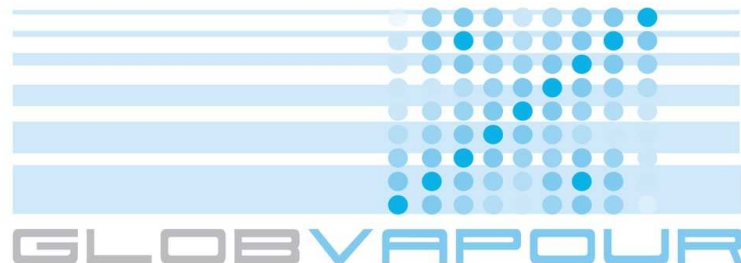




DUE GLOBVAPOUR

Monthly Progress Report

May 2011



GLOBVAPOUR

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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: 01.05.2011 - 31.05.2011

Main Accomplished Actions:

- Provision and implementation of SSM/I L2, MERIS L2 and SSM/I+MERIS L3 processors to the EODAPS-GV processing system and subsequent testing
- Continuation of validation of the test products for SSM/I and MERIS L3 and GOME-2 products
- Validation of IASI+SEVIRI L2 products against MOL data

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

- Organization of the next progress meeting (PM-4) in Berlin (FUB) started.
- Organization of GlobVapour User Consultation Meeting has started. It will take place in Oslo during the EUMETSAT Satellite Conference 2011 (afternoon of 8th September). Invitations to users/experts will be send out soon.

WP 020 - Promotion (M. Schröder)

- Preparations for the GlobVapour Newsletter Vol. 2/2011 are ongoing.
- Minor webpage updates of e.g.user group.
- User Group activities; there are two new users:
 1. Christine Radermacher, christine.radermacher@zmaw.de, Max Planck Institute for Meteorology
 2. Verena Gruetzun, verena.gruetzun@zmaw.de, Max Planck Institute for Meteorology
- User change:
 1. Johannes Quaas:
former: MPI-HH,
current: johannes.quaas@uni-leipzig.de, Leipzig Institute for Meteorology (LIM)

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

- Started acquisition of additional GUAN and ARM data for validation of final products.

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

- Nothing to report.

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

- Nothing to report.

Development of Prototype Product

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

- A test dataset for GOME-2 (using the latest cloud screening) was delivered to DWD

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

- Additional validation for MERIS L2 results has been done against AERONET to RS, GPS and MWR

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

- Nothing to report.

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

- Nothing to report.

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

- Nothing to report.

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

- Based on the previously reported extension of the evaluation software for the IASI assessment, new comparisons have been made and been analysed. The evaluation now focuses on the statistics considering all months. Due to the discussion during the GEWEX water vapour workshop in Frascati in March, the intermediate EUMETSAT IASI v5 product are excluded from the assessment.
- Latest results of the IASI assessment will be shown at the next GlobVapour Progress Meeting.

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

- Tool to validate diurnal cycles of SEVIRI single-sensor product, IASI single-sensor product and IASI+SEVIRI merged-sensor product against ground-based MWR observations is modified after first results. Currently: analysing results

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

- Nothing to report.

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

- Development of concurrent processing for stand-alone processing system continued.
- Prototype for control of the MERIS-SSM/I chains with dummy processors finished.

Processor Development and Test Product

WP 410: Development of GOME/SCIAMACHY/GOME-2 processing system (D. Loyola)

- The development of the processing system is ongoing.

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

- The development of the MERIS-SSM/I processing system was finalised for the Test Phase.
- The SSM/I 1D-VAR L2 processor was delivered to BC. Existence of some problems to let the processor run at BC.
- MERIS L2 processor was delivered to BC
- The SSM/I+MERIS L2 to L3 processors was delivered to BC. There, it was installed successfully.

