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STATUS OF MULTI-FUNCTIONAL TRANSPORT SATELLITE (MTSAT)

In response to CGMS Permanent Action 1

This paper reports on the status of MTSAT-1R and MTSAT-2, including the International Data Collection System (IDCS) of MTSAT-1R.

No significant spacecraft anomalies occurred on MTSAT-1R during the reporting period. MTSAT-2 experienced a Loss of Lock (LOL) of the Earth pointing and attitude control on 5 November 2007.

JMA terminated the HiRID and WEFAX broadcast services in March 2008, and started providing the compact imagery files via the Internet in January 2008.

The IDCS of MTSAT-1R has been functioning properly since the satellite began operation. As of the end of September 2008, 11 IDCPs were registered on 5 out of 33 MTSAT-IDCS channels.

MTSAT-2 has been on standby in a geostationary orbit since 4 September 2006. JMA conducted the Rapid Scan observation using MTSAT-2 from 10 through 13, from 17 through 18 and from 27 through 28 September 2008, as a part of the THORPEX Pacific Asian Regional Campaign (T-PARC).

STATUS OF MULTI-FUNCTIONAL TRANSPORT SATELLITE (MTSAT)

1 INTRODUCTION

The Multi-functional Transport Satellite-1R (MTSAT-1R), launched on 26 February 2005, has been operating in a geostationary orbit at 140 degrees East since 28 June 2005. MTSAT-2, launched on 18 February 2006, has been on standby in a geostationary orbit at 145 degrees East since 4 September 2006. The current status of the two satellites is outlined below.

2 CURRENT MTSAT STATUS

2.1 MTSAT-1R

No significant spacecraft anomalies have occurred since CGMS-35. MTSAT-1R has been observing 24 full disk images, 24 northern hemisphere images and eight southern hemisphere images a day. MTSAT-1R's operational information is available at http://mscweb.kishou.go.jp/operation/index.htm.

2.1.1 Data dissemination

JMA has been providing a direct broadcast service of HRIT and HiRID to Medium-scale Data Utilization Stations (MDUSs) and LRIT and WEFAX to Small-scale Data Utilization Stations (SDUSs) using MTSAT-1R since its operation started.

Of the above broadcast services, HiRID and WEFAX (provided as a transition measure for users of S-VISSR and/or WEFAX imagery) was discontinued on 12 March 2008. More detailed information is available at http://www.jma.go.jp/jma/jma-eng/satellite/NEWS/discon2.html.

On 23 January 2008, JMA started providing the compact JPEG imagery via the Internet to National Meteorological and Hydrological Services (NMHSs) in order to ensure easier access to MTSAT-1R imagery for narrow-band users.

Additionally, on 26 March 2008, JMA opened the website (http://mscweb.kishou.go.jp/sat_dat/index.htm) of MSC to browse the imagery of Australia, Central Asia, New Zealand, Pacific Island and/or Southeast Asia.

Further information regarding the data providing services such as HRIT via the Internet is available at http://www.jma.go.jp/jma/jma-eng/satellite/ds.html, which JMA opened in order to inform the availability of JMA's satellite data and products in line with the CGMS Action 35.28.

2.1.2 Status of the registered IDCPs

MTSAT-1R's International Data Collection System (IDCS) has been functioning properly since the satellite started operation. Although harmful interference was frequently observed on IDCS channel 33 from August 2007 through July 2008, there was no negative impact on IDCS operation since no International Data Collection Platform (IDCP) is registered on the channel.

Though IDCPs are registered on 5 out of 33 MTSAT-IDCS channels as of the end of September 2008, no effective data has been transmitted during the reporting period. Further information regarding MTSAT-IDCS is available under the *Monthly Operations report* on the MSC website at http://mscweb.kishou.go.jp/operation/opr_report.htm.

2.2 MTSAT-2

MTSAT-2, the follow-on satellite to MTSAT-1R, has been on standby in orbit above the equator at 145 degrees East since 4 September 2006. In case of the maintenance or the trouble of MTSAT-1R, MTSAT-2 takes over the observation until MTSAT-1R system recovers.

The meteorological mission of MTSAT-2 will become operational in around 2010, when it will succeed MTSAT-1R and remain in operation until around 2015.

2.2.1 Maintenance operation for MTSAT-2 images

JMA obtains images from MTSAT-2 to check and review its observation capability several times a year. Additionally, the tuning of the image quality concerning calibration and navigation is implemented.

