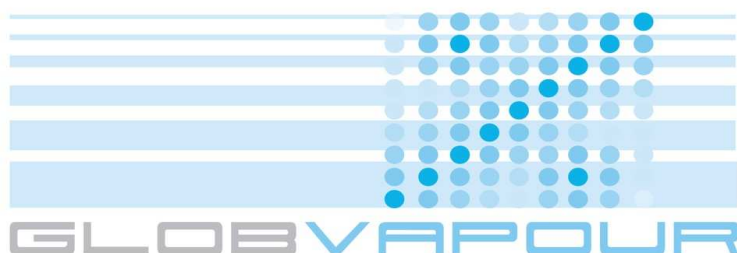




DUE GLOBVAPOUR

User Consultation Meeting 2

Minutes of Meeting



Issue 1 Revision 0

25 November 2011

Project nr: ESRIN/AO/1-6090/09/I-OL

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Participants

GlobVapour Consortium:

[BB] Bojan Bojkov (ESA)

[MS] Marc Schröder (DWD)

[MSt] Martin Stengel (DWD)

[HG] Hans Gleisner (DMI)

[RS] Roger Saunders (MetOffice)

[NS] Nadine Schneider (DWD)

[TW] Thomas Wagner (MPI-Ch)

GlobVapour User:

[TA] Thomas August (EUMETSAT)

[EO] Estelle Obligis (CLS)

[RB] Ralf Bennartz (UWisc)

[CR] Christine Radermacher (MPI-HH)

Guests:

[AA] Axel Andersson (MPI-HH)

[MB] Michael Borsche (MPI-HH)

[KF] Karsten Fennig (DWD)

[RH] Rainer Hollmann (DWD)

[KH] Kenneth Holmlund (EUMETSAT)

[JS] Jörg Schulz (EUMETSAT)

[TB] Thomas Blackmore (MetOffice)

[JE] John Eyre (MetOffice)

[PF] Pierre Fritzsche (DWD)

[XC] Xavier Calbet (EUMETSAT)

[RK] Rigel Kivi (FMI)

Agenda

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|------|-------------|--|----------------------------|
| (1) | 14:00-14:05 | Welcome | Schröder, Saunders, Bojkov |
| (2) | 14:05-14:20 | GlobVapour Overview | Schröder |
| (3) | 14:20-14:30 | Workshop motivation+objectives | Saunders |
| (4) | 14:30-15:00 | Comparison of GV products with climate model output | Saunders |
| (5) | 15:00-15:30 | Evaluation of GV TCWV products | Bennartz |
| (6) | 15:30-15:55 | GV MWR products for altimetry | Obligis |
| | 15:55-16:20 | <i>Coffee break</i> | |
| (7) | 16:20-16:40 | First applications of GV products at MPI-HH | Radermacher |
| (8) | 16:40-17:20 | Status of comparison of IASI retrievals | Stengel |
| (9) | 17:20-17:50 | Feedback to the GV IASI assessment | August |
| (10) | 17:50-18:20 | Upcoming reference data for profile validation:
CFH | X. Calbet |
| (11) | 18:20-18:40 | Final discussions | All |
| (12) | 18:40-18:50 | Wrap-up | Schröder, Saunders, all |
| | 18:50 | <i>End</i> | |

Top	Issue	Com	Cat	Content	Actionee	Ref.	Status	Deadline
1.	Opening	MS, BB, RS	I	MS, BB and RS opened the meeting and welcomed all participants. Main aim of the UCM2: Get feedback from the Users.		Item 1		
2.	Presentation	MS	I	<i>GlobVapour Overview</i> MS gave a short overview of the project and related activities. Among others, he mentioned the consistency checks of the SSMI+MERIS product and validation results of all three products (GOME/SCIA/GOME-2, SSMI+MERIS and AATSR).		Item 2		
3.	Discussion	TW		TW commented that the homogenisation of GOME-family products is a function of lat/lon. For Europe homogenisation is not necessarily needed.		Item 2		
4.	Action #1	TW	A	Metadata of GOME should contain in field 'comment' that it is a daylight only product.	TW	Item 2		15 Oct 2011
5.	Presentation	RS	I	<i>Workshop Motivation and Objectives</i> RS explained in his talk why the need of a long-term TCWV dataset is important for climate modelling		Item 3		
6.	Presentation	RS	I	<i>Comparison of GV products with climate model outputs</i> RS presented results from Mark Ringer: the comparisons of GV products with reanalyses and other SSM/I derived products show larger differences compared to GOME than to SSMI+MERIS products. The models seem to have problems in SE-Asia region with the Met Office climate model in particular showing large underestimates of TCWV compared to GV		Item 4		

