



CAMS-84, phase 2 Minutes of the PM-6 progress meeting

Webex

Minutes compiled by
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Agenda

PM-6 meeting of CAMS-84,

9:30-13:30, Friday 14 February 2020

Agenda

1. Welcome,
2. Project management (Jacques)
2019 Q4 deliverables, reporting, contract, news from CAMS SLBs ...
3. Progress, latest achievements, activities in the coming months, announcements (Henk)
status scoring doc (Michael)
4. Status of the WP1 report, SON 2019 (short statement from editors)
5. WP 2: status and progress (Jacques)
6. WP 3: Planning e-suite evaluation (Henk)
7. WP 4: status of the SON-2019 report (John)

Coffee break
8. Presentations by all groups (5 minutes each)
Focussing on innovation and new results
9. AOB

Participants

Bavo Langerock, BIRA-IASB
Harald Flentje, DWD
Sara Basart, BSC
Annette Wagner, MPG
Michael Schulz, METNO
John Kapsomenakis, AA
Eleni Katragkou, AUTH
Henk Eskes, KNMI
Antje Inness, ECMWF

Yves Christophe, BIRA-IASB
Simon Chabrillat, BIRA-IASB
Yasmine Bennouna, CNRS-LA
Sander Niemeijer, S&T
Anna Benedictow, METNO
Natalia Sudarchikova, MPG
Thorsten Warnecke, UBC
Jacques Claas, KNMI
John Douros, KNMI

Excused: Michel Ramonet, Anne Blechschmidt, Kaj Mantzius Hansen

Action items and deadlines

See Redmine for overview of the planning related to the deliverables.

- Henk: Investigate Canada surface observations and US embassy data availability
- John D: Explore CAMS-regional Interim Reanalysis data availability.
- John D (soon): add new aerosol output variables (dust, SIA, more to follow) to the station output.
- John D: check if the global model can be added as extra “regional” model in the station output
- Michael: Use the new variables (dust, SIA) for upcoming reports.
- Sara: Send email to ECMWF (Antje, Zak) on a formula to compute PM from dust and other aerosol species.
- Jacques: For the KPI on AOD bias to contact ECMWF on exact definition and to contact Michael concerning AOD bias monitoring for the regions.
- Sara, John, Henk: Discuss Joly-Peuch selection vs EIONET site classification: Can we do ozone and PM in a similar way, or better not?
- Henk: coordinate fire case study Australia for next DJF report.
- Jacques: Data policies on the operational server.

Action items from last meeting

The grey action items are closed:

- Henk: Investigate Canada surface observations and US embassy data availability
Not started yet, but to be picked up soon
- Henk: coordinate UV contribution in next e-suite report.
See below. Action closed.
- Henk: send Doodle for the second week of December to discuss the reanalysis paper of Annette
Done. Action closed.
- John D: Explore CAMS-regional Interim Reanalysis data availability.
John was in contact with INERIS, data will be available from ECMWF. Consistency needs to be checked, so the action is still open.
- John D: add new aerosol output variables (dust, SIA) to the station output.
This will be done, starting MAM-2020. Action open.
- John D: check if the global model can be added as extra “regional” model in the station output
This will be done, starting MAM-2020. Action open.
- Michael: Use the new variables (dust, SIA) for upcoming reports.
Michael will look at the additional variables, of use for the EARLINET and AOD validation.
- Antje: check if speciated PM would be possible to provide from CAMS-global.
Effort ongoing at ECMWF to reduce nr of variables in archive. Variables may be computed by offline processing, using formula provided by ECMWF. Sara would find PM10/PM2.5 for dust useful. Antje: if you have the formula you can compute it. Sara: easier to download just one field instead of 5.

Announcements by the Service Manager (Jacques, Henk)

Status Service Contract 2 (covering 2020 activities)

- SC2 has been signed end of February by ECMWF and KNMI.

Status existing subcontracts

- A draft Contract Change Note (CCN) is currently checked by the KNMI legal adviser. Once approved, this CCN will be sent to all subcontractors for signature. This CCN declares SC2 applicable to the subcontract. The CCN also contains an update payment table for the 2020 payment milestones.

