



Sentinel-3 Mission Performance Center: paving the way of high-quality controlled data

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As part of the Sentinel-3 mission and in order to ensure the highest quality of products, ESA and EUMETSAT set up the Sentinel-3 Mission Performance Centre (S-3 MPC). This facility is part of the Payload Data Ground Segment (PDGS) and aims at controlling the quality of all generated products, from L0 to L2. The S-3 MPC is composed of a Coordinating Centre (CC), where the core infrastructure is hosted, which is in charge of the main routine activities (especially the quality control of data) and the overall service management. Expert Support Laboratories (ESLs) are involved in calibration and validation activities and provide specific assessment of the products (e.g., analysis of trends, ad hoc analysis of anomalies, etc.). The S-3 MPC interacts with the Processing Archiving Centers (PACs) and the marine centre at EUMETSAT.

The S-3 MPC service contract is currently carried out by 23-partners consortium led by ACRI-ST, France. The S-3 MPC contract was kick-offed in September 2014 with a first set-up phase of 12 months. After the launch of S3-A (planned before end of 2015), the S-3 MPC will start its second phase to support commissioning activities. Then a routine operation phase of up to 5 years will begin, including the commissioning activities related to S3-B.

The main S-3 MPC activities are:

- Calibration: to update on-board and on-ground configuration data in order to meet product quality requirements.
- Validation: to assess, by independent means with respect to the methods and tools used for calibration, the quality of the generated data products. Validation functions provide feedback to calibration and data processors corrective and perfective maintenance activities.
- Verification: to confirm that the specified requirements on a system have been satisfied.
- Quality Control: to routinely monitor the status of the sensor and to check if the derived products (Level 0, Level 1 and Level 2) meet the quality requirements along mission lifetime.
- Algorithm Maintenance and Evolution: to maintain the algorithm documentation baseline and to perform the necessary corrections/evolutions as agreed with the mission management and to validate them.
- System performance monitoring: to monitor the end-to-end performance of the Sentinel-3 relevant system operations and assess them with respect to the operations plan.

Due to the high volume of data and in order to facilitate the analysis to be performed by the expert scientists, an innovative facility is being implemented as part of the MPC/CC. We propose to all ESLs to use a collaborative platform which is a secured IT environment mixing hardware and software elements enabling users to work remotely. The main benefit is that they don't need to download huge amount of data by performing their processing and analysis where the products are located. First tests of the platform have been successfully done in last December.

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