

Fifth MONGOOS meeting minutes.

Summary of talks

November 16

Welcome speech

IOF: Funded in 1930. 8 laboratories. First funded institution of this kind in this part of the Med. Sea. Several kinds of activities, participation in national and international projects: environment protection, fisheries, economics, etc. Important educational role.

DHMZ: Importance of collaboration between institutions. Description of present projects. Participation in several workshops this year. Plans to install 6 oceanographic buoys in the Adriatic.

Status of operational oceanography in Croatia

IOF - Towards Croatian operational oceanography, *V. Dadic*

More than 60 years of tradition, national systems, international projects, Automatic measuring systems. Several ships of the different institutions, 7 tide gauges, HF Radars (Hazard project), oceanographic buoy multiparametric. Network of Microbarographs for meteotsunami. Strong numerical modelling activity in several institutes. Activity with POM and ROMS. Data availability depends on data policy. Important development plan, based in National Oceanographic program. 6 multiparametric buoys, 6 microbarographs, 3 tide gauges, extension of HF radar, 2 wave buoys, one underwater noise recorder.

HHI - Croatian tide gauge operational tidal network, *S. Cupic*

First station. Bakar, 1929. In 1950's 5 more stations. Later e more stations. All are of the float type. A pressure tide gauge in Split. Analogic to digital convertor upgraded to digital. In 2004, a GPS station was installed at Astech. Today there is a plan for renovation of the tide gauge director. A web page is available with the real-time data, under password.

CIM(IRB) – Long term monitoring of the Northern Adriatic, *R. Precali*

Data set started June 1972. In monthly based several variables measured, CTD, nutrients, O₂, Chl_a, Phytoplankton, DOC... Several long-term time series are shown. Conclusions of long-term evolution can be derived. Measurements shows a lowering of the chlorophyll in the Northern Adriatic in the last 15 years. Evolution and impact of Po river outflow is explored.

AMGA – Could data provided by a yo-yo profiler be useful for operational oceanography, *Zoran Pasaric*

Several case studies presented, showing the results of the cruises done with the yo-yo. The instrumentation samples the water column (upper 50 meters) with high spatial resolution. Comparisons are made with models. 3D quasy-synoptic fields of water properties are obtained.

DHMZ - Meteorological and hydrological Service of Croatia for Marine Meteorology, *D. Klaric*

Warning systems on sea state developed for several areas of Croatia. Main activity in modelling the atmosphere. Participation in Aladin community. Participation and implementation actions in WIGOS, JCOMM and other international initiatives. Participating in an initiative with main Croatian institutions: a cooperative agreement on scientific, technological and operative cooperation has been signed in summer 2016 to promote and coordinate operational oceanography. Important development plan, with 6 buoys and meteorological radars.

MonGOOS status and 2016 activities, *Giovanni Coppini and Enrique Alvarez* (MonGOOS Co-chairs)

Several actions described, related to new partners, and web page development. Description of activities of WG are described. A workshop on products planned for next annual meeting

Presentation of new candidatures and partners.

ETT: activities of ETT described. Special focus on EMODNET. Participation in other projects, such as EMODNET, described.

ARPAE: large data network inland, moored buoy. Activities in climate scenarios and forecasting. Hydrology of Po river. Weather and marine forecasting activity. Oil spill modelling included (Gnome) and Xbeach for coastal inundation. Large monitoring network of stations.

Both member accepted unanimously.

Modelling working group, *Pierre Garreau*

A discussion is established on how to publish the results from Modelling workshop. Ocean modelling will be approached.

Data working group activities, *Leonidas Perivoliotis* (MonGOOS Data Working Group leader)

A review of the status of the measuring system is presented. The difference of coverage between eastern and western Med sea is very clear. A discussion on data policy established. A workshop will be organised in 2017 coinciding with MONGOOS annual.

MonGOOS working group on Products and Open discussion on future of MEDESS oil spill system, *Giovanni Coppini* (MonGOOS Co-chair)

A description of some products is presented. A catalogue on products will be prepared. We should reinforce the relationship with similar working group on products

A discussion is established on the resubmission of Medess-2. It was stated the importance of maintaining the system by ourselves in this period.

