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STATUS OF THE METEOSAT SYSTEM, INCLUDING IDCS

This Working Paper reports on the more recent operations and changes affecting the system of Meteosat satellites. Mote detailed information is provided by EUMETSAT to CGMS Members on a regular basis via its half-yearly (from 2006) Operations Reports.

CGMS Members are invited to take note.

STATUS OF THE METEOSAT SYSTEM INCLUDING IDCS

1 INTRODUCTION

This Working Paper summarises the status of more recent Meteosat operations and related activities. Reports on the EARS and IDCS Services are also now included within this document. The latest information on EUMETCast can be found in EUM-WP-11.

2 OPERATIONS STATUS – SHORT OVERVIEW

The status of Meteosat-5 and 6 satellites is unchanged and the configurations of these spacecraft have remained stable.

The configuration of Meteosat-7 has been modified following the end of the Direct Dissemination Service (including WEFAX) on 14 June 2006 and due to the drift towards a final orbital position at 57.5° East. The drift was started on 11 July 2006. During the phase during which Meteosat-7 and Meteosat-6 were co-aligned, the Rapid Scanning Service was suspended to avoid RF interference and perturbations in the Meteosat-7 images.

Meteosat-8 has supported the DCP mission since 16 May 06. Due to the anomaly found on the nominal Unified Propulsion Subsystem (UPS), the Attitude and Orbit Control Electronics (AOCE) is using on the redundant unit with effect from on 18 May 06 and the Latch Current Limiter (LCL) 29 for the redundant UPS has been left ON.

MSG-2 (Meteosat-9) has completed its commissioning and the investigation into an anomaly in the WV6.2 channels is still under investigation. A work-around solution is foreseen.

3 SYSTEM STATUS

3.1 Space Segment

3.1.1 Meteosat-5

The satellite was launched on 2 March 1991.

Meteosat-5 has been used in support of the Indian Ocean Data Coverage service since the formal start of EUMETSAT support to the INDOEX experiment on 1 July 1998. No MDD service has been provided via Meteosat-5. The DCP acquisition system on Meteosat-5 was activated in January 06 to support a Tsunami warning system in the Indian Ocean region (see later section).

Estimated fuel remaining at end of July 2006: 4.11 kg.

3.9 kg of fuel are reserved for re-orbiting at end of life. The period for re-orbiting Met-5 has been set to end April 2007, although this is to be confirmed nearer the time. The date for Met-5 re-orbiting is tied with the relocation of MSG-2 to 0º and the relocation of Met-7 over the Indian Ocean to support the IODC mission.

As the Meteosat-7 batteries do not allow support for the Indian Ocean DCP Service in eclipse periods, this service is provided by Meteosat-5 at least for the Spring 2007 eclipse season. Once the

spring 2007 eclipse season is over, Met-5 can be re-orbited. From the autumn 2007 eclipse season onwards, the Indian Ocean DCP Service could be supported by Meteosat-6.

Orbit			Attitude	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
8.527°	63.23°	0.00248°/day	328.004°	81.535°

Meteosat-5 Orbital Parameters on 31 July 2006

The spacecraft configuration status has remained stable since the failure of Power Amplifier 3 in July 1998. No significant spacecraft anomalies have occurred on Meteosat-5 during this reporting period. However, due to ageing, a degradation of the performance of the batteries was noticed and some recovery measures have been put in place (i.e. further reduction of power load in eclipse and battery cross-strapped configuration). With these measures no problem is expected until the satellite re-orbiting.

3.1.2 Meteosat-6

The satellite was launched on 20 November 1993.

Meteosat-6, located at 10° East, has been used to support the Rapid Scanning Service (RSS) since the formal start of this service on 18 September 2001. In addition to this, it continued to act as the in-orbit backup satellite for the Meteosat-7 Operational Service.

Estimated fuel remaining at end of July 2006: 5.810 kg

At least 3.9 kg of fuel are reserved for re-orbiting at end of life. Due to the limited amount of fuel left, manoeuvres to correct the orbit inclination can no longer be performed, and thus reception of direct dissemination from Meteosat-6 (if used) at certain latitudes will become less reliable.

