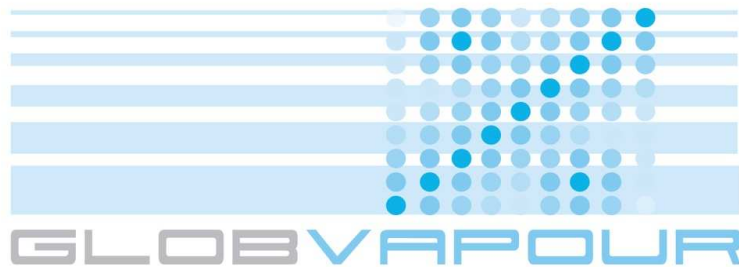




DUE GLOBVAPOUR

Monthly Progress Report

January 2011



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Monthly Progress Summary - ESA DUE GlobVapour

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

Reporting Period: 01.01.2011 - 31.01.2011

Main Actions: PMP version 2.0 submitted (includes AATSR, IASI+SEVIRI, IASI assessment plans); Meeting on processing system between DWD and BC; first algorithm updates included; update of other documentation; progress in all development WP

Activities, Achievements and Status - Phase I**Management and Coordination****WP 002 - Management and Coordination (M. Schröder)**

- Following recommendations from PM2 the PVRs and ATBDs were updated. Version 1.0 updates to PVRs are completed and submitted to ESA, ATBDs are almost completed.
- The PMP version 2 has been drafted and submitted to ESA. Attached are the plans on AATSR, IASI+SEVIRI and IASI assessment.
- During a meeting between BC and DWD details of processing system were discussed. The way forward was outlined in large parts and BC started to gather required information already. At present, it is foreseen to implement the SSM/I+MERIS processor first.
- In a meeting with EUMETSAT the project supported drafting the agenda for the joint GRP/ ESA DUE GV meeting in March.
- The User Group has three new members from the US.

WP 020 - Promotion (M. Schröder)

- Preparations for the GlobVapour Newsletter Vol. 1/2011 started.
- The GlobVapour webpage was updated and revised, with a User Help Desk initialised and with data access via ftp designed and included. First user registered. News section updated with GOME article.
- The project submitted 6 (tbc) abstracts to the joint GRP / ESA DUE GV Meeting in March 2011.
- Abstract 'ESA DUE GlobVapour water vapour products: retrieval methods and validation' accepted by EGU for Session HS1.4 (EO for Water Cycle Science).

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

- Processing AIRS and MODIS L3 data for test months (2006-2008) ongoing.
- Preparation for Level 2 validation ongoing.

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

- Procurement of satellite data for test products nearly completed. Due to updated AATSR plans the acquisition of more AATSR data just started.

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

- Preparation for Level 2 validation ongoing. Tool to validate diurnal cycles of IASI+SEVIRI against ground-based MWR observations is under development.
- IDL tools for validation of L3 products upgraded now including a.o. standardised routines for collocation and validation statistics, and generation of PNG plots for AIRS, MODIS and ATOVS.

Development of Prototype Product

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

- At last PM a few adaptations to the current version were discussed which are currently under development.
- L3 ATBD updated following recommendations from PM2.

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

- Above the dark ocean, the ratio of MERIS bands 15 and 14 is strongly influenced by atmospheric scattering. In order to correct this effect, the deviation of the observed reflectance in band 14 from the reflectance calculated for a rough ocean surface (Cox and Munk, 1956) is used to estimate the aerosol loading for each individual pixel. The Cox and Munk reflectance and the derived aerosol loading are then used to determine and correct the influence of atmospheric scattering on the measured band ratio. The method is expected to eliminate the strong dry bias of TCWV in the coastal area.
- At last PM it was decided to analyse the adjacency effect. This effect is not the cause for the previously observed bias at coastal areas..

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

- Update of L2 to L3 processor in order to include F13 and F14
- Update of 1D-Var; it includes new netcdf read routines for updated HOAPS.

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

- Implementation of input from WP 320 and WP 330 almost finished.

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

- Radiative Transfer Modelling (RTM) for AATSR sensitivity studies.
- RTM for AATSR look up tables.
- Assessment of a-priori and first guess datasource also using NCEP.
- AATSR data acquisition started.

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

- KIT and NOAA have been contacted. KIT will not be able to submit data in 2011 while NOAA intends to submit data in March 2011. Both is not considered to be critical.

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

- A draft proposal on future activities has been formulated and submitted to ESA on 10 January 2011. Efforts towards quality assessment started.

