CGMS-XXX JPN-WP-03
Prepared by JAPAN
Agenda Item: B.2
Discussed in Plenary

BACKUP OF GMS-5 WITH GOES-9

To report on the procedure to backup GMS-5 with GOES-9

No action is required on this subject

BACKUP OF GMS-5 WITH GOES-9

The Japan Meteorological Agency (JMA) has recently agreed with the NOAA of the USA to establish a procedure to backup GMS-5 with GOES-9, in case of malfunction of GMS-5. On 17 May 2002, JMA announced the procedure through JMA web site as the attached "*ESTABLISHMENT OF THE PROCEDURE TO BACKUP GMS-5 WITH GOES-9*."

The backup of GMS-5 with GOES-9 is expected to be ready starting in the boreal spring (April) of 2003 and continual until the initiation of MTSAT-1R normal operation, which is now scheduled around the end of 2003. The timing of the start of the backup system will be determined taking into consideration the status of GMS-5.

During the backup, GMS-5 will remain stationed at the present position (140E degrees over the equator) and GOES-9 will be operated at 155E over the equator to observe the earth. The GMS-5 functions for data collection from DCPs and transmission of WEFAX signals to users will be continued as they are now.

The provision services of the earth image data in case of the backup of GMS-5 are as follows:

1) SDUS users will be able to continuously receive the WEFAX broadcast through GMS-5 as they do now. The WEFAX broadcast will continue GOES-9 imagery. Neither modification nor change of your SDUD receiving facility is required.

2) The present S-VISSR high-resolution data broadcast service from GMS-5 to the MDUS users will cease in case of the backup of GMS-5 with GOES-9. It will be possible to receive the GVAR broadcast directly from GOES-9 with GVAR facility, but the characteristics of the GVAR broadcast are quite different from those of GMS S-VISSR broadcast. In considering such a circumstance, JMA will make available a portion of the high resolution data, namely the IR-1 channel (10.5-11.5μm in wave length) through Internet to the National Meteorological and Hydrological Service (NMHS) which has already registered the reception of S-VISSR broadcast from GMS-5 with JMA. This service will be provided to only one receiving station of the individual NMHS. Other stations including those outside the NMHS are requested to obtain the data from the station of the NMHS in their own country.

Attachment

17 May 2002
Release by
Japan Meteorological Agency

ESTABLISHMENT OF THE PROCEDURE TO BACKUP GMS-5 WITH GOES-9

1. Background

The Japan Meteorological Agency (JMA) has been operating GMS-5 launched in 1995 beyond its designed life-time of five years due to the failure of the launch of MTSAT in November 1999 and postponement of the launch of MTSAT-1R until the late summer of 2003 from its original schedule (early-2003). Since 4 July 2001, JMA has introduced a reduced-mode operation of the earth observations from GMS-5 for the southern hemisphere, namely, hourly observations for the whole of the northern hemisphere and 3-hourly observations for the southern hemisphere around north of 50S .

At this moment, GMS-5 is expected to maintain its present observations capability during the year of 2002. However, there is a concern that GMS-5 might face difficulties in continuation of its present operation of picturing the Earth in spring 2003 or later, namely, further reducing of picturing area and decrease of receiving signal level of MDUS broadcasts due to increase of north-south inclination of the spacecraft orbit associated with shortage of the fuel for the maneuvering of its north-southward movement.

In the last few months JMA and NOAA have intensively discussed aiming at establishment of a procedure to back-up GMS-5 with GOES-9 of US NOAA. After considerable but cooperative deliberation the government of Japan and the government of the United States have recently agreed to exchange diplomatic notes, and to conclude Implementing Arrangement between JMA and NOAA for the establishment of the back-up of GMS-5 with GOES-9. The notes and the arrangement were signed on 10 May 2002.

This establishment of the back-up procedure will enable geostationary meteorological satellite observations to be continued without interruption in case of failure of GMS-5, thus securing satellite data for all of the countries in the eastern Asia and the western Pacific for various meteorological services including issue of meteorological information for prevention of natural disasters due to typhoons, torrential rain etc.

2. Procedures to implement the back-up

(1) NOAA moves GOES-9 from 105W above the equator (its present position for storage mode) to 155E to cover the western Pacific area.
NOAA transmits the earth image data obtained by GOES-9 on an hourly basis and JMA receives it at Meteorological Satellite Center in Kiyose City Tokyo for delivery of the products including WEFAX product to be transmitted for GMS-5 users with the telecommunication function of GMS-5. At present this back-up system is considered to be effective in the spring of 2003. Regarding the MDUS broadcasting service, refer to (4) in Remarks.