It is estimated that the available fuel will be sufficient to allow E-W station-keeping and attitude control until at least the end of 2007, assuming the current role continues. However, once Met-5 is re-orbited now that DCP testing on Met-8 and MSG-2 are satisfactory, Met-6 will be relocated over the Indian Ocean to support the Indian Ocean DCP Service during the eclipse season. A new fuel budget will be established to indicate the expected end of life for the satellite after relocation.

Orbit			Attitude	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
5.82°	9.57°	0.027°/day	339.413°	83.978°

Meteosat-6 Orbital Parameters on 31 July 2006

The spacecraft configuration status remained stable. No significant spacecraft anomalies occurred on Meteosat-6 during this reporting period.

3.1.3 Meteosat-7

The satellite was launched on 2 September 1997.

During the reporting period, Meteosat-7 has been used to provide the MTP 0°-Longitude Operational Service, including the DCP and MDD services.

Black body calibrations are performed once per day on slot 24 outside eclipse season. Up to 4 black body calibrations per day are performed during eclipse seasons.

The routine reception of DCP messages was transferred to Meteosat-6 during Meteosat-7 eclipses when Power Amplifier 2 was de-configured. This was due to the duration of the eclipse and the available battery capacity.

The Meteosat-7 batteries have shown a slight improvement in their performance during the Spring 2006 eclipse after an almost constant degradation since the autumn 2002 eclipse period. This is thought to be the result of the preventive measure (i.e. de-configure the satellite with only the essential loads and the radiometer left on for the eclipse periods) that has been put in place to revert the observed degradation trend. This is encouraging and will be continued to increase the battery lifetime until the re-orbiting of the satellite. A very thorough assessment of the battery performances is performed at the end of each eclipse season to confirm the operational strategy.

Estimated fuel remaining at end of July 2006: 8.895 kg.

3.9 kg of fuel are reserved for re-orbiting at end of life. The last Meteosat-7 inclination manoeuvre was performed in May 2003. Without further inclination manoeuvres, the orbit inclination has reached about 2.55º in July 2006. It is estimated that the fuel available is enough to allow nominal longitude and attitude control well beyond the year 2008.

Met-7 relocation manoeuvre took place on 11 July 06 and the satellite is currently drifting towards 57.5 ºE over the Indian Ocean, to take over the IODC service from Met-5, nominally in November 2006. A new fuel budget will be established to indicate the expected end of life for the satellite after the relocation.

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
2.547°	11.53°	0.584°/day	345.851°	87.164°

Meteosat-7 Orbital Parameters on 31 July 2006

The spacecraft configuration status remained stable apart the configuration changes due to the interruption of the Direct Dissemination service and the relocation. An anomaly on the MST receivers was detected in May 2006. (See later section)

3.1.4 Meteosat-8

The satellite was launched on 28 August 2002.

Meteosat-8 started parallel operations with Meteosat-7 on 29 January 2004, at a location of 3.4°W.

Estimated fuel remaining at end of July 2006: 142.85 kg

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
0.936º	3.308º	0.015º/day	288.404º	89.390º

Meteosat-8 Orbital Parameters on 31 July 2006

The spacecraft configuration status has remained stable since the failure of Solid State Power Amplifier in October 2002. In March 06 the DCP transponder was activated to support the DCP mission, which finally became operational on 16 May 2006.

LCL08 failure – see later section

GERB outages:
Following the event that caused the damage of the GERB detectors on 28 February 2005 at 1612 UTC, an Anomaly Review Board has agreed to a change in the GERB on board software to increase the recovery speed (in case the GERB mirror shows irregularities in the movement), thus reducing the risk of re-occurrence. This software patch was implemented on board MSG1 and used during the Spring 2006 Sun Avoidance Season. The several occurrences of GERB outages are due to the tight limits under which the mirror movement is controlled during the Sun Avoidance Season. Broader limits are used outside this season with a reduction of GERB outages.

