

MEDESS 4MS

Mediterranean Decision Support System for Marine Safety

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MED Annual event: a cruise to the MED future
Lisbon, Portugal
23rd - 24th October 2013



The project is being co-financed by the European Regional Development Fund



Project Scope

- ◆ The project is dedicated to the maritime risks prevention and strengthening of maritime safety related to oil spill pollution in the Mediterranean.
- ◆ MEDESS4MS will deliver an integrated operational multi model oil spill prediction service in the Mediterranean, connected to existing monitoring platforms (EMSA-CSN, REMPEC, AIS), using the well established oil spill modeling systems, the data from the GMES Marine Core Services and the national ocean forecasting systems.



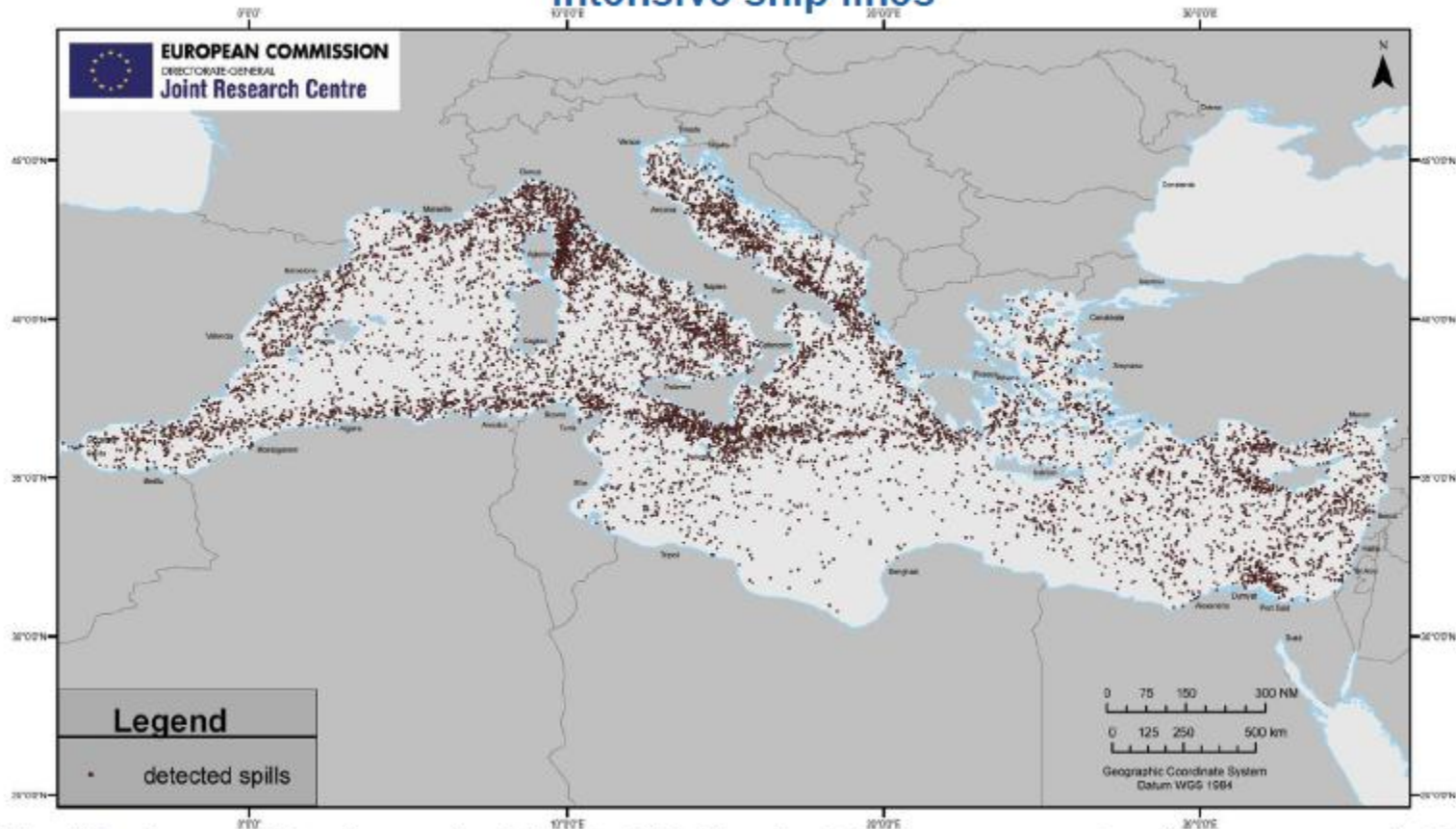
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The problem : Oil spill pollution in the Mediterranean Sea

