

# RSMC TOULOUSE 2014 REPORT

## Executive Summary

Primary activities for 2014 consisted of the Regional Specialized Meteorological Centre (RSMC) tests, including quarterly IAEA tests and regular monthly tests and incremental updates and improvements to the response procedures, software, and to the joint RSMC secure web pages, which are used for communicating transport model products to National Meteorological and Hydrological Services (NMHS) and between RSMCs. RSMC Toulouse received – both operational and planned - requests for inverse modelling support from the Provisional Technical Secretariat (PTS) of the Comprehensive Test Ban Treaty Organization (CTBTO) during all the year.

## 1. Introduction

Météo-France is designated by the WMO as the Regional Specialized Meteorological Centre (RSMC) for the provision of atmospheric transport modelling in case of an environmental Emergency Response. The regions of responsibility are WMO Regional Associations (RA) I & VI which encompasses Europe, Ukraine, the Russian Federation and Africa. This responsibility is shared with RSMC Exeter. Meteo-France National Forecast Centre operates 24 hours a day, 7 days a week and has the responsibility of providing forecasts for the spread of pollutants (nuclear, chemical). The service consists on an immediate delivery of meteorological observation data, followed by forecast and modelling dispersion products. In case of a nuclear accident, national meteorological services could « request for RSMC support ».

In addition to emergency response, RSMC Toulouse contributes global inverse modelling support to the CTBTO verification system

## 2. Operational Contact Information

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### 3. Responses and information on dissemination of products

#### 1) Models used

Two models may be used, according to the needs :

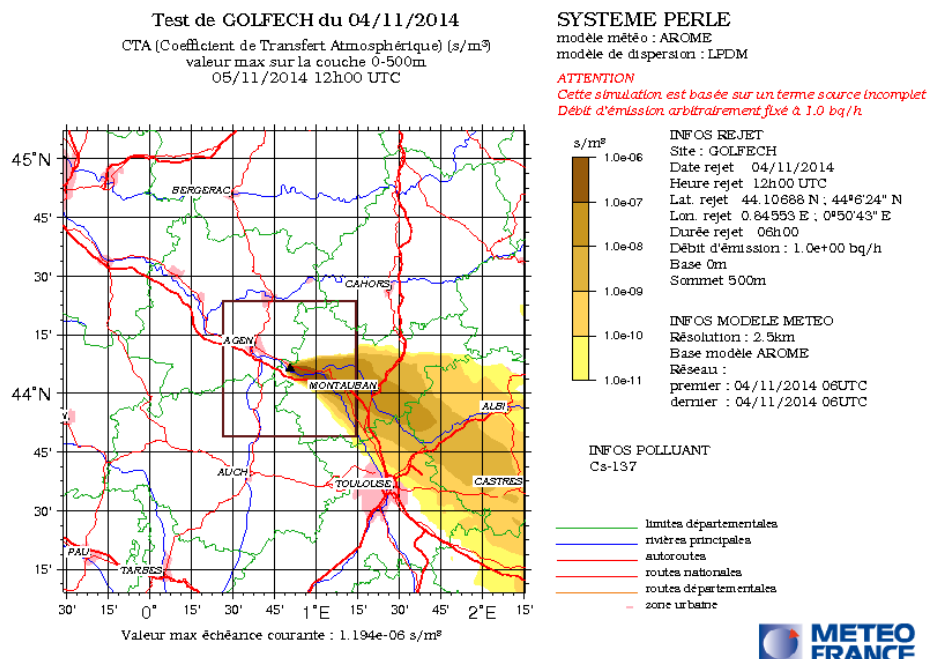
- The global **MOCAGE** model coupled with the French atmospheric global model ARPEGE or with the European ECMWF global model. Standard outputs are available 20 minutes after launch, for a three days or more forecast. MOCAGE offers the possibility of computing retro-trajectories for CTBTO. The resolution is 0.5° for 47 vertical levels
- The local **PERLE** high resolution dispersion model system.

3 possibilities of meteorological coupling :

- AROME model up to 2,5 km resolution covering France
- ARPEGE/MESO-NH covering Europe
- ECMWF/MESO-NH global cover.

LPDM diffusion model is used. First outputs are available 15 minutes after launch. The forecast is up to 24 hours, the outputs resolution is 2 km, for a 60km\*60 km domain and 8km for a 240km\*240 km.

