

RESOLUTION ON
THE PREPARATION OF THE METEOSAT THIRD GENERATION
PROGRAMME (MTG)

Adopted at the 61st Meeting of the EUMETSAT Council
on 23 April 2007

The EUMETSAT Member States,

HAVING REGARD to the objectives of EUMETSAT, which are to establish, maintain and exploit European systems of operational meteorological satellites, and to contribute to the operational monitoring of the climate and the detection of global climatic changes,

HAVING REGARD to the EUMETSAT Convention, which establishes that mandatory EUMETSAT programmes are the basic programmes required to continue the provision of observations from geostationary and polar orbits,

BEARING IN MIND that for the accomplishment of the EUMETSAT objectives in the geostationary orbit, the first satellite of a third generation of Meteosat should be available for a launch in 2015,

TAKING INTO ACCOUNT that the way forward for the Phase A of the Meteosat Third Generation (MTG) Programme was unanimously endorsed at the 59th meeting of the EUMETSAT Council, with the understanding that, as a goal, an overall cost of the MTG Programme to Member States shall be comparable to that of MSG, for an equivalent lifetime,

TAKING INTO ACCOUNT that the descoping of the MTG requirements as presented in EUM/C/60/06/DOC/06 was endorsed at the 60th Council meeting,

WISHING to build on the results of the pre-phase A studies for the establishment of the MTG system,

TAKING INTO ACCOUNT that MTG preparatory activities are covered through the General Budget until the end of 2007, and that there is a need to ensure the continued funding of MTG activities from beginning of 2008,

FOLLOWING the roadmap for the approval of the MTG Preparatory Programme as agreed at the 60th Council meeting,

NOTING that the MTG payload complement to target in Phase B/C/D will be decided by Council by the end of the Phase A Industrial Studies,

AGREE:

- I** That the main missions of MTG should be met through a **twin** satellites configuration, respectively embarking, as main missions, the Imaging and Sounding mission, in a series of three-axis stabilised satellites, based on a common platform design.
- II** That, in order to improve the value for money of the MTG programme, every effort should be made during the preparation phase to ensure that the design lifetime of the satellites is maximised, and that overall flexibility regarding the schedule of launches is preserved.
- III** To urge ESA to initiate all necessary preparatory activities to obtain approval of their part of the programme in 2008 in order to secure data continuity in the geostationary orbit.
- IV** To task the Director-General with establishing a joint road map with ESA leading to a coordinated approval of the MTG programme by both Organisations.
- V** To task the Director-General with elaborating an MTG Preparatory Programme Proposal and related Programme Resolution, and to submit them for approval to the 62nd Council meeting in June 2007.

RESOLUTION ON

THE METEOSAT THIRD GENERATION PREPARATORY PROGRAMME

**Presented for adoption at the 62nd Meeting of the EUMETSAT Council
on 26-27 June 2007, entered into force on 25 June 2008**

The EUMETSAT Member States,

HAVING REGARD to the objectives of EUMETSAT, which are to establish, maintain and exploit European systems of operational meteorological satellites, and to contribute to the operational monitoring of the climate and the detection of global climatic changes,

HAVING REGARD to the EUMETSAT Convention, which establishes that mandatory EUMETSAT programmes are the basic programmes required to continue the provision of observations from geostationary and polar orbits,

BEARING IN MIND that for the accomplishment of the EUMETSAT objectives in the geostationary orbit, the first satellite of a third generation of Meteosat should be available for a launch in 2015,

TAKING INTO ACCOUNT that the way forward for the Phase A of the Meteosat Third Generation (MTG) Programme was unanimously endorsed at the 59th meeting of the EUMETSAT Council, with the understanding that, as a goal, an overall cost of the MTG Programme to Member States shall be comparable to that of MSG, for an equivalent lifetime,

TAKING INTO ACCOUNT that the descoping of the MTG requirements as presented in EUM/C/60/06/DOC/06 was endorsed at the 60th Council meeting,

