

# Copernicus Atmosphere Monitoring Service

Minutes



## Minutes of the VAL telecon, 30 November 2015, 9 December 2015

Telecon by WebEx, hosted by KNMI

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## Agenda

1. Announcements, general points
2. Action items (status)
3. First WP1 report: short presentations for all contributions
4. New validation activities (Arctic, Med, CO<sub>2</sub>+CH<sub>4</sub>, lidar, evaluation regional models): short overview of plans from the partners involved
5. Other deliverables
6. AOB

## Participants

Valerie Thouret, CNRS-LA

Anna Carlin Benedictow, MET-NO

Simon Chabrillat, BIRA-IASB

Yves Christophe, BIRA-IASB

Martine de Mazière, BIRA/IASB

Guy Brasseur, MPG

Kaj Mantzius Hansen, AU

Sander Niemeijer, S&T

Anne-Marlene Blechschmidt, IUP-UB

Richard Engelen, ECMWF

Natalia Sudarchikova, MPG

Henk Eskes, KNMI

Michael Schulz, MET-NO

Emilio Cuevas, AEMET

Sara Basart, BSC

Bavo Langerock, BIRA-IASB

John Kapsomenakis, AA

Eleni Katragkou, AUTH

Andi Massling, AU

Harald Flentje, DWD

Michel Ramonet, CEA-LSCE

Olivier Jossould, LSCE

Jacques Claas, KNMI

Vincent Huijnen, KNMI

## Action items and deadlines

- All, 1 Dec: inform Henk who will be the Project Board member.
- All: Monitor progress concerning the subcontracts.
- Anne, Valerie, John, Natalia, 3 Dec: Provide few sentences to describe tropospheric chemistry model performance for executive summary. All to provide feedback.
- Harald, Guy, Henk, 4 Dec: Discuss possibility to hire Annette.
- Richard: To provide a complete list of outputs available to users
- Richard: Check with Stijn if a delivery date of 1 February 2016 for the updated websites is acceptable.
- Richard: Check website templates.
- Sara, 3 Dec: Add a description of SDS-WAS to the model description section in the NRT report.
- Henk, 1 Dec: Announce Project Board
- Henk, 2 Dec: Contact CAMS-50 on evaluation of the regional models
- Henk, 4 Dec: Provide guideline for monitoring the KPI on the number of available observations.
- Henk, 4 Dec: Post the work plans for the "new" activities, which will provide input to the second NRT report and regional validation report.
- Henk, 9 Dec: "Version 0" of the Observations characterisation document, WP 8. Initiate discussion on the content.
- Henk, 9 Dec: "Version 0" of the Validation scoring methods document, WP 8. Initiate discussion of the content.

# 1 Summary of the meeting

## Announcements, general points

### **Subcontracts.**

KNMI has been very busy with the text of the subcontracts over the past weeks. A response was formulated to all comments from the partners. Payment procedure was discussed. Institute-specific information has been included. The contract texts have been circulated to 11 out of 13 partners last week. The contract for S&T will follow in one day. For DWD the process is on hold.

We hope to sign most subcontracts before the end of the year.

### **DWD.**

Various possible ways to hire Annette Wagner have been explored. Unfortunately no solution has been found yet. Harald is now responsible for the DWD tasks.

### **Service manager.**

KNMI found a service manager for CAMS-84: our KNMI colleague Jacques Claas. Jacques has been responsible for the instrument operations of the satellite missions OMI and TROPOMI. Jacques will start his work for CAMS-84 in January 2016 for about 25% of his time.



### **CAMS-50.**

A confirmation that the contract between ECMWF and Météo-France for CAMS-50 has been signed came on 23 November 2015.

### **CAMS Service Board.**

The first meeting of the CAMS Service Board will take place on 4 December, involving CAMS-84 and CAMS-50.

### **CAMS-84 Project Board**

The CAMS-84 Project Board members are:

Partner	Member of the CAMS-84 Project Board
AA	Christos Zerefos
AU	(Ole Hertel ?)
AUTH	(Melas ?)
BIRA-IASB	Simon Chabrilat or Martine de Mazière?
BSC/AEMET	Sara Basart (?)
CEA/LSCE	(Leonard Rivier ?)
CNRS-LA	Valerie Thouret
DWD	Werner Thomas
IUP-UB	Andreas Richter
MET-NO	Michael Schulz
MPG	Guy Brasseur
S&T	Sander Niemeijer
UBC	(Justus Notholt?)
KNMI	Henk Eskes (PI) Jacques Claas (Service Manager)

### **RedMine.**

A RedMine page has been set up, and almost everyone has access to these pages.