2.2.2 Anomaly report

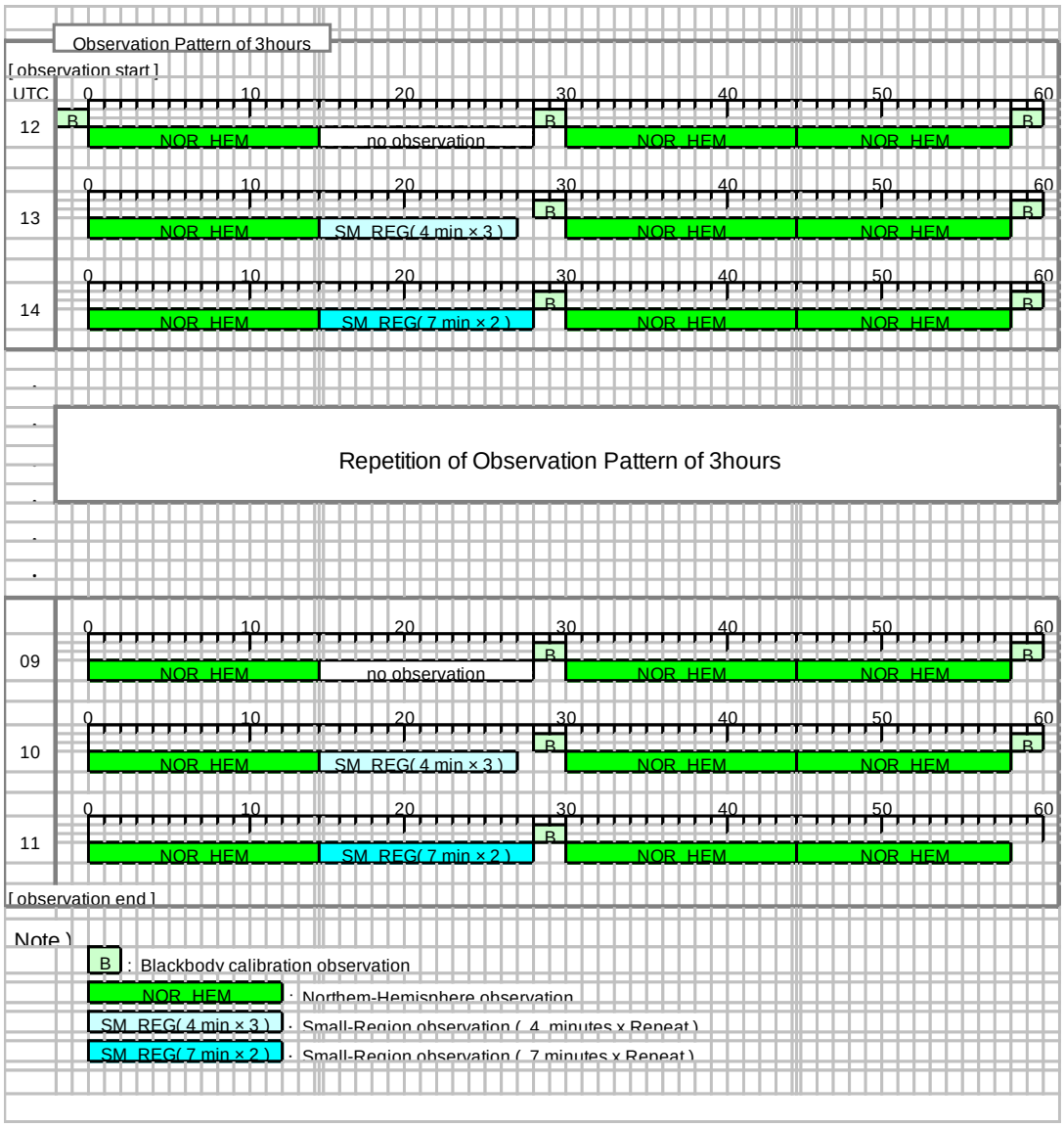
MTSAT-2 experienced a Loss of Lock (LOL) of Earth pointing and attitude control on 5 November 2007. The satellite was recovered to normal operation 34 hours after the occurrence of the LOL.

2.2.3 THORPEX Pacific Asian Regional Campaign (T-PARC)

JMA conducted the Rapid Scan observation using MTSAT-2 from 10 through 13, from 17 through 18 and from 27 through 28 September 2008, as a part of the THORPEX Pacific Asian Regional Campaign (T-PARC).

The Rapid Scan observation pattern consists of three northern hemisphere observations every hour and small region observations twice every three hours. The small region observation consists of region observation of four minutes and that of seven minutes. The region observation of four minutes observes the same area three times consecutively, and the seven minutes observes the same area two times consecutively. Figure 2.2.3 shows the Rapid Scan observation schedule pattern.

The imagery data and the Atmospheric Motion Vector (AMV) products obtained by the Rapid Scan observation were provided to the T-PARC community.


Observation Pattern of 3hours
[observation start]
UTC
12
13
14
B
NOR_HEM
no observation
SM_REG(4 min × 3)
SM_REG(7 min × 2)
0
10
20
30
40
50
60
Repetition of Observation Pattern of 3hours
09
10
11
[observation end]
Note)
B : Blackbody calibration observation
NOR_HEM : Northern-Hemisphere observation
SM_REG(4 min × 3) : Small-Region observation (4 minutes x Repeat)
SM_REG(7 min × 2) : Small-Region observation (7 minutes x Repeat)