SAR oil spill detections in the Mediterranean (illicit vessel discharges)

Reverse determination the most intensive ship lines



Oil spills detected in the period 1999–2004 in the Mediterranean Sea (Ferraro et al., 2007)

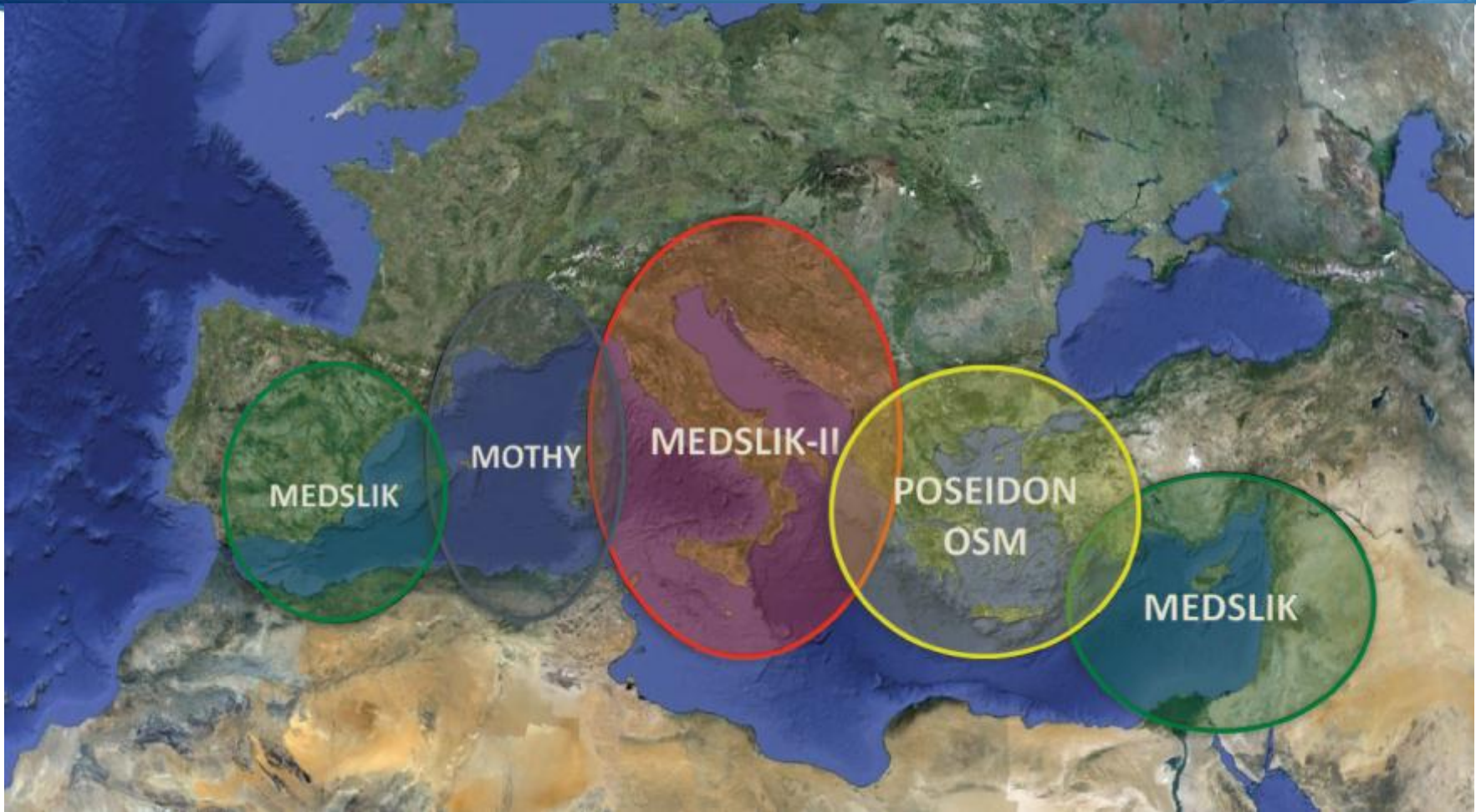


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MEDESS4MS Oil spill models



Connecting the standalone systems: The four already operational oil spill models (MEDSLIK, MEDSLIK-II, POSEIDON OSM and MOTHY) will be connected in order to form the multi model oil spill system of the MEDESS-4MS