The aim of the page is to:

- monitor progress and action items through a set of "Issues" and corresponding Gantt table, Calendar.
- provide access to project documents: contract, minutes, deliverables, papers
- forums: let's see how useful this is.

### **Model upgrades.**

During the WebEx meeting with ECMWF (12 Nov 2015), Richard commented on model upgrades:

C-IFS will be transferred to operations. Several quite major upgrades are foreseen:

- Resolution will be higher, and go to T511, or about 40 km
- The number of vertical levels will go to L137
- The grid will be octahedral
- There will be 2 forecast runs instead of 1
- The 4D-Var windows will be shifted by 6 hours (3 to 3).

No major upgrades are foreseen for the chemistry/aerosol part of the model before the Summer.

Feedback:

- Simon asked if the octahedral grid should be used for collocations. Richard remarked that the products as made available to the users should be our starting point.
- Guy asked about the advection scheme. Richard mentioned ECMWF is working on this.
- Sander asked which products should be validated. Richard: what is made available to users (on ftp).
- Richard will provide a list of outputs available to users.
- Richard mentioned that the validation work can focus on the main forecast (of 12 UTC, 5 day forecast) and that it is not needed to look at the 0:00 forecast as well.

### **Interaction between ECMWF and CAMS-84:**

Simon asked how this interaction will work. Richard mentioned the CAMS board, the yearly assembly meetings and the CAMS-84 telecons. Henk made the remark that CAMS ideally should work as one team, and specific people at ECMWF may be approached directly depending on the kind of question.

### **KPI monitoring**

- KPI on number of downloads of reports: ECMWF will provide this information.
- KPI on availability of verification sites: Sander Niemeijer of S&T investigated a tool to monitor this. To start off, KNMI will consider "Uptime Robot" to monitor. Later on more professional monitoring may be put in place.
- KPI on number of observations available for the validation activity ("NRT", or available within one month after sensing). This needs to be picked up ! The number of datasets available will need to be monitored by all partners separately. Sander asked how this is done in a uniform way: number of files, or actual number of observations? Henk will provide a guideline for this.

### **IASOA**

It is the plan (AU, KNMI) to introduce CAMS-84 to the IASOA community at their next meeting, likely in January.

### **Template for Websites**

Richard provided a template for the CAMS verification websites. This template is posted on the Redmine documents section:

DMSF Documents/WP2 Websites

The proposal to ECMWF is to have two more months (end of January as deadline) to integrate the template in the existing sites. In the proposal we promised to do it in two months after start, but templates were not available from the beginning. Richard will check with Stijn if this delay is acceptable.

Sander mentioned that the template does not seem to be fully compatible with the CAMS site.

### **Template for documents**

Richard has also provided a new template for CAMS deliverables. Vincent (Huijnen) provided feedback on this template (which will be used for the first NRT report, D1.1). Also naming/numbering of the document deliverables was proposed by Richard.

## **Meeting ECMWF-KNMI, 12 November 2015**

On 12-11-2015 there was a meeting between ECMWF and KNMI, attended by Richard Engelen, Stijn Vermoote, Henk Eskes and Vincent Huijnen. A summary of some relevant aspects:

#### **Management:**

- We discussed how close Richard and ECMWF will be involved in CAMS-84. Richard mentioned that the results from CAMS-84 are of direct relevance for the global activity of ECMWF. Richard will be part of the mailing list and will have access to Redmine.

Stijn announced that:

- ECMWF is working on the VAT exception, both for contractors and subcontractors, which will come soon. He is aware of the urgency.
- Templates for the quarterly reports will come before Xmas.
- ECMWF want the Service Manager to be appointed as soon as possible.
- The issue of renaming "CAMS-84" into "CAMS-VAL" should be discussed in the CAMS board (when the other projects have also started). So, for the moment it is "CAMS-84".

#### **Work-related:**

- ECMWF agrees with our proposal for the first NRT report, accepting

- the 2-week delay (delivery mid December),
- that new activities are not yet included in the first report,
- that plans are presented before the end of the year for the new contributions to the validation reports
- KPI on nr. of downloads of the reports: this will be monitored by ECMWF on a regular basis.
- Not all MACC reports are available on the new website. Richard will make sure that a clear link to the old site will be put in place (or that older reports are added).
- The 2015 interim reanalysis: at the moment this is not an official product, and the evaluation is not part of CAMS-84. Richard keeps us informed.
- The use of models / alternative assimilation systems (BASCOE, SACADA, TMDAM, SDS-WAS, DEHM) for evaluation purposes in the VAL reports is fine.
- Greenhouse gases: The products relevant to CAMS-84 at this moment are the CO<sub>2</sub> and CH<sub>4</sub> high-res daily forecasts. Richard will clarify the current products to be evaluated and keep us up to date on the development of future analysis products for the greenhouse gases. The flux inversion products are not part of CAMS-84.
- Richard will provide templates (header+footer) to make the CAMS-84 verification pages layout consistent with the new website.

