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JMA's Activities for ATOVS Data Exchange

This paper reports on the APSDEU-6 meeting at which AP-RARS was discussed as the main topic. This paper also introduces the activities of JMA for AP-RARS ATOVS data exchange. JMA is planning to provide direct readout ATOVS data received at JMA/MSC (Tokyo) and at NIPR/ Syowa Station (Antarctica).

JMA's Activities for ATOVS Data Exchange

1. Introduction

1.1 RARS workshop

Near real time access (within 30 minutes) to ATOVS data is important for Numerical Weather Prediction (NWP) capability of WMO Members because the operational NWP requires assimilation of data as much as possible within a limited time period to give better forecast. The CGMS/WMO Regional ATOVS Retransmission Service (RARS) workshop was held on 16-17 December 2004, hosted by EUMETSAT at its headquarters in Darmstadt, Germany to discuss possibilities towards the development of Regional ATOVS Retransmission Services. At the workshop, a number of currently unfulfilled user requirements for ATOVS data were identified. In order to meet some of these unfulfilled user requirements, it was noted that at least two RARS (South American RARS and Asia-Pacific RARS), in addition to the existing EUMETSAT ATOVS Retransmission Service (EARS), should be further considered and developed.

At the workshop, it was agreed that all relevant actions (with the exception of standardization) would be addressed within the APSDEU framework bearing in mind that the sixth meeting on Asia-Pacific Satellite Data Exchange and Utilization (APSDEU-6) is the primary mechanism that would be used to implement Asia-Pacific RARS (AP-RARS).

At the workshop, in view of the proposed data distribution approach, two data distribution centers were proposed:

- Tokyo (WMO Regional Association II), and
- Melbourne (WMO Regional Association V).

In addition, JMA undertook the responsibility for investigating one of potential HRPT stations for ATOVS retransmission, i.e. Syowa Station, East Antarctica, identified during the course of the workshop.

1.2 APSDEU-6 meeting

The meeting on Asia-Pacific Satellite Data Exchange and Utilization is an international meeting, of which main purpose is to promote the exchange of meteorological satellite data in the Asia-Pacific region and international cooperation in satellite data utilization. Several national meteorological services, space agencies and academic organizations in the Asia-Pacific region participated in APSDEU-6 which was held on 1-3 June 2005, hosted by KMA at its Headquarters in Seoul, Republic of Korea. At the meeting, the possibilities towards the development of AP-RARS were discussed and the schedule for the implementation phase of the Asia-Pacific RARS was made clear.

1.3 Implementation of AP-RARS

Members of the APSDEU-6 agreed that Members are to contribute significantly to

the implementation of AP-RARS. The main issues of the agreements are as follows:

1) Dr. Griersmith of BoM acts as an overall coordinator of AP-RARS,
2) Each country willing to participate in AP-RARS designates one focal point,
3) A set of possible baseline stations is to be developed,
4) Standards such as data processing, data format, compression, and communication protocols are to be developed between the focal points and with WMO, EUMETSAT and EARS coordinators, and
5) Initial implementation of the exchange includes FTP over the GTS as its means.

The implementation scenario is divided into the following three phases:

Phase-1: To start experimental exchange on the GTS with up to 12 baseline stations
Phase-2: To exchange data from all stations, plus possible other dissemination means
Phase-3: To expand exchange to other data types

Members of the APSDEU-6 agreed to start the phase-1 implementation by the end of 2005.

2. ATOVS data Exchange

2.1 Status of ATOVS data processing at JMA

The Meteorological Satellite Center (MSC) of JMA operationally started using EUMETSAT ATOVS and AVHRR Processing Package (AAPP) to process direct readout NOAA/HRPT data in September 2004, and JMA has been utilizing the ATOVS level 1c data for NWP since December 2004. Additionally, JMA has been provided with direct readout HRPT data at Syowa Station by the National Institute of Polar Research of Japan (NIPR) in quasi-real time (within 50 minutes). The data acquisition and processing system started in August 2005 on a trial basis for validating the availability for NWP.

