



Report on Activities for MOON 2011

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1. Contact

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2. MOON members

The Table contains the MOON Members list up to December 2011.

INSTITUTION	TOWN	COUNTRY
1) Istituto Nazionale di Geofisica e Vulcanologia, Italy	Rome	Italy
2) Alma Mater Studiorum Università di Bologna, Sede di Ravenna, Centro Interdipartimentale per la Ricerca sulle Scienze Ambientali, Italy	Ravenna	Italy
3) Consiglio Nazionale delle Ricerche, Istituto di Scienze Marine, Italy	Venezia	Italy
4) Consiglio Nazionale delle Ricerche, Istituto di Scienze dell'Atmosfera e del Clima, Italy	Bologna	Italy
5) Consiglio Nazionale delle Ricerche, Istituto per l'Ambiente Marino Costiero	Napoli	Italy
6) Ente per le Nuove tecnologie, l'Energia e l'Ambiente, Progetto Speciale Clima Globale, Italy	Roma	Italy
7) Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Italy	Trieste	Italy
8) MERCATOR OCEAN, France	Toulouse	France
9) Institut français de recherche pour l'exploitation de la mer, France	Paris	France

10) Centre National de la Recherche Scientifique Laboratoire d'Océanographie de Villefranche, Station Zoologique, France	Villefranche	France
11) Centre National de la Recherche Scientifique, Pole d'Océanographie Cotière de l'Observatoire Midi-Pyrenees, Laboratoire d'Aerologie, France	Toulouse	France
12) University of Athens, Greece	Athens	Greece
13) Hellenic Centre for Marine Research, Greece	Athens	Greece
14) Hellenic Centre for Marine Research	Anavyssos	Greece
15) Aristotle University of Thessaloniki - University Campus	Thessaloniki	Greece
16) Institute of Accelerating Systems and Applications - University of Athens Campus	Athens	Greece
17) Israel oceanographic & Limnological Research	Haifa	Israel
18) Bar Ilan University Department of Geography and Environment	Ramat	Israel
19) Oceanography Centre of Cyprus University of Cyprus	Nicosia	Cyprus
20) Consejo Superior de Investigaciones Cientificas	Madrid	Spain
21) Laboratory d'Enginyeria Marittima - Universitat Politecnica de Catalunya	Barcelona	Spain
22) Puertos del Estado	Madrid	Spain
23) Middle East Technical University Institute of Marine Sciences	Mersin	Turkey
24) International Ocean Institute Malta Operational Centre University of Malta	Birkirkara	Malta
25) National Institute of Biology - Marine Biology Station	Piran	Slovenia
26) Andrija Mohorovicic Geophysical Institute, Faculty of Science, University of Zagreb	Zagreb	Croatia
27) Consiglio Nazionale delle Ricerche, Istituto di Studi sui Sistemi Intelligenti per l'Automazione, Sezione di Genova	Genova	Italy
28) Instituto Espanol de Oceanografia	Madrid	Spain
29) Alexandria University	Alexandria	Egypt
30) Institut National de Recherche Halieutique	Casablanca	Morocco
31) METEO FRANCE	Paris	France
32) CLS	Toulouse	France
33) Institute of Marine Biology	Kotor	Montenegro
34) Institute of Oceanography and Fisheries	Split	Croatia
35) Faculty of Civil Engineering and Architecture University of Split	Split	Croatia
36) Hydrographic Institute of the Republic of Croatia	Split	Croatia

Members approved but still to sign:

- USAM, Italian Meteorological Office Italy
- Environment Agency of the Republic of Slovenia
- Oceans Catalonia International SL, Spain
- Institut National des Sciences et Technologies de la Mer, INSTM- Tunisia
- Conseil National des Recherches Scientifiques - CNRS, Lebanon
- University of Belgrado, Serbia
- Institute of energy, water and environment, Albania

Permanent Invited Institutions to the Member Assembly; UNEP/MAP, Athens, GR.

