CAMS-84
Minutes of the PM8 telecon

Minutes compiled by
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Agenda

Agenda PM9 meeting,

9:30-12:30, Monday 6 November (WebEx)

Agenda

1. Welcome,
2. Announcements by the Service Manager (Jacques):
   reporting, payments, KPIs, news from CAMS SLBs …
   New collaborators in CAMS-84
3. WP 2: planning and overview of status (Jacques, Sander)
4. Status of the WP1 report, JJA 2017 (editors, Henk)
5. Presentations by all groups (5 minutes max, see instructions below)
   Short break
   Presentations by all groups (5 minutes max, see instructions below)
6. WP 8: development plan for the scoring document (Michael),
   status other WP8 docs (Henk)
7. Status of WP5/6 activities (John),
   status WP7 (Henk)
8. AOB

Participants

Yves Christophe, BIRA-IASB	Simon Chabrillat, BIRA-IASB
Michael Schulz, MET-NO	Augustin Mortier, MET-NO
Michel Ramonet, LSCE	John Kapsomenakis, AA
Christos Zerefos, AA	Thorsten Warnecke, UBC
Hannah Clark, CNRS-LA	Yasmine Bennouna, CNRS-LA
Sander Niemeijer, S&T	Paul Brusee, S&T
John Douros, KNMI	Sara Basart, BSC
Guy Brasseur, MPG	Annette Wagner, MPG
Katinka Petersen, MPG	Yuting Wang, MPG
Harald Flentje, DWD	Emilio Cuevas, AEMET
Eleni Katragkou, AUTH	John Douros, KNMI
Henk Eskes, KNMI	Jacques Claas, KNMI

With contributions from Anne-Marlene Blechschmidt, Kaj Mantzius Hansen (excused)

Action items and deadlines

- Jacques (6-11): Schedule further meetings for WP2, starting with meeting on ozone sondes.
- Jacques (10-11): Make quarterly report and implementation plan 2018 available on RedMine.
- Jacques (8-11): Check if the Aeronet time series page is monitored by "Uptime".
- Michael (10-11): Update of scoring document.
- Michael: Next steps for development of headline scores and paper.
- All (9-11): Send feedback to Jacques on the WP2 note.
- Annette (13-11), with Yves and Simon: Inform ECMWF on biases found in ozone in the reanalysis for the year 2004.
- Harald (due January 2018): Investigate combined use of ceilometer data from Germany, Norway and the Netherlands.

Summary of the meeting

Announcements by the service manager (Jacques):

(Sub)contract status since previous meeting:
- A CCN, making Service Contract 2 an applicable document to the existing subcontract, was issued in April 2017. Almost all subcontractors have signed the CCN except CNRS-LA and CEA-LSCE. Reminder e-mails have been sent.
- **NOTE!!** Without a signed CCN KNMI cannot pay your 2017 invoices. Please sign the CCN asap and send back to KNMI via e-mail.
- An amendment on SC2 has been setup to account for a shift of budget left over from SC1 to SC2. This is mainly to cover the S&T WP2 activities which takes a larger budget in SC2 than originally anticipated.

Invoice process SC1:
- All 2016 / Q1-Q4 invoices have now been received and paid by KNMI.

Invoice process SC2:
- The Note of Acceptance for Payments 2 and 3 were received from ECMWF. KNMI has issued an invoice request for 2017/Q1 and 2017/Q2 to its CAMS-84 partners.

Reports:
- The Quarterly Report 2017/Q3 was issued to ECMWF on October 17th and accepted after some minor modifications.
- A draft version of the Implementation Plan 2018 has been issued to ECMWF on October 17th. Comments from ECMWF are currently being ingested. Based on this Implementation Plan, ECMWF will issue a Service Contract 3 by the end of the year.

Programmatic status:

- ECMWF is targeting for a smooth transition from the current Framework Contract (ends at Sept. 30, 2018) to a new Framework Contract. ECMWF expects that an Invitation to Tender will be released by the end of 2017 resulting in a new KNMI proposal, written in collaboration with the current partners, in spring 2018.

KPI status:
- KPI 2: "User Uptake": these numbers are provided by ECMWF on a monthly basis and included in the Quarterly Reports. Numbers have been increased since these are now provided by ECMWF itself.
- 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. Vincent-Henri Peuch commented that user statistics will become available after the summer.
- KPI 4: "Uptime of validation websites": average uptime > 99.5%. All partners are requested/reminded to keep the website content up-to-date.

From the SLB:
- No decision yet on place and precise date of the CAMS General Assembly 2018, likely to be called "Atmosphere Week" in the future. Tentative dates are still 14 May, 21 May or 4 June 2018. Please reserve these in your agenda.
- ECMWF received comments from DG-GROW on the 2017/Q2 Quarterly Report. They were fairly minimal.