2.2 Information about ATOVS data processed at JMA

2.2.1 Specification of data received at Kiyose

Owner of ground station:	Japan Meteorological Agency (JMA)
Location:	Kiyose, Tokyo (35.77N, 139.53E)
Data acquisition and processing:	HRPT data are received and processed at JMA/MSC
Coverage:	Figure 1 shows actual coverage from 20 August to 31 August 2005 (12 days).
Satellites:	NOAA-17 and 18 (2 satellites)
Frequency of acquisition:	8.5 times per day on an average
Processing sensor and data level:	AMSU-A: level 1a, 1b, 1c
	AMSU-B: level 1a, 1b, 1c, 1d
	HIRS: level 1a, 1b, 1c, 1d
Processing time (from start of receiving to end of processing):	
	About 20 minutes

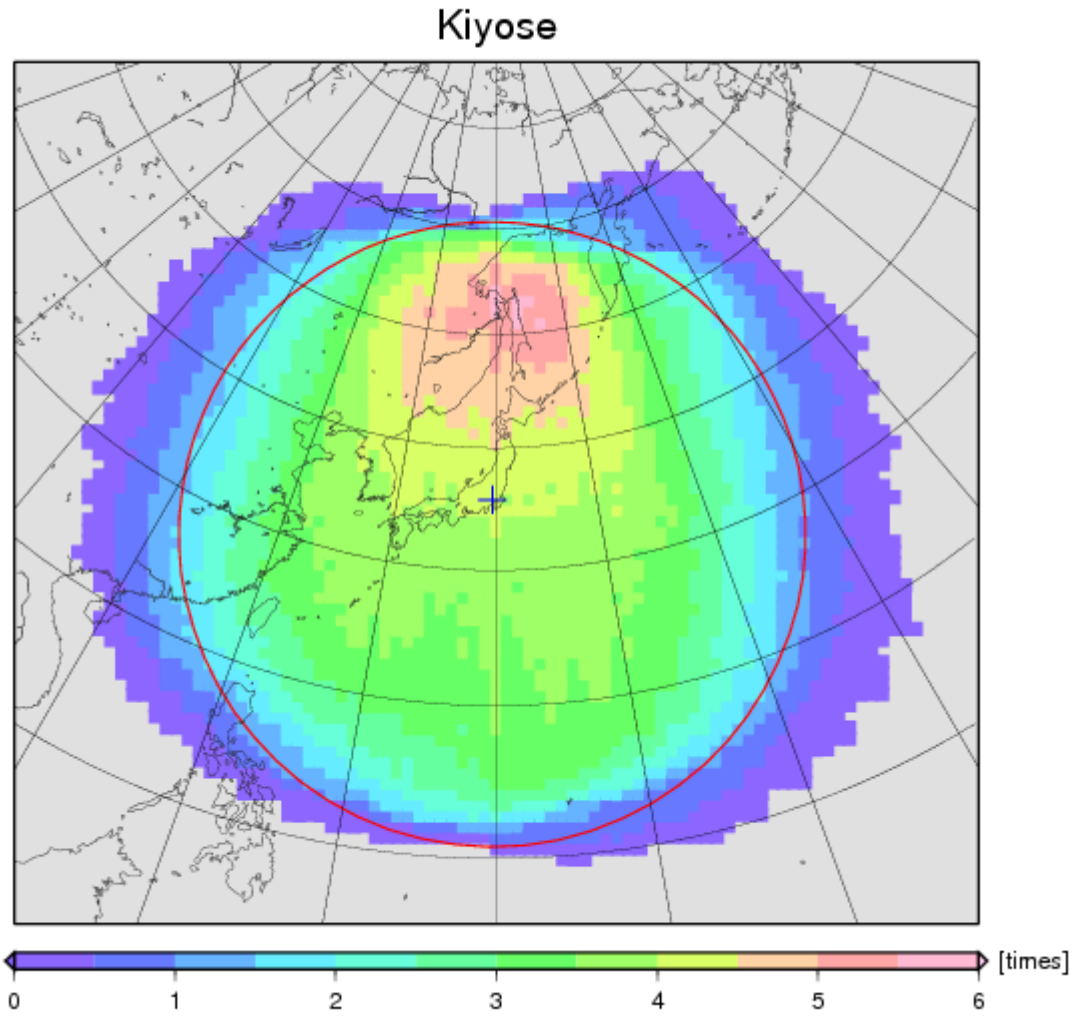

Figure 1 Coverage map of ATOVS data received at Kiyose

2.2.2 Specification of data received at Syowa Station

Owner of ground station:	National Institute of Polar Research
Location:	Syowa Station, Antarctica (69.00S, 39.58E)
Data acquisition and processing:	HRPT data are received at Syowa Station and transmitted to NIPR via INMARSAT. The data are transmitted by FTP from NIPR to JMA/MSC via the Internet and processed at JMA/MSC.
Coverage:	Figure 2 shows actual coverage from 20 August to 31 August 2005 (12 days).
Satellites:	Mainly receiving NOAA-17 and NOAA-18, sometimes NOAA-15. The selection of satellite depends on NIPR's research activities (including other satellites, such as EOS, DMSP).
Frequency of acquisition:	11 times per day on an average

