



OPEC Annual Science Meeting 2014 Report

8-9 October 2014, Lake Como, Italy.

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Executive summary

The final meeting of the Operational Ecology project was held in Como Italy on the 8th and 9th of October 2014. The purpose of the meeting was 2 fold, firstly to assess the status of the project in terms of both delivery and science outputs and secondly to plan the completion of the final three months of work and the final report. The first part of the meeting was devoted to assessing the status of the project by work package with an emphasis on milestones and deliverables. WP2 is now complete. In WP3, 4 and 5 are on track, the numerical experiments are complete and edits of the Month 33 deliverables are underway. In WP6 the WQASS downstream service is about to be released to users for evaluation. The OPEC data portal has undergone significant redesign to enhance the user experience. A session was held during the meeting, where OPEC scientists explore the portal online and provided feedback to the developers. It was noted by DTU aqua, that SMS model simulations made in OPEC had been influential in changing the approach to fish stock assessment in the Baltic Sea from single species to multi-species. Finally there was discussion of the KE activities, a number of factsheets were identified and the plan for the roadmap of implementation of operational ecology in the marine core service was discussed in light of the MSC contract being awarded to Mercator and consequent uncertainty about the tendering process for services. Each partner presented the science highlight from their work and this was used to guide a discussion on the publication strategy for the project, with an emphasis on joint publications. The final part of the meeting was devoted to agreeing a timeline for finalising the delivery and reporting of the project. The resulting list of actions for the consortium follows. Finally the coordinator thanked the partners for their hard work.



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Actions

Activity	Action	Date	Responsibility
Portal	All providers to send any licensing statement they want included with their data to Jess H. by 31 st October	by 31 st October	HCMR, OGS, DMI, CEFAS, PML, METU, DTU
	Add information about hindcast/REA split to portal more information section	31 st October	PMLA
	Quality Assurance info on portal: Explanation of low, medium and high. Icarus to prepare short sentence on confident. Link to smiley faces on portal as indicator of confidence	31 st October	PML (Icarus)
	Model benchmarking information to be provided on portal. Jess to provide information to PMLA	31 st October	PML (Jess)
Deliverables	D3.2 Finale draft sent out. Agreement from all institutional leads required	Final draft to project office 17 October	OGS
	D4.2 OGS and METU to send their sections to HCMR	30 October 2014	HCMR
	D5.2 Input from METU provided by end of October	Final draft to Project Office 10 November	DMI
	D4.3 Input from DTU required. Draft for circulation by end of October to all contributors.	Final draft to Project Office 10 November	HCMR, with input from DTU
	D3.3 Model blending underway. Cosimo to contact contributors to tell them what is needed.	Delivered by Dec 15 th	OGS
	D3.3 Jess to send deliverable discussion to Cosimo	Done	PML
	D4.4 Jess to send deliverable discussion to George	Done	PML
	D5.3 Draft to be developed following discussions at the meeting	Final draft to Project Office 10 November	DMI
	D6.3 On track	Delivered by 15 th December	PMLA
	D6.4 In hand, just awaiting continued feedback from users	Delivered by 15 th December	BC
	D7.2 Completed by end of November	15 th December	PML
D7.3 Marine Core service has changed.	20 th October	DMI/ PML	

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	Icarus to contact Paolo to discuss how to move forward and report on this		
	D7.4 Circulate collation list in October for completion by all partners	15 th December	PML (with input from all)
Fact Sheets	Jess to contact partners directly about specific fact sheet topics and contributions. Templates for Regional OE fact sheet to be sent to regional contributors	20 th October	PML
	Submission of first draft regional OE fact sheets to Jess H.	31 st October	Med (HCMR/OGS) Black (METU) Baltic (Jun, Stefan)
Reporting	Financial reporting information to partners mid-December	15 December	PML (Jess)
	Final periodic reporting templates distributed	by 31 st Oct.	PML (Jess)
	Final periodic report - input by mid-November from each partner	Draft input by 20 th November	All partners
	Full Draft periodic report sent back to partners for comment	15 th December	PML (Icarus)
	40 page summary report	Icarus to prepare in January 2015 and circulate for comment	



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Meeting presentations

Work package leaders reported on the status of their work plans through presentations.

Work was on track for all partners, following the presentations plenary discussions were held to plan and assign tasks for the remaining deliverables. Notes from these discussions are provided below.