Triggering of Safe mode:

Due to a triggering of the Meteosat-8 safe mode on 23/09/2006 at 14:07, all Meteosat-8 Operational services were swapped to Meteosat-9 with effect from 18:00 23/09/2006. Investigations into the cause of the safe mode triggering have been carried out by EUMETSAT and ESA and concluded that all telemetry analysed from the event was consistent with a transient caused by a Single Event Upset as being the cause of the Safe Mode triggering. This type of event has been observed several times on both MSG satellites and is atttributed to a particular circuit (LM139) sensitive to protons and heavy ions in solar and cosmic radiation. It is planned that Meteosat-8 will be reconfigured and operational services will be resumed by 10 October 2007.

3.1.5 Meteosat-9

The satellite was launched on 21 December 2005.

Meteosat-9 has now completed its Commissioning (apart the WV6.2 anomaly investigation) and was relocated to 0° on 18 July 2006 to provide in orbit backup to Meteosat-8.

Estimated fuel remaining at end of July 2006: 177.04 kg

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
1.3º	0.344º	0.011º/day	127.932º	89.009º

Meteosat-9 Orbital Parameters on 31 July 2006

The spacecraft is in imaging mode, fully configured with the exception of the Search and Rescue transponder which is currently off.

A Gauging Sensor Unit Failure : Several tests have been performed on Met-8 and 9 to help the investigation and the definition of the best operational practice with these failed devices.
No conclusion has been reached on this anomaly during the reporting period.

3.2 MTP Ground Segment

The availability of the MTP ground segment has been nominal for the reporting period. The MTP Control Centre operations were also nominal during the reporting period.

Following the switch-off of the direct dissemination from Meteosat-7 ion 14 June 2006, all **MDD** uplink stations that were used to transmit data to the first generation satellites are no longer active. MDD, in its present form, makes use of EUMETCast to distribute the various meteorological products. The content of the former and current MDD broadcasts are identical.

Primary & Backup Ground Stations: Routine weekly activation of the Backup Ground Station (BGS) in Cheia, Romania and the Backup Satellite Control Centre (BSCC) in Fucino, Italy continues. The BGS also continues to routinely support the monthly ranging campaigns for Meteosat-6.

The routine half-yearly activation of the Backup Mission Control Centre (BMCC) in Fucino was performed in May after the successful ALPHA hardware and VMS 7.3.2 Operating system upgrade.

Lannion FSDR: The Lannion uplink station continues to provide the service of uplinking foreign satellite data as expected in a stable manner.
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3.2.1 MTP MPEF

3.2.1.1 Changes

The 0° service from Meteosat-7 was terminated with the start of the re-location of the satellite. Basic image processing by MTP-MPEF is continued to support the cross satellite calibration of Meteosat-5 and Meteosat-6 with Meteosat-7. The IODC service from Meteosat-5 is not impacted by this change. It should be noted that all products generated by Meteosat-7 have now been replaced with the equivalent products from Meteosat-8, except for the Sea Surface Temperature (SST) product generated with Meteosat-8 data, but not disseminated. The Meteosat Surface Albedo product is also currently only generated with data from the first generation satellites, hence it is not available from Meteosat-8. No other significant changes to the product generation for MTP has taken place.

3.2.1.2 Reprocessing

The reprocessing project, supporting the ECMWF ERA-Interim project (1989 – 2000) with Meteorological Products from Meteosat First Generation Image Data was completed by March 2006. Data for the following services were reprocessed.

Spacecraft	Service	Spacecraft	Service
Meteosat-3	0^0 Service	Meteosat-5	0^0 Service
Meteosat-3	ADC Service	Meteosat-5	IODC Service
Meteosat-3	XADC Service	Meteosat-6	0^0 Service
Meteosat-4	0^0 Service	Meteosat-7	0^0 Service

3.3 MSG Ground Segment

The availability of the MSG ground segment has been nominal for the reporting period. The introduction of changes to fix anomalies and to improve both maintainability and the reliability of

operations was resumed in the MSG Ground segment. This was after the interruption in the maintenance due to the launch of MSG-2. The MSG Central Facility has shown a few minor problems tied with the load due to double S/C operations which have since been fixed. Thus, the Central Facility is stable and supports the operations of both Meteosat-8 and 9.

