SUBJECT: IBISAR - Mid-term meeting minutes   DATE: **05/11/18@12.00**

Location:

Instituto de Ciencias del Mar (ICM) in Barcelona, during the IMDIS conference.

Date and time:

05/11/18@12.00 - 14.00 h (2 hours)

Objective:

Mid-term review meeting (face-to-face) with IBISAR team members and collaborators (SASEMAR and Puertos del Estado) to:

- Meet with the project team and collaborators 6 months after the start date.
- Update on the project progress.
- Discuss any questions, concerns, difficulties, and user's feedback.
- Define follow up actions.

Final Attendants list:

ICM-CSIC

- JB: Joaquím Ballabrera (Scientist, COSMO project) [mailto:protllan@socib.es]
- EG: Emili García Ladona [emilio@icm.csic.es]
- JJ: Jose Antonio Jimenez [j.madrid@icm.csic.es]

SOCIB:

- PR: Paz Rotllán (DC, Frontend) [mailto:protllan@socib.es]
- BM: Baptiste Mourre (MFF) [mailto:bmourre@socib.es]
- ER: Emma Reyes (HFR, IBISAR PI) [mailto:ereyes@socib.es]

AZTI:

- JM: Julien Mader (Head of Marine Technologies Area) [mailto:jmader@azti.es]

SASEMAR:

- CL:Christian De Lera Fernández (Head of eLearning and R&D Area, Jovellanos) [mailto:christiandlf@centrojovellanos.es]
- OR: Oriol Ros Amor (SAR Operator, Palma) [mailto:oriolra@sasemar.es]

PUERTOS DEL ESTADO:

- PL: Pablo Lorente (Product Quality expert) [mailto:plorente@puertos.es]

Discussion:

1. **Update of the project progress.**

   ▪ ER presented the update of the **project progress. Video recording of the presentation (at IMDIS)** is available <u>here.</u>

   ▪ ALL participants provided **comments included** in the sections **below**.

2. **Needs and feedback of the targeted users**

   ▪ OR informed about the necessity to **fill the gap**, regarding **current forecast**, in the **Canary island** SAR responsibility area (characterized by an intense traffic of sailboats). At this moment only HYCOM_GLOBAL_NAVY model is available.

   ▪ CL explained that the **CMEMS_GLOBAL_1_4 model will be integrated** into the EDS to solve this issue (hopefully by the end of the 2018).

   ▪ PL informed that end-users from Azores islands **requested the expansion of the IBI model** domain to cover also this area. This is an unaffordable request since the computational cost would be very high (due to high spatial resolution of IBI ~2km).

   ▪ Regarding the data products to be integrated into the service, CL notified about the **delay in the data integration**. ER shared also her concern in this issue.

   ▪ Regarding the skill assessment service, CL's main **concern** is related on **how the information will arrive to the SAR operators.**

   ▪ CL found it useful to include/consider the functionality to **select periods at monthly or seasonal basis**. Currently, historical selection is working at yearly basis.

   ▪ CL requested to inform about the **methodology's limitation** by using disclaimers.

   ▪ BM proposed to add also a **disclaimer informing** whether the **assessment** is based on **near-real time** (NRT) data available **or based on historical** data.

   ▪ BM highlighted that the skill assessment will be more efficient when NRT is considered. If **NRT** is **not available**, a **specific warning** informing about this limitation should be shown.

   ▪ BM asked about the **delay of the NRT information** in CMEMS-INSTAC.

   ▪ PR clarified that the **delay of arrival** depends on the observing platform. Regarding moorings and drifters most of the data is provided **within 3 hours** since reception.

   ▪ Moreover, PR pointed out that In Situ TAC is providing on an hourly basis **metrics showing its network performance** (in terms of delay time) available in this link: **http://www.marineinsitu.eu/monitoring/**

   ▪ BM warned about **different versions** of the **CMEMS models** available.

   ▪ OR requested **fewer options** to choose and to combine **but more reliable ones**. He is interested in an **easy product**, **reducing** the number of **options**.

   ▪ OR pointed out that the **reliability of the skill score** (SS) will **depend on** the **emergency type**. He warned us about the differences between the SAR response

dealing with "man overboard" or "search of a 6 metre-long sailboat" and the relative weight of the skill score (metric) in both cases. In the former a SS > 0.85 would be requested and for the later, a SS ~0.4 would be probably enough.

- OR highlighted the **importance of reducing times** to provide an immediate response (commitment to respond in 20 minutes, particularly in case of man overboard). Usually, two SAR operators are working 24 hours: one in charge of running the SARMAP and OILMAP modelling tools and the other is in charge of the operational management (coordination of resources, telephone,...)

