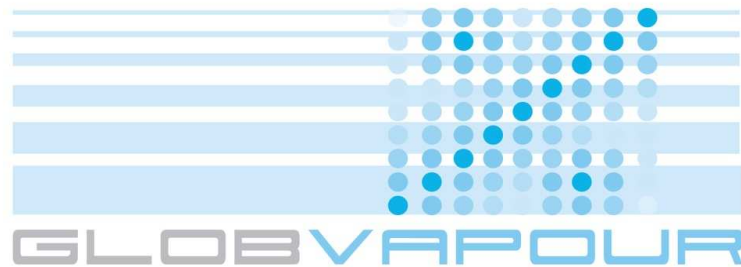




## DUE GLOBVAPOUR

### Monthly Progress Report

April 2010



GLOBVAPOUR

Issue 1, Revision 0

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ESRIN/Contract No.:

22696/09/I-OL

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**Monthly Progress Summary - ESA DUE GlobVapour**

ESRIN/Contract No.: 22696/09/I-OL

Reporting Period: 01.04.2010 - 31.04.2010

**Main Actions:** Submission of revised versions of relevant documents, Progress in the development of the SSM/I 1D-Var scheme and in the IASI inter-comparisons, Presentation of GV on ITSC-17 conference, Acquisition of validation data and development of validation tools proceeded.

**Activities, Achievements and Status - Phase I****Management and Coordination****WP 001 - Management and Coordination (M. Schröder)**

- The Requirements Baseline Document (RBD), Data Acquisition Plan (DAP), Software Development Plan (SDP), and Technical Specifications Document (TSD) were updated and re-submitted to ESA after revision.
- Nadine Schneider started to work on the GlobVapour project on 12 April 2010.

**WP 010 - Promotion (M. Schröder)**

- The ESA DUE GlobVapour project was presented at the ITSC-17 conference in Monterey, USA by DWD including firstly the project's objectives, products and current status, and secondly, first results of the IASI retrieval assessment.

**Consolidation of Requirements and Specifications****WP 110: Requirements Baseline (R. Saunders)**

- WP completed.

**WP 120: Technical Specifications (M. Schröder)**

- WP completed.

**WP 130: Summary of existing algorithm comparisons (M. Schröder)**

- The documentation of different existing algorithms and validation efforts has started.

**Creation of Diagnostic Data Set and validation tools****WP 210: Collection and procurement of validation data (M. Schröder)**

- Acquisition of IASI L2 data for January and August 2008 as part of the IASI Assessment has been completed.
- Acquisition of L2 & L3 AIRS, L2 & L3 MODIS and L3 ATOVS data for the prototype months (Jul/Aug 2007, Jan/Aug 2008) has been completed.
- Data from three selected ARM sites have been downloaded.

**WP 220: Collection and procurement of satellite data (M. Schröder)**

- Acquisition of ERA-Interim data for IASI Assessment, as well as for MERIS-SSM/I and (A)ATSR production, has been completed for the prototype months.

**WP 230: Development of validation tools (M. Schröder)**

Last saved by Marc Schröder on May 7, 2010

- First software tools have been developed for reading ARM site measurement files containing radiosonde and ground-based microwave radiometer and for validation.
- Development of validation tool for AIRS and MODIS data, based on the L2 reading routines from NASA, implementing grid projection mechanism, has been started.

## Development of Prototype Product

### WP 310: Development of GOME/SCIAMACHY/GOME-2 retrieval scheme (D. Loyola)

- The fine-tuning of the parameter settings for SCIAMACHY/UPAS is finished; good agreement has been reached compared to the scientific prototype from Mainz.

### WP 320: Development of MERIS retrieval scheme (R. Preusker)

- The MERIS optimal estimation algorithm has been finalized. Two forward models have been designed, one based on an artificial neural network, the other one is an analytical single scattering model. Both versions are currently tested.

### WP 330: Development of SSM/I - MWR retrieval scheme (M. Schröder)

- The implementation of the NWP-SAF 1D-Var scheme for SSM/I into the prototype environment has been started. Computational costs of the algorithm are currently evaluated. Corresponding optimization has started.
- Information about the MWR instrument's characterization were collected. These were committed to UK Met-Office for the production of convoluted transmittance files needed in RTTOV for the simulation of MWR measurements.

### WP 340: Establishment of consistency of MERIS and SSMI (M. Schröder)

- Starts June 2010

### WP 350: Development of ATSR/AATSR retrieval scheme (R. Preusker)

- Starts June 2010

### WP 360: Assessment of existing IASI retrieval schemes (M. Schröder)

- The development of DWD's IASI retrieval has nearly been finished. The scheme is currently being implemented on a regular Linux computer at DWD. Additional processing steps, as for example the AAPP pre-processing software and the version 9 of the RTTOV radiative transfer model, are also being implemented.
- EUMETSAT's IASI L2 data has been compared to measurements of two ARM sites. Preliminary results were presented at the ITSC-17.
- The IASI retrieval code from DLR has been further optimised. It was tested using real measurement data (AIRS, IASI) and the spectral window selection and concentration profile discretisation were investigated.

### WP 370: Development of merged IASI/SEVIRI profile product (M. Schröder)

- Starts June 2010

### WP 380: Production and validation of prototype data sets (M. Schröder)

- Starts September 2010

### WP 390: Development of processing environment (U. Krämer)

- Starts May 2010

## Next Steps and Schedule

- Completing the implementation of DWD's IASI retrieval scheme including testing and tuning of the algorithm, and the application of the scheme to produce water vapour retrieval products for the IASI assessment.
- Adding more content to the GlobVapour website.
- Continuing Summary of existing algorithm comparison and validation reports, Product Validation Plan, Ground Data Document and Diagnostic Data Set.
- Organising the next progress meeting.
- Continuing acquisition of data for production and validation.
- Finalizing the IASI assessment plan.
- Development of tools for data reading and validation.

## Achievements

- Presentation of GlobVapour at ITSC-17.
- Review comments implemented into RER documents.

## Problems encountered and solutions proposed

- The occurring computational cost for the production of some IASI retrieval schemes leads to a delay of the IASI assessment.
- Development of a 1D-Var retrieval scheme for MWR potentially delayed due to problems in acquiring instrument specifications.