BEARING IN MIND that the potential accommodation on MTG of the GMES Sentinel 4 payload will be considered by the EUMETSAT Council in due course on the assumption that this accommodation is feasible within the MTG System design margins and at no additional cost to EUMETSAT,

TAKING INTO ACCOUNT the Council Resolution EUM/C/61/07/Res. I on the Preparation of the MTG Programme,

NOTING the progress of the phase A studies for the establishment of the MTG System,

RECALLING that the EUMETSAT MTG activities are covered through the General Budget until the end of 2007, and that there is a need to ensure the continued funding of MTG activities from beginning of 2008,

FOLLOWING the roadmap for the approval of the MTG Programme as agreed at the 60th Council meeting (EUM/C/60/06/DOC/07),

IN ACCORDANCE WITH the Programme Proposal for the MTG Preparatory Programme contained in document EUM/C/62/07/DOC/04,

IN CONFORMITY with Articles 3, 5 and 10 of the EUMETSAT Convention,

AGREE:

- I** To establish a Preparatory Programme for a Meteosat Third Generation (MTG) commencing in January 2008 and lasting until the start of the full MTG Programme expected to be no later than mid 2010.
- II** That the mission objectives, system description and Preparatory Programme content shall be as described in the EUMETSAT MTG Preparatory Programme Definition attached to this Resolution.
- III** That the financial envelope of the Preparatory Programme shall amount to 30.0 MEUR at 2007 economic conditions, with an indicative payment profile of 11.0 MEUR in 2008, 12.4 MEUR in 2009, and 6.6 MEUR in 2010.
- IV** That, in order to improve value for money of the MTG Programme, every effort should be made to ensure that the design lifetime of the satellites is maximised, and that overall flexibility regarding the schedule of launches is preserved.
- V** To task the Director-General to maintain close contact with ESA with a view to ensuring a coordinated approval process of the MTG programme by both organisations and their respective Delegate Bodies.
- VI** To task the Director-General with elaborating a Programme Proposal for the full MTG Programme and related Resolution, and to submit them for Council consideration no later than autumn 2009.

METEOSAT THIRD GENERATION

PREPARATORY PROGRAMME DEFINITION

1 GENERAL

The Meteosat Second Generation (MSG) system is the primary European source of geostationary observations over Europe and Africa and started routine operation services in January 2004. MSG is one of the key EUMETSAT contributions to the Global Observing System (GOS) of the World Meteorological Organization (WMO). The series of four MSG satellites will deliver observations and services at least until end of 2018 (MSG-4). According to availability analyses, the first in-orbit element of the Meteosat Third Generation (MTG) system needs to be available around 2015, to ensure continuity of the EUMETSAT imagery mission.

MTG preparatory activities started end of 2000 in cooperation with the European Space Agency (ESA), following the decision of the EUMETSAT Council to proceed with a EUMETSAT/Post-MSG User Consultation Process aimed at capturing the foreseeable needs of EUMETSAT users in the 2015-2025 timeframe. This process led to the definition of the mission requirements for the MTG candidate observation missions.

2 MISSION OBJECTIVES AND CANDIDATE MISSIONS

The MTG Mission Requirements baseline for the Phase A is the result of the user consultation process, the Mission Definition Review output (spring 2006), and the requirements descoping undertaken with the MTG Mission Team until end of 2006. The selected mission concept for the MTG Phase A encompasses four candidate observation missions, which are:

- **Full Disk High Spectral resolution Imagery (FDHSI)** mission, covering the full disk with a Basic Repeat Cycle (BRC) of 10 minutes with a spatial resolution of 1 / 2 km;
- **High spatial Resolution Fast Imagery (HRFI)** mission, looking at local scales with a BRC of 2.5 minutes and a spatial resolution of 0.5 / 1 Km;
- **InfraRed Sounding (IRS)** mission covering the full disk with a BRC of 30 minutes (goal – 60 minutes threshold) and a spatial resolution of 4 km, providing hyperspectral sounding information with a spectral resolution of 0.625 cm⁻¹ in **Long Wave InfraRed** and **Mid Wave InfraRed**;
- **Lightning Imagery (LI)** mission, detecting lightning events linked to discharges taking place in clouds or between clouds and ground, over 80% of the full disk;

A priority ranking has been assigned to the MTG candidate missions with priority 1 for FDHSI and HRFI, both to be realized by one instrument, the so called Flexible Combined (FCI) imager, priority 2 for the IRS and priority 3 for the LI mission.

