

CAMS-84

Minutes of the PM4 telecon

Minutes compiled by
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KNMI

Date: 05/09/2016

REF.: CAMS84_2015SC1_PM4_minutes_20160905

Agenda

Agenda WebEx meeting 5 September 2016, 14:00-17:00 CET

1. Welcome (Henk)
2. Announcements by the Service Manager (Jacques):
reporting, subcontracts, KPIs, news from last CAMS SLB, RedMine, actions PM3 ...
3. Input from Richard Engelen (Henk)
4. NRT validation report (Vincent & all partners involved) (WP1 and WP4):
all: prepare 1 or 2 slides with highlights, developments, status new activities,
mention delays if any. Keep it short and mention only new results and
developments!

(coffee/tea break, 15 mins)

5. Web sites (WP 2):
short update status work S&T (Sander)
6. Evaluation of regional models (WP5):
contributions from KNMI, AA, BIRA, CNRS-LA, DWD, IUP, MPG (2x), MET-NO
7. Comparing regional and global models (Eleni, WP6)
8. Reanalysis preparations (Henk)
9. WP 8: development plan scoring document (Michael, Henk)
10. AOB

Participants

Hannah Clark, CNRS-LA
Simon Chabrillat, BIRA-IASB
Yves Christophe, BIRA-IASB
Eleni Katragkou, AUTH
Anna Benedictow, MET-NO
Emilio Cuevas, AEMET
Anne-Marlene Blechschmidt, IUP-UB
Natalia Sudarchikova, MPG
Henk Eskes, KNMI
Jacques Claas, KNMI

Michael Schulz, MET-NO
Sara Basart, BSC
Bavo Langerock, BIRA-IASB
John Kapsomenakis, AA
Harald Flentje, DWD
Augustin Mortier, MET-NO
Michel Ramonet, CEA-LSCE
Thorsten Warnecke, UBC
Vincent Huijnen, KNMI
Sander Niemeijer, S&T

Action items and deadlines

- Henk, 6 Sept: ECMWF/CAMS-50 emails on dust
- Henk, 9 Sept: Finalise first WP5 report.
- Henk, 12 Sept: review WP6 report Eleni
- KNMI, 1 October: include T, p and global CAMS fields of ECMWF in the WP5 data files.

Summary of the meeting

Announcements by the service manager (Jacques):

Sub-contract status since previous meeting:

- The remaining three subcontracts have now been signed: UBC, CEA-LSCE and DWD. So, all subcontracts have now been signed.

Reporting:

- The CAMS-84 Quarterly Report 2016/Q2 and the related deliverables have been sent to ECMWF. Report is available on Redmine.
- KNMI is now waiting for the letter of acceptance from ECMWF.

Invoice process:

- The table below shows the current invoice status for the Q4/2015 and Q1/2016 invoices.
- Not all parties have send their invoices. Please check the table and send e-mail to KNMI if you think table is not up-to-date.
- After receiving the 2016/Q2 Note of Acceptance from ECMWF, the invoice process will start. Please wait for an e-mail from KNMI before sending your 2016/Q2 invoices.
- The VAT issue has still not been solved yet (currently KNMI cannot ask for a VAT return from the Dutch tax office despite the ECMWF provided VAT exemption form).

Invoice status per 2016, September 5th.

	Q4 2015		Q1 2016	Q2 2016
KNMI	39.166,67		39.166,67	39.166,67
BIRA-IASB	30.583,33		30.583,33	30.583,33
MET-NO	26.166,67		26.166,67	26.166,67
DWD	5.458,33		5.458,33	5.458,33
CNRS-LA	15.833,33		15.833,33	15.833,33
BSC/AEMET	14.666,67		14.666,67	14.666,67
MPG	33.791,67		33.791,67	33.791,67
IUP-UB	13.250,00		13.250,00	13.250,00
UBC	4.166,67		4.166,67	4.166,67
S&T*		25.000,00		50.000,00
AARHUS UNI	13.083,33		13.083,33	13.083,33
AA - academy of athens	7.333,33		7.333,33	7.333,33
AUTH	7.333,33		7.333,33	7.333,33
LSCE	7.916,67		7.916,67	7.916,67
TOTAL	218.750	25.000	218.750	268.750
		Geld ontvangen		
		Factuur betaald		

KPI status:

- KPI 2: "User Uptake": these numbers are now automatically provided by ECMWF on a monthly basis and included in the Quarterly Reports.
- KPI 3: "User Satisfaction": this is ongoing work that will be developed CAMS-wide by CAMS-94 (coordinated by Thomas Popp), ECMWF and the other sub-projects.
- KPI 4: "Uptime of validation websites": using the "Uptime Robot" tool, uptime numbers are updated monthly and the results are included in the Quarterly Reports.