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				<p>products and reanalyses.</p> <p>The CMIP5 multi-model mean vs. observations shows larger differences above ocean than land in summer months and differences in north pacific and east Asia relative to ERA Interim and GlobVapour products. The results for the mid-latitudes are generally smaller (in absolute terms) and the spread of model is generally larger in the tropics.</p> <p>It might be that some differences evident in N. Africa and Asia during summer are caused by different treatment for aerosols.</p> <p>He ended with a summary of how we intend to use GV products to validate climate models.</p>				
7.	Discussion	BB, MS, RS		<p>Question 1 (BB), concerning absolute terms on units: Wouldn't it be better to use percentage differences because in some regions the values are very small? -yes</p> <p>Question 2 (BB): How long should be a data period you need for model comparisons? - 6 years as for the SSM/I+MERIS product is valuable for process studies, e.g., El Nino or the monsoon -15 years minimum are needed to start evaluation of long-term behaviour.</p> <p>Question 3 (BB): Do you use the additional information which are provided? E.g. uncertainties? -yes uncertainties are vital for climate applications</p>		Item 4		

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				<p>Question 4 (MS):</p> <p>Could the comparisons between CMIP5 model output and GV products be prepared for publication in AR5 IPCC?</p> <p>- yes, this is foreseen but timeline can be critical.</p> <p>Following this, it was further decided that the SSM/I+MERIS product will be made available to CMIP5.</p> <p>The general aim is to get the SSM/I+MERIS product mentioned in the IPCC AR5 report and available to the modellers.</p>				
8.	Action #2	RS	A	Use also percentage for model evaluation	MR	Item 4		15 November 2011
9.	Action #3	RS, MS	A	Initiate communication with CMIP5 community with the aim to provide the SSM/I+MERIS data set for CMIP5 evaluation.	RS, MS	Item 4		15 October 2011
10.	Presentation	RB	I	<p>Evaluation of GV TCWV products</p> <p>RB talked about the advantages and disadvantages of GV products.</p> <p>General comments were: Standard tools can be used due to standard data format.</p> <p>Valuable data sets are made available by GV.</p> <p>He favours the combination approach over merging approaches, that is, it is advantageous to keep the individual sensor products and errors and make use of</p>		Item 5		

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				<p>the different spatial (or temporal) coverage.</p> <p>Approaching IPCC is recommended.</p> <p>Full error information should be included in the products (retrieval errors and std dev).</p> <p>It was indicated that (small) biases in the MERIS product might be caused by water vapour continuum absorption.</p> <p>RB pointed out the differences of the sensors:</p> <p>IR (MERIS): - clear sky only, not above ocean except in sun glint</p> <p>MW (SSM): - all sky, over ocean only</p> <p>RB found, that the change in WV and predicted change exhibits good correlation. The SSM and MERIS products might exhibit systematic differences caused by an all sky vs. clear sky sampling. By analysing MW data he found an average bias of 2 kg/m² between clear sky and all sky products.</p> <p>Finally he has summed up that the SSM/I+MERIS data set combines the two most accurate sensors.</p> <p>How can the data set be maintained?</p>				
11.	Discussion	MS, BB, RS, RB		<p>Question 1 (MS):</p> <p>Would you recommend the release of a cloud-free data set?</p> <p>- An additional SSMI product which is 'cloud-cleared' should be combined with MERIS.</p> <p>Question 2 (BB):</p>		Item 5		