MTG SYSTEM CONCEPT

The MTG system concept encompasses the following characteristics:

- Space Segment based on a Twin-satellite in-orbit configuration (TSC):
 - TSC satellites (Imaging and Sounding) implemented using a common platform;
 - Use of 3-axis stabilised platforms for all required satellites;
- Development of satellites based on inheritance of commercial Geostationary platforms;
- Compatibility with more than one launcher (capability of vertical and horizontal processing);
- Maximum reuse of existing EUMETSAT Infrastructures;
- Distribution of the Ground Segment capabilities, including the assets of the EUMETSAT Satellite Application Facilities (SAF Network);
- Need to establish at EUMETSAT level (for the MTG era) a Ground Segment supporting parallel operations of the MSG and MTG Series;
- Interoperability, in terms of standardisation of the space to ground interface, supporting a possible integration into required international contexts (e.g. GEOS, GMES, etc.).

The MTG satellites will operate from the geostationary orbit at 0° longitude, this being the nominal position of the operational satellites, with additional orbital positions for the hot/active and spare satellites between 10° W and 10° E.

3 PREPARATORY PROGRAMME CONTENT

The MTG Preparatory Programme covers the EUMETSAT activities associated with the closeout of MTG Phase A in 2008 and contains for EUMETSAT the full MTG Phase B, up to the System Preliminary Design Review (PDR) planned for mid 2010.

It is assumed that all activities following the PDR will be covered under the MTG Development and Operational Programme.

Phase B will focus on consolidation of the requirements for the MTG system, and their justification via detailed analyses and trade-off, to derive necessary design elements, in line with programmatic constraints (schedule and costs). These activities will allow the system to be subsequently developed, produced, operated and maintained.

The requirements activities are formally closed by a Preliminary Design Review (PDR), which leads to the Development Configuration Baseline of the MTG system. The definition and justification activities start after the System Requirements Review (SRR) at which the system specification is baselined. Justification Files are generated by analyses, trade-offs, and Design Reports and will constitute an important element

of the documented project progress. An essential part of the work will be the analysis of risks on technical, costing and scheduling aspects.

At EUMETSAT level, the Phase B activities will encompass the overall MTG System, including the Ground Segment and all system interfaces. A further important element of the Phase B activities will consist in following-up and supporting the Space Segment activities performed by ESA.

During Phase B, the necessary cooperation agreement with ESA covering the Phase C/D of the Space Segment will be established and submitted to Council for approval.

A close interaction with users over the course of EUMETSAT Phase B activities through direct involvement of the MTG Mission Team and MTG User consultation Workshops as required will ensure the elaboration of a consolidated EURD (End User Requirements Document).

The duration of the Preparatory Programme is from 01 January 2008 until the start of the MTG Development and Operations Programme, which will cover for EUMETSAT the Phases C/D/E of the MTG Programme, assumed to be no later than mid 2010.

4 IMPLEMENTATION

The main activities planned during the MTG Preparatory Programme will consist of:

- Management and Quality Assurance (QA);
- System Engineering, as the main contribution to the planned effort and including:
 - End User/Mission Requirements baselining and Maintenance;
 - System Requirements & Design;
 - Functional Design;
 - Baselining and maintenance of Segment Level Specifications, external and internal element ICDs;
 - Operations Concept & Constraints;
 - Development Plans;
 - System Engineering Implementation;
 - System Analysis;
 - System and Segment level Reviews;
 - Prototyping of meteorological product S/W packages;
 - System Integration Verification & Validation planning.
- External System Support Studies, addressing technical and scientific topics;
- External Ground Segment Studies, related to the MTG Overall Ground Segment Architecture and its implementation approach.