(2) To operate GOES-9 over the western Pacific, NOAA enhances its FCDAS from June 2002.

(3) The back-up system will be terminated when MTSAT-1R, the successor to GMS-5, starts its normal operation.

3. Remarks

(1) This back-up operation is now considered to be in readiness in the spring of 2003. The timing of actual initiation of the back-up operation will be decided later on, considering the condition of GMS-5.

(2) Up to starting of the back-up operation, all of the operations of GMS-5 will be maintained as it is now.

(3) Users of WEFAX service will be able to receive the WEFAX broadcasts through GMS-5 telecommunication function without any modification to the users' receiving facility even after JMA initiates the back-up operation of GMS-5 with GOES-9. Types and others of WEFAX will be identical to those of the present products.

(4) As regards the MDUS service during the back-up operation, the broadcasts from GMS-5 will be ceased. Another possible limited service is now under consideration in JMA.

(5) The data relay function of GMS-5 from DCPs will be maintained as it is now even during the back-up operation. The extraction of wind vectors will be also continued by processing GOES-9 image data.

The formal information on the necessary actions of GMS-5 users relevant to the said back-up operation will be issued later on in due course.

Figures attached

1 Data relay from GOES-9 to users via the GMS-5

2 Full-disk images obtained at 140E and at 155E

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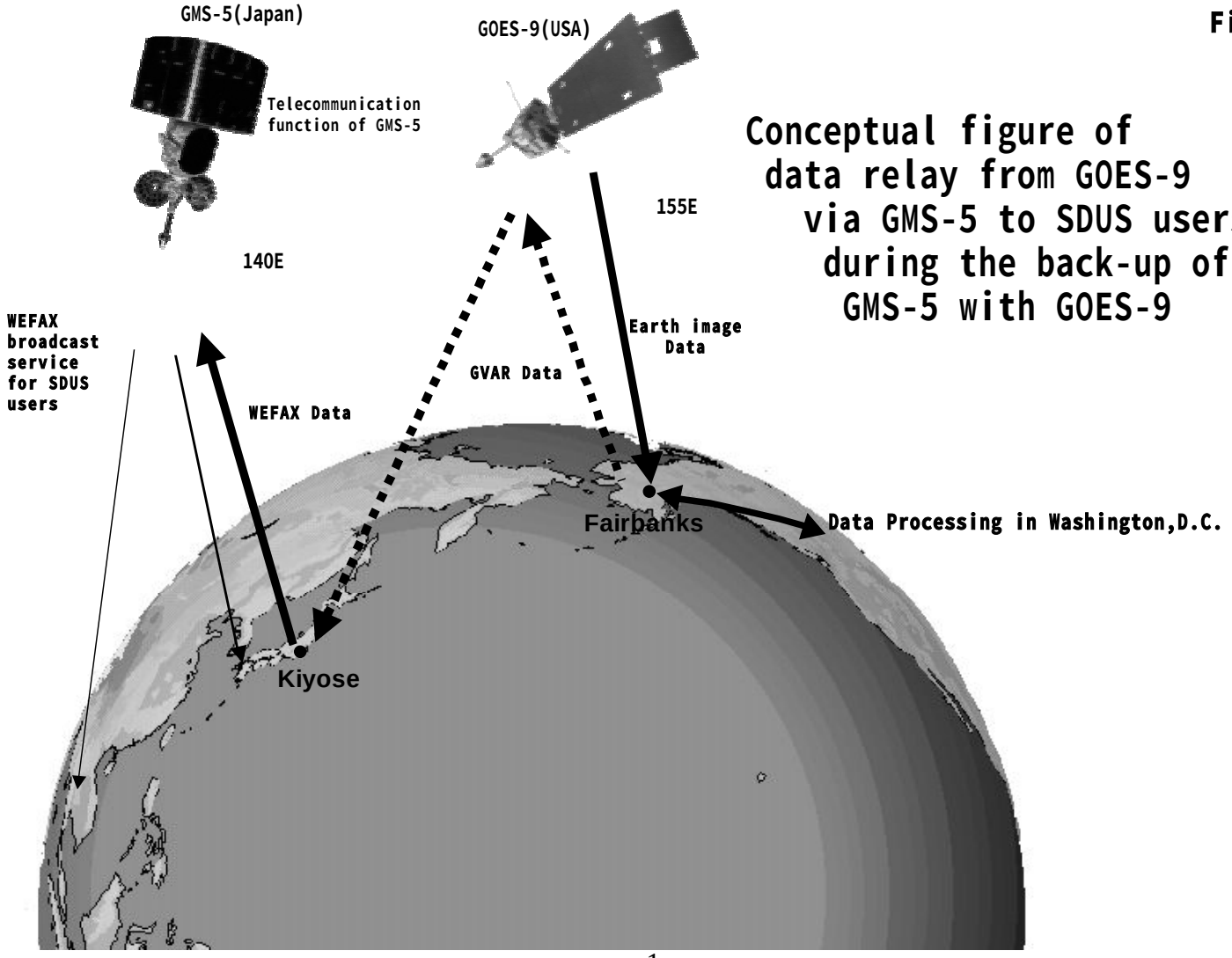
Abbreviations and Acronyms