Work package summaries

[WP2 Next generation model setup and benchmarking](#) | Baris Salihoglu, METU

[WP3 Rapid Environmental Assessment](#) | Cosimo Solidoro, OGS

[WP4 Seasonal forecasting](#) | George Triantafyllou, HCMR

[WP5 Assessment of ecological monitoring system and data needs for GMES ecological service](#) | Jun She, DMI

[WP6 Downstream services](#) | Thomas Storm, Brockman Consult

[WP6 Data Visualisation](#) | Kieran Jones and Peter Walker, PMLA

[Knowledge Exchange](#) | Jess Heard, PML

Science highlights

[Black Sea modelling](#) | Sinan Arkin, METU

[Modelling in the Baltic Sea](#) | Zhenwen Wan, DMI

[Coupling HBM-ERGOM and SMS](#) | Asbjorn Christensen and Stephan Neuenfeldt, DTU

[North East Atlantic Shelf](#) | Stefano Ciavatta, PML

[North Sea Higher Trophic level Modelling](#) | Jonathan Beecham and Sonja Van Leeuwen

[Finite-Size Lyapunov Exponents](#) | George Triantafyllou and Kostas Tsiaras, HCMR

[Mediterranean model system](#) | Gianpiero Cossarini and Simone Libralato, OGS

Outstanding Deliverables

D3.3

Lead by Cosimo Solidoro at OGS. This deliverable includes a number of sub-tasks to be coordinated by Stefano (PML) and George (HCMR) to delivery collated sub-tasks as below. Sub tasks to be delivered to OGS for collation and final drafting.

Task 3.2.1

- A. 12 month with/without assimilation plus skill. Use same variables as for the REA, focusing on REA 3 (Dec 2012 to Nov 2013). DMI be slightly difference due to limitations of data access. Send skill of free run, plus skill of REA (which has already been done). Delivered by 10 November. Kostas (HCMR), Gianpiero (OGS), Zhenwen (DMI), Sinan (METU). **Stefano to coordinate inputs**
- B. Error Covariance: Analysis should answer the question: where, when and which variables benefit from DA. Kalman ensemble covariance: Chlorophyll, oxygen, phosphate,



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zooplankton. Do this for REA3. February-April 2013 (to be confirmed by George T.) No DMI.

George T to coordinate inputs.

Task 3.2.2

Model blending: blend REA3 in Med. 2 experiments, simple average and weighted average over REA3. **Cosimo Solidoro**

D4.4

Recommendations on Seasonal forecast. Coordinated by George Triantafyllou (HCMR)

1. Forecasting is better than climatology
2. Capacity as a community to set up chronological system, just need more and better data to feed it
3. Robust ICs – sensitivity to winter nutrients. Include observations to support these statements
4. Robust model set up: technology works, needs improved climate data
5. For periods that we have nonlinearity then skill is comparable with climatology
6. Depends on model bias. Requires tuning.
7. HTL hindcast leading. Needs to repeat timescales of target HTL. Ideally at least 10years.
8. Dynamic downscaling (DMI)
9. Fully coupled (atmosphere/ocean system) system. Predictability from global system can be transferred. So signals from a fully coupled system will have a more reasonable impact on the ecosystem.
10. Multi-model ensemble (model vs forcing [atmosphere and ocean] vs parameters)
11. Indicators....eutrophication, fisheries.
12. HTL can be improved as better fisheries data is made available.

Lessons learnt, how can we improve?

Satellite data already assimilated, better Sat data coming in terms of times and space provide data for previous gaps. Continued improvement in satellites will help with seasonal forecasting.

Regional analysis

Short regional summary of model sensitivities and identifying strengths and weaknesses, identifying where there is more or less uncertainty?

D5.3

Each region to send one page summary of fit for purpose achievements for Operational Ecology.

- Use models to interpolate across space and time what the observing systems can provide.
- Observation system provides verification and reanalysis. Can identify areas of high risk that would benefit from observing system.
- Cover space, time and parameters (Chl, nitrogen, phosphate, oxygen).



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- What is most effective way of sampling systems?
- What data do we actually need?
- Low space with high frequency vs low frequency and high space – which is likely to be more effective from the results we have?
- What scales should the monitoring be at

Jun to send out half page summary to for input to help answer some of the questions and get a regional perspective. (Jun, Stefano, Sinan, Cosimo, Kostas and George and Sonja)

Knowledge Exchange

As the project enters its final months and scientific activities draw to a close, the OPEC fact sheet series is being developed; it will provide a summary of the highlights of the project. Fact sheets will be collated into a printed pack for broad dissemination.