RESOLUTION ON
A FOURTH EXTENSION OF THE
METEOSAT TRANSITION PROGRAMME (MTP)

Adopted at the 62nd Meeting of the EUMETSAT Council
on 26-27 June 2007

The EUMETSAT Member States,

HAVING REGARD to the EUMETSAT Convention, which states that the primary objective of EUMETSAT is to establish, maintain and exploit European systems of operational meteorological satellites, and that a further objective of EUMETSAT is to contribute to the operational monitoring of the climate and the detection of global climatic changes,

CONSIDERING that the MTP Programme was set up to ensure a continuous operational service to provide data from geostationary satellites, and to fill the gap between the Meteosat Operational Programme (MOP) and the Meteosat Second Generation Programme (MSG),

NOTING that the MTP Programme, established through Resolution EUM/C/Res. XXVII in November 1990 and extended through Resolutions EUM/C/97/Res. VII, EUM/C/02/Res.I and EUM/C/04/Res. II will end on 31 December 2009,

TAKING INTO ACCOUNT that nominal operations of the second MSG satellite started in April 2007, and that the full MSG system with its hot backup is providing the full primary EUMETSAT geostationary service from zero degrees longitude,

HAVING REGARD to the very positive impact that the Meteosat Indian Ocean Data Coverage (IODC) Services have had on operational meteorology and on climate monitoring since 1998 and to the significant contribution of the IODC satellites to the initial Indian Ocean Tsunami Warning Service, established following the Sumatra-Andaman Tsunami in December 2004,

WISHING to ensure a continuation of the IODC Services until a viable alternative for providing equivalent operational data to Member States is established,

BEARING IN MIND that existing space assets from the MTP Programme, and related ground segment infrastructure, allow for extended IODC operations,

EXPECTING that a dedicated licence fee structure for the IODC Services will generate a financial contribution from the wealthy non-Member States benefiting from these services,

WISHING therefore to further extend the MTP Operations,

IN CONFORMITY with Article 5.2(c)ii. of the Convention, which establishes that Member States may approve possible overruns of up to 10% of the overall programme envelope by a vote representing at least two-thirds of the total amount of contributions and one half of the Member States present and voting,

AGREE:

- I** To extend the MTP Programme at least until 31 December 2011, in order to cover the extension of the MTP operational service at least until 31 December 2010, and subsequent close-out activities.
- II** That the extension of the MTP operations shall cover at least the following services:
 - half-hourly imaging from 57,5°E using Meteosat-7;
 - half-hourly IODC image data dissemination;
 - Data Collection Platform acquisition support for selected projects;
 - meteorological products from 57,5°E generated by the MPEF;
 - archiving and retrieval using the UMARF.
- III** To increase the MTP Programme Envelope from 280 MEUR at 1989 economic conditions to 284,2 MEUR at 1989 economic conditions.
- IV** To task the Director-General to continue pursuing all possible avenues to identify a long-term alternative for providing and funding the IODC Services.

RESOLUTION ON
THE ENTRY INTO FORCE OF THE
METEOSAT THIRD GENERATION PREPARATORY PROGRAMME

Adopted at the 63rd Meeting of the EUMETSAT Council
on 6-7 December 2007

The EUMETSAT Member States,

CONSIDERING that the EUMETSAT Council, at its 62nd meeting on 26-27 June 2007, unanimously agreed on the contents of the programme proposal for the Meteosat Third Generation (MTG) Preparatory Programme as contained in document EUM/C/62/07/DOC/04 Rev.1,

CONSIDERING that the EUMETSAT Council, at its 62nd meeting, unanimously agreed to open the voting of Resolution EUM/C/62/07/Res.I on the MTG Preparatory Programme,