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				<p>Do you have specific comments on maintaining the data set?</p> <p>- The data set release should be imbedded in a sustained operational environment.</p> <p>If added value of new MERIS is evident ESA might consider implementation of new MERIS retrieval. E.g., if the new MERIS product would lead to increased forecasting skills after assimilation, it would be a very good argument.</p> <p>CM SAF expressed its general willingness to maintain the SSM/I+MERIS in a sustained and operational environment. Details of the realisation are open at present.</p>				
12.	Action #4	MS	A	Produce a cloud-free SSM/I product.	NS	Item 5		10 October 2011
13.	Action #5	RS	A	To compare GlobVapour MERIS TCWV product with operational ESA Meteo product to make the case for updates to the ESA operational retrieval	RP	See also MoM from PM4		31 Oct 2011
14.	Discussion	JS		The results from comparisons to radiosondes might depend on radiosonde type.		Item 5		
15.	Presentation	EO	I	<p><i>GV MWR products for altimetry</i></p> <p>EO gave an overview about CLS activities concerning altimetry. The main issues in altimetry are the interannual and seasonal variations in WV.</p> <p>She discussed how reliable radiometers are and talked about different missions which have shown differences in data due to rain filtering. Also, MWR on</p>		Item 6		

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				ENVISAT exhibits a drift in early years. Consideration of GV products is one of the next steps.				
16.	Discussion	BB,RS, EO		Question 1 (BB): Will your evaluation of GV vs operational MWR products be ready for the final meeting? -yes Question 2 (RS): WV correction with help of GV data? - Within CCI new methods will be developed. It might be too late, the meeting is already next week. However, there is a chance that it might be considered later at CLS.		Item 6		
17.	Presentation	CR	I	First Application of GV products at MPI-HH CR started her talk with a motivation why absolute values of WV are important. She used in her model comparison the DC of SSMI+MERIS product in 2K temperature bins for summer and winter for western and eastern Europe She has found that REMO overestimates the WV in winter, but for summer the comparison shows good quality in western Europe. She has found larger differences in summer for eastern Europe. The low data density in winter could cause the overestimation in winter. Advantage/disadvantage - Time period too short to study seasonal		Item 7		

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				<p>variations (6 years should be ok).</p> <ul style="list-style-type: none"> - Data set is huge. Selection of certain regions and remapping is time consuming. - Compare data with e.g. MODIS and make the time period longer. - Very good spatial resolution. 				
18.	Discussion	All and CR		<p>It was discussed that it might be reasonable to provide subsets for standard regions.</p> <p>For GV users the project can offer to provide regional subsets of interest to the user. In this specific case, it is preferred to carry out the remapping at user facility.</p>		Item 7		
19.	Presentation	MSt	I	<p>Status of comparison of GV IASI retrievals</p> <p>MSt gave an overview about the background of the IASI Assessment, which includes 5 participants and data for 4-6 months.</p> <p>He has shown first results of the assessment vs ARM and Lindenberg data. He also addressed the difference in quality between background and retrieval relative to ground-based observations.</p> <p>At PM4 in July 2011 it was decided to extend the comparisons to GUAN stations in order to increase number of valid collocations. He showed new results of recently provided IASI data and comparisons to GUAN. He noted that different geolocations and cloud masks causes significant overhead in the assessment.</p> <p>MSt still needs IASI data from participants to finalize</p>		Item 8		

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				the assessment.				
20.	Discussion	RS, BB, JE, JS, TA, MSt		<p>What is next (RS)? -New data from Katie Lean (Met Office).</p> <p>Discussion about different collocations. In general IASI values should be considered only if all cloud masks agree on clear sky conditions. However, this largely reduces number of valid collocations, or is even not possible at all if including NOAA retrievals due to the cloud-clearing/averaging approach within one 2-by-2 IASI footprint cluster.</p> <p>A discussion was started (BB) on what can be expected at final meeting.</p> <p>JS proposed to write a 'guidebook' on how to compare datasets, also describing the pitfalls associated with such comparisons. That would be good for GEWEX. For the project this is a valuable comment from the vice chair of GDAP as it encourages plans and proposals from PM4 (transfer GV approaches into the GDAP assessment, in particular the IASI assessment, and present the IASI assessment methods and results in the GEWEX Newsletter).</p> <p>It was further discussed (TA) that the provision of collocated GUAN and IASI data, and the experiences with respect to the collocation of various retrieval schemes to specific reference sites, can be very valuable for future assessments.</p> <p>JE argued that the advantages from the background vs the retrieval might be caused by different levels of detail: The model is characterised by generally smoother TCWV fields than the satellite product</p>		Item 8		