A list of fact sheet was discussed, with key scientists who would draft the initial input was agreed:

1. Seasonal forecasts – *Draft received from HCMR*
2. Capabilities for Operational Ecology in each region: North East Atlantic, Mediterranean (George and Cosimo), Black Sea (Baris and Sinan), Baltic Sea (Jun and Stefan) N. Atlantic (Susan, Stefano, Momme – input from Cefas required) *draft nearly ready for sharing*
3. What is an REA and how can be used in management – Icarus Allen/Cosimo Solidoro
4. OPEC Data Portal – Peter and Jess
5. Observing System and links with Marine Protected Areas - Icarus and Jun
6. Monitoring network – available data and how it can be applied- Jun (nearly complete)
7. The application of Down Stream Services – Thomas Storm – draft in progress
8. OPEC in support Blue Growth
9. MSFD Descriptors – examples of how OPEC outputs can contribute to the development and implementation of MSFD

Additional KE activities in the final months include the production of a short OPEC movie and a re-development of project website to provide an archive of project scientific highlights.

Publications

Partners discussed in plenary potential topics for publications as a result of OPEC scientific developments.

There was general agreement towards a small number of joint papers covering broad topics with OPEC outputs:

- Reanalysis regional compare and contrast of drivers (PML, OGS, DMI, HCMR, METU?)
- Factor analysis



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- Verification – effectiveness of data assimilation and reanalysis (different regional papers as quite regionally specific)
- REA – lessons learnt (PML, OGS, DMI, HCMR, METU?)
- Regional paper: Seasonal forecast lessons and observing systems as a collective paper to give a European wide scale (PML, OGS, DMI, HCMR, METU?).
- Observing systems (PML, OGS, DMI, HCMR, METU?)
- Policy paper for nature climate change – modelling in ecosystem based management (PML, OGS, DMI, HCMR, DTU)
- Synthesis of HTL – insights from different methods, different regions, timescales of response etc.

Meeting Participants

Annika Polani, HCMR

Simone Libralato, OGS

Icarus Allen, PML

Stefan Neuenfeldt, DTU

Sinan Arkin, METU

Baris Salihoglu, METU

Jonathan Beecham, Cefas

Jun She, DMI

Momme Butenschon, PML

Cosimo Solidoro, OGS

Asbjorn Christensen, DTU

Thomas Storm, BC

Stefano Ciavatta, PML

George Traintafyllou, HCMR

Gianpiero Cossarini, OGS

Kostas Tsiaras, HCMR

Jessica Heard, PML

Sonja Van Leeuwen, Cefas

Kieran Jones, PMLA

Peter Walker, PML

Susan, Kay PML

Zhenwen Wan, DMI



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Meeting Agenda

OPEC Final Meeting Agenda

Palace Hotel, Lake Como

8-9 October 2014

Day 1, 8th October: Project status review

9:00 Welcome and goals of the meeting from Icarus Allen

9:10 Overall Project Status following Review

9:20 WP2 Brief Summary of achievements – B. Salihoglu

9:30 WP3 Summary and Status update (*including brief review of work in previous years, current state of play, linkages and interactions with other WPs*)

10:00 WP4 Summary and Status update (*including brief review of work in previous years, current state of play, linkages and interactions with other WPs*)

10:30 Coffee

11:00 WP5 Summary and Status update (*including brief review of work in previous years, current state of play, linkages and interactions with other WPs*)

11:30 WP6 Summary and Status update (*including brief review of work in previous years, current state of play, linkages and interactions with other WPs*)

12:00 WP7 Summary and Status update (*including brief review of work in previous years, current state of play, linkages and interactions with other WPs*)

12:15 Questions, discussion and feedback

13:00 Lunch

Science Highlights

(Scientific highlight from each partner to show key achievements, bearing the final report in mind and what should be highlighted there)

14:00 Portal interactive session

14:40 PML

15:00 DMI

15:20 METU



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15:40 Coffee

16:00 HCMR

16:20 OGS

16:00 DTU

16:40 Cefas

17:00 Brockman

17:20 Discussion and feedback

Day 2, 9th October: Project Completion

9:00 Review of outstanding Deliverables status (*timeline to completion and actions needed*)

Other topics to be discussed throughout the day include:

- Any outstanding project issues
- Roadmap for the Future
- Final Report planning session (who will do what, agree science highlights, timeline)
- Special Issue
- Financial Reporting
- Project Impacts and dissemination

17:00 Day ends

19:00 Group Dinner (this will be our final chance to gather as a group so please plan your travel to depart on Friday morning). The conference dinner will be at the [Ristorante Caffè Teatro](#)



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