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Copernicus Atmosphere Monitoring Service

Quarterly report Q4/2015

CAMS_84 / Validation

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Performance of the Service Contract

Work	CAMS_84.1 Validation of CAMS Near-Real-Time Global Products					
package #						
Performance	Tasks, repeated every 3 months:					
of tasks	 Retrieve forecast and analyses fields from the global service provider. Retrieve information on model and assimilation (datasets) upgrades and evolution, information on availability. Generate a set of routine validation plots for a core set of validation observations. Generate specific validation plots for all observational datasets and plots to be included in the validation reports by individual partners. KNMI is responsible for the general sections and the final editing. Discuss the results and conclusions with all CAMS-84 colleagues involved. Assemble the draft validation report. 					
	 Achieved during Oct-Dec 2015: All the above tasks were achieved. The report is publicly available at http://atmosphere.copernicus.eu/quarterly_validation_reports. The content for the first report is limited to all datasets which were also included at the end of MACC-III. 					
	 For the new themes (Arctic, Mediterranean, Greenhouse gases) the corresponding partners have worked on the preparations. The first results will be included in the second report. These new contributions were discussed in detail during a telecon (9 Dec) and the content/preparations for these new aspects are available as a set of presentations. These presentations are delivered to ECMWF. 					
	 The project started one month late. As a result, the final delivery of the report was late by 11 days, as agreed with ECMWF at the start of the project. 					
Deliverables	 D84.1.1: (M2) Validation report of the MACC near-real time global atmospheric composition service; delivered 					
Milestones	 M84.1.1: (M2) Availability of draft validation report two weeks before publishing; delivered 					



Work package #	CAMS_84.2	Verification of CAMS Near-Real-Time Global Products through provision of routine validation graphics		
Performance of tasks	 Tasks: Continuous: maintain the validation websites available in the MACC- III validation subproject with up-to-date content, and include development activities from WP 2 and 8 when they become available. Websites are reviewed every 3 months. Development (led by S&T): The development of an improved processing chain for verification/validation plots, including acquisition of the model fields and the measurements. Improved presentation of verification plots on the websites. At PM4: Delivery of the Specification & Design document, including a development plan for the first development phase. 			
	Achieved duri The M Preparas KPI A temp early D templa websit end of A serie Decem require	 Achieved during Oct-Dec 2015: The MACC-III websites are continued and kept up-to-date. Preparations have been made to monitor the up-time of the websites, as KPI to be reported monthly (3-monthly). A template for the new CAMS website was received from ECMWF early December. Feedback was provided to ECMWF and the final template was available after a few iterations. It is agreed that all websites should have implemented these CAMS templates by the end of February 2016. A series of interviews are conducted by S&T with all partners during December and January. This will result in an inventory of 		
Deliverables	 D84.2. conter D84.2. 	 (M2) Initial set of verification websites with up-to-date (continuity from MACC-III); delivered (M3) Up-to-date websites (based on new CAMS template). 		
Milestones	 It was M84.2 	agreed to delay this deliverable to February 2016. 1: (M3) Review of content of the websites; done		



Work package #	CAMS_84.3	Validation and assessment of upgrades of the CAMS global production system		
Performance of tasks	This work-package involves the assessment of model upgrades, or the "e- suite" Tasks:			
	 No tas the first 	ks in the first three months (there is no upgrade initialised in three months of CAMS)		
Deliverables	• (none)			
Milestones	• (none)			



