

RSMC Tokyo Activity Report for 2015

Executive summary

This document outlines activities conducted by the Regional Specialised Meteorological Centre (RSMC) Tokyo in 2015 to support environmental emergency response (EER) and atmospheric backtracking. It highlights exercises and routine tests, operational issues and challenges, and plans for 2016. Major activities are summarized below.

- i) RSMC Tokyo participated in a number of international exercises. These were the WMO EER Quarterly Test for Regional Association II (RA II) in February, ConvEx-2B run by the International Atomic Energy Agency (IAEA) in August, and the National Data Centre Preparedness Exercise with the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) in October and November.
- ii) An expert from RSMC Tokyo participated in the Time of Arrival (ToA) tests in June and October, and also contributed to discussions to decide the specifications of ToA charts.
- iii) In November, RSMC Tokyo examined email and fax communications with registered organizations in RA II. The results were presented to RSMCs Beijing and Obninsk and the WMO Secretariat.

1. Introduction

In July 1997, the Japan Meteorological Agency (JMA) was designated by the World Meteorological Organization (WMO) as a Regional Specialized Meteorological Centre (RSMC) supporting environmental emergency response (EER) activities. RSMC Tokyo is responsible for providing atmospheric transport modelling (ATM) products in response to requests from the International Atomic Energy Agency (IAEA) and Members of the WMO Regional Association II (RA II). In such work, RSMC Tokyo responds jointly with RSMCs Beijing and Obninsk.

Based on the Manual on the Global Data-Processing and Forecasting System (WMO No. 485), RSMC Tokyo provides atmospheric backtracking products in response to requests for support from the International Data Centre (IDC) of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

At the 15th session of RA II held in Doha in December 2012, it was decided that Emergency Response Activities (ERA) would be launched within the region as part of activities engaged in by the Expert Group on Operational Forecasting (EG-OF). Mr. Masami Sakamoto of RSMC Tokyo was appointed as the Theme Leader in Emergency Response Activities (TL-ERA) with responsibility for (a) monitoring the provision of products and services, and (b) advising on evolving requirements for ERA operational systems and services.

2. Contact information

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3. Exercises and routine tests

3. i. ConvEx-2B with IAEA/IEC

On 18 August, the Incident and Emergency Centre (IEC) of IAEA invited RSMCs in RA II to contribute to ConvEx-2B. All three RSMCs participated in the exercise, which was conducted from 25 to 27 August. On the first day in response to a request from IEC, RSMC Tokyo distributed standard products to their intended recipients and issued a joint statement in conjunction with RSMCs Beijing and Obninsk. All the prescribed services were provided in a timely manner without any major problems.

3. ii. National Data Centre Preparedness Exercise with CTBTO / IDC

On 6 October, CTBTO/IDC asked RSMCs to contribute to the National Data Centre Preparedness Exercise in October and November. RSMC Tokyo participated in the exercise, which was conducted from 27 October to 7 November. It received 12 requests and sent backtracking results for a total of 198 stations. On 3 November, there was an issue with the SFTP connection by which data were being sent to IDC. The problem was investigated on both sides and the connection was recovered by the deadline specified in the request.

3. iii. Quarterly test

RSMC Tokyo participated in the quarterly EER exercise for RA II on 19 February 2015. The Center distributed standard products, but no joint statement was issued because RSMCs in the region were unable to complete one before receiving the termination message from IEC.

3. iv. Monthly internal training

RSMC Tokyo conducted monthly internal training to maintain its operational capability for emergency response to nuclear accidents and for atmospheric backtracking.

4. Operational issues/challenges

4. i. Email and fax test within RA II

In November, RSMC Tokyo conducted an email and fax communication test within RA II in line with the technical memorandum issued by RA II RSMCs. The results showed that 28 out of 29 registered organizations were accessible, and that 26 organizations were able to receive email appropriately. The test results were shared with RSMCs Beijing and Obninsk and the WMO Secretariat.

4. ii. ERA-related activities in RA II

RA II TL-ERA Masami Sakamoto highlighted related activities in the region at a meeting of the CBS Expert Team on Emergency Response Activities (ET-ERA) held in Buenos Aires in November and December. In response to a 15 February request from the director of the Legal and International Affairs Department of the Islamic Republic of Iran Meteorological Organization (IRIMO) for support in remedying the organization's inability to receive WNXX01 IAEA (EMERCON messages via GTS), Mr. Sakamoto asked the member from RTH Offenbach to take appropriate action to fix the issue. This became one of the Action Items (Annex III Action 10 c) of the ET-ERA meeting.

5. Operational atmospheric transport model status

The status of RSMC Tokyo's operational atmospheric transport model is described in Annex 4 of WMO Technical Documentation No. 778 (WMO/TD-No. 778).

6. Other activities regarding ATM product development

Joint Time of Arrival (ToA) Experiments

Mr. Masami Sakamoto took part in the ToA production experiments in June and October as an expert from RSMC Tokyo. Mr. Sakamoto's standard set of ATDM charts and ToA charts were provided to all participants in the experiments.

Before starting the tests, the ET-ERA members engaged in a series of discussions on the designs and definitions of ToA charts and the test procedures. Mr. Sakamoto contributed the following points to the discussions:

- The initial time for numerical weather prediction (NWP) should be specified because the time frame of products for EER is defined with reference to this time.
- The definition of ToA should be clarified, as there may be multiple definitions depending on the integration period of the exposure (time-integrated concentration).
- NWPs used for ATDM should be compared, as differences in ATDM results stem mostly from differences in NWPs.

7. Plans for 2016

RSMC Tokyo remains committed to fulfilling its responsibilities as an RSMC providing ATM products as necessary. The Centre will participate in international exercises planned for 2016 to maintain its nuclear emergency response capabilities based on requests from IAEA/IEC, CTBTO/IDC and WMO RA II Members.

RSMC Tokyo plans to develop an hourly 0.5-degree backtracking system in response to a request made by CTBTO/IDC at ET-ERA in November/December 2015.

Additionally, an expert from RSMC Tokyo and TL-ERA in RA II will participate in/conduct the following activities in 2016:

- Joint RSMC ToA tests and related discussions among ET-ERA members
- Fixed-contour chart tests proposed by IAEA/IEC at the ET-ERA meeting
- Development of a joint TCM/JRC-EC ensemble test
- Formulation of Lagrangian ATM comparisons for RSMCs as discussed at the ET-ERA meeting
- Conduct of a user request survey in RA II as an activity for EG-OF in RA II