Status finance SC1

- Payment T0 (advance payment at contract signature): all subcontractors have been paid.
- Payment T0+9 (June 2019): KNMI is still waiting for invoices from AU, BSC, CNRS-LA and MET-NO. Other subco's have been paid.
- Payment T0+15 (Dec 2019): delayed by 2 months as not all deliverables could be delivered on time

Status finance SC2

- Payment T0 (advance payment at contract signature): all subcontractors will be asked to send their invoices once CCN has been signed.

Key Performance Indicators (KPI):

- KPI 84.1.1 "Uptime Verification Websites": on average very good, uptime $\geq 99.5\%$. Subco's are asked to keep the content of their websites up-to-date till at least period from latest validation report!
- KPI 84.2.1 "Number of validation reports downloaded": on a longer timescale there seems to be a slight increase in the number of downloads (see figure next slide).
- KPI 84.3.2 "Common Area Fraction for the Neumayer site in Antarctica": script for calculating CAF has been written and tested against ECMWF provided numbers. First report on KPI in the 2020/Q1 Quarterly Report.
- KPI 84.3.3 "MNMB of the d+1 Aerosol Optical Depth global forecasts against AERONET sites for East Asia, Europe, North Africa and North America": script to be developed

Upcoming activities:

- Signing of Contract Change Note for Service Contract 2

Status SC1 deliverables: All deliverables delivered on time with a few exceptions:

- WP2 deliverables, related to the December validation server release due 31-12-2019, will be released end of February 2020.
- WP6 deliverable D6.2.1-2020 "Validation scoring methods document" due 30-9-2019, will be released end of February 2020 (TBC).
- This currently holds the final SC1 payment milestone by ECMWF.

Status SC2 deliverables:

- All documents so far (3) delivered on time

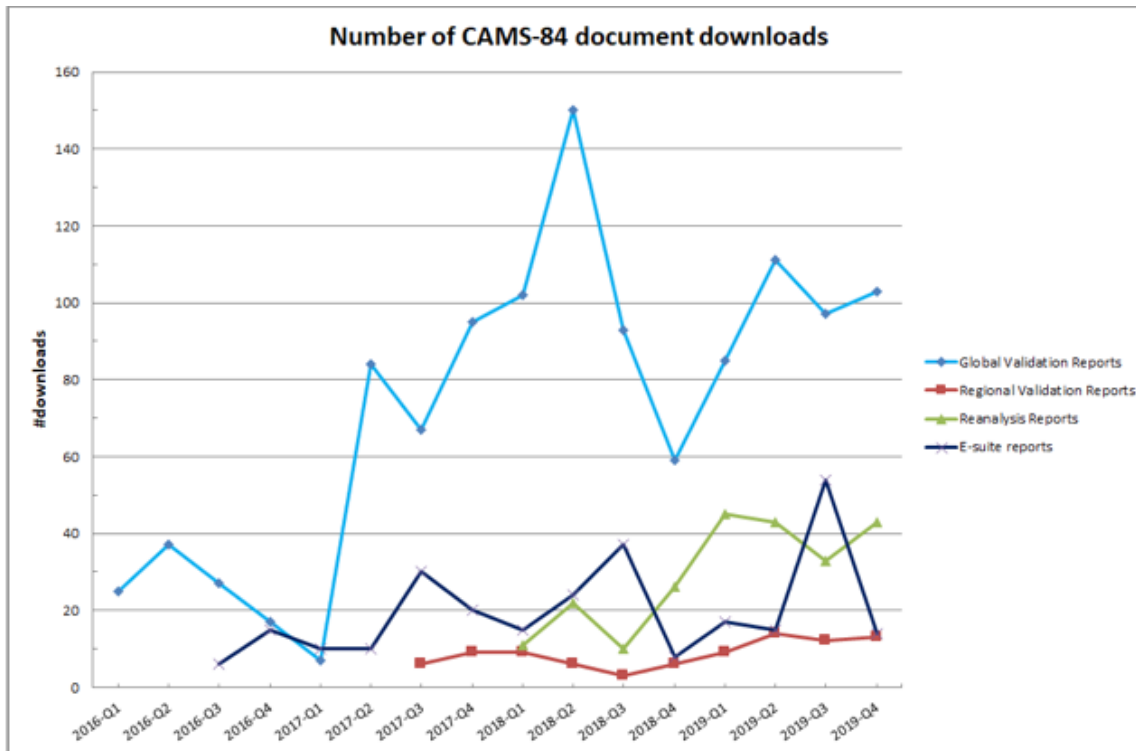


Fig. 1: Download statistics reports.