Work package #	CAMS_84.4	Specific validation of CAMS Near-Real-Time Global Products for the Arctic and Mediterranean areas					
Performance of tasks	 Task 1: Arctic (Partner: AU) To collect and prepare data from IASOA, AMAP and other datasets mentioned in WP 84 1 and 84 7. To use results from the DFHM 						
	model 84.3 a	for evaluation. To deliver sections for the reports of WP 84.1, nd 84.7. To act as contact point for the IASOA and AMAP					
	Task 2: Medite	erranean (Partners: BSC/AEMET and AA)					
	NRT v	alidation of aerosols, PM10 and AOD (Task 2.1)					
	NRT v	alidation of reactive gases, O3, CO, NOx, HCHO (Task 2.2)					
	 Case s 	studies and extreme events (Task 2.3)					
	 Delivery of sections for the reports of WP 84.1 and 84.7. 						
	Achieved duri	Achieved during months 1-3:					
	In the first two months the contribution to the WP 1 report consists of a continuation of the MACC-III activity, and no separate sections are						
	introduced in the report for these two themes, but arctic and mediterranean measurements are included.						
	These two new contributions (tasks 1 & 2) were discussed in detail during a telecon (9 Dec) and the content and preparations for these new aspects are listed (to ECMWF) in a set of three presentations, made available to						
	ECMWF. Separate sections on these themes will be introduced in the second NRT report.						
Deliverables	D84.4.1: (M2) Validation results for the Arctic and Mediterranean, in						
	the for	the form of sections to be included in the validation reports of WP					
	84.1; delivered (note that the WP 4 contribution is limited, as explained above, focussing on continuity)						
Milestones	• M84.1	1: (M2) Availability of draft validation report two weeks before					
	publish	ning. delivered					



Work	CAMS 84.5	Validation of CAMS Regional Products above the surface					
package #	0, 110_0 110						
Performance	Tasks for first	3 months:					
of tasks	 Update 	e the discussion note developed during MACC-II.					
	Organise a meeting with CAMS-50 to find an optimal compromise						
	between the output requested and the extra output that can be						
	deliver	delivered by all models, and to discuss data transfer/storage.					
	Due to the late	e contract signature for both CAMS-50 and CAMS-84, this task					
	is somewhat o	delayed. It has been agreed to have a meeting between the two					
	subprojects in	subprojects in Paris, which will take place on 2 February 2016.					
	Before the meeting an updated plan will be written, to be used as input for						
	the meeting. The validation plan (D84.5.1) will incorporate the agreements						
	resulting from the meeting, and will be made available before the end of						
	February.						
	Mark has been norferred by U.D. U.D. and KNMI on the construction of the						
	work has been performed by IUP-UB and KINIVII on the comparison of the						
Delluserekles	regional models with MAX-DUAS measurements.						
Deliverables	• D84.5.1: (M2) Validation plan for the regional services; some delay						
	(about	(about 2 months).					
Milestones	 (none) 						



Work package #	CAMS_84.6	Validation of the interface between CAMS global and regional production systems				
Performance	Task 1. Comp	arison of CAMS regional and global model products.				
of tasks	 Model- 	-to-model comparisons for O3, CO and aerosol.				
	 Analys 	is of major events (dust, fire, and photochemical pollution				
	events	s).				
	 Evaluation 	ation of long-range transport.				
	Task 2. Evalu	ation of CAMS global and regional products.				
	 Compare results 	arison of regional and global products with observations, using from WP 84.1 and WP 84.5.				
	The "consiste	ncy reports" will be issued yearly. However, the WP will also				
	contribute the	3- monthly reports of WP 84.5 with short summary and list of				
	possible major inconsistencies.					
	Achievements in the first months (partner AUTH):					
	This is a new contribution which needs to be developed. It was discussed in					
	detail during a telecon (9 Dec) and the content and preparations for this new					
	aspects is provided in a presentation by AUTH, available on the CAMS-84					
	internal Redmine page (available to ECMWF). Three-monthly contributions					
	will be available from M5 onwards.					
	Preparations consist of getting access to the Meteo-France dissemination of					
	the global and regional model outputs					
Deliverables		before 1 Jan 2016)				
Milestones	• (none)					
	(



Work	CAMS_84.7	Validation of CAMS Global Reanalysis Products		
package #				
Performance	This work-pac	kage involves the validation of the CAMS global reanalysis		
of tasks	products deliv	ered by the global data provider ECMWF.		
	Tasks:			
	 No tasks in the first three months (there is no reanalysis data 			
	available at this moment; start of the reanalysis is planned for			
	Summ	er 2016)		
Deliverables	• (none)			
Milestones	• (none)			



