Report and plans of OS-Eval TT

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Communication of OS-Eval TT outcomes

- **What are the products/knowledge/advances generated by the TT?**

✓ Regular web meetings (1 hour/2 months) with presentations and discussions on ongoing OS-Eval studies in different OP centers
✓ Table of observation usage by OP centers (on the OP website)
✓ Discussions with the Argo ST.

- **How are these advances communicated to the science community, to operational systems, to the public …**

✓ Presentations of OS-Eval studies given at different science conferences (25y of Altimetry, PIRATA, US CLIVAR, CLIVAR-GSOP) and organisation meetings (WMO/IOC/OBP, GOOS)
✓ TT webpages with the presentations on the OP website
✓ Contribution from the TT to “external” documents (ex. Ocean Obs. Req for IOC/WMO)

Communication of OS-Eval TT outcomes

- **What steps could be taken to increase the information and communication flow on TT and OP advances?**

- Find the right level of communication depending on the "subject" between OP ST and the TT and the different international organisations managing "ocean observations".
- ➢ Need to identify and know the role of those different international organisations we would like to interact with more closely
- ➢ set up of the OP communication plan will clarify those aspects.

➢ *SynObs project is having an important communication aspect*

OS-Eval TT community interactions

- **Please provide information about who uses OS-Eval TT output?**

- Space agencies
- TPOS, Argo community
- H2020 European project
- OP centers
- WMO/IOC/OBP and GOOS …

- **What groups does the TT collaborate with?**

- Other TTs in OP – mostly DA (for SynObs preparation, and the joint Symposium)
- externally Argo, TPOS, CLIVAR-GSOP.

OS-Eval TT future plans in UN decade context

- **What gaps in knowledge/expertise need to be filled from your TT perspective?**

- OS-Eval Methodology for efficient and prompt evaluation
- Extending the OS-Eval to BGC and coastal areas (coll. with other TTs)
- Real time assessment of observing systems
- Regular and formatted report to Observation Agencies (OIS)

- **What do you see as challenges for the TT in the next 3-5 years?**

- Develop methods to improve the complementarity of various observation systems and to evaluate the synergy (SynObs project)
- Link with other communities to draw requirements on Ocean Observing system evolution based on OS-Eval (OOS are multi-purpose).

OS-Eval TT future plans in UN decade context

- **If available, what is the longer-term outlook in the TT field of expertise (next 10 years)?**

- Establish a mechanism so the OceanPredict community can commit to the maintenance and evolution of the ocean observing networks.

- **Where do you anticipate benefit in the Decade?**

- The Decade gives us a good opportunity to enhance the collaboration with observational communities, such as GOOS, and the earth system prediction community.

- **How do you plan to engage with SynObs and/or CoastPredict?**

- The TT plans to lead the SynObs UN decade project to reinforce enhances the link between the OceanPredict and observational communities, which also contributes to the enhancement of the whole ocean prediction value chain.

SynObs: Synergistic Observing Networks for Impactful and Relevant Ocean Predictions

OceanPredict
Advancing the science of ocean prediction

- A Comprehensive Decade Project for ForeSea, CoastPredict, and ObsCoDe

- **Objective**

  SynObs will seek the way to extract the maximum benefit from the combination among various observation platforms, typically between satellite and in situ observation data, or between coastal and open ocean platforms, in ocean (and earth system) predictions.

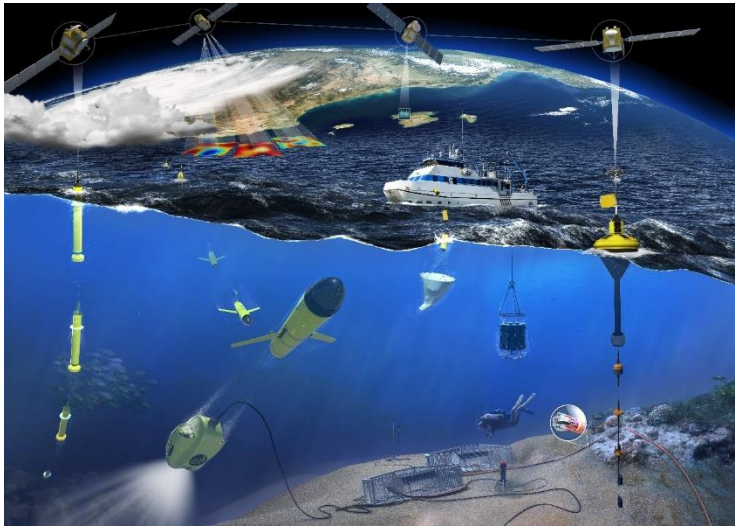
- **Strategy**

  SynObs aim to identify the optimal combination of different ocean observation platforms through observing system design/evaluation, and develop assimilation methods with which we can draw synergistic effects from the combination.