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				<p>which exhibits more detailed information.</p> <p>JS and TA: EUMETSAT v5 data from 08/2008 might be available.</p>				
21.	Action #6	RS, KL	A	New IASI product from MetOffice	KL	Item 8		30 Sept 2011
22.	Action #7	BB, JS	A	Report on IASI assessment approaches and results	MSt, NS, MS	Item 8		30 Nov 2011
23.	Presentation	TA	I	<p>Feedback to the GV IASI assessment</p> <p>TA gave a feedback about the results of the GV IASI assessment which have been presented on PM4.</p> <p>Specific feedback is given on slide 5, e.g., also consider RS errors.</p> <p>It was recommended to include information on clouds, how they are defined, a priori, emissivities and more into product files for intercomparisons.</p> <p>High temporal resolution data, e.g., ground-based MWR data might be smoothed prior to utilisation in comparisons.</p> <p>Other aspects of calibration and validation strategies were presented.</p>		Item 9		
24.	Discussion	MSt, TA		<p>In view of limited time not all aspects can be addressed in the IASI assessment. In particular some recommendations might require new IASI processing which might be critical for finalisation of the assessment within project run time.</p> <p>It was discussed whether or not NOAA applies cloud-</p>		Item 9		

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				clearing/averaging in their IASI retrieval.				
25.	Presentation	CX	I	<p>Upcoming reference data for profile validation: CFH</p> <p>XC started his talk to give an overview about the CFH data. He showed results of Sodankylä radiosondes.</p> <p>He made a proposal on how to carry out validation campaigns and subsequent validation in order to reach reliable conclusions, that is, results within 1 sigma of instrument noise.</p> <p>BB proposed to also plot the validation results in volume mixing ration space. It will potentially increase more fine scale structure at lower atmospheric layers.</p>		Item 10		
26.	Final discussion	RS, MS, BB		<p>The workshop results with focus on actions were summarised. In particular, the intention to provide the SSM/I+MERIS product to CMIP5 was mentioned. It was also stated that the IASI assessment is challenging.</p> <p>BB mentioned, that there will be a chance to implement the MERIS retrieval on the operational side at ESA.</p>		Item 11		
27.	Ending	BB, MS		<p>MS thanked all guests, speakers, EUMETSAT and the organisation team. The final meeting was announced which will take place in Frascati, Italy on 17+18 January 2011. All participants were encouraged to join the meeting. In particular the users have the chance to refine their comments, feedback and to update their application results.</p>		Item 12		

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				BB was thankful for the very nice results and outcome of the talks and the discussions.				

Conclusions

The ESA DUE GlobVapour project carried out its second User Consultation Meeting in Oslo, Norway on 8 September 2011, in parallel to the EUMETSAT Meteorological Satellite Conference. EUMETSAT kindly offered facilities and beverages, what is kindly acknowledged by the project. The major objective of the meeting was to gather feedback on the GlobVapour project's products and approaches related to the retrieval, validation and assessment of atmospheric water vapour. In general, the meeting offered a great opportunity for intense discussions as it brings together the producers and users of water vapour data sets. In total, 22 scientists from various communities attended the meeting. The project received valuable feedback from the user community. Together with the outcome from stimulating discussions it led to refinements of the project's activities and might lead to a continuation of GlobVapour activities beyond the projects end. Major decisions were to initiate communication with CMIP5 community with the aim to provide the SSM/I+MERIS data set for CMIP5 evaluation and to get visibility in the IPCC AR5. Also, a guidebook containing methods, lessons learned and results from the IASI assessment would be valuable for the community and in particular for the GDAP water vapour and temperature profile assessment.

All participant and in particular the users are encouraged to continuously provide the project with feedback and results from first applications. The final meeting of the project is planned for 24 January 2012 at ESRIN, Frascati, Italy, and the participants were invited to join the meeting.