New faces in CAMS-84:
- **Yasmine Bennouna** has taken over the activities of Hannah Clark (since early October). Yasmine has many years of experience and worked on aerosol retrievals with Gerrit de Leeuw, after which as postdoc she worked on several topics: aerosols, Aeolus, IAGOS/IASI.
- **Yuting Wang** has started in October in the group of Guy Brasseur. She will extend the activity of MPG, first of all by using aircraft campaign data for the reanalysis evaluation.
- **Khalil Yala** will replace Olivier Jossoud in the GHG evaluations at LSCE. Khalil comes from the Ocean community.

Hannah Clark has been involved (with a break in between) in MACC and CAMS for many years, and **Olivier Jossoud** has been involved since the start of CAMS-84. We thank both of them for their contributions to the validation of CAMS (MACC).

Jacques will make QR and IP 2018 available on RedMine.

Michael was wondering if the uptime of the new time series page for Aeronet is monitored. Jacques will check this.

Action items from last meeting

Actions in grey from the PM3 meeting have been completed:

- Michael: Next steps for development of headline scores and paper
- Richard: Check counting of the number of validation document downloads.

- Henk: Initiate updating of the 3 documents of WP8
- Henk (Jacques): schedule meetings for WP2

Schedule and announcements

New schedules for the upcoming activities (Henk)
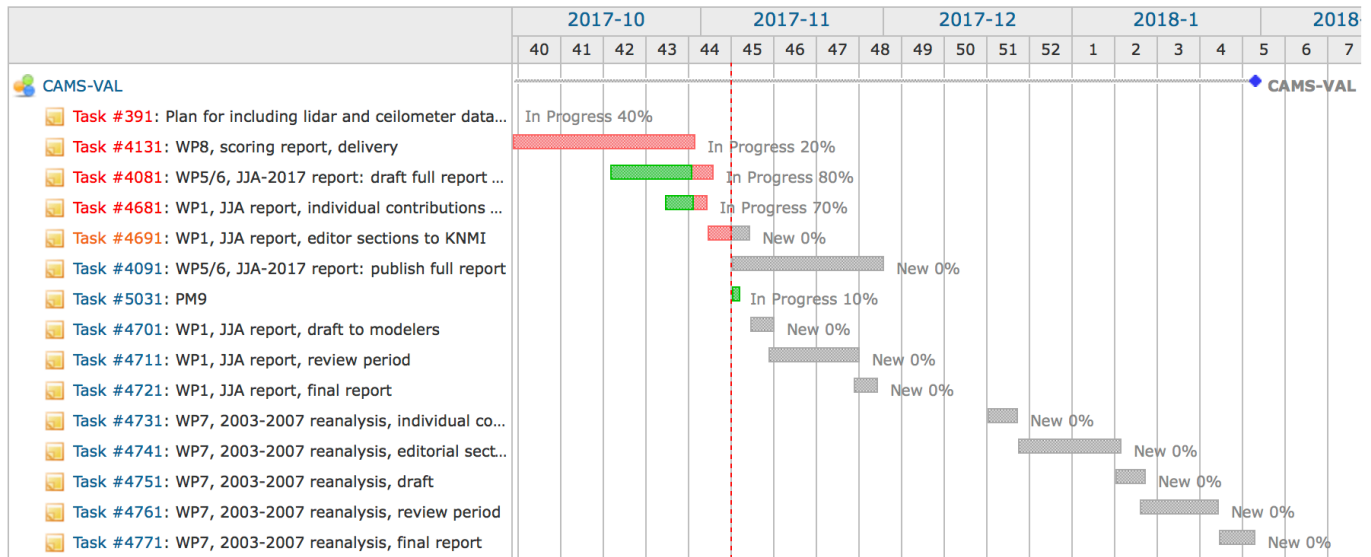
WP1 and WP5 reports due end of the month November.

E-suite: No new e-suite introduced yet. The last upgrade took place 26 September 2017.

WP 2: planning and overview of status

Jacques: A tech note was produced to clarify the deliverables of WP2 and the involvement of all partners. Partners are requested to send feedback by Thursday 9. Meetings will be setup with small groups of partners and S&T to discuss details.

Simon was wondering about satellite comparisons and model-model comparisons. Sander explained that BIRA can send numerical data to the server (in HARP format) to be displayed. Comparisons with satellite is covered, but not model-model.

Sara asked about vertical profiles, in particular Ceilometer extinction. This is part of the functionality.

Jacques asked if HARP data can be made available to partners. Sander mentioned that the BIRA server will be restricted to NDACC-TCCON.

