
EUMETSAT Altimetry programs

- Jason-3**
- The other programs**

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OSTST meeting, Seattle, June 22nd - 24th , 2009

Following the ESA ministerial Conference in November 2008, and discussions with partners at its 66th meeting in December 2008, EUMETSAT Council agreed to propose a Jason-3 Programme and hold a Potential Participants meeting on 17 February 2009 on the understanding that :

- EUMETSAT will seek a contribution from its Member States at a level of 60 MEUR (e.c. 07) over the 9 years of the Programme (Devlpt. and Ops)
- EUMETSAT will seek written confirmation, before EUMETSAT Member States are finally deciding on the programme, that:
 - NOAA will contribute at an estimated level of 100 MEUR as planned
 - CNES will contribute at a level of 46 MEUR (in kind contribution) as planned
 - ESA will contribute at a level of 7 MEUR as per Mr Dordain's letter
 - EC will fund 25 MEUR during the operational phase of the satellite as part of the planned GMES operational budget



Jason-3 is a recurrent system from Jason-2

- It is the only way to cope with the budget and schedule and to ensure data continuity after Jason-2,
- It is the last element of the Topex/Jason series.



- **European Decision process:**
 - Key milestone : Programme Proposal approval expected in June 2009 by EUMETSAT Council, Programme Declaration frozen, opening of subscription period
 - Programme Entry into Force December 2009 (assuming 90% subscription level reached)
- **Programme development**
 - Start of Industrial activities early 2010
 - 4 months system margin (as per Jason-2)
 - Launch date in mid 2013
 - Jason-3 operational: Q4, 2013 (Jason-2 theoretical EOL: June 2013)



A number of high level requirements and constraints have been taken into account in building the Programme Proposal:

- Performances at least identical to Jason-2, same orbit parameter;
- Nominal launch date mid 2013, goal is to have a 3 to 6 month overlap with Jason-2;
- Satellite operations planned for 5 years (theoretical satellite qualification 3 years, but in orbit demonstration of 5 years achieved);
- Programme led by the operational Agencies NOAA and EUMETSAT with CNES making a significant contribution and acting as system coordinator; NASA, in conjunction with partners will support Science team activities.
- Programme approval at EUMETSAT by end of 2009;
- Funding shared between US and Europe.



Proposed Agreements Structure

- A four partner (EUMETSAT, NOAA, CNES and NASA) MOU based on the heritage from the 4 partner OSTM/Jason-2 MOU
- A Cooperation Agreement between EUMETSAT and CNES
- An agreement between EUMETSAT and ESA describing the mechanism and rules for the transfer of funds between ESA and EUMETSAT
- An Agreement with the European Commission in due course, for the operational phase
- An Agreement between NASA and NOAA



US Responsibilities

- **Project Management**
- **Launch vehicle and launch support**
- **Payload Instruments**
 - Advanced Microwave Radiometer (AMR)
 - GPS Receiver (GPSP)
 - Laser Retro-reflector Array (LRA)
- **Support to Payload instruments integration and test**
- **Ground System & Operations**
 - Satellite Operations Control Center (SOCC)
 - CDA Stations (2)
 - Mission Operation support for payload instruments
 - NRT processing
 - All product distribution and archive
 - Ground network
 - Satellite operations after handover
- **User interface**
- **Support to Science and Operational activities**

European responsibilities

- **Project Management**
- **Satellite bus including Proteus platform**
- **Payload Instruments**
 - Nadir Altimeter
 - DORIS
- **Satellite integration and test**
- **System integration & test**
- **Ground System & Operations**
 - Satellite Control Command Center (CCC)
 - Earth Terminal (1)
 - Mission Operation support for CNES instruments
 - NRT product processing, archiving and distribution
 - OFL product processing and distribution
 - All archiving
 - Ground network
 - Satellite Operations before handover
 - Navigation, Guidance, Expertise for all mission
- **System Coordination for all mission phases**
- **User interface**
- **Support to Science and Operational activities**



- The hybrid approach which comprises a Jason-3 satellite followed by a Jason-CS (Continuity of Service) satellite is the baseline.
 - Dedicated study on Jason-CS planned within the approved GMES Space Component programme following the decision of ESA CMIN-08
 - This study should provide the necessary technical and programmatic input for a decision to develop Jason-CS, at the latest by ESA-CMIN-11
 - This programme shall be developed on the same basis of cooperation as for operational meteorology and it is essential to plan for a series of operational satellites developed along the principles used for operational meteorology in Europe but within the programmatic framework of GMES
 - The future US-Europe cooperation scheme needs to be worked out



- CEOS, through EUMETSAT and NOAA, is currently developing a Mission Requirement Document at the level of the Ocean Surface Topography (OST) constellation from which the individual mission requirement (such as Jason-CS) should be derived. To this end a process of review and endorsement of the Constellation MRD by space agencies (including ESA, ISRO and SOA) and users representatives is on going.

Meeting on Thursday morning starting at 8:30 am

- The constellation MRD will not replace the individual Jason-CS mission requirements but will address points such as multi-mission products requirements, orbits, overlap between missions, etc... that needs to be addressed first at the level of the constellation
- A dedicated MRD will be prepared for Jason-CS in line with the GMES approach



- **Sentinel 3**

- The Sentinel 3 proposed concept is based on EUMETSAT being the operator of the marine mission of Sentinel 3. This includes, after completion of the in-orbit commissioning phase, the monitoring and control of spacecraft and flight operation segment, payload data acquisition, and product generation and dissemination.

- **SARAL**

- EUMETSAT would be involved in SARAL for NRT products processing and dissemination in synergy with Jason-2.
- Approval by Member States is expected at the end of 2009



