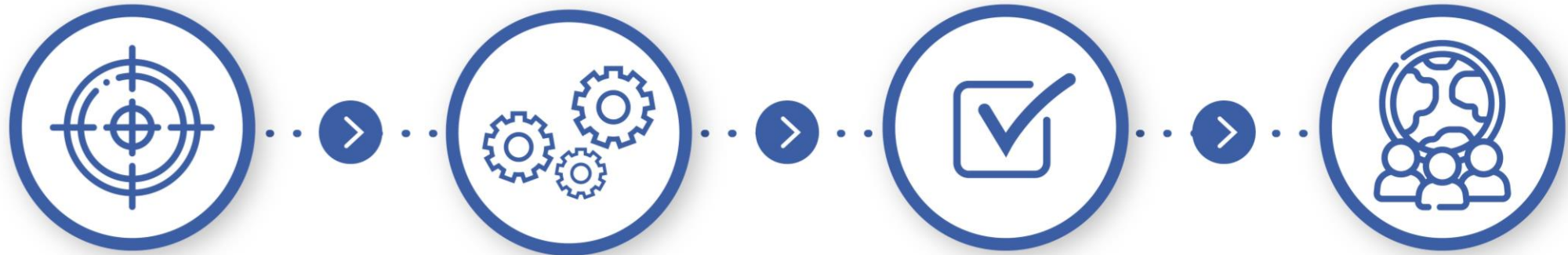
Vision for next phase of ETOOFS: changes under the new scenario opened by the Ocean Decade.

- New scenario opened by the arrival of the Ocean Decade and the development of decentralized coordination structures and actions
- Need of a cross-cutting coordination between three basic pillars Observations (GOOS DCO), data management (IODE DCO) and forecasting (OceanPrediction DCC).
- ETOOFS will play a key role as endorsement body for new technical developments.
- ETOOFS will continue its work on the guide, keeping it as a living document that will incorporate all the developments of the Decade.

A new role for ETOOFS

ETOOFS as a key element for delivering as one

Example of one typical iteration:



1) OceanPrediction DCC, in collaboration with decade actions, **identifies** the need of a new standard or tool and coordinates the **co-design** of specifications

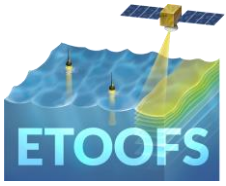
2) The Decade actions (e.g., Coastpredict, Foresea) **develop** the new component, aligned with OceanPrediction DCC

3) ETOOFS **endorse** the new development

4) OceanPrediction DCC and others (e.g., BestPractices) make sure the new developments are **distributed to the community**

New ToR

- Contribute to the needed **joint governance** and convergence of the development plans for the observing system (in-situ and satellite - GOOS DCU), data management (IODE DCU), and ocean forecasting (OceanPrediction DCC). Contribute to the dialogue of these pillars with the services component.
- Collaborate with Oceanprediction DCC and other UN Decade coordination bodies and actions (such as Coastpredict, Foresea, Obscode, OBPS and DITTO) to **promote the development of a new technical scenario** with shared tools, standards and best practices for ocean forecasting during the Decade and beyond
- **Endorsement** of tools, standards, best practices and ORLs developed by Decade actions to promote interoperability and other critical advances:
- Development of a **portfolio of endorsed documentation** (including the ETOOFS guide) to advise on the implementation of OOFS services and products
- **Certification of services** following ORL criteria defined by Decade Actions
- Elaboration of **recommendations** for the reinforcement and development of ocean forecasting capacity worldwide.



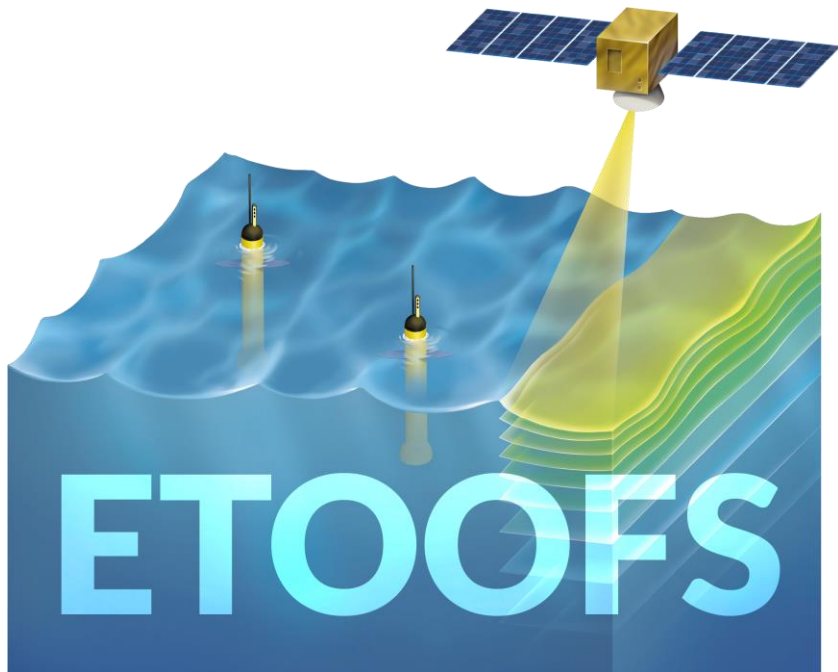
Next steps:

- Celebrate an ETOOFS meeting and officially adopt the new ToR
- Review the members, exploring the need of changes in composition
- Prepare a short-term action plan
- Reinforce connection with DCCs, DCOs and Decade actions
- Convert the ETOOFS guide into a wiki site to start preparing next edition (including Biological and Tsunami forecasting)
- Continue efforts for WMO endorsement

Conclusions

Last achievements:

- Finalized and released the ETOOFS Guide
- Raised ETOOFS awareness (workshop)
- New ToR ready



Our objective for the coming year is to reinforce this *Ocean Prediction* backbone with ETOOFS / OceanPredict / OceanPrediction DCC and reinforce the ETOOFS role in supporting IOC and WMO Member States.



The Global Ocean Observing System
www.goosocean.org

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ETOOFS



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