

IASI-NG operational L1C processing chains: development, validation and products

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ABSTRACT

The goal of the IASI-NG system is to produce data for the meteorological, atmospheric chemistry and climatology user's community. L1C product is the first level of product that will be generated continuously and distributed to end-users.

L1C processing is starting from L0 raw products and generates L1C products containing calibrated spectra and images (at radiometric and spectral level) and additional information for further spectra exploitation (geolocation, classification, masks).

CNES has developed several L1C operational processors in order to generate L1C products in the frame of IASI-NG mission:

- L1CPOP (L1C Product Operation Processor) for the global and regional mission, that will be integrated in the EUMETSAT PDAP (Payload Data Acquisition and Processing) ground segment to support the routine phase
- L1CLOP (L1C Local Operation Processor) for the local mission, that will be integrated in SAF (Satellite Application Facilities) ground stations
- L1CTOP (L1C Temporary Operational Processor) extending the L1CLOP to the global mission, that will be integrated in the EUMETSAT T-GPS (Temporary Ground Processing Segment) to support the commissioning of METOP-SGA-1 satellite before the setting of L1CPOP/PDAP.

This presentation describes:

- The architecture of L1CPOP in EUMETSAT PDAP ground segment based on a Big Data in-memory technology
- The architecture of L1CTOP in EUMETSAT T-GPS based on a simplified file exchange solution
- The functional and scientific L1C validation process performed thanks to the use of CNES simulation tools and real IASI-NG data from instrument tests
- The structure and content of L1C products based on NetCDF-4 format