CAMS-SLB:

- CAMS Service Level Board (SLB) meetings were held: SLB#6 on May 13, SLB#7 on June 15 (General Assembly Athens), SLB#8 on July 8 and SLB#9 on August 12.
- We have asked for DOI's for CAMS-84 reports. This is an action for ECMWF.
- A few remarks from these SLB meetings:
 1. Consequences of the Brexit are unclear yet. ECMWF will continue as normal.
 2. The EC visited ECMWF. Mainly financial checks. An EC report is expected mid-September.
 3. User satisfaction: An option for fast feedback on the Copernicus webpages via a chat option is currently being investigated.
 4. ECMWF will approach the subproject coordinators for input text that must serve as an introductory text for the various webpages. The current text is considered too technical.
 5. Logo's and contributing institutes are now on the CAMS website.
See "About CAMS" -> "Providers"

Redmine:

- Please check regularly for reports, action items, ...

Conferences:

- Henk will visit the ESA-ACVE, 18-20 October, and present CAMS-84 activities. Bavo will go as well and present NDACC vs satellite. Sander will present HARP.

- Thorsten: ESA ACVE meeting Frascati, session on Fiducial Reference Measurements. Thorsten plans to show one slide on CAMS-84.
- Sara: SDS-WAS meeting Korea, 1 day workshop on Asian dust. Sara's contribution is about dust modelling activities at BSC, particularly on the model intercomparison of the SDS-WAS Regional Center. Within the SDS-WAS framework, CAMS-84 activities will be included in the presentation. Angela Benedetti, ECMWFC, is member of the Global Steering Committee of the SDS-WAS and she will join through teleconference.
- Hannah: will participate in the IAGOS annual meeting, 17-19 October.

Action items from last meeting

All actions in grey from the PM3 meeting have been completed:

- All: provide slides (WP 1 and WP 5) to KNMI (using the _Inbox), to be added to the minutes.
- Henk, 17 May: Distribute emails on discussion between CAMS-50 and ECMWF on dust.
Henk will do this.
- Henk, 17 May: check coordinates of De Bilt in the station files (to explain NO2 results of Anne B).
- Henk, 17 May: send orography of Lotos-Euros model to Annette (for WP5).
- Henk, 20 May: Introduce color coding for regional models.
- Henk, 23 May: circulate agenda for the Athens meeting.
- Henk, 1 June: check if T_p of ECMWF can be provided in the WP5 data files.
- Simon, 1 June: write a short note on MLS versions to be sent to Antje Inness (for reanalysis).
Simon will write the email.
- Simon: explain by email to Henk the actions taken to obtain DOIs for the MACC validation reports.
- Richard: publish the WP 8.1 observations description document (completed on 17 May).

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

Discussion with Richard on Friday 2 September

Input/requests from Richard:

- The CAMS reanalysis will start in October. At the beginning of November the first year of data may be available. There are still a few things to be finalized by ECMWF before the exact start date can be provided. The CAMS reanalysis will be an exciting data set being the first comprehensive reanalysis with C-IFS (greenhouse gases, chemical species and aerosols). CAMS/ECMWF hopes to attract many users and validation will be a key element for promotion of the data set.
- The reanalysis will first be run for 2010. The reason is that this year has been used before for model development test runs, because of the number of satellite observations and the number of available measurements for validation is good. Richard is requesting us to investigate this 2010 run first, at least before the end of

the year. When issues are found there will still be an option to implement fixes and to re-start the reanalysis from the start. In parallel to the 2010 run, the reanalysis production will start (from jan 2003). Reanalysis will include RG+AER+GHG.

- A new e-suite (for CY43R1) is also planned to be introduced. ECMWF will start the e-suite this week. Richard is finalizing the summary of changes and this will appear on the web site as soon as it is complete later this week. By the end of September, ECMWF should have several months available, but Richard will keep us updated as it progresses. The idea is to start from April 2016 onwards and let it catch up with real-time. The procedure for the evaluation of this e-suite is changed compared to the last upgrade. This time an e-suite run will be produced by the research dept (before sending it to the forecast dept where also an e-suite will be produced). CAMS-84 will evaluate the research dept e-suite run. The advantage of this approach is that there is more room for adjusting/debugging the code before the actual upgrade will occur. If there are specific wishes regarding the timing, ECMWF can take those into account.
- Timing of the validation report for the new upgrade: ECMWF will have about 6 months of e-suite data available around 1 October. Plan for E-suite report to be available in the second half of October. Precise dates will be announced soon. It is best to perform this evaluation before the reanalysis work starts.
- ECMWF would like to have a telecon with CAMS-84 to discuss the development work of S&T, WP2. ECMWF (Vincent-Henri, Miha) is still reviewing the WP2 document of Sander. We will receive the comments/review from ECMWF and fix a date.
- ECMWF is now negotiating the in-situ contracts with the prime networks (GAW/EMEP, NDACC, ICOS, ACTRIS, EEA/EIONET, IAGOS, EAN). If there are specific wishes/requirements from CAMS-84 on formats, timeliness, data bases etc. we can make this known to ECMWF. A more direct involvement (consultation) of CAMS-84 partners in the tendering process is not foreseen/allowed.