The IMPF, apart the normal activity of fixing software anomalies, has been modified several times to test several algorithms to correct on ground the effects of the Meteosat-9 WV6.2 anomaly. This is still on going.

The DADF, apart introducing the changes necessary for Meteosat-9 (i.e. a capability of parallel Direct Dissemination and EUMETCast dissemination for LRIT with a single chain) the major change has been to prepare and conduct the swap of the DCP mission from first generation to second generation Meteosat. Finally, the MSG ground segment communication links continue to work reliably.

Routine operations at the Primary Ground Station (PGS) in Usingen, Germany include the weekly activation of the Backup Satellite Control Centre (BSCC). TTC and Ranging alternate between Met-8 and Met-9 the PGS and the Back-up & Ranging Ground Station (BRGS) in Maspalomas. The Secondary Backup Ground Station (SBGS) located in Cheia is activated routinely to support Met-8 and 9.

3.3.1 Unified Archive and Retrieval Service

The U-MARF has continued to operate under stable conditions. Since the last reporting period, the amount of retrieval has been increasing greatly; the average retrieval from the archive is well over 20 TB per month, this is up from 10.5 TB per month in le last reporting period.

The number of users has increased significantly since the introduction of the online ordering system. We currently have 808 registered users, an increase of 260 users from the previous reporting period, and continues to grow on a average of 43 new users per month.

As reported previously the MARF has stopped archiving data. Migration and transcription has been completed for the image datasets, with only approximately 5000 MPEF files still to be migrated.

Testing of ingestion of METOP and NOAA datasets are on-going, and are progressing well. The new version of the online archive retrieval system will be made available to beta testers by mid-August 2006.

3.3.2 MSG MPEF

The main change to the product generation covering this period is the termination of the product generation over 0^{o} with Meteosat-7. Meteosat-8 is now the sole provider of the full disc service over the primary mission area. The last outstanding product requiring continuity was the Multisensor Precipitation Estimate (MPE) that is since mid-July derived operationally with meteosat-8 data. Additionally the algorithm for the derivation of the fire-product has been updated, improving the performance over coastal regions, rivers and near cloud edges.

It should also be noted that in support of AMMA (African Monsoon Multidisciplinary Analyses) project divergence fields from the water vapour Atmospheric Motion Vectors are derived in an offline environment as a precursor to the operational divergence product currently planned for routine operation second half of 2006.

3.4 ATOVS Retransmission

3.4.1 Activities and planning

EARS-ATOVS continues to operate normally providing NOAA ATOVS data from 9 HRPT stations. In May INTA relocated their HRPT receiver, EUMETSAT-provided computer and network equipment used for EARS to a new building at the Maspalomas site. This major work was accomplished without impact to the operational ATOVS service. A kick-off meeting was held in April with KSAT for the upgrading of Svalbard reception systems to be able to receive NOAA and Metop and provide data to EARS-ATOVS service.

Upgrade and installation activities for the provision of HRPT data from Svalbard and Lannion were completed in July. After completion of the validation period ATOVS products from these two stations will be added to the service in August 2006. After a short 2 week transition period of parallel Svalbard/Tromosoe operations, the provision of data from Tromsoe will be terminated.

3.4.2 EARS Broadcast

The EARS service utilises EUMETCast for the dissemination of data to users, and this continues to perform well. Some EARS products also continue to be distributed by the GTS/RMDCN and are retrievable at the DWD (Offenbach, Germany) RTH.

3.5 EUMETCast (see EUM-WP- 11 for details)

At the end of July 2006, the EUMETCast user statistics are:

- Total number of EUMETCast Stations 1845

- Total number of users per service (note - a user can have several stations):

Meteosat 15 min SEVIRI	1434
RSS service	681
DWDSAT Service	242
DCP Service	59
HRI IODC (Met-5) 30 min Service	846
MDD Service	138
BMD Service	22

4 INTERNATIONAL DATA COLLECTION SERVICE (IDCS)

4.1 STATUS OF IDCS

As of the beginning of September 2006, there were 133 International DCP (IDCP) registered worldwide for regular use of the IDCS, using 9 of the 33 channels available (see below). In addition, the following DCP programmes use further International channels for regional purposes:
- 60 DCP allocated on channels I23 and 24, operated by the Aeronet programme.
- 20 DCP allocated on channels I25 and I26, operated by ROSHYDROMET.
- 181 DCP allocated on channels I27-I33, operated by WMO agro-meteorological and hydro-meteorological networks.