DCP	Data Collection Platform
FCDAS	Fairbanks Command and Data Acquisition Station (operated by US NOAA)
GOES-9	Geostationary Operational Environmental Satellite – 9 (operated by US NOAA)
GMS-5	Geostationary Meteorological Satellite – 5 (operated by JMA)
JMA	Japan Meteorological Agency
NOAA	National Oceanic and Atmospheric Administration (NOAA)
MDUS	Medium - scale Data Utilization Station
WEFAX	Weather FACSimile (Low resolution facsimile broadcasting service of GMS-5)

Fig.1

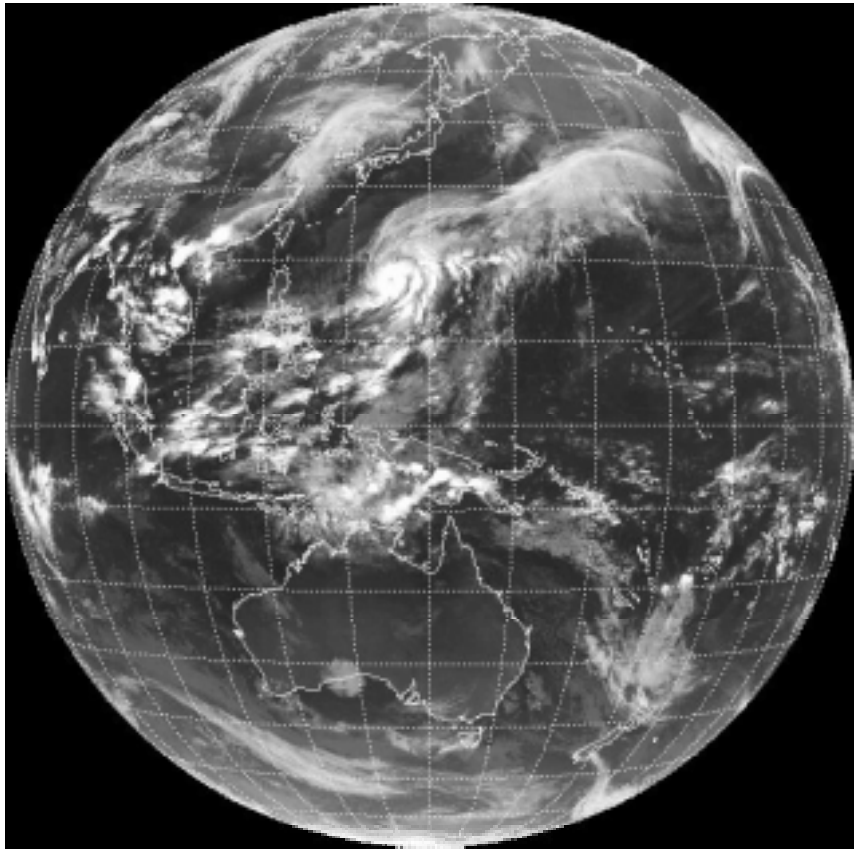


Conceptual figure of data relay from GOES-9 via GMS-5 to SDUS users during the back-up of GMS-5 with GOES-9

Fig.2

Full-disk images obtained at 140E and 155E

From the GMS-5
stationed at 140E over the equater



From a geostationary meteorological
satellite stationed at 155E over the equater
(a simulated image)