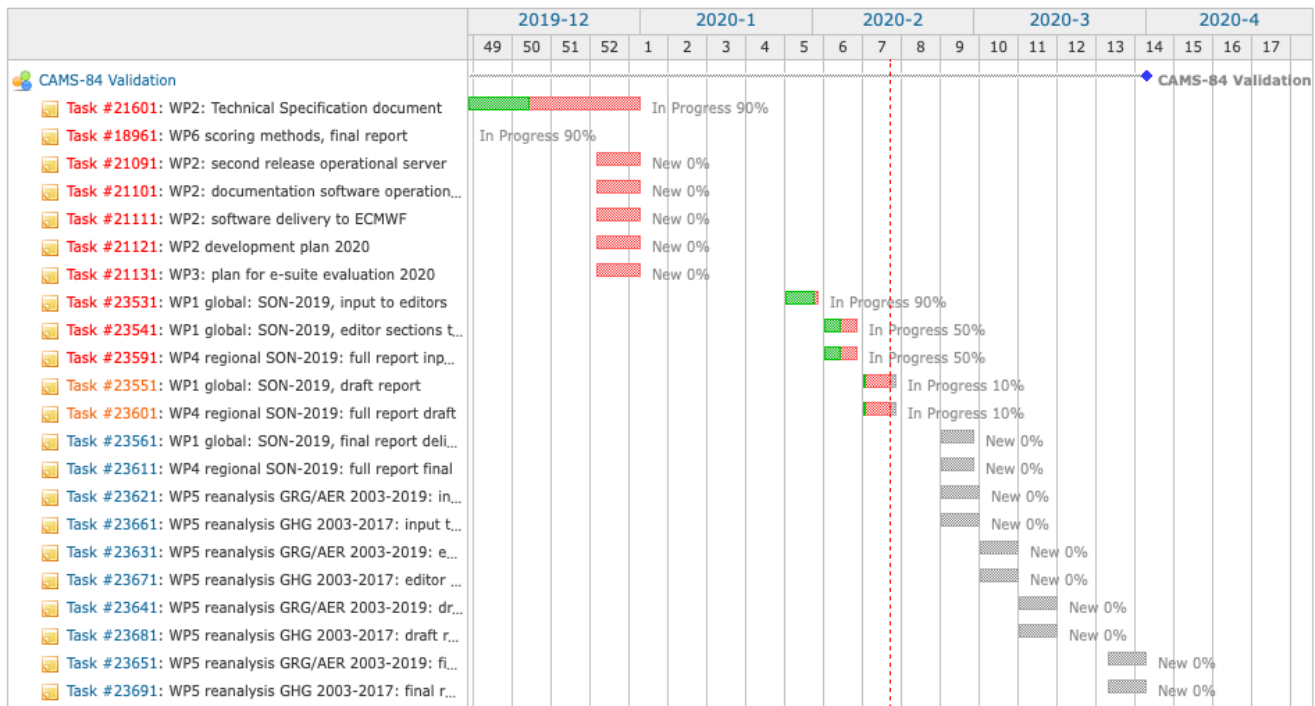


Fig. 2: Gantt diagram: status update second week February.

Project progress (Henk)

2019 Q4 / 2020 Q1 deliverables:

Status of the deliverables and milestones on 12/02/2020:
(yellow: delivered; green: approved; orange: delayed)

The project time-critical validation report deliverables are on track, but some non-time-critical deliverables are delayed:

- The scoring methods doc is late
- The delivery of the validation server, software and documentation is delayed

Next on the list:

- WP2 second release of the operational server + documentation
- WP1 SON-2019 report
- WP4 SON-2019 report
- E-suite quick-look feedback
- The reanalysis validation reports for GRG+AER and GHG are due at the end of March.