- ER asked the SAR operators **how are they currently selecting the most reliable source** for running their SAR modelling tools when different outcomes are available. OR replied that currently, the selection is **based mostly on** the **SAR operator's experience**, weather conditions, knowledge about the coastal area, maritime traffic,...

- OR informed that they should run the modelling tools for **12-24 hours of forecast horizon**, considering the time needed for the helicopter to arrive at the place of the accident.

- ER pointed out the **importance of including metadata** (= information about the data) regarding the forcings (e.g. wind, tides, waves, rivers,...) included into the model in order to better consider the reliability of the model source.

- ER informed that the **IBISAR service already include** those **metadata for every layer** (= dataset included in the table of contents) in the viewer area.

- CL suggested including **the modellers as potential users** of the IBISAR service, since they might be interested in the model assessment.

- CL asked about the possibility to **include other metrics** based on the **distance between the end-points** (of simulated and observed drifter trajectories) to assess the model performance.

- BM agreed with CL and suggested the **presentation of those metrics based on Lagrangian separation distance** at the same time and in the same way as the SS are provided.

3. Final review of CMEMS products to be integrated

- The final **list of CMEMS and complementary database** to be integrated in IBISAR service has been reviewed. There are still **5 data products pending** on integration: CMEMS_GLOBAL model, CMEMS_INSTAC_IBI_NRT; HFR from Bay of Biscay; 3 SAMOA models (Bilbao, Ferrol and Tarragona).

- PL requested the **integration of HFR_Ebro and HFR_Cádiz** into the IBISAR service.

- CL confirmed that both data products are **already available** in the Jovellanos-**ED**S.

- ER explained the **existence of the CMEMS_GLOBAL_1_12** (1/12 degrees) at higher resolution than the CMEMS_GLOBAL_1_4 (1/4 degrees).

- **CL will ask RPS to include** CMEMS_GLOBAL_1_12 instead of the lower resolution one.

- PL informed that it is expected that all **CMEMS-MFC** models resolution might be increased in the mid-term future (e.g. CMEMS_GLOBAL will be provided at 1/36º).

- CL communicated that the increasing of resolution **will not affect to the integration** of the datasets into the EDS if the format is the same.

- ER requested the **integration of drifters' data from SASEMAR and COSMO** into the Copernicus Marine Service (IBI area).

- EG informed that the gathering, the standardization and the creation of a **catalog of historical drifters' data** and other drifting objects from SASEMAR, COSMO and other institutions, is one of the **tasks to be carried out in COSMO** project next year.

- PL pointed out that in order **to request the integration** of this catalog **into CMEMS**-INSTAC, he would recommend us to **contact Marta de Alfonso** < mar@puertos.es> (Puertos del Estado, in charge of CMEMS-INSTAC in the IBI area).

- ER pointed out the **benefits of integrating the drifter data catalog** into CMEMS will widens this data distribution, gain visibility and unlock the data potential.

- CL, OR, PL and ER notified the **forthcoming drifter deployments:**
    - **SASEMAR** (J. Cristóbal Maraver) in the strait of Gibraltar.
    - **SASEMAR** (OR) in the scope of SAREX in the southern area of Dragonera Island (13/11/2018)
    - **INTECMAR** (P. Montero) in Galicia.
    - **SOCIB** (ER) in the Ibiza Channel. **5 eco-friendly CARTHE's drifters** will be deployed inside the HFR footprint area 15/11/2018.
    - **ICM-CSIC** (JB) in Tarragona.

- JM, PL, ER informed about h**istorical drifter releases inside HFR footprint areas:**
    - **JM:** buoys from Life-LEMA project and drifters from SHOM available in CMEMS-INSTAC.
    - **PL:** datasets from MEDESS-GIB in Alboran Sea on SEP 2014.
    - **ER:** datasets from massive Lagrangian experiments in the Ibiza Channel on SEP-OCT 2014; JUL 2016 and NOV 2018.

- PR advised to **draw attention to the CMEMS Production Units** (IBI in this case) aiming to the integration of complementary drifters' databases.

- PR informed that the **CMEMS-INSITU** available for the **IBI region** is only a **subset** of the product available at GLOBAL level (including the same information).

- PL warned us about the **consideration of a delay of HFR integration** into CMEMS-INSTAC (scheduled by April 2019, depending on other ongoing project).

- ER explained that **this risk was considered in the initial proposal**. In the case of

delay in the integration of HFR, the request will be done direct to the Thredds of each institution operating the system.