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

- All combined SSM/I+MERIS and GOME-2 prototype months are currently reprocessed using improved SSM/I+MERIS products.
- All PVR version 1.were updated in agreement with review comments of PM2 and has been submitted.

- Integration of total column of H₂O from COSMIC4 water vapour profiles, in preparation to a comparison with Total Column H₂O from GOME-2

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

- 4 chains drafted for SSM/I-MERIS, GOME-SCIA-GOME-2, IASI-SEVIRI, and (A)ATSR in a TN for internal discussion and clarification.
- Internal status meeting DWD-BC at 25.01.2011 to initiate clarification of final GlobVapour processing chains and of scope of stand-alone processing system.
- Definition of chains with DWD for SSM/I and IASI-SEVIRI ongoing, with FUB for MERIS and DLR for GOME/SCIA-GOME-2 initiated. The development of the processing environment is ongoing.

Processor Development and Test Product**WP 410: Development of GOME/SCIAMACHY/GOME-2 processing system (D. Loyola)**

- The WP has been started, and the evaluation is ongoing.

WP 420: Development of MERIS-SSM/I processing system (M. Schröder, R. Preusker)

- The WP has been started, and the evaluation is ongoing. First information on chain definition submitted.

WP 430: Development of AATSR processing system (R. Preusker)

- The WP has been started, and the evaluation is ongoing. Note the updated plan for AATSR.

WP 440: Development of IASI processing system (M. Schröder, R. Saunders)

- The WP has been started, and the evaluation is ongoing. Note the proposal on IASI-SEVIRI.

WP 450: Development of IASI-SEVIRI processing system (M. Schröder)

- Not yet started. Note the proposal on IASI-SEVIRI.

WP 460: Production and validation of test data set (M. Schröder)

- Reprocessing of prototype months for SSM/I + MERIS started.

WP 470: Development of stand alone processing system (U. Krämer)

- The WP has been started, and the evaluation is ongoing.

Development of Final Product**WP 510: Production and validation of final data set (M. Schröder)**

- Not yet started.

WP 520: Update of PS and System Delivery and Test Application at ESRIN (U. Krämer)

- Not yet started.

Scientific Exploitation**WP 610: Comparison of GlobVapour Products to Climate Model Output (M. Ringer)**

- Comparisons are ongoing.

WP 620: Alternative Ways of Climate Model Evaluation (M. Ringer, R. Saunders)

- The WP has been started, and the evaluation is ongoing.

WP 630: Establishment of the Scientific Exploitation Plan (R. Saunders)

- The SEP has been drafted - structure and contents are under discussion and topic for PM3.

Next Steps and Schedule

- Minor adaptations to documents.
- Finalise retrieval algorithm improvements and continue processing of test products.
- Plan next meeting and User Workshop.
- Intensify validation efforts, in particular consider Level 2 validation and inter-comparisons.
- Decide on proposal on IASI+SEVIRI and assess added value of merged IASI+SEVIRI product.
- Develop processing systems.
- Continuous development on all running WP.

Achievements

- Webpage now includes interface to data and an updated news section on GOME.
- ATBDs and validation reports in near-final version.
- Several abstracts submitted to EGU and GRP/ESA DUE GlobVapour Meeting.
- The bias at coastal areas in the combined SSM/I+MERIS product could be removed through proper consideration of aerosol impact on reflection.

Problems encountered and solutions proposed

- The IASI assessment is on-going as mutually agreed between the project and ESA.
- Following decisions at PM2 a proposal on how to proceed with the IASI+SEVIRI product was drafted. It is proposed to carry out high-temporal resolution comparisons against ground-based microwave observations from Lindenberg. It is likely that the added value on monthly scales is not significant which will also be assessed. At PM3 it will likely be decided on how to proceed with this product.
- On PM2 a few adaptations to the retrieval schemes were proposed. As the implementation requires some efforts uncritical delays in processing development are expected at this stage. However, further updates would be critical.
- At PM3 it needs to be discussed on how to proceed with SSM/I+MERIS TCWV over coastal areas. However, it seems that this issue has been solved.
- The project and the GEWEX Radiation Panel jointly carry out a meeting in March 2011. The meeting, its discussions and the assessment plan might strongly affect the project. It might give reason for internal discussions which might affect future activities of the project.
- On 30 November 2011 the project will be finished. It is likely that scientists working on temporal contracts will leave the project before November 2011. It is unlikely that for the remaining time new scientists can be recruited.