### Action items from last meeting

- Henk, 10 Nov: Circulate the final text of the contract.  
Done
- Henk, starting 10 Nov: Co-ordinate preparation of subcontracts.  
Done
- Henk, 10 Nov: discuss proposals in these minutes with ECMWF.  
Done
- Henk, 10 Nov: schedule a Doodle for the NRT telecon.  
Done
- Henk, 10 Nov: Initiate a new CAMS-84 group on Redmine, for document version control and activity monitoring.  
Done
- Henk, between 10-13 Nov: Contact "new" partners individually to discuss start of the activities. Make plans for the new partners on their contributions.  
Done
- Henk, 13 Nov: Schedule a meeting with CAMS-50  
Not done yet. Now that the CAMS-50 contract has been signed this will be picked up.

(The status of the actions may be monitored on Redmine)

## First WP1 report: short presentations for all contributions

Vincent Huijnen discussed the first report.

### **General remarks:**

- The new document template of ECMWF is used.
- Vincent asked if one of the partners would be willing to be the editor for the tropospheric chemistry part (to replace DWD for the moment).
- New naming convention: "o-suite", "control"
- Description of models:
  - BASCOE will stay
  - SACADA will be removed
  - BSC will add a section on the SDS-WAS ensemble
- Feedback is needed from all for the executive summary text.

### **John (AA):**

- Ozone comparisons with ESRL showed large biases in the tropics, and poor correlations in the Arctic for o-suite, while the control run looks fine.
- Showed first results for the Mediterranean theme (AirBase, Finokalia).

### **(DWD):**

- Vincent, Miha, and Luke have assisted DWD to provide input for the GAW observations and ozone sondes.

### **Valerie (CNRS-LA):**

- Two aircraft available for this period.
- Interesting case studies, with sometimes excellent agreement of the o-suite, and sometimes biomass burning plumes which are missed by the model. Also CO versus O3 enhancements are variable in the model.

### **Natalia (MPG):**

- Biomass burning case study, which was very well captured by CAMS.

### **Simon (BIRA-IASB):**

- Showed oscillations in the tropical ozone profile near 100 hPa in the comparison with MLS data. Discrepancy is larger with C-IFS than with BASCOE, but this is attributed to BASCOE. May be related to the different MLS product used (NRT versus offline).

### **Anne (IUP-UB):**

- As before, NO2 from boreal fires is overestimated compared to GOME-2. Middle East has overestimate as well, especially shipping emissions. Tropospheric NO2 in China has reduced in the GOME-2 observations, in much better agreement with o-suite. Now the model shows an over-estimation in summer.

### **Michael (MET-NO):**

- New plots based on the better quality "SUN2.0" AERONET datasets, which gives a better estimate of the biases.
- PM10 over US and EU overestimated near the coasts: due to too-high sea salt. Henk suggested to make a similar figure excluding the contribution from sea salt.

### **Sara (BSC):**

- Examples of the exceptional dust season, Summer 2015, with many events. Extreme large and

short events can not be captured by o-suite and SDS-WAS, as expected. Middle East event 7-10 Sep: the signal is in the model, but the strength is not reproduced. Syrian event was chosen for more deep analysis. Possibly soil properties need to be revisited due to changes in land use.

### New validation activities (Arctic, Med, CO<sub>2</sub>+CH<sub>4</sub>, lidar, evaluation regional models): short overview of plans from the partners involved

AA - Mediterranean

BSC - Mediterranean

AU - Arctic

AUTH - Global-Regional

UBC / BIRA - TCCON

CEA-LSCE - GHG

KNMI - lidar

Due to a lack of time, the above new activities were not discussed in the first meeting.

A second meeting was held on 9 December to discuss these new activities.

- Slides from the 9 December meeting from AA, AU, AUTH, BSC, BIRA, LSCE and KNMI are available on RedMine.
- Henk is collecting all work plans and will make this available to ECMWF and put it on RedMine.

