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**Brief Activity Report
of the National Meteorological Administration of Romania
in 2013**

The National Meteorological Administration of Romania (NMAR), settled through a law from 2004 and its main aim is to ensure the meteorological protection of life and property. The Romanian Meteorological Service was set up in July 1884, being one of the oldest scientific institutions in Romania.

At the end of the year 2013, NMAR employed around 1265 people, and about 329 of them have been working at the headquarters in Bucharest.

The 2013 total budget of NMAR was of Euro 12.350.888.

NMAR co-ordinated the activity of the National Meteorological Observations Network within 7 Regional Meteorological Centres. It operated 158 meteorological stations, 126 of them being automatic weather stations, the rest of 32 being classical stations, and a network of 67 rain gauges. 55 meteorological stations had an agrometeorological program.

In 2013, NMAR complied with its obligations as National Centre and operationally transmitted the SYNOP, TEMP and CLIMAT data, both in ASCII (TAC) and BUFR (TDCF) formats.

During 2013, the process of upgrading the Doppler operational weather radar systems within the national network with digital receivers continued. January - September 2013 served as the largest period of warranty for the system upgraded during 2012, period in which the producer of the radars developed and installed new, better, versions of the software applications which handled non-conformities arisen during the upgrade process. In 2013 (November), the system of whose receiver was upgraded to digital technology was the DWSR 2500C C-Band from Craiova, thus becoming the fourth system upgraded since 2011. The hardware and software warranty for this radar extends for 1 year beginning with November 2013.

Moreover, in 2013 was initiated the process of upgrading the servers VIPW (Volumetric Imaging and Processing Workstation). They convert, process and deliver the radar information in the right format to be displayed with the two types of radar applications owned by many beneficiaries. Three of the eight computers of the VIPW servers network were replaced with latest generation computers on which were installed new operating systems and the upgraded applications VIP.

Romania is a full member of EUMETSAT and the data and products coming from geostationary satellites were received, processed and transmitted to main internal beneficiaries: Ministry of Environment and Climate Change, Ministry of National Defense, Ministry of Internal Affairs, Ministry of Transport and Infrastructure, Ministry of Agriculture and Rural Development.

In the framework of the GMES - COPERNICUS and EUMETSAT Programs, Romania started to play an important role to deliver information which corresponds to user needs within the "GMES service component".

In the framework of the EU FP7 SAFER project, establishing the pre-operational COPERNICUS Emergency response core service, Meteo Romania contributed to "Past Flood Event Mapping" elaborating the risk analysis maps based on archived satellite data and to "Flood Risk Mapping" providing the information about flood risk zones and impact of specific flooding scenarios.

Also, in the framework of EU FP7 project CRYOLAND Meteo Romania contributed to develop, implement and validate a standardized and sustainable service on snow and land ice monitoring as a downstream service in a value added chain with the COPERNICUS Land Monitoring Core Services.

MeteoRomania contributes to all of the EUMETSAT mandatory programs: Meteosat Second Generation (MSG); Meteosat Third Generation-Preparatory Program (MTG); Eumetsat Polar System (EPS) and to the following optional programs: Jason 2; Jason 3 si Eumetsat Polar System – Second Generation Preparatory Program (EPS-SG PP).

In 2013, Romania participated to the EUMETSAT Council and Delegate Body Meetings.

Romania has also maintained its status of ECMWF cooperating member state.

Although Romania is not an EUMETNET member, NMAR participated in various programmes such as OPERA, FPM, C-SRNWP, EMMA, Climate-Op. Services, Eumetcal.

Romania, as full member of OPERA, contributes to the fulfillment of the objectives of developing, generating and distributing high-quality pan-European weather radar composite products on an operational basis, by having appointed a national delegate responsible with the National Meteorological Administration's activities within the programme. Romania contributed to the generation of OPERA European operational composite which is generated by the ODYSSEY data hub with volume data provided by 6 of our weather radar systems. We also received the European composite and used it in our forecasting activity.

NMAR kept its status as a member of the COSMO and ALADIN/LACE.

The non-hydrostatic COSMO model was integrated operationally four times a day (00UTC, 06UTC, 12 UTC and 18UTC), at two horizontal resolutions (7 km and 2.8 km horizontal resolution). The model was implemented on a Cluster Linux IBM. For the 7 km-resolution, the model was integrated for 78 hours of forecast on a domain which covers Romanian territory. The initial and lateral and boundary conditions for the COSMO model integrated at 2.8 km horizontal resolution were obtained from the integration of the COSMO model at the 7 km resolution. The results were post-processed and used in the operational forecasting activity. The numerical results of the COSMO model at 7 km horizontal resolution were also used for the air pollution dispersion model INPUFF.

The ALADIN model version named "ALARO" (with specific moist parameterization package) run four times a day at 6.5 km resolution over a domain covering Romania and its surroundings; the post processed output was available for the forecasters throughout the integrated visualization system and the intranet web site. The model outputs are also used as input data for hydrological modeling. At the same time the ALARO model is integrated twice a day over a larger domain (covering as well the entire Black Sea) with a coarser resolution (11 km) especially for marine

applications.

NMAR preserved its membership to ECOMET.

Romanian National Meteorological Administration was involved in the “Building resilience to disasters in Western Balkans and Turkey” European Project, conducted by United Nations Office for Disaster Risk Reduction - Regional Office for Europe (UNISDR EUR) and World Meteorological Organization (WMO) by hosting and conducting the On-the-job Training on Severe Weather Forecasting and Warnings for the beneficiary countries. The first phase of the training courses closed in September 2012, and another two stages were organized in May and June 2013. The National Meteorological Administration of Romania was chosen as the training venue due to the existence of excellent operational and technical facilities as well as the rich *experience in dealing* with severe weather forecasting and warnings.

A total of 7 forecasters from Albania, Republic of Turkey, Republic of Macedonia, Bosnia-Herzegovina, Republic of Serbia, Montenegro and Kosovo participated to the training stages.

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