NOTING that, although all Member States have voted in favour of the above Resolution, the votes of Belgium and Spain are conditional with regard to the finalisation of national approval procedures, and that the above Resolution will only formally enter into force upon approval by all Member States,

EXPECTING that the Delegations of Belgium and Spain will be able to lift their *ad referendum* within a short period of time, and that the formal entry into force of the Resolution on the MTG Preparatory Programme will take place at the latest by 1 July 2008,

RECOGNISING the need to continue MTG preparatory activities from beginning of 2008,

AGREE:

- I** That the necessary activities under the MTG Preparatory Programme can start with effect from 1 January 2008.
- II** That Belgium and Spain will be legally obliged to contribute financially to the Programme only after finalisation of national approval procedures, and that their contributions would only become due 30 days after notification thereof.
- III** That in the MTG Preparatory Programme Budget 2008 an amount corresponding to the contributions from Belgium and Spain remains blocked until the finalisation of national procedures has been notified to the Director-General.
- IV** That if Belgium or Spain would not be in a position to confirm finalisation of national approval procedures by 1 July 2008 at the latest, those Member States who have agreed unconditionally to contribute to the programme will decide on the action to be taken.

RESOLUTION ON
THE REIMBURSEMENT OF THE PREFINANCING OF THE
HEADQUARTERS EXTENSION AND
A REVISION OF THE CEILING OF THE GENERAL BUDGET 2006-2010

Agreed at the 63rd Meeting of the EUMETSAT Council
on 6-7 December 2007

The EUMETSAT Member States,

HAVING REGARD to Article 2.5 of the Convention, which establishes that the General Budget comprises activities not linked to a specific programme, and that they shall represent the basic technical and administrative infrastructure of EUMETSAT including basic staff, buildings and equipment as well as preliminary activities authorised by Council in preparation of future programmes not yet approved,

RECALLING Resolution EUM/C/57/05/Res.I establishing the fourth ceiling of contributions for the General Budget for the period 2006-2010 at a level of M€101.8 at 2006 economic conditions (e.c.),

RECALLING that, in Resolution EUM/C/03/Res. VI on the pre-financing of the extension of the EUMETSAT Headquarters building, Council agreed to pre-finance an amount not higher than M€9.4 at 2004 e.c. from the EUMETSAT treasury under the cover of the General Budget, until Council had identified further sources of revenue, or decided to reimburse it partially or entirely from future ceilings of the General Budget,

CONSIDERING that the total amount effectively pre-financed of M€8.12 has been partially covered through unbudgeted revenue, as approved by Council, and that the currently outstanding amount to be reimbursed by Member States, as described in document EUM/C/63/07/DOC/34, is M€4.35,

CONSIDERING that the profile of planned Member States contributions to the Organisation would allow to budget the reimbursement of the outstanding amount already in 2008,

AWARE that the budgetary cover of the reimbursement requires an increase of the current contributions ceiling of the General Budget,

HAVING DUE REGARD to Article 5.2(a)iii of the Convention,

AGREE:

That the ceiling of contributions to the General Budget for the years 2006-2010 shall be increased to M€106.15 at 2006 economic conditions.

RESOLUTION ON
AMENDMENT TO THE EUMETSAT TREASURY RISK REDUCTION

**Adopted at the 63rd Meeting of the EUMETSAT Council
on 6-7 December 2007**

The EUMETSAT Member States,

RECALLING that Council, at its 58th meeting, established treasury risk reduction measures through adoption of Resolution EUM/C/58/05/Res.III,

TAKING INTO ACCOUNT that Council, at its 63rd meeting, has agreed to an amendment to Article 12 of the Financial Rules which may increase the risk of possible treasury shortages at EUMETSAT for a longer period during the annual cycle,

WISHING to enhance the mechanism established in Resolution EUM/C/58/05/Res.III through a slightly longer period of usage,

AGREE to amend AGREE II of Resolution EUM/C/58/05/Res.III as follows:

II “That this usage should be limited to the period from 1st November of a given year until **15 March** of the following year.”