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Prepared by EUM
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EUMETSAT REPORT ON AVAILABILITY OF IASI LEVEL-1 PRODUCT EXTRACTION SOFTWARE FOR DIRECT READOUT

This paper provides short summary information on the availability of IASI Level-1 processing software for direct readout.

A software package called OPS-LRS, which is based on the operational global IASI Level-1 processor software, developed by CNES and operated routinely by EUMETSAT in the Core Ground Segment (CGS), was modified and maintained for local processing by the EUMETSAT Satellite Application Facility on Numerical Weather Prediction (NWP SAF), hosted by the Met Office UK. Users can obtain the software in the framework of the AAPP package from the NWP-SAF via their web-page. A license agreement needs to be signed.

The OPS-LRS software performs the processing from Level 0 data to Level 1c products.

Since 2011, the software will be maintained by EUMETSAT in the Core Ground Segment. For that purpose, the software was made compatible with a Linux environment and is now identical to the operational global version. The distribution to Users will continue to be facilitated by the NWP SAF.

Action/Recommendation proposed: Take note.

EUMETSAT Report on availability of IASI Level-1 Product Extraction software for direct readout

1 INTRODUCTION

On the Metop satellites the Advanced High Resolution Picture Transmission (AHRPT) service provides to local Users a direct readout data stream at level 0 which can be received with the appropriate AHRPT hardware. Data from the Infrared Atmospheric Sounding Interferometer (IASI) are part of the AHRPT data stream.

Direct readout users need to perform the required processing from Level 0 to higher processing level themselves – for the global data stream this task is performed at the EUMETSAT EPS (EUMETSAT Polar System) Core Ground Segment, at EUMETSAT headquarters in Darmstadt, Germany.

This paper provides summary information on the availability of IASI Level-1 processing software for direct readout.

2 IASI level-1 Processing Software

A software package called OPS-LRS has been available to users since 2006 for the processing of IASI data from Level 0 to Level 1c. The package is based on the operational global IASI Level-1 processor software, developed by CNES and routinely operated by EUMETSAT in the Core Ground Segment. OPS-LRS was modified and maintained for local processing by the EUMETSAT Satellite Application Facility for Numerical Weather Prediction (NWP SAF), hosted by the Met Office UK. Users can obtain the software in the framework of the AAPP (ATOVS and AVHRR Pre-Processing Package), which was developed under EUMETSAT co-ordination and is maintained and distributed by the NWP SAF. AAPP and OPS-LRS are available via the NWP SAF web-page. A license agreement needs to be signed.

2.1 OPS-LRS software

The OPS-LRS software performs the processing from Level 0 data to Level 1c products, i.e. from raw instrument data to calibrated, Earth-located and apodised radiance spectra.

The software is written in C and C++.

The software interacts with the AAPP software, which provides the necessary AVHRR level 1b product required to Earth locate the IASI pixels and to provide the radiance cluster analysis and cloud characterisation for each pixel.

For more details refer to [RD1].

The global OPS software makes use of a context file, which contains all historic data the processing requires (in particular at dump start/end). This context file is saved in the Core Ground Segment before the operational processor stops and is opened and used when the processor starts again. This is not possible for local processing, and forces to use an empty context file. This has the consequence to cause some minor differences between local and global spectra. Details are discussed in [RD2]. It was shown the results were identical, provided the inputs (including the context files) were identical.

2.2 Latest developments

Since 2011, the latest version of OPS-LRS has been available in the EUMETSAT Cal-Val environment, and has been validated there. For that purpose, the OPS-LRS software was made compatible with a Linux 32 bit environment and it is now identical to the operational global version. The distribution to Users will continue to be facilitated by the NWP SAF in the framework of the AAPP.

2.3 Availability

User can obtain the software via the NWP SAF web-page www.nwpsaf.org, or (<http://research.metoffice.gov.uk/research/interproj/nwpsaf/index.html>) under the item "Deliverables".

3 CONCLUSIONS

Software is available to process local IASI data from Level 0 to Level 1c, and can be obtained from the EUMETSAT NWP SAF in the framework of the AAPP software distribution. The code is now identical to the operational software and is maintained by EUMETSAT. Delegations are invited to take note.

4 References

- [RD1] OPS-LRS User Manual, NWPSAF-MF-UD-006, NWP-SAF, 2010
- [RD2] Philippe Marguinaud and Pascal Brunel, 2007: Technical Note: Use of the OPS software for local processing and comparison with global IASI data, NWPSAF-MF-TR-002.