Here are notes from this second meeting (9 Dec 2015):

- Kaj (AU) discussed the Arctic theme (see his slides, including the timeline for the activity). There is overlap with the other activities / other groups, e.g. concerning ESRL/GAW data. Kaj is contacting several partners to share the processing. Kaj mentioned the meeting in January with the IASOA community. Michael suggested it may be very useful to use climatologies from the IASOA sites to compare with the CAMS NRT products. Vincent was interested in the evaluation of VOCs. Michel mentioned the link with ICOS, which contains Arctic sites. Michael mentioned that we have to define the "Arctic", e.g. above 70N? Henk asked if there could already be an Arctic section in the next report, and this was confirmed.
- Christos (AA) discussed the Mediterranean theme (see his slides, including the timeline for the activity). A mediterranean section will be available in the next report. Christos will actively look for African measurements (Egypt and Morocco were mentioned). AA and BSC will communicate on this theme. Henk was wondering if the recent Etna eruption was visible in any of the stations, e.g. SO<sub>2</sub> from Brewer?
- Sara (BSC/AEMET) also discussed the Mediterranean theme with a focus on aerosols (see her slides, including the timeline for the activity). BSC will communicate with AUTH on the regional products. It was discussed how PM<sub>10</sub> / PM<sub>2.5</sub> are computed: BSC and MET-NO will exchange methods.
- Eleni discussed WP6 (see her slides, including the timeline for the activity). She was wondering what data is available from CAMS-50, and how S&T can contribute. Henk mentioned that Vincent-Henri sees WP-6 as a high priority, in order to evaluate the uptake of the global results by the regional models. Henk also explained that we should look at individual models, and not only the ensemble, and we should take the data as available to

the users of CAMS-50. A possibility for the large amount of data is to reduce the resolution of the regional output from 0.1 resolution to e.g. 0.5 as a preprocessing step.

- Bavo (BIRA, on behalf of UBC) discussed the progress made concerning the processing chain for TCCON data, following the NDACC implementation (see his presentation). He noted TCCON has Arctic stations (Eureka, Sodankyla).
- Michel (LSCE) provided a status overview of ICOS and showed the variety of data available for CAMS-84 activities (see his presentation). There is a paper under review. Michel proposes to bring in CO data, and there are links with IAGOS and the Arctic theme. For the next NRT report LSCE can provide results based on the 12 stations where LSCE is the PI.
- Arnoud (KNMI) discussed the use of Lidar and Ceilometer data (see his presentation). Arnoud will interact with the ACTRIS/EARLINET community on NRT availability of lidar data, and E-Profile / TOPROF on Ceilometer data. Michel asked about the use of PBL height information. This is a theme in the ICOS community and there is a proposal for a unified algorithm. Michel will circulate the corresponding report. Michael was wondering about the timeline for this activity.

S&T - Will send invitations to all partners today for interviews on the validation processing and web sites. Interviews will be completed before Christmas.

## Deliverables for the first four months

The deliverables for the first four months are:

1. NRT validation report for the global service products. Due T0+2 (WP 1, WP 4).
2. Verification webpages, up-to-date and consistent with new CAMS website. T0+2. (WP 2)
3. Specification and Design document, due T0+4 (WP 2)
4. Validation plan for the regional services (WP 5). As soon as CAMS-50 contract is signed, this point will be discussed. A telecon or meeting is foreseen for the coming months.
5. Observations characterisation document for validation, first draft. T0+3 (WP 8)
6. Validation scoring methods document. T0+3, WP 8.

Proposal:

- Concerning 1. the plan is to focus first of all on continuity from MACC, with a similar content as the MACC reports.
- 2: Now that the template is available, we can start to work on updating the existing websites.  
Deadline is end of January, pending on agreement from Stijn.
- For the new themes (Arctic, Mediterranean, greenhouse gases, new observations) a plan will be written before the end of the year on which sections will be added to the second and following reports.
- 3: work of S&T, see above
- 4: this point will be discussed with CAMS 50. A telecon or meeting is foreseen for the coming months. A plan will be presented on the content of a first report early 2016.
- 5: A first draft will be based on the annexes of the MACC-III NRT report. We will analyse this report to identify missing info, weaknesses etc. A plan will be drafted how to extend this document.

- 6: First draft based on MACC-III report. The current content will be analysed and a plan for development of this report will be made, together with ECMWF.

For WP 3, no upgrade is expected in first months. WP 6 will have it's first deliverables at T0+5. WP 7: no reanalysis data will be available in the coming months.

## Planning

The proposed condensed timeline for the first NRT report:

- 4 December: Draft version of report available
- 11 December: publish NRT report

## AOB

- Sara is interested in the historical outputs and verification plots of the regional models. Comparisons will be coordinated with Eleni. Henk will ask CAMS-50 if these datasets are available.
- Harald commented on the DWD steps to be taken. Guy once more offered his assistance. DWD/MPG/KNMI will together discuss a possible solution for the DWD contribution.
- Anne asked about the templates for reporting.