Products are distributed either by fax, email, on internet (mirror web sites of Toulouse RSMC, with a specific external link created for each new event)



The presentation of RSMC Toulouse is available on <http://www.meteorologie.eu.org/CMC>

- 2) Participation in international inverse dispersion modelling events and exercises with CTBTO

During 2014 RSMC Toulouse received occasional requests for both real and exercise scenarios from the Provisional Technical Secretariat of the Comprehensive Test Ban Treaty Organisation (CTBTO). These were all responded to within the expected timescale

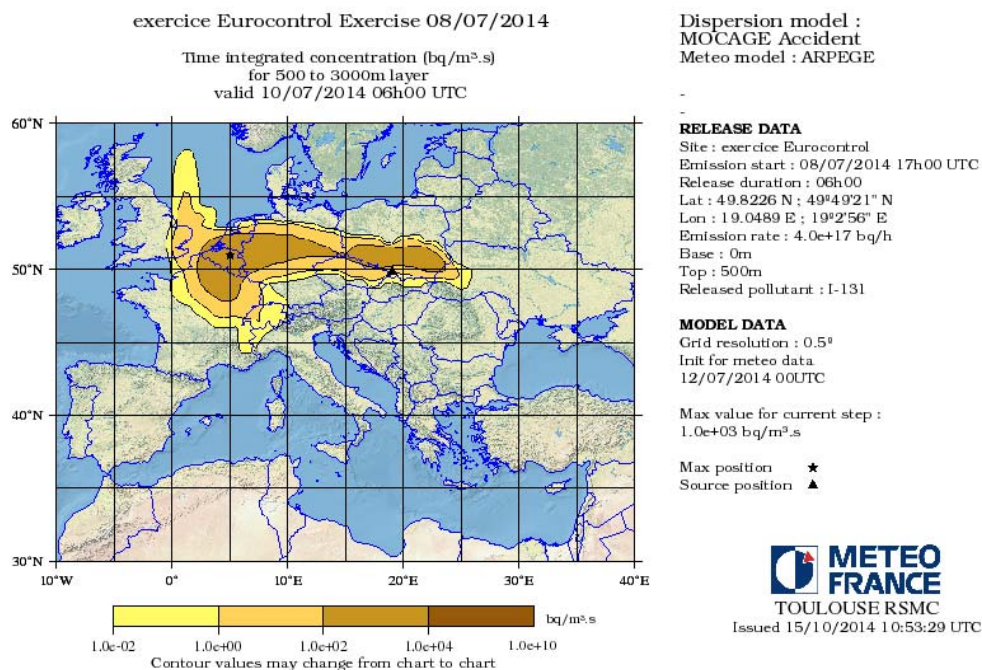
- 3) Routine operations

RSMC Toulouse took part in the planned International Atomic Energy Authority (IAEA) quarterly exercise in Kozloduy (Bulgaria) as lead RSMC (in conjunction with RSMC Exeter) in November 2014. Graphics were posted to the relevant RSMC mirrored websites, as well as to the IAEA and to NMSs within RA I and RA VI

In addition, RSMC Toulouse has been responding to the monthly tests hold by RSMCs Melbourne, Montreal and Washington by running dispersion models and sending output onto the mirrored RSMC web pages.

- 4) Other responses

RSMC Toulouse took part in EuroControl Nuclear14 exercise in November by sending outputs model



#### 4. Lessons learned and significant operational or technical changes in 2014 :

- o CTBTO upload sftp (transition to the new upload system of the SRS fields)

- According with RSMC Exeter, update of mailing lists. Nevertheless a lot of countries, especially in Africa didn't provide correct email addresses. It will be fine if WMO could manage up-to-date mailing lists.
- Forecasters training on emergency response activities.

## **5. Plans for 2015 :**

### **Plans for improvements in 2015**

- Development of "Time of Arrival" new product (as soon as the WMO ERA group will set up a standard product)
- PERLE using AROME new resolution 1.25 km, higher resolutions for the large domain of MESONH –Perle forecasts (both small and large domains will use a 2 km resolution).
- Studies on ensemble forecasting on dispersion model will be conducted, based on Morage and Perle.
- MOCAGE : using 3 hours temporal frequency for meteorological forcings.

### **International exercises in 2015**

- RSMC Toulouse will take part in all IAEA or WMO emergencies requests, tests and exercises, and in all CTBTO requests.
- RSMC Toulouse will participate to the monthly test hold by RSMC Washington/Melbourne/Montreal.

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