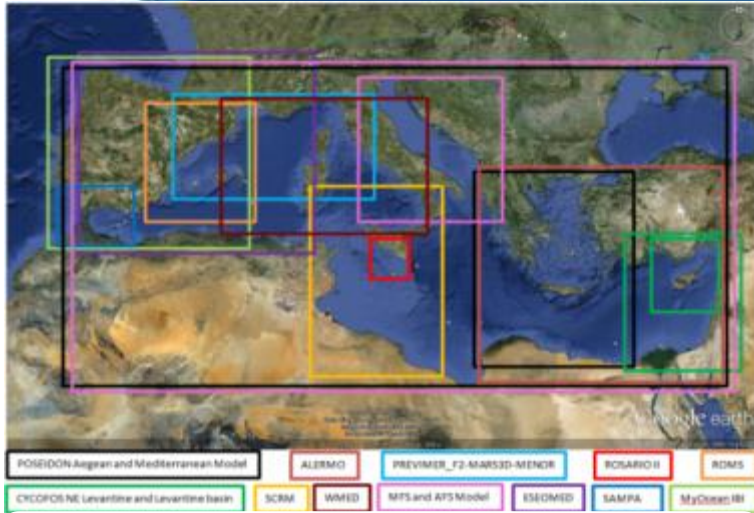


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MEDESS4MS Met-Ocean data



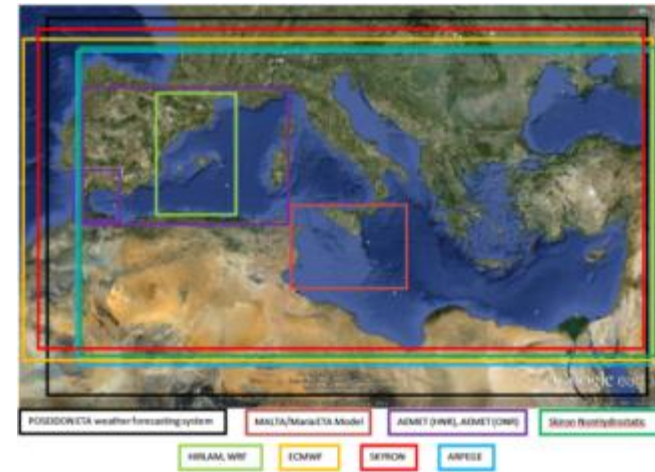
MEDESS4MS hydrodynamic forecasting systems (12)

- Basin scale models resolution approx. 6.5 Km
- Regional/Coastal scale, resolution ranges between 1-3 Km



MEDESS4MS sea state forecasting systems (6)

- Three (3) basin scale models - resolution 10 Km
- Regional/Coastal scale in higher analysis (~3 Km)



MEDESS4MS atmospheric forecasting systems (8)