Remark Thorsten related to the in-situ contracts:

A dedicated budget for TCCON is needed !

Third WP1 (WP4) report: short presentations of all contributions

Vincent Huijnen discussed the third WP1 report.

Editors: Annette Wagner, Michael Schulz, Simon Chabrillat, Michel Ramonet.

Timeline 4th WP1 report:

- 9 September 2016: release of draft version for review by the modellers and ECMWF
- 21 September 2016: public release of the report

General remarks:

- All contributions are in place! The content of the report is growing.
- Please always use the previous NRT report (including the use of styles, sectioning, captions etc) as starting point for the new report. Otherwise editing by the editors and KNMI will be tedious. Proposal Michael: introduce automatic figure numbering in the reports; start from the text of the previous report?

Michel (LSCE):

Analyses for individual stations with observations deviating from the mean. Individual stations show the impact of nearby emission hotspots and land-sea transitions, e.g. Finokalia. Such an analysis could also be useful for the reactive species.

Thorsten (UBC):

- Reunion: very strong oscillations in model columns in Nov 2015-Jan 2016. But not the case in in-situ. Henk: plotting model data at different altitudes may help to identify where the problem comes from.
- Changes in model around March-April 2016, discontinuity which has positive impact on biases. Similar discontinuity seen in in-situ. But not in Trainu/Orleans where ICOS is continuous, while TCCON shows jump?
- Quite some surprising differences in remote sensing and surface data results. Why is this?

Bavo (BIRA), and Thorsten (UBC):

More stations are foreseen in future with the NDACC CAMS contract.

Profile La Reunion: Negative bias below 6km, positive above, but column very accurate.

These biases come after fnyp -> g4e2 transition !

Michael (MET-NO):

Modis deep blue related improvement in correlation still visible in last three months.

Qu Henk: Is the observed bias o-suite vs AERONET also seen in MODIS-AERONET ? Where does this come from, since MODIS is assimilated?

Sara (BSC-AEMET):

Improvement of CAMS model wrt old MACC model: scores much better over the Sahara.

Forecasts show strong degradation of correlation from 48 to 72h.

Mediterranean: control underestimates background, but analysis overestimates.

PM10: Sea salt overestimated (using the standard PM10 as provided, with known wet-dry sea-salt issue)

New: use of visibility as proxy for dust.

Yves (BIRA):

Stratosphere. Time series shows a doubled bias at 30-70 hPa in forecast, in comparisons against OMPS. This effect persists until August. Strange, given the long life time of O3 at these altitudes.

Kaj (AU):

(absent due to illness). Arctic validation now including new observational data set from station Alert. It was discussed to share the Arctic results of John with Kaj, in order to discuss all Arctic observations in one section.

Anne (IUP-UB):

NO2 and HCHO.

New: Helsinki and Moscow show up with positive bias.

Qu Henk: Also NO2 (osuite-control) may be an interesting extra panel to include. It is interesting to see the impact of the NO2 assimilation.

John (AA):

Global ozone:

- Improvement of biases in Antarctica due to assimilation.
- Small value of correlations in Mediterranean at Finokalia: why?

Med:

- New stations in Cyprus and Greece.
- Very good results: biases very small, high correlations.

Hannah (CNRS-LA):

IAGOS is growing: New aircraft to New Zealand (Melbourne, Sydney).

Henk: would be interesting to focus on the tropopause region, because of the significant biases which are often observed in the 8-12km altitude range.

Natalia (MPG):

MOPITT and IASI results, including forecasts this time.

Case study over Eastern Asia.

Henk: suggestion to combine CO results with NO₂ (HCHO) from Anne, and maybe aerosol from Michael. This will provide a multiple species view of the event.

All: provide slides to KNMI (using the Inbox), to be added to the minutes.