Ongoing Projects

- MEDOS, *Alessandro Crise*.

The objectives are described, as well as the international context. 41 partners. Based on existing networks. Capitalization on previous initiatives and projects. Three year for the harmonization and integration phase, and 6 months for assessment.

- EMODNET Physics, ETT, *Giussepe Manzella*

EMODNET composed by 8 thematic portals, being one physics. Provides a single portal of free and open access to marine real-time and archived data on physical conditions of all

European seas. Data collection, discovery, visualization. In-situ TAC main source of data of real time data. There is a MoU between EMODNET and CMEMS to optimise this situation. For historical data, the connection with SeaDataNet is very important.

- EMODNET Med-Sea check-point, *Nadia Pinardi*

Assessing observations at the basin scale. The final product will be used to see if the input is good. After data is obtained, checkpoint products are generated. Later an adequacy assessment is generated and provided as feedback. ISO and INSPIRE principles service. For each relevant characteristic show the adequacy as a function of ISO quality elements across all challenge targeted products. Checkpoint challenges are wind farm siting, oil platform leaks, etc. Two territories of assessment criteria: availability and appropriateness.

- CMEMS MED-MFC, *Giovanni Coppini*

V3 will enter in production in October 2017. A description of the present system is done, including forcings, physics, models, data assimilation, etc. Reanalysis products are also described. Offline coupled with BIO.

- Jerico-Next, *Leonidas Perivoliotis*

Jerico is dealing with the coastal operations and activities. Jerico-next is a sequel of Jerico, deliver a harmonized research infrastructure for coastal observations. WP are described. Review of different aspect of development of the project are presented.

- RITMARE, *Alessandro Crisse*

100 ME in 5 years to be used in several areas. 10 ME for observing system. This infrastructure project put many Italian institutions in a good position to participate in EU projects. 200 hundred scientists, 5 institutions, 2 university consortia. Infrastructure supported is 13 fixed point moorings, 5 gliders, 5 radars, etc. 3 strategic actions: consolidation development of existing infrastructure, development of e-infrastructure, and targeted research Innovation

- FixO3, *Vanessa Cardin*

Fixed point open ocean observatory network. 29 partners, 7 ME, 4 years. Coordination, Research and access to data and infrastructures. Different types of observatories in different seas. A handbook of best practices is presented. Work on sensor interoperability. Summary on new sensor development, technical guidelines of standards, etc. Trans National access explained. Data delivery is fine for physics data. For Bio data more problems due to uncertainty in quality. ESONET yellow page for description of sensors.

- Danubius RI, *Georg Umgieser*

A pan-European distributed research infrastructures on river delta Research. There is one Hub in Romania, nodes and supersites distributed around Europe. Scientific vision is focusing in integrated modelling. Danubios can provide R&D that could flow into Copernicus services.

- EUCISE-2020 project, *George Zodiatis*

Achieving pre-operational information sharing between the maritime authorities of the MS. An interface for CMEMS and sub regional ocean analysis and forecast.

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External Relationships

EuroGOOS, Erik Buch

EuroGOOS organization explained. Including objectives, projects and priorities. Gaps in the observing system is described. EOOS is now a major objective. A steering group has been established. EMODNET is aiming global, with data from other regional systems. An analysis of the present system in the Med. Sea is done. Similar conclusions to what is known in MONGOOS.

AfricaGOOS, Mika Odido

Guidelines of AfricaGOOS explained. Amongst others, capacity development, Food security and fisheries, managing coastal hazards, etc. Collaboration with MONGOOS as one of main objectives. Relevant activities: amongst others is review of sea level network, workshop for the western Indian Ocean region, etc. There is already work going on a draft proposal for ocean observations, including proposal for installing stations. A n action is required to coordinate this project with MESCAT. A videoconference is going to be done in a short future between MonGOOS, EuroGOOS and AfricaGOOS

PAP/RAC, Marco Prem

Implementation of the ICZM Protocol in the Mediterranean. Ecosystem approach is one of the major guiding approaches. Examples are presented.