Status scoring document (Michael): Plan to finish the report within one week. Michael is working on the comments from Henk on the previous draft.

Status reanalysis paper, coordinated by Annette: At the beginning of January we had a telecon to discuss the aerosol section of the paper. This week new contribution from Yasmine: major new contribution. Aerosol part still missing. Sara is working hard on new contribution and hopes to deliver this next week. Michael is on holiday next week but plans to review the aerosol part when he comes back. Concl: the aerosol part should be there by end of the month. Annette will put a new draft on redmine.

Announcements (Henk)

- The CAMS-61 project has started, dealing with the development of the regional component. Henk is involved as advisor. A meeting is planned on 3-3 to discuss the interaction between CAMS-61 and CAMS-84, including a possible exchange of model/measurement/comparison results. People interested to participate: ...
- CAMS-50 is organising a workshop in Paris on 31 March to 2 April. John Douros and Henk Eskes plan to join. The CAMS-84 regional activity will be presented.
- Mark Parrington of ECMWF visited KNMI on 6 February and gave a colloquium on „the CAMS weather room“. The forecasts of CAMS will be monitored daily and events of special interest will be logged. There is a link with e.g. WP 2 since these event will be compared with real-time data as much as possible. If the validation server is up-to-date (filled with daily data) then this will be of interest to the weather room activity.
- Environment Canada is regularly evaluating the surface concentrations of CAMS global, compared to regional models in Canada and the USA. The results are not public, but on

request could be shared with CAMS partners. CAMS (40km resolution) is performing a bit less than other models (typically 10 km), but not bad overall. This work makes use of a combined score (based on factor 2, correlation and normalized bias), the air quality performance index (AQPI). This has a “good”, “acceptable”, “poor” type of scale. It may be interesting to discuss this score in the scoring doc?! Michael is interested.

- Because of the increased use of CAMS for AQ forecasts, also ECMWF is more closely monitoring CAMS against AQ surface networks worldwide (e.g. Airbase and AirNow). Michael mentions the systematic bias difference when comparing Europe and N-America. (Check HTAP and AQME special issue).
- Miha announced that the CAMS data store has opened. The data store contains currently the global reanalysis data and the regional forecasts data (for all 9 models).
- (Antje, email November) An upgrade of the NRT GHG system to CY46R1 is now available. It would be good if the CAMS_84 team could start to retrieve the data from the new experiments from 1 Dec 2019 onwards and then use them in the DJF2019/2020 GHG validation report. The experiment IDs are:
h72g = GHG analysis 46R1
h9sp = GHG forecast 46R1
- Jacques has developed a script to compute the CAF (common area fraction) for ozone profiles at Neumayer, compared to ozone sondes. This is a KPI for CAMS-global at this moment.

WP 1: SON-2019 validation report status

Editor status reports:

- Yves: the stratospheric section was delivered. In line with previous report.
- Annette: Many contributions late. One contribution still missing. Sections will be sent to KNMI early next week.
- Michael: input available on 11 February (on redmine).
- Michel: Several delays. Input expected next week.

Status of WP2 (Jacques)

URL: <https://global-evaluation.atmosphere.copernicus.eu>

The December 2019 release of the validation server is delayed.

- Status of the server has been discussed on January 31 between ECMWF, KNMI and S&T. ECMWF accepted delay to end of February.
- Lessons learned: in order to meet server release deadline all partners involved must start very early with preparations as the “devil is in the detail”: many iterations were needed when discussing the required HARP files (conversion to HARP, filename, file content), comparison details and setting up an operational data stream.