Globally, the total number of IDCP allocated on individual IDCS channels is:

Channel	06	07	12	13	14	15	16	18	20	23	24	25	26	27	28	29	30	31	32	33
No.	12	26	17	6	8	9	34	9	12	30	30	20	0	45	29	12	31	31	14	19
	Regular IDCS									Aero		ROS		WMO Networks						

It will be recalled that channels I23-I24 (Aeronet), I27-I33 (WMO networks) and I25-I26 (Planeta/ROSHYDROMET) are being used within the Meteosat IDCS, on a temporary basis, with the special agreement of CGMS and, in addition, IDCS Channels I08, I09, I11 are being used for the IOTWS transmission via Meteosat-5 (see later section 4.2) with the agreement of CGMS.

Despite the earlier failure of an SSPA on board MSG-1, the 33 IDCS channels (with 3KHz spacing) are currently supported by that satellite. MSG-2 can be used as a backup for this service should the need arise in the future.

Following the termination of direct broadcast service from Meteosat-7, there is no longer any DCPRS service and all DCP messages are relayed via EUMETCast and the GTS.

4.2 Indian Ocean Tsunami Warning Service (IOTWS)

In response to the Asian Tsunami in December 26th 2004, EUMETSAT activated the DCP transponder on Meteosat-5 in March 2005. This allows more frequent transmissions than is possible on either Meteosat-7, which has limited capacity. Several tidal gauges operated by the PTWC (Pacific Tsunami Warning Centre) were reallocated to International channels 8, 9 and 11 with the agreement of CGMS, transmitting every 15 minutes via Meteosat-5. The DCP messages are relayed as bulletins to the GTS via the Fucino ground station and EUMETSAT control centre in Darmstadt. There are currently 30 DCPs assigned to the IOTWS, but the number is expected to increase in the near future, hence the recent EUMETSAT request for three additional channels (I17, I19 and I21 are currently being checked).

The following should be noted:

- Meteosat-7 will be relocated to the IODC position around 63°E during 2006 to take over from Meteosat-5 will be reorbited in 2007. Meteosat-7 cannot support the DCS service during the eclipse period (up to 2 hours per day for the two 42 day eclipse seasons), due to a satellite amplifier limitation. Meteosat-5 can act as the back-up during these periods until it is reorbited in early mid 2007. A back-up strategy, using a relocated Meteosat-6, is under review.

4.3 FUTURE OF THE IDCS

The following issues exist concerning the future use IDCS:

- Future requirements for the amount of channels dedicated to IDCS - Many satellite operators now use the IDCS channels for regional purposes, ostensibly on a temporary basis. There are far fewer truly mobile DCPs using more than one satellite on the international channels.
- Several IDCS Channels are not being used according to specification, e.g. many allocated DCP belonging to major networks are no longer transmitting, although they are still allocated. EUMETSAT is planning to introduce a tougher “channel policing” policy and CGMS may wish to consider adopting similar practice.

4.4 5. INTERFERENCE TO THE IDCS

During the last twelve months the level of interference affecting IDCS channels within the Meteosat telecommunications field of view has not been sufficient to affect system performance.

5 SERVICE TRANSITIONS

5.1 Satellites Relocations

After conclusion of the MSG-2 Commissioning and of the Met-8 DCP testing, the longitude of the geostationary satellites has been modified as follows:

- MSG-9 has been moved from its Commissioning position at 6.5° to 0° where it is from 18 July 06 ready, apart the investigations on the WV6.2 anomaly still on going, to take over the MSG operational service should Met-8 operations be interrupted.
- Met-7 relocation manoeuvre was performed on 11 July 06 and the satellite is now drifting towards 57.5° East where it will be stopped in October 2006 to take over the Indian Ocean Data Collection mission in November 06. The rectification point is modified every 10° during the drift. Once on station the rectification point will be at sub-satellite point.
- Mid January 07, after termination of the RSS service, Met-6 will be relocated to 67.5° East where it is stopped early April 07 to provide imaging back-up and support for the IODC DCP mission during eclipses to Met-7 (after that Met-5 is re-orbited).
- Met-5 is re-orbited end on April 07.