4. Related developments

- **IBISAR Service available** at: http://jovellanos.oceansmap.com/IBISAR/
    - ○ ER requested the **review of the metadata** included **in each layer**:
        - • BM > please, check WMOP
        - • PL > please, check SAMPA
        - • IH & ER > check CMEMS-MFCs & CMEMS-INSTAC
    - ○ SASEMAR will host the service as a mirror of the EDS-SASEMAR.
    - ○ ER informed about **the inclusion of a disclaimer** into the **service** in agreement with SASEMAR-Jovellanos.
- **Synergies with NARVAL** by integrating the maps showing the Skill Score within the IBI region (either near-real time or delayed mode) > section IBI.vs.drifters
- **COSMO** is **evaluating** the possibility to **include** also **the Skill Score** in the viewer.

5. Promotional activities

- ER **distributed IBISAR leaflets** in both versions (Spanish and English) between the participants of the meeting and during IMDIS conference.
- ER presented the **IBISAR graphic-motion** to the attendees and at IMDIS conference.
- ER requested **collaboration for dissemination** of the promotional materials (leaflets and graphic-motion) by re-twitting @socib_icts#IBISAR tweets and forwarding the emails including promotional information.
- CL and OR showed their **willingness to cooperate** with IBISAR in the development of the **IBISAR service tutorial video** and in the **end-users interviews**. OR proposed the **use** of the **technical language** employed in SAR operations in the edition of the tutorial, and considering the SAR operator perspective (closer to a real case).
- ER suggested to offer different **trainings in the e-Learning area** of SASEMAR-Jovellanos related to:
    - ○ COSMO model training
    - ○ IBISAR service: how to use it?
- PL suggested informing Qualitas for requesting the publication of the promotional activities in the **CODAR newsletter.**

6. Draft of IBISAR web site

- IBISAR dedicated webpage: http://www.ibisar.es
- ER informed about the date of **delivery on the 15th November 2018**.

- ER requested **collaboration to link the IBISAR website** to the main web portals of partner institutions and collaborators.

7. Encountered issues

- Strengths and weaknesses of **CMEMS Models**: forecast (temporal coverage since 2016, hourly mean) and hindcast models (temporal coverage until 2015, daily mean).
    - o PL informed about the forthcoming availability of hourly mean of the hindcast models until a year ago (e.g. IBI reanalysis is already available from 1992 until 24/12/2017).
- **COSMO Lagrangian models**: BLM (upgraded version available) and MLM. JB communicated the changes performed in the upgraded version of the BLM (release expected within one month after the meeting)
    - o Possibility to specify the trajectory (simulation) length.
    - o Initial date/time can be specified (independently on the NetCDF initial time).
    - o Read a subset of the NetCDF.
    - o Independent grids for each variable are considered.
    - o Different options of Runge-Kutta formulas (RK3, 4 and 5) are available.
    - o All CMEMS models (also 3D) can be used.
    - o 2 different spatial interpolation methods (lineal, Alkima splines)
    - o New COSMO models release: source and compiled version.
- Changes in the **implementation/hosting** of the IBISAR **service.**
    - o Responsibilities for the service maintenance after the project finalization should be considered and discussed within the IBISAR team & SASEMAR.
- **Delay** on **the integration** of datasets.
    - o Review and reduce the time as much as possible.
    - o Priority will be given to the CMEMS data products.
    - o Request of integration aligned with SASEMAR.

8. Actions required (short term)

Action	Responsible	Deadline	Status
Delivery of the intermediate report	SOCIB	NOV 15	Already sent and validated.
Delivery of the IBISAR web site	SOCIB	NOV 15 DEC 15	Already sent. Changes requested by Mercator. Pending of new validation. New delivery.
Lagrangian Experiment in the Ibiza Channel	SOCIB	NOV 15	Already done. Available here
Support the IBISAR promotional material dissemination	SOCIB, AZTI, RPS, SASEMAR, PUERTOS	DEC 15	Pending. Specific request will be sent by email.
Link the IBISAR web site to the institutional websites	SOCIB, AZTI, RPS, SASEMAR, PUERTOS	DEC 15	Pending. Specific request will be sent by email.
Confirm dates of massive release of drifters inside HFR footprint areas for SA validation: • Bay of Biscay • Strait of Gibraltar / Gulf of Cádiz • Ibiza Channel	 AZTI PUERTOS SOCIB	DEC 15	Pending.
Skype meeting with the Innovation Team from Mercator Ocean	SOCIB, AZTI, RPS	Date to be set	Pending. Email will be sent
Inform about the new COSMO release	COSMO project team	Within 1 month after the meeting	Pending JB will inform about the release.
Integrate the pending data products	RPS	End- 2018	Pending. RPS will inform about the status.
Review/provision of metadata for each layer of information (dataset) • SAMPA & SAMOA • WMOP & CMEMS	 PUERTOS SOCIB	End-2018	Pending
Technical description of COSMO Lagrangian Model	COSMO	When available	Pending