

## CONTRIBUTION OF COSMO/SKYMED DATA INTO PRIMI: A PILOT PROJECT ON MARINE OIL POLLUTION. RESULTS AFTER ONE YEAR OF OPERATIONS

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### 1. INTRODUCTION

The Pilot Project PRIMI, one of the seven initiatives started by The Italian Space Agency (ASI) to support risk management activities, aims to provide information on oil marine pollution. The system, consists of four components, two of them devoted to the analysis of the SAR and Optical satellites images for the slicks detection, an oil spill forecast subsystem and a central archive that provides web-gis services. The system is operational since the begin of 2008 on the Mediterranean region, providing information on polluted areas, wind, wave and ships present on the scenes analyzed.

The system PRIMI has been design to process SAR and Optical images for detecting areas potentially polluted. It can process the data of the following SAR missions: ERS, ENVISAT, RADARSAT, ALOS, COSMO/SKYMED. While for the optical data, the system can process the data of the following sensors: MODIS, MERIS. When a suspected oil spills is identified at least the following information are provided: spill extension and geographical location, for those slicks detected on a SAR image also its

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age and composition are estimated. In addition the system provides information on the meteorological and marine conditions. If the detection conditions are not fulfilled over some regions, i.e. wind is under 2 m/s or over 15 m/s, a map of those areas are provided to end users. In order to support the risk mitigation actions the forecast sub system, produces the expected positions for any slick for the 72 hours successive to its detection. The Web-GIS Sub System has the task both to send the information available in the archive to a list of registered users and to publish them on a web site.

During the august 2009 a validation campaign has been conducted with the oceanography ship Urania. In the campaign the information provided by Primi have been verified with in situ data and the results available up to now are going to be presented. During the experiment Cosmo/SkyMed has provided an extraordinary contribution supplying almost any day an image over the area inspected by the ship and in some cases also images requested with short notice.

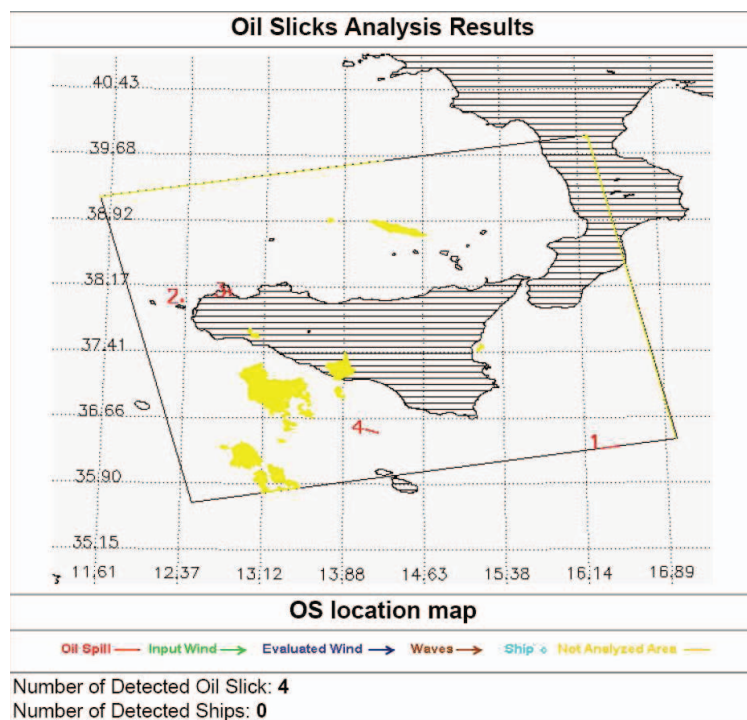


Fig. 1 Example of oil slick report

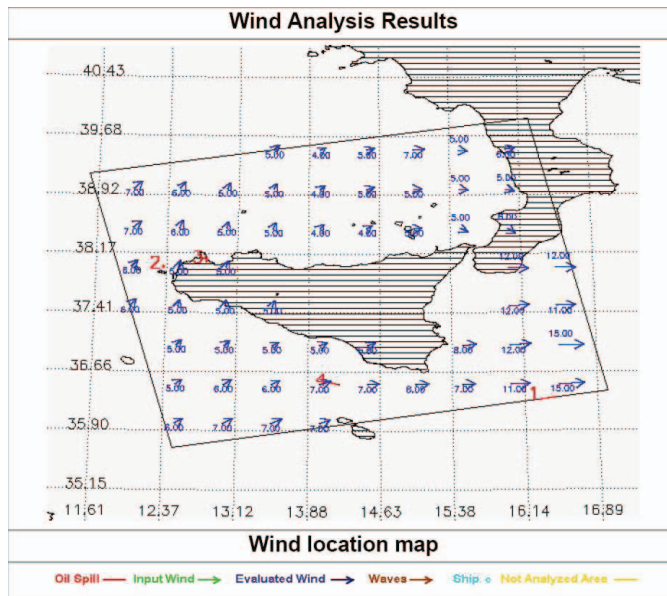


Fig.2 Example of estimated wind map.



Fig.3 Example of oil spill detected during the August 2009 campaign



Fig. 4 Detail of the slick.

## 2. REFERENCES

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