The logic for the above is driven by the fact that Met-5 needs to be re-orbited (fuel budget) in April 2007 and that Met-7 batteries do not allow to support the IODC DCP mission during eclipse.

5.2 Service Transitions

Tied with the satellite relocations described in the above section are the following Service Transitions:

- Met-7 direct dissemination has been terminated on 14 June 2006;
- MSG-2 has been renamed Met-9, relocated to at 0° and provides operational backup to Met-8. The decision on whether Met-9 remains back up or becomes prime is to be taken once the MSG2 SEVIRI WV6.2 anomaly has been fully investigated (expected by Dec 06)
- Met-8 continues the operational service until further notice and at least until the Met-9 SEVIRI WV6.2 anomaly has been fully investigated.
- Met-7 starts the IODC mission in Nov 06. Rectification will be at Sub Satellite Point.
- After 4 weeks of parallel imaging with Met-7, Met-5 stops imaging and supports the DCP mission during the Spring 2007 eclipse.
- Met-6 stops the RSS service on 31 December 2006.
- Met-5 is re-orbited in late April 07.
- Met-6 is relocated at 67.5°E to provide redundancy for the IODC imaging mission and to support the DCP mission in eclipse. This location has been selected to reduce the number of necessary station keeping manoeuvres and therefore increase the satellite lifetime.

6 PROJECTS

6.1 Indian Ocean DCP Service Project

The aim of this project is to establish a DCP Acquisition Service over the Indian Ocean region, and to disseminate the DCP messages as required by the Users.

6.1.1 Background

Subsequent to the Tsunami disaster in December 2004, EUMETSAT made the decision to make access to the Meteosat satellite covering the Indian Ocean available to the international community for use in supporting a Tsunami warning system in the Indian Ocean region.

A similar warning system, operated by NOAA, already exists for the Pacific Ocean region and includes, as one element of the system, Data Collection Platforms (DCPs) on buoys which measure the sea-state and report via the GOES-West satellite.

The DCP Acquisition Service on the Meteosat satellite located over the Indian Ocean (currently Met-5), in order to receive messages from DCPs on buoys located in the area covered by the satellite was activated on 1 April 2005 using 3 international channels (all 3 are for regular transmissions). DCP UHF Receiver 1 was activated on Meteosat-5 on 25 January 2005.

6.1.2 Status

Currently 30 DCP are allocated and 20 of them are activated. As regards the ground-based infrastructure, a backup chain at Fucino will be made available by end of 2006.

Request for additional Channels

CGMS will be aware of a recent request from EUMETSAT for the allocation of three additional IDCS channels (I17, I19 and I21 are currently proposed, subject to interference checking) to support the growing number of DCPs to be used within the framework of the Tsunami Warning system for the Indian Ocean. It is hoped that CGMS Members will be in a position to support this request at CGMS XXXIV.

6.2 EARS Continuation and Extension Project

6.2.1 Background

In December 2004, the EUMETSAT Council decided to continue and extend the existing EARS service for a period of four years. In addition to continuation of the ATOVS Retransmission Service, two new services will be added: the pilot ASCAT Retransmission Service and the pilot AVHRR Retransmission Service. In addition to the support of the current NOAA KLM satellites, the continuation of EARS will also support the NOAA N and N' and Metop satellites. The purpose of the project is to develop and commission the new additions to the service.

6.2.2 Status

Preparatory work for the inclusion of Metop data within the EARS service is taking place. INTA, DMI and CMS have progressed with procuring upgraded reception systems to be able to receive Metop and provide both NOAA and Metop data in 3 minute segments throughout a pass.

The upgrade of the EPS antenna at Svalbard for NOAA and Metop reception is being coordinated with the EUMETSAT EPS team. After review of the KSAT proposal and subsequent negotiations the contract was signed and Kick-off meeting held in April.