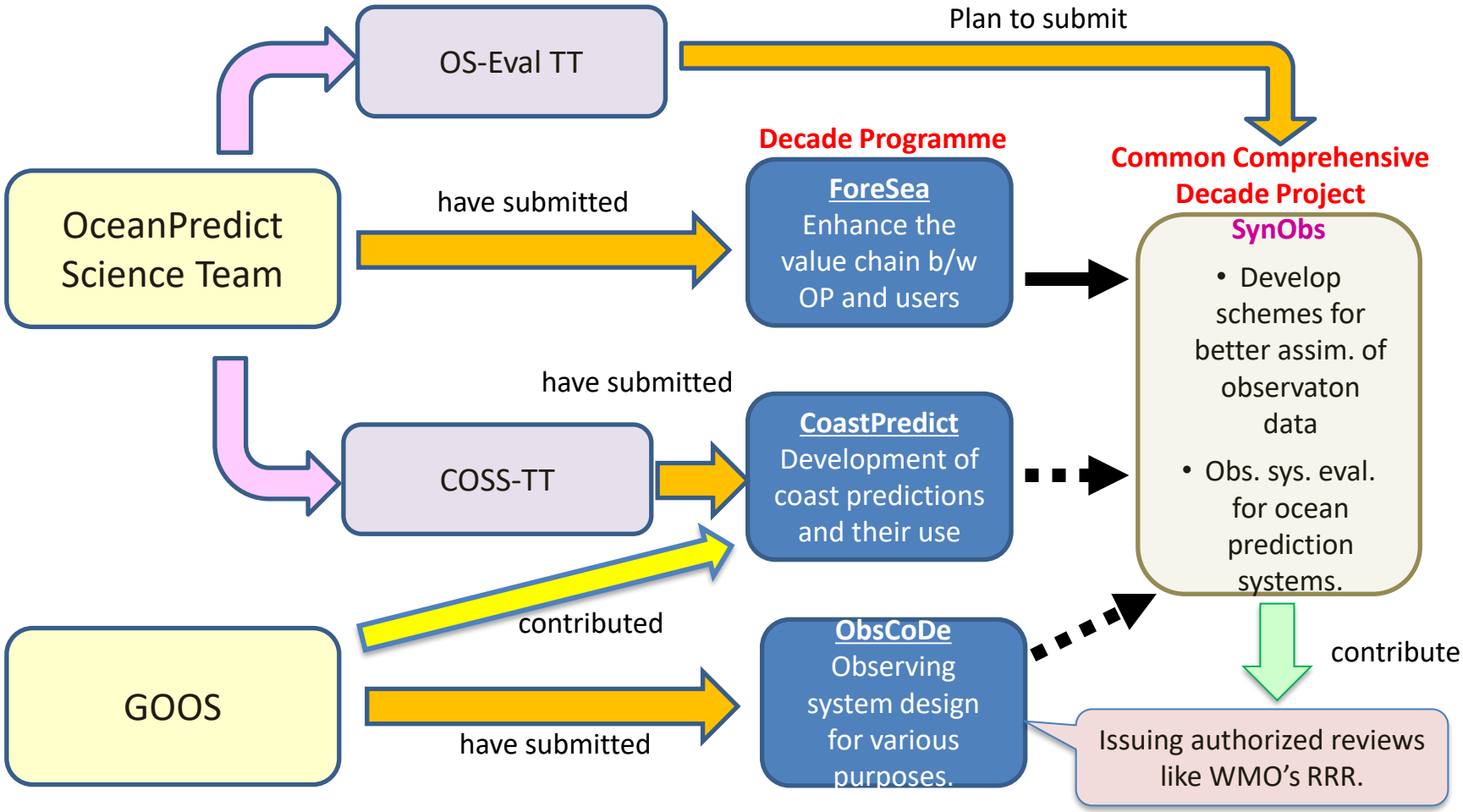
- **Scope**

  Targets of SynObs include open-ocean, coastal, and biogeochemical (BGC) observing systems (collaboration with DA-TT, COSS-TT, and MEAP-TT)

Courtesy of SOCIB



★ OceanPredict contributions to the UN Decade of Ocean Science



★ Targeted Combination of Observing Systems

1. Satellite altimeters (including conventional and wide-swath altimeters), satellite ocean current observations (SKIM) and Argo floats
2. Satellite radiometers (for SST observations), near surface in situ observations (from Mooring buoys and Argo floats, etc.), and sea surface atmospheric parameters ⇒ Specific to coupled data assimilation
3. Satellite Sea Surface Salinity (SSS) observations and near surface in situ observations
4. Satellite ocean colour observations and in-situ (Argo) observations ⇒ Specific to marine ecosystem predictions
5. Observations of sea ice concentrations and sea ice thickness ⇒ Specific to polar regions
6. Coastal ocean radars and sensors, gliders, drones, satellite remote sensing, and Argo floats ⇒ Specific to coastal predictions.

★ Expected Activities in SynObs

1. Multi-system evaluation, including Multi-System OSE, OSSE, and evaluation using various diagnostic based on ensemble statistics or adjoint models.
2. Development of data assimilation schemes for synergy
   - ✓ Assimilating low-level processed satellite data (direct assimilation)
   - ✓ incorporate background error covariance between atmospheric and oceanic elements.
3. Collocated satellite-in situ observation campaigns (e.g., Argo and InfraRed satellite)
4. Development of best-practices for evaluating the performance of ocean observing networks composed of various observing platforms
5. Construction of a real-time ocean observation impact monitoring framework
6. Publishing the Observation Impact Annual Report ⇒ Contribute to ObsCoDe

➢ ***Financial support will be needed for SynObs activities***

Symposium toward Synergistic Observation Networks for Ocean and Earth System Predictions

~~*10-13 Nov, 2020*~~, *Tsukuba Japan*

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~~30 Nov – 3 Dec, 2021~~

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Jun-Jul or Oct-Dec, 2022?

- Held as the regular face-to-face meeting of OS-Eval Task Team, but jointed with the coupled prediction task team.
- Open for all researchers who are interested in evaluation and effective use of ocean observations in ocean and earth system predictions.
- Also, having a role as the kick-off meeting of SynObs.
- Having a presentation about the evaluation/design of ocean observation networks, DA development for effective use of observations, and earth system predictions.