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

(The following items are according to the AATSR work plan for phase 2)

- The AATSR-TCWV breadboard (idl) had been finalized:
 - (1) In march it was limited to 2 (day) or 3 (night) Nadir channels;
 - (2) Now it is using forward and Nadir consistently. This leads to less valid pixel (valid = residual chi square is small) probably because of forward-Nadir miss-location;
 - (3) test scenes have been re-calculated and again compared to GHRSSST and SSMI
- The Look up table, that is basis for the forward operator F in the TCWV retrieval over Ocean has been re-calculated and extended:
 - (1) Up to now the calculations were based on AFGL standard profiles;
 - (2) new principal-profiles of temperature and humidity have been extracted from 2200 GFS global datasets (between Aug. 2006 and Feb. 2011);
 - (3) simple cloud filtering of GFS data à 25 Mio profiles;
 - (4) 6 classes of profiles have been created, according to the surface temperature (between -3°C and 35°C). The amount of classes could be increased immediately, if ongoing sensitivity studies indicates a need; (5) within this classes extreme values (95% and 5% percentiles) have been identified, the corresponding RTM-simulations are used for the model uncertainty quantification
- The sensitivity and information content studies have been re-done, using the new LUTS (but the results are the almost same, finally)
- AATSR data has been collected:
 - (1) FUB had already access to a ftp-site “ats-merci-uk.eo.esa.int”, where AATSR data can be found;
 - (2) coded some scripts to actually duplicate the AATSR L1B data on FUB server, since the esa access appears to be reliable, but (to) slow;
 - (3) download is ongoing
- Calculation of the 4 month prototype data set has been started
- Writing of relevant documents (ATBD, validation report) is ongoing

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

- 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)

- The MERIS-SSM/I test data set (2006-2008) has been completed at DWD (SSM/I) and at FUB (MERIS). Monthly means (MM) and Daily Composites (DC) for each 15th are available on ftp server through www.globvapour.info.
- The GOME/SCIAMACHY/GOME-2 test data set has been completed for 2007 and 2008; MM are available on ftp server.
- Validation and inter-comparison of SSM/I+MERIS products for the test years (2006-2008) against the diagnostic data set (DDS) was performed and is included in PVR 2.0.

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

- Reception and installation of first version of SSM/I processors from DWD for : L2 (1dvar) and L3 (aggregation)
- Successful compilation and generation of a first test product
- Standalone processing system design document started

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)

- Structure and content of the SEP are under discussion and will be topic during PM-4.

Next Steps and Schedule

- Finalization of Product User Guide (PUG) for test products
- Acquisition of auxiliary data (ERA-Interim) for processing of final products for SSM/I and MERIS
- Acquisition of validation data to be used for evaluation of final products.
- Organization of 4th Progress Meeting (06 - 07 July, FUB)
- Organization of User Consultation Meeting (Sept., Oslo) including invitations to users and experts
- Continuous developing and updates on the initial processing systems for the SSM/I L2 production after feedback loop with BC
- Continuous development on all running WPs.

Achievements

- Finalization of the production of the test products for SSM/I+MERIS covering 2006-2008. (enabling access via GlobVapour webpage and DWD ftp-server)
- Finalization of and enabling access to GOME-2 test products (webpage/ftp-server)
- Delivery of the SSM/I L2 and L3 processing systems (version 1) to BC.

Problems encountered and solutions proposed

- The GOME/SCIAMACHY/GOME-2 test products are incomplete (not yet covering 2006) due to the start of GOME-2 measurements in 2007 and the missing assimilation of SCIAMACHY in the dataset. The completion of the test products is currently being worked on.
- For a few dates the ARM observations of ground-based microwave radiometer and radiosondes are not completely available and cause gaps in the validation of the test products, when using ARM as reference. The gaps are small and are judged to not lead to a degradation of the representativeness of corresponding evaluation.

- The DLR IASI retrieval data collocated to the Lindenberg site was to be included in the IASI assessment. Unfortunately, the delivered NetCDF files were found to be erroneous. and not readable. One further iteration with DLR will be necessary.
- Due to the large disagreement of the availability of IASI data and due to the relative strict clear-sky criteria used, the total number of point in time for the various retrieval provide a valid retrieval result is limited. Therefore, it was decided to base the IASI retrieval evaluation on statistics taken over all IASI assessments months per reference site, instead of separating the different months. This now reveals a more mature picture within the inter-comparisons.