Processing sensor and data level: AMSU-A: level 1a, 1b, 1c
AMSU-B: level 1a, 1b, 1c, 1d
HIRS: level 1a, 1b, 1c, 1d
Processing time (from start of receiving to end of processing):
About 30 minutes

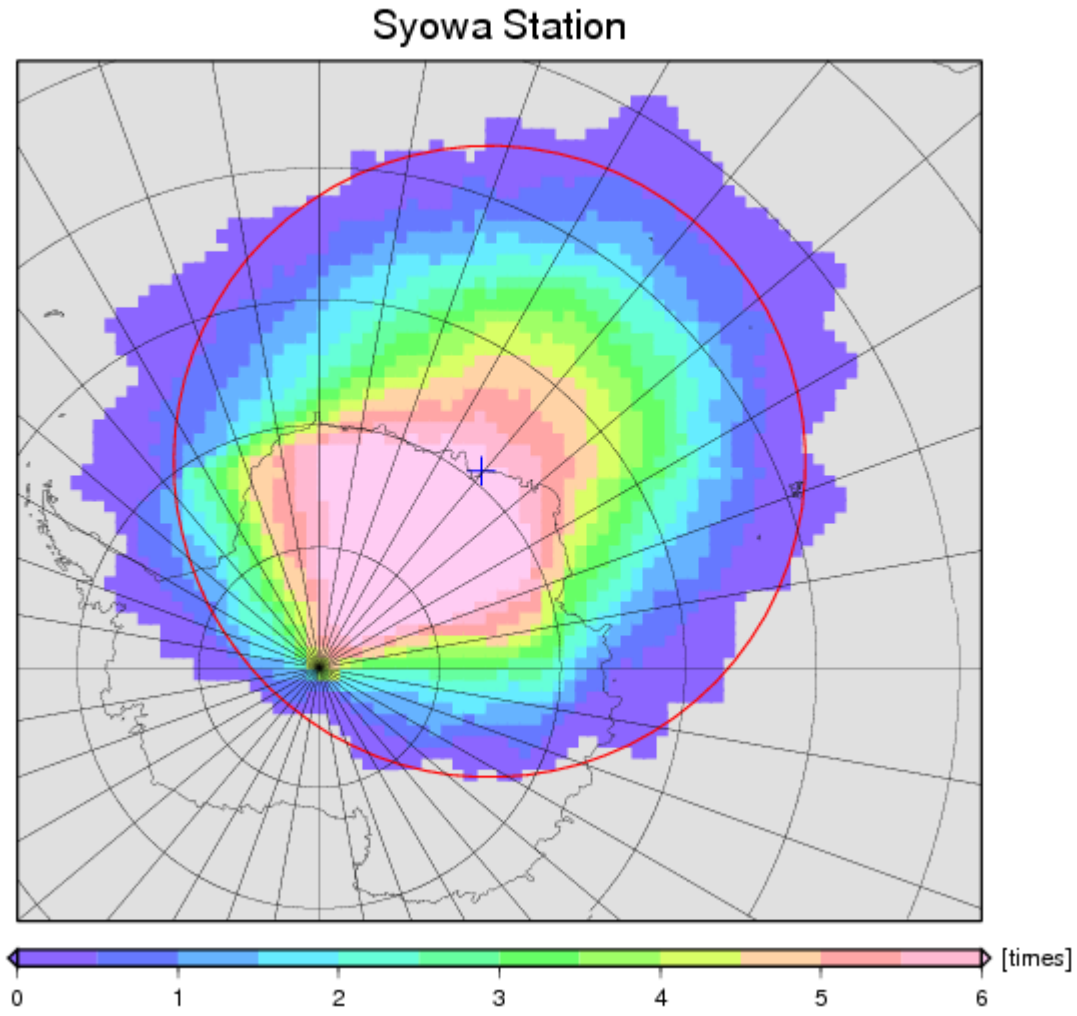

Figure 2 Coverage map of ATOVS data received at Syowa Station

2.3 Implementation status of AP-RARS at JMA

For the implementation of phase-1, JMA is preparing for distribution of direct readout ATOVS data for overseas users and also completing the expansion of GTS capability to support AP-RARS function.