EUMETSAT has prepared and shipped new product processing computers (PPNs) to each of these sites and they have been installed by the host organisation and brought into operations without impact to the operational ATOVS service.

The necessary Metop upgrades were completed during June/July such that verification testing took place with EUMETSAT witnesses for the systems at Svalbard and Lannion. These provided good confidence in readiness for being able to receive Metop data soon after Metop launch and HRPT activation. Installation activities at Maspalomas of Metop receiver systems also progressed well and testing is scheduled for early August.

The Svalbard HRPT station (in its function as Backup Reference User Station) was ready support Metop SIOV during the activation and verification of the HRPT transponder that was originally planned for 22 July.

Development of the necessary software for providing segmented AVHRR data to users via EUMETCast has made good progress. In March AVHRR data from a Maspalomas station started to be disseminated to users via EUMETCast as an early demonstration of the service. Some 100 users registered for this service within the first week of operation.

The software for the service based on multiple stations involves the analysis of incoming segments and messaging their quality to a central server for selection and initiation of transfer to EUMETCast. After deployment and testing of this software on the two remote computers, segments from Lannion and Svalbard were sent to users via EUMETCast, starting 18 July. Very positive feedback has been received from the users. At this time dissemination of Maspalomas was interrupted and it is planned to reintroduced to the service during August.

Dissemination of ERS-SCAT value-added Wind Product via EUMETCast has started as a demonstration of the ASCAT service continued during this period. On 10 May the service began dissemination of data in ASCAT BUFR format that will be used for the EARS ASCAT Pilot service.

KNMI have made good progress with establishing the Level 2 processing system for EARS-ASCAT. System testing of the EARS-ASCAT Level 2 processing system took place at KNMI in May with good success. The EUMETSAT development of ASCAT level 1 processing within EARS environment encounters problems during July. Currently the ASCAT PPF has difficulty run in the EARS IBM AIX environment due to issues with hardware and OS version that is different from the CGS IBM AIX and ASCAT PPF software issues. Actions are being undertaken to find a way forward on these problems.

6.3 0° MET-7 Termination Project

6.3.1 Background

Given the successful launch of the MSG-2 satellite the direct dissemination of first generation Meteosat services from 0º longitude ceased on 14 June 2006 at 09.00UTC. The project activities included, preparation of new operational baseline configurations, terminating operational and

maintenance contracts, updating user information and issuing timely notifications to the user community. The project, as such, is now closed.

6.4 EUMETCast South America Setup Project

6.4.1 Background

Following the bandwidth and coverage upgrades of EUMETCast to disseminate Meteosat-8 data to Users in Europe and Africa, and the start of routine operations of Meteosat-8, the issue of coverage of South America has been addressed in the form of a 3 year trial service.

The solution is a DVB turnaround system of MSG High Rate SEVIRI data from the Ku-band to a satellite providing coverage for users in South and Central America - similar to the C-band turn-around system for Africa. Since December 2005 a C-band South America turn-around service - provided by Globecast - is running using the NSS806 satellite at 40.5° W.

The aim of this project is:
- To operationally integrate the EUMETCast South America turn-around service into the Meteosat-8 dissemination system, thus allowing the start of service before the Meteosat-7 services are terminated at 0°;
- To integrate South and Central American users into the MSG and EUMETCast user community;
- To promote the use of EUMETCast South America and MSG data in the South American region;
- To assess the basis for the continuation of the service beyond the trial phase - together with the South and Central American user community and partners such as the WMO, the Spanish and Portuguese NMSes, NOAA, and the European Commission.

6.4.2 Status

Apr 2006 installation of the C-Band reference reception station in Miami

May 2006 first operational reception of Eumetcast in South America at INPE (Brazil)

June 2006 installation of the Ku-Band reference reception station in Madrid,

- acceptance of South America turn around system,
- addition of GEONETCast data streams to turn around and three more American users, to support the GEONETCast dissemination trial

July 2006 installation of the C-Band reference reception station in Miami,

- approval of funds by the Spanish government for the provision of reception stations in the South and Central American NMSs through WMO funds,
- provided reception station technical specifications to INM, for procurement of reception stations in Spanish speaking South American countries