3. Objectives of MOON

MOON specific objectives are to:

- consolidate and expand the Mediterranean Sea concerted monitoring and forecasting systems, and ensure full integration to the overall operational oceanography global ocean European capacity
- co-ordinate, improve and harmonise observation and information systems
- increase the quality of, and harmonise user-oriented operational products identify new customers and further develop the market for operational oceanographic products co-operate with UNEP-MAP and other relevant bodies acting at regional level
- improve and further establish services to meet the requirements of environmental and maritime user groups
- encourage Mediterranean scientific research on monitoring/forecasting activities and their link with operational oceanographic services
- facilitate the availability and dissemination of long term high quality data required to advance the scientific understanding of the Mediterranean Sea
- promote the transfer of operational oceanography expertise through training and education

4. Main achievements during the last year

5. Operational Services

MOON system has consolidated all the following services:

a. Ocean Nowcasting/Forecasting Centers

- MFS- Mediterranean ocean Forecasting System
- Mediterranean Sea Monitoring and Forecasting Center (MyOcean)
- Mercator Ocean
- Poseidon Ocean Forecast
- Adriatic Sea Forecast system
- Sicily Channel Forecasting System
- Western Mediterranean Forecasting System
- Tyrrhenian Sea Forecasting system
- Oristano Coastal Waters Forecasting System
- Alermo Forecasting
- Southeastern Levantine Shelf Model
- Cyprus Coastal Forecasting and Observing System
- ROSARIO-II Malta Shelf Forecast
- ESEOO circulation forecast system
- Puertos del Estado Sea level forecast system (Nivmar)
- PREVIMER coastal observations and forecasts
- Cilician Basin Forecasting System
- Northern Levantine Forecasting System
- OPA-BFM ecosystem forecast

b. Observational and atmospheric forecast components

Atmospheric Forecasting Centers

- SKIRON Mediterranean atmospheric forecast

- SKIRON Mediterranean dust forecast
- Meteo-France forecast
- USAM forecast

Observational System Centers

- Mediterranean Volunteer Observing Ship Program
- MEDARGO
- Coriolis Center-Mediterranean real time data
- MEDGLOSS
- Poseidon observing system
- Satellite SST and Color
- Satellite Altimetry
- Cretean Sea Buoy
- Adriatic Sea Buoy
- Ligurian Sea Buoy
- MedGOOS-3 Ocean Observatory Station
- Puertos del Estado observational real-time networks
- Mediterranean Surface drifter program
- MyOcean Mediterranean In situ TAC
- MyOcean Ocean Color Mediterranean TAC
- SeaDataNet

C. Downstream Services

- Medslick
- UVT User Visualization Tool
- FOS Fishery Observing System
- Seasonal probability dispersion maps from numerical models
- Mediterranean adjusted heat fluxes

6. Main activities

During 2011 MOON main activities were the following:

- Improve and implement the operational MyOcean V1 Core Service and develop the MyOcean V2 upgrade
- Consolidation and upgrade of MyOcean Mediterranean In Situ TAC
- Organization of MOON Members MyOcean service uptake meeting (July, Bologna)
- Further development of the MyOcean Cal/Val service with support of MOON members
- Further development of MyOcean OC TAC
- Final approval of EUMETNET-MOON MoA and establishment of a MOON-E-SURFMAR Cooperation Plan
- Contribute to the EEA GMES In Situ data program and development of the MOON Coastal Observatories concepts
- Contribution of MOON to EEA indicators for State of Env Report (Nov 2010) and EEA Climate Change impacts report (2012)
- Establishment of a closer collaboration with MEDPOL on the implementation of the ecosystem approach in the Mediterranean for the preparation of the Quality reports
- Developed new projects: MyOcean II, Ocean of Tomorrow call projects, MEDESS4-MS project, Ionio.

- Participation to the negotiation of MyOcean2 project
- Maintained dialog with HYMEX program
- MOON (Chair and SSC lead) participated to Marine Research Infrastructure initiative, together with MedGOOS, and represented MOON
- Organised and implemented the process to sign a new MoU that will merge MOON and MedGOOS.

7. Agreements

MOON operational partners have continued to use the governance system built on the Data Exchange Agreement (DEA). The DEA has the aim of harmonising and securing the flow of data within this network in order to deliver regular and systematic products on the state of the Mediterranean Sea and its sub-regional areas. MOON DEA continues in consolidating the operational functioning of MOON MCS and Member State services. MOON DEA partners exchange data and products in operational mode.