- Five (5) basin scale models - resolution 5 Km
- Regional/Coastal scale with similar resolution (finer res ~3.2 k)

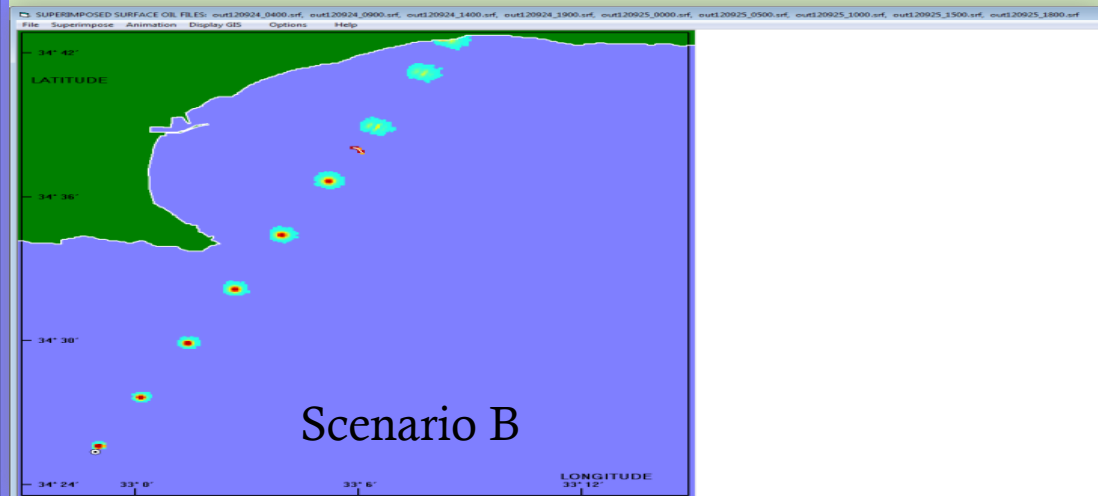
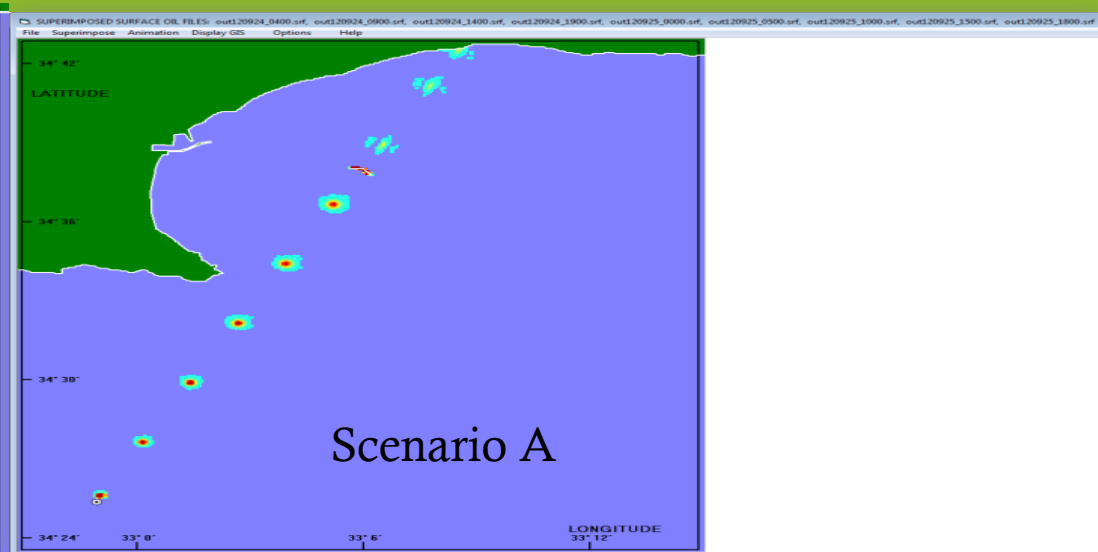
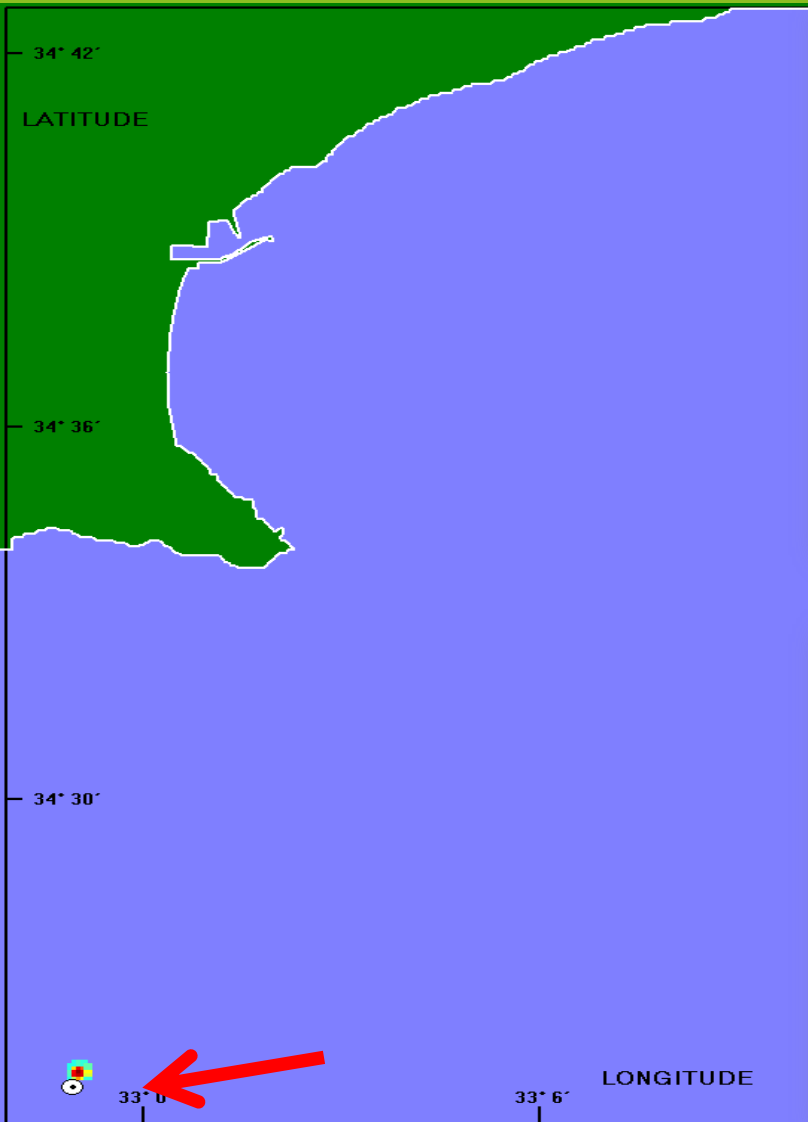
Coupling with a variety of environmental data: The MEDESS-4MS oil spill service will be coupled with the environmental data from the MCS, the downloaded MS national ocean forecasting systems and the oil slick data from existing platforms (EMSA-CSN, REMPEC, MS VTMIS HF-radars and AIS data).



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Scenario A (boom 500m) vs. Scenario B (boom 250 m)



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MEDESS-4MS – DSS

- **Real time – Automatic simulations using satellite images**

Operational monitoring and forecasting of the Mediterranean Sea, in order to connect timely detected oil slicks to oil spill models, and provide rapid predictions of the movement of spilled oil.

- **Delayed mode – Offline simulations in the past**

Determine vulnerable sites to oil spills that could be used to identify where the response equipment should be placed in order for it to be effective.

- **Management of emergency – Real time simulations done by the users**

Assist the decision makers involved in real time management of emergency operations.



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Thank you for
your attention

WWW.MEDESS4MS.EU



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