Sander gave a short overview of the status. Now surface + NDACC covered. The archive is reorganised, and is now based on pre-collocated datasets (not starting directly from ECMWF-Grib). Next: Henk mentioned ozone sondes. Jacques will make an appointment for this (Monday 13 November).

WP 1 report

Status of the WP1 report, JJA 2017:
- (GRG) Annette received all contributions
- (AER) Michael received inputs from Harald and Sara, but MET-NO is a bit late
- (GHG) Michel received inputs and can deliver the section in a few days.
- (Stratosphere) Yves has received all contributions and will send the section within a few days.

To conclude: the writing of the report is on schedule.

The **structure of the summary** section has been adapted, following the service themes as on the CAMS website. Simon proposed at the last PM to include the summary section in the table of contents. This has been done / will be done in future docs. But we should re-think also the way the Summary results are presented: look for a more condensed, easy to digest, graphical way ... This is related to the scoring discussions.

Presentations from the partners

On RedMine the slides presented at the meeting are available (merged to 1 pdf). There were presentations by the persons listed below. Focus on:
- New developments in analysis approach, measurements used, other new aspects
- Major (unexpected) results for the MAM 2017 NRT report,
- Other results, e.g. case studies

The Canadian **fires**, as well as fires in Portugal, Syberia in Summer 2017 have attracted a lot of attention. Katinka, Harald, Michael, Arnoud (KNMI) have been collecting observations of long-range transport.
Also the **heat waves** in southern Europe provide an interesting theme for dedicated studies. Will receive special attention in the JJA 2017 NRT report and 2003 reanalysis report.

Michael Schulz, Augustin Mortier (MET-NO). Michael started with showing the new aeronet evaluation page available for about half a year now. METNO studied the Canadian fire signals over Europe. Bergen-Flesland ceilometer (new datasets) shows clearly elevated signals at about 4-5 km, interpretes as fire ash. Harald will look if he can combine ceilometer data from Germany, Norway and the Netherlands (action). Emilio also mentioned the availability of Ceilometer data (Tenerife).

Eleni (AUTH): Showed the evaluation of the regional analyses, which are available since July. The analysis shows lower surface ozone. Individual models: SILAM shows too low ozone near surface, EURAD has issues with CO. The heatwave in Athens was studied, comparing surface obs against the models. Large local effects (underestimate of NO) observed.

Sara, Emilio (BSC). Local dust storms (Haboobs) in Sahara not covered (Tamanrasset), as expected. Strong underestimate found in Kuwait, CAMS lower than SDS-WAS. In

mediterranean, AOD over/underestimated in o-suite/control. Carpentras (France) with good results but high resolution needed to capture the details. Atlantic outflow case study: underestimate of dust in o-suite. AOD vs DOD: fraction of dust underestimated, o-suite too much organic, control often better dust levels.

Yves & Simon (BIRA). The global comparison against OMPS and ACE-FTS is comparable to previous reports. OMPS-LP moved to new version 2.5 (old 2.0 to 2.4) with significant different retrieval results affecting the comparisons.

Yasmine, Hannah (CNRS-LA). Ozone pollution peaks (Paris, 22 June) well captured by CAMS models. Global model somewhat lower than regional model ensemble, underestimating boundary layer O3 concentrations. CO fire signals from Portugal partly described by global model, missing in the regional ensemble. Canada fire plume over Europe better described by global system. Nice examples of elevated concentrations in West Africa (Lome, Luanda, Douala, Kinshasa) with sometimes very good results (Luanda, Kinshasa).

Annette (MPG). See slides. Annette discussed the peaks on 22-24 June related to Portugal fires, not fully covered by the o-suite. For the reanalysis 2004 Annette found strong biases in Antarctica, especially in July, with a strong seasonality. Tropospheric ozone shows a strong positive bias trend during 2004, from negative to positive. This is also observed in the Arctic. The ozone hole looks good. Yves will check this, and ECMWF will be notified (action). Simon suggested this may be related to missing MIPAS data.

Katinka (MPG). Katinka included the CAMS European regional analyses in her evaluation of the regional models against MOPITT. The performance of the anaysis is nearly identical to the forecast. Positive bias of MOCAGE was improved going from June to July 2017. Katinka discussed three case studies: Siberian fires in June 2017, Portugal fires in August 2017, Canada fires in August 2017. The Siberia and Canada case showed good results, but for the Portigal fires timing (one day late), location and strength are not well described by the o-suite.