MOON DEA partners are the following:

1. INGV
2. MERCATOR OCEAN
3. IFREMER
4. CNRS-POC
5. University of Athens
6. Hellenic Center for Marine Research (HCMR)
7. IOLR
8. Cyprus Oceanography Center
9. University of Malta – (IOI-MOC)
10. ENEA-Santateresa, La Spezia
11. OGS
12. CNR-ISAC
13. IASA
14. Puertos del Estado
15. CSIC
16. LIM-UPC
17. NIB
18. CNR-IAMC
19. IMS-METU

MOON and REMPEC established a collaboration agreement in April 2009. MOON partners and REMPEC entered into the Agreement with a view to ensuring maximum coordination of the work and activities of REMPEC and MOON in respect of oil spill activities in the Mediterranean. The MOON-REMPEC agreement has been in force during 2011 and partners are:

1. Istituto Nazionale di Geofisica e Vulcanologia
2. Cyprus Oceanography Center, University of Cyprus
3. Hellenic Centre for Marine Research, Institute of Oceanography
4. MERCATOR OCEAN
5. International Ocean Institute-Malta Operational Centre, Physical Oceanography Unit
6. Institut français de recherche pour l'exploitation de la mer
7. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
8. Consejo Superior de Investigaciones Científicas

9. Ente per le Nuove Tecnologie, l'Energia e l'Ambiente, Dipartimento Ambiente, Cambiamenti Globali e Sviluppo Sostenibile
10. University of Athens, Division of Physics of the Environment – Meteorology
11. Consiglio Nazionale delle Ricerche, Istituto di Scienze dell'Atmosfera e del Clima
12. Israel Oceanographic & Limnological Research
13. Institute of Accelerating Systems and Applications, Atmospheric Modelling and Weather Forecasting Group (IASA/AM&WFG)
14. Consiglio Nazionale delle Ricerche, Istituto per l'Ambiente Marino e Costiero
15. Institute of Marine Science – Middle East University

MOON-REMPEC agreement partners constituted the Emergency Response Office (ERO) to support REMPEC in responding to emergencies and carried out MOON-REMPEC agreement activities. ERO has participated to two exercise organized by REMPEC:

- National Workshop on Contingency Planning and Table Top Exercise, 5-7 July 2011, Durres, Albania
- MALTEX2011 September 2011

MOON-ERO provided in all cases meteo-oceanographic forecasts and oil spill drift forecasts.

A new MOON_EUMETNET MoA has been approved where the MOON Members will endeavour to:

- a. share information and outputs of their respective activities for the purpose, and within the scope, of this Agreement, subject to arrangements as may be necessary for safeguarding confidential information;
- b. utilise the MOON Members' expertise in the activities which are regularly carried out by EUMETNET (e.g. training, organization of workshops and conferences);
- c. collaborate in the development of projects for the implementation of the MOON/E-SURFMAR Science and Strategy Plan (Annex B);
- d. cooperate to disseminate MOON data in the GTS in real-time through the network of national meteorological centres and receive GTS data from them;
- e. collaborate to improve observational data quality control systems and improve the existing network: E-SURFMAR should make available Quality Control tools to MOON members to monitor in near real-time the quality of measured parameters by each platforms.

The MOON-EUMETNET Science and Strategy Plan has also been written in support of the MoA.

8. Plan for next year

- Finalize the development of the Mediterranean Operational Network for the Global Ocean Observing System (MONGOOS) Memorandum of Agreement, and proceed to its signature.
- Finalize and sign the MoA between EUMETNET and MOON Members
- Promote the exchanges with UNEP/MAP to contribute to the UNEP/MAP future reports
- DEA relationship with third party data providers should be clarified: Meteo offices and Southern Med Countries, MOON should open the DEA data to be accessed by third parties, not only MOON members.
- MOON-REMPEC agreement: enhance the relationship between MOON partners and National oil spill monitoring and forecasting systems.
- continue the activities with EEA both for indicator development and for GMES in situ activities.

9. Relation to major projects

MOON partners are participating to the following projects:

- SEADATANET-II
- PERSEUS
- ETC-Water

- ETC-ICM
- EuroSITES
- EuroARGO
- MyOcean and MyOcean2
- JERICO
- EMSO

10. Challenges and problems

- Clearly understand and quantify uncertainty is the next frontier: ensemble methods should be used, as well as comparison with independent data
- The relationship between the European Service and the Member State services must be consolidated.
- MOON observing system should be continuously upgraded and sustainability should be ensured.
- Entrainment and collaboration with North African countries should be a focus