Ocean Literacy, Francesca Santoro

Ocean literacy explained, understanding the ocean influence on you and your influence on the ocean. Seven essential principles and fundamental concepts. Different activities to promote ocean literacy are explained.

REMPEC, Gabino Gonzalez

Explanations of REMPEC. The collaboration with MonGOOS community is very satisfactory. A need of further signatures from other partners on the REMPEC-MonGOOS agreement. Different issues related with the coordination of our activities with REMPEC are tackled. An analysis is done about the future of MEDESS.

WMO-JCOMM Session

WIGOS/WIS presentation, Champika Gallage

Framework for coordination of WMO networks; documenting, recommendations, collaboration, etc... WIGOS vision: coordinated, comprehensive, reliable & trusted observations for WMO.

JCOMM/TT-MOWIS, Nadia Pinardi

Need of cooperation of WMO and marine community. JCOMM established a TT for integrating within WIS (TT-MOWIS). Build on existing systems. Why? make it easy for user, better Met. Forecasts due to better ocean forecasts. EMODNET and TACs should be included in this system.

MONGOOS DRR

Good idea to follow met community techniques: Multi-Hazard and Hazard/Risk analysis... holistic approach. Proposal or calling the WG as MONGOOS-DRR Action Groups Strategy. 3 points to focus initially; Interface with stakeholders, hazard and risk mapping activities, define a MONGOOS-DRR Platform for exchange of data.

MONGOOS Scientific Strategic Plan

The document has still some missing sections to be completed in the next months. A first version will be distributed to members for comments in July 2017. A final draft will be circulated among members in October 2017 to be approved during the next assembly.

Partners Activity

Salvatore Marullo (ENEA): Long-term changes in the Northwestern Atlantic and Mediterranean SST from 1982 to 2015: A contribution of the Operational Oceanography to the determination of the present-day Climate.

Satellite data are evaluated regionally. Differences in heating between Atlantic Ocean and Med. Sea are clear. A new buoy deployed near Lampedusa

Rosa Balbin (IEO): The Spanish Institute of Oceanography Observing System in the Mediterranean Sea: new components

Review of IEO systems. New projects on plastics and monitoring described

Pierre Garreau (Ifremer): Deriving surface currents from marine traffic, a new operational tool

With AIS data and knowing the course, drift can be derived. First results are shown. Validation with satellite included

Antonio Guarnieri (DHI): Examples of down streaming of CMEMS data

Downscaling approach incorporated to engineering projects thanks to CMEMS. Water quality in support of sewage system design, environmental study of oil and gas industry...

Jure Jerman (ARSO): Recent development of Slovenian Operational Oceanography

Review of observation system: 3 buoys, HF WERA system, and one tide gauge station... recent development in storm surge forecasting and statistical sea level forecasting, atmosphere ocean-coupling (Aladin-WAM-POM)

Actions derived from the meeting discussions

- *All members* to send suggestions of additional partners, private and public.
- *Modelling WG* to approach to ocean modelling journal for a special issue
- *Modelling WG* to organise a special session on existing congress. Possibility on EuroGOOS conference, GODAE, etc.
- *Enrique Alvarez* to explore funding MESCAT via ENP Action Plans
- *Data WG* to contact BSH to check about Mediterranean Sea data
- *Data WG* to explore the connection of MONGOOS data centre with IOC portal for tide gauges
- *All members* to suggest new members for data WG
- Organise WebEx with AfricaGOOS and EuroGOOS on Africa monitoring project.
- *Co-chairs* to contact UNEP-MAP to establish a MoA with MonGOOS.
- *Nadia Pinardi* to organise the first meeting of DRR Working Group.
- *Co-chairs* to distribute index of science plan to community, as well as development calendar.
- *Enrique Alvarez* to ask by mail to EuroGOOS about funding possibility for MonGOOS science plan.