Anne (IUP). Unfortunately Anne could not join, but she sent a few remarks on the WP1 work. (1) Overestimation of tropospheric NO2 over various fire regions (e.g. related to the fires in Canada, Alaska, Siberia). For HCHO, an overestimation over parts of these regions was also found, but overall fire emissions from HCHO seem to be better represented than the ones for NOx. (2) It is also interesting and surprising (no stratos chemistry in CIFS) to see that simulations for stratospheric NO2 have improved (although there still is a negative bias compared to GOME-2 which is stronger for the no assimilation run, at least models seem to catch the seasonality much better now).

Michel (LSCE). Reported on systematic biases, e.g. Mace Head. Consistent with TCCON there is an overestimate of the CO2 seasonal cycle and a large negative bias in CH4, but correlations are high. Spikes in Trainou are well captured.

Thorsten (UBC), Bavo (BIRA). The station Orleans is missing due to measurement issues. CO2 in Bialystok shows that the model overestimates the seasonal cycle, and Reunion shows a positive offset. Methane shows a clear negative bias in o-suite and control (1%),

but this bias is much reduced in the high-res run. Correlation is OK. Reunion bit worse than in 2016. CO shows the usual bias in the control and best performance for the o-suite. The high-res run performs better that the control.

Kaj (AU). Kaj was excused due to illness, but he prepared slides. In the Arctic overestimates are found in surface ozone, in contarst to previous seasons. The control run performs better.

Harald (DWD). New plots are generated, i.e. time series of ceilometer station means at different altitudes, monthly-mean profiles. Means work better than medians, and include signal from events. IFS more smooth than Ceilometer, which shows the gradient near the BL top more clearly. Smoke (organic) and dust are mixed in the model. Case study: 30 August: total backscatter coefficient in line with model.

John & Christos (AA). Shown were global-scale ESRL ozone comparisons, with similar results to earlier reports. John also discussed the ozone evaluation over the mediterranean. Heat waves were studied for the NRT report (2017) and the reanalysis (2003). Good comparisons for the hot periods in 2017, but the peak ozone values in 2003 were underestimated.

Yuting Wang (MPG). Yuting made an overview of the available aircraft campaigns relevant for the reanalysis (2003-2007). She proposed to start with MILAGRO/INTEX-B/IMPEX in 2006. Measurements with the DC-8 and C-130. Flight maps were shown. Species available: O3, CO, NO, NO2, OH, CH2O.

WP 8: development plan for the scoring document (Michael)

Scoring document update: Michael is coordinating the next steps to arrive at a set of headline scores:
• A telecon is organised on Friday 10 November.
• A second meeting will be held a few weeks later.
• An update of the scoring document will be delivered soon, and the content will be discussed during the Friday 10-11 meeting.

Michael discussed the agenda of the meeting, and presented a set of discussion points.

WP 8: other documents (Henk, John)

Updates for the WP8 documents were due at the end of September.

• *Observation characterisation document*, version 2. This document has been made up-to-date with input from all partners. The document was delivered to ECMWF on 5 October. Richard sent his comments, and John/Henk/partners are working on the response.

• *Data mining document*. The "data mining" document was updated, including information from Bavo on the CAMS NDACC "in-situ" contract. The document was delivered to ECMWF

on 6 October. Richard has read the doc, with one critical point: use of satellite datasets for validation. Will be addressed in next update.

The DoW of other contracts will soon be available to CAMS-84 (ICOS is close). Maybe update early next year.

WP 5-6:

WP5-6 report: Summary for CAMS-50 Ensemble report, JJA period, delivered on time (mid-october). John Douros (KNMI) is editor of this document. Full report nearly finished ...

In this last report we have evaluated also profile information from the **analyses** (before we only considered the forecasts). John mentioned that the regional ensemble analysis generally performs better than the forecast for ozone. For other species like CO the difference is small.

WP 7, evaluation of the CAMS reanalysis

The second edition of the 2003 validation report was delivered to ECMWF on 30 September 2017, according to plan.

Originally the document contained a section on the greenhouse gases, with input from LSCE, UBC, BIRA. However, unfortunately we received a message from Richard & Antje that "The multi-year results for CO2 just don't look good enough and we don't want to release data that is not useful ... the most likely solution is that we might rerun the greenhouse gases in a separate experiment." As a result, the sections on CO2 and CH4 were removed just before delivery of the report. We are waiting for information on the new runs for the GHGs.

The next report (reactive gases and aerosols for now) will cover the period 2003-2007. Last week Antje sent news on the status of the runs, which were close to the end of 2007. The schedule for the report is on RedMine. Individual inputs should be submitted just before Xmas, and the report will be delivered by the end of January.

AOB

Henk: As reminder: A set of guidelines for providing text for the reports has been added to Redmine, Wiki. Re-formatting of text in practice takes quite some time, and can be partly avoided if the guidelines are followed.