

Nowcasting and weather radar products developed and in real-time implemented

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Table of contents

1. Introduction.....	3
2. Forecast and monitoring products	3
3. Conclusion	5
4. Annexes	5

1. Introduction

A collaboration with CETEMPS, Competence Centre of the National Civil Protection System was carried on to to enhance forecast, nowcasting and monitoring capability of the regional Functional Centre.

2. Forecast and monitoring products

Agreement with CETEMPS research public bodies, Competence Centre of the Civil Protection System was signed in order to enrich regional Functional Centre with new monitoring and forecast products.

The following products have been tested and investigated:

- rain rate estimation product by using MSG satellite in synergy with ground-based weather radar data (WICRA algorithm) (see Annex 1);
- weather and nowcasting products by meteorological radar (see Annex2, Annex 3 and Annex 4);
- Landslides Activation Index (LAI) (see Annex 5)

In particular a dedicated activity took place to update codes for the meteorological products from X-band Cingoli radar meteo, installed inside Adriaradnet project (financed within IPA Adriatic CBC Programme 2007-2013), optimizing radar antenna alignment and cleaning volume data from ground and sea clutter.

Set up of an operational chain for radar products in real time with visualization on the web platform and creation of an interregional radar network was also realized (Annex 3).

Example of real time radar VMI (vertical maximum intensity) product is available at <http://console.protezionecivile.marche.it/MonitoraggioMeteo/observations/radar/html/radar.html>

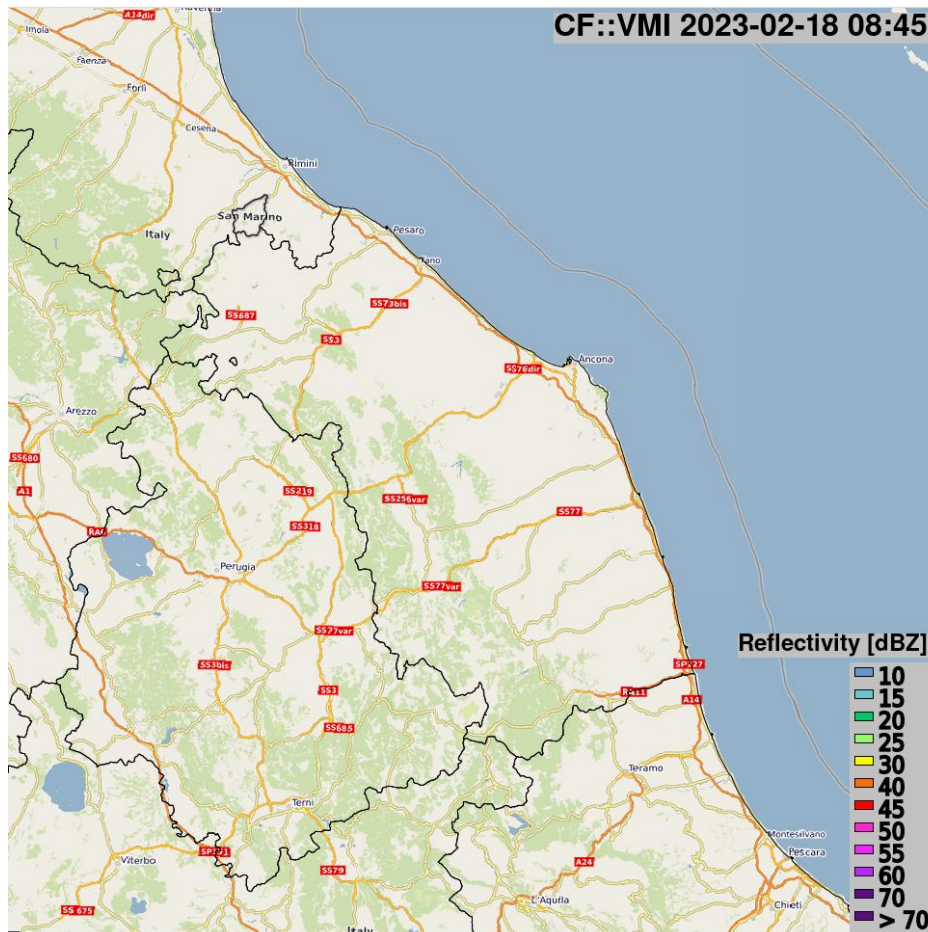


Fig. 1 VMI real time product

A dedicated analysis took place in order to better investigate the relevant flood event that hit the 15th-16th of September 2002 the central catchments of the region and enhance forecast and monitoring tools in case of flash flood events (Annex 6).

Moreover a verification and valorisation of the microwave radiometer of Marche Region was realized (Annex 7). CETEMPS detailed technical reports are provided as annexes for further information.

3. Conclusion

In order to enhance forecast, nowcasting and monitoring capability of the regional Functional Centre, in charge of broadcasting the meteo-geohydrological alert, a collaboration with CETEMPS, Competence Centre of the National Civil Protection System, was set up.

Weather products from satellites and the meteorological X band radar data of Cingoli were finalized and investigated. This radar was previously installed inside Adriaradnet IPA CBC project. Radar operative products are now available with clutter noise cleaned and run on regional server. Ownership is by Marche Region. A landslides activation index was also tested to support forecaster.

4. Annexes

Technical reports:

- d.5.1.5_Annex1.pdf
STREAM_Report Activity radar satellite product
- d.5.1.5_Annex2.pdf
STREAM_Report Activity Nowcasting product
- d.5.1.5_Annex3.pdf
STREAM_Report Activities Operational Chain Radar
- d.5.1.5_Annex4.pdf
STREAM_Report Activities Radar Product
- d.5.1.5_Annex5.pdf
STREAM_Report LAI product
- d.5.1.5_Annex6.pdf
STREAM_Report Operational chain Casestudy
- d.5.1.5_Annex7.pdf
STREAM_Report radiometer