WP 2: Status work S&T (Sander)

S&T has been busy over the Summer. Work done on the toolkit HARP. This is available on the github page. Add support for ECMWF Grib files, conversion to HARP compliant netcdf/hdf4/5. Selection of CAMS model data possible for regions, collocation timeseries are in progress, so S&T is close to having a tool available to do overpass data.

Website part: front-end GUI (javascript based), interaction with back-end (OpenDAP, which allows for datasets to be stored in different locations). Flexible platform, allowing individual partners to develop their own plotting.

First demo planned for end of this year.

WP 5&6: Evaluation of regional models

Comments from Vincent-Henri, 7 July:

- the principle is that these reports are initially kept internal to CAMS (ECMWF, CAMS_50, CAMS_4* and other contracts if relevant) at least for the period covered by CAMS_50/Phase 0 (which finished at the end of May): most of the models have been undergoing small or bigger changes, especially in the area of global boundary conditions.
- beyond the end of phase 0, the "above-surface" validation reports have a vocation to become public, because the information is fundamentally of interest for the users (especially of regional CAMS data as boundary conditions for national/local applications). We need though to be all reasonably happy (_84, _50, ECMWF) with these before starting to make them public. Let's assess this thoroughly with the

edition for the next quarter, as suggested by Henk. BTW, the report is very nice, but there are some figures I find a bit strange (for instance, just random: on Fig 4.7 is "r" = correlation? if so, there must be a sampling element going into such perfect correlation -1.00, 0.99...- because I cannot believe models capture perfectly the profile variability). TBD also if we can combine them in the end (in a form or another) with the "surface" validation reports so that users have the "complete" picture.

- for the "regional/global interface", we have to assess first if this has enough interest for the users, because this is the primary concern. Depending, it could be made public similarly.

Comment Matthieu Plu:

to add in the 84.5 graphics the global model performance.

Henk:

Status first WP5 report, June 2016: Henk will incorporate the comments received from CAMS-50 / Vincent-Henri and send a final version to Richard this week.

KNMI has continued downloading the full distribution of forecast fields from Meteo-France, available from 20160219 until today (more than 6 months of data). Alternative downloads have been set up by CNRS-LA (to map model results along the IAGOS flight tracks), IUP-UB (for satellite comparisons), MPG (for satellite comparisons). It is planned to add T profiles to the collocated files.

The proposed time schedule for the WP5 report:

- 16 September: send WP 5 contributions to KNMI.
- 20 September: KNMI will produce a first draft report, identifying gaps, missing info etc.
- 30 September: draft report to CAMS-50 / ECMWF for feedback.

During the telecon, the progress was discussed:

Michael and Augustin Mortier (MET-NO):
(left the meeting)

John (AA):
(left the meeting)

Hannah (CNRS-LA):

Diurnal cycle plots over Rome.

Heat wave over Amsterdam, around 18 July, with high ozone in early morning, not captured by the models., e.g. related to night-time stability.

Qu. to KNMI: can you provide T hourly data for July, together with climatology.

Natalia (MPG):

Bug fix: new ENS-MOPITT plots

For report: Feb-Mar-April-May ENS results

MOPITT layers used up to 500 hPa (6 lowest).

Anne (IUP-UB):

Preparing the figures.

- Sat comparisons. Data available.

- One more MaxDOAS station. Some plots may come a bit later, 2nd half of September.

WP 6: Comparing regional and global models

Eleni and the AUTH team have prepared a new report, with a more concise discussion of the results.

Next report: include temperature profiles, new global forecasts with 40km resolution.

Remark: Processing of the global fields to the 8 layers of the regional models is done operationally, and results can be used by WP5.

WP 7: Reanalysis evaluation

Henk reminded the teams that it is time to start preparing for the reanalysis, and collect observational datasets. The faster CAMS-84 will provide feedback on the quality of the reanalysis, the better.

WP 8: development plan

Next in line is Task 2. Michael will be lead editor for this scoring report. During the meeting there was no time left to discuss this report. Michael and Henk will discuss this off-line.

AOB

- Vincent Huijnen is the co-ordinator of CAMS-42, which will start 1 October. He will be assisting with the current WP1 report, but his involvement in CAMS-84 will stop afterwards. Vincent has been involved for many years in the validation activity in MACC-II, MACC-III and CAMS.
- Papers:
 - Paper of Anne on MaxDOAS close to submission
 - Paper of Christos on volcano SO₂ measurements with Brewers
- Comment Bavo: New control model id is "gjjh". This is related to the change of the o-suite on 20 June. see:
<https://atmosphere.copernicus.eu/gda-global-production-log-files#forecast-only>