- Therefore: preparations for the next June server release started with a webex meeting last Monday, Feb 10 with all partners involved (CEA-LSCE, BIRA, CNRS-LA, BSC, AA, MPG, S&T). A timeline for all activities to be performed has been defined.

| February release server | June release server |
|--|--|
| - ESRL surface O3 <ul style="list-style-type: none"> • GAW surface CO, O3 • IASOA surface O3 • AERONET AOD • Sonde O3 profiles | Minimum: <ul style="list-style-type: none"> • ICOS surface CO2, CH4 • EVDC TCCON CO, CO2, CH4 column • IAGOS O3, CO, H2O profile Optional: <ul style="list-style-type: none"> • IAGOS CO2, CH4, NOx • EIONET PM2.5, PM10 • EIONET surface CO, O3 • GAW surface NO, NO2, SO2 • AERONET AE, fine fraction AOD • NDACC MAXDOAS trop. aerosol profile |

Status remaining SC1 WP2 deliverables, all due 31-12-2019, now to be delivered end of February 2020.

- D2.2.4
“Documentation of the software running on the validation server”
- D2.2.5
“Software delivery to ECMWF plus related documentation”
- D2.2.6-2019Q4
“Delivery of developments agreed for second half 2019 and development plans for first half 2020, including delivery of a full copy of up-to-date measurement data”

Thorsten asked if the data policy was already included on the server. Thorsten announced a major reprocessing of TCCON data, to become available about June 2020, with possibly data format changes.

WP 3 - evaluation of new experiments

The evaluation of the upgrade of Summer 2020, Cy47R1 has started. Yves send some first results for stratospheric ozone which looks very promising. The adjustment of the ozone climatology in the stratosphere seems to have removed the “artefact” at 30 km altitude.

For the next GHG upgrade we are also asked to provide an e-suite validation report for the greenhouse gases. Planned availability of e-suite 47R1 GHG data is somewhere in March 2020. (Antje, 12 feb): “I checked with Anna and the GHG team is actually ahead of the GRG/AER team and have started an 47R1 analysis experiment already (From 1 Dec 2019 onwards). Anna is now setting up a control and we will email you the IDs when both are up and running.”

The e-suite evaluation for 47R1 will also include a UV contribution. Henk discussed this with Marion Schroedter-Homscheidt. Involved are Antti Arola and Mikko Pitkanen.

As summary for the e-suite evaluation we will consider a “score-card”, a list of aspects evaluated with a color ranking better-neutral-worse. See e.g. for example

<https://confluence.ecmwf.int/display/FCST/IFS+Cycle+46r1+scorecards>

NWP 47R1 in June, but CAMS 47R1 will probably come a bit later. Fixing issues with fire emissions (capping OM). Possibly new GFAS v4. There are forecast-only tests running. This will be part of the e-suite run.

WP 4 – Evaluation of CAMS-regional above the surface

Status of the WP4 report, SON-2019: (John Douros)

- The summary for SON-2019 was delivered on 30 January and was accepted by Antje.
- The draft version of the SON-2019 full report is planned to be delivered early next week, on time. All input is available. No big surprises.

Presentations by all partners

On RedMine the slides presented at the meeting are available (merged to 1 pdf).

There were presentations by the persons listed below.

- New developments in analysis approach, measurements used, other new aspects
- Major (unexpected) results for the SON 2019 reports,
- New developments
- Other results, e.g. case studies

There are slides included from:

Michael (MET-NO): Aerosols; focus on fires.

Sara (BSC): Dust; NRT, Mediterranean.

Harald (DWD): Ceilometer. Poland dust case.

Eleni (AUTH): Global-regional comparisons, WP4.

Yves & Simon (BIRA): Stratosphere; 47R1 first look

Kaj (AU): Arctic.

Anne (IUP): NO₂, HCHO, satellite and MAX-DOAS; NRT, WP4.

Yasmine (CNRS-LA): IAGOS.

Annette (MPG): 47R1 first look, reanalysis and sonde bias issue.

John & Christos (AA): ESRL, EIONET ozone

Bavo (BIRA): NDACC

Natalia (MPG): MOPITT/IASI CO, IASI O₃

AOB

Yasmine: What about the two new models of regional CAMS? These are now on the ADS. This will be relevant for DJF report. John mentions that it is good to download within 5 days after production. In case of problems contact John.