Work	CAMS_84.8	Improvement of validation methodology					
package #							
Performance	There are four	r objectives for this work package:					
of tasks	1. Deliver a report to characterise the measurements used.						
	2. Develop scoring methods.						
	3. Report on "data mining"						
	4. Publish results.						
	Activities M0-I	M3:					
	 A first draft v 	0 of the "Observations characterisation document for					
	validation" has	lidation" has been created based on material from MACC-III.					
	- A first draft v	A first draft v0 of the "Validation Scoring Methods" document has been					
	created based	on material from MACC-III.					
	These documents are not intended to be published at this memory. They will						
	be reviewed internally to discuss the subsections and content. These						
	reviews will take place in February (after the draft validation report has been						
	delivered) and	delivered) and a plan will be made to extend and improve the content.					
Deliverables	• D84.8	D84.8.1: (M3) Observations characterisation document for validation:					
	delivered						
	 D84.8. 	 D84.8.2: (M3) Validation scoring methods document; delivered 					
Milestones	• M84.8	M84.8.2: (M3, M6, M9,.) Review of draft document, updated work					
	plan						

Other points:

- Sub-contracts: A major effort is setting up the subcontracts with all partners. 6 contracts (about half) have now been signed, with partners AA, AU, AUTH, BIRA, BSC-AEMET and MET-NO. The contract with CNRS-LA is in an advanced state and will be finalised soon. Three partners (S&T, IUP, CEA-LSCE) provided substantial feedback on the first draft contract text, and iterations with these partners takes more time. It is our aim to complete these contracts in January. UBC is late in providing feedback on the draft contract.
- DWD and MPG have investigating if Annette Wagner can be hired by MPG. MPG has recently provided a positive result, and we hope to hire Annette by 1-2-2016. The CAMS-84 board will be approached (20 jan 2016) to ask for their approval of the total cost neutral transfer of funding from DWD to MPG.
- Upon approval, two new draft contracts will be send to DWD and MPG. The DWD allocation will be reduced by 75% (€196.500), and this amount, and corresponding tasks, will be added to the MPG contract.
- Our service manager, Jacques Claas, has started on 1-1-2016.
- The service manager will write a proposal for the use of Redmine by the sub-contractors. This enables efficient monitoring by KNMI on the progress of the work of all sub-contractors involved. This is especially needed to monitor the transition from the current research phase to the required operational phase.
- Preparations for the next NRT validation report have started. Scheduled release date is February 29th, 2016.



Key Performance Indicators

KPI	Target end of contract	Status previous quarter (Q-1/Y)	Current status (Q4/2015)	Expected status (Q+1/Y)	Comments trend
KPI 1: Timeliness. Timeliness of the validation reports.		n.a.	According to schedule.	According to schedule.	The first NRT validation report was published on time and is available on the CAMS website. It is expected this will be the case for the next reports.
KPI 2: User Uptake: The number of downloads for each of the validation reports.		n.a.	Operational. This KPI is monitored by ECMWF. Results are reported to KNMI.	Operational.	Currently, only the CAMS website is monitored. In the next coming weeks the MACC website will be included in this monitor. The monitor will provide Total Downloads (the total number of times a document has been downloaded) as well as Unique Downloads (the amount of downloads per IP address). ECMWF will provide monitoring reports on a monthly basis. A first result is shown in the table on the next page.
KPI 3: User Satisfaction Percentage /numbers of users that find sufficiently quantitative information in the validation reports for their area.		n.a.	Not implemented yet. This will be discussed with CAMS-94, Thomas Popp.	Expected not to be operational.	
KPI 4: Verification Websites. Percentage of 'uptime' of the verification websites.		n.a.	A choice has been made to use 'Uptime Robot' for monitoring the uptime of websites. This is a free online	Operational.	-

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monitoring service.	
Not operational yet.	

Results for KPI 2 "User Uptake":

01.12.2015 - 31.12.2015		
Files	Total Downloads	Unique Downloads
Quarterly validation report December 2015	2	2
Quarterly validation report June 2015	2	2
Quarterly validation report September 2015	2	2

Financial reporting

Use of Funds invoiced to ECMWF

				Duration	Amount (EUR)
Price Framew	vork Contract			36 months	2 824 999.00
Price Servic	e Contract 1			15 months	1 222 259.00
Invoices iss	ued during quarte	r Q4/2015			
Payment number	Date request for payment	Period of activities /Milestone covered	Activities covered by payment		Amount (EUR)
1	20/01/2016	Q4 2015	Upon acceptance by ECMWF of the deliverables d 84.5, 84.6, and upon acceptance by ECMWF of th WP 84.2, WP 84.3, WP 84.7 and WP 84.8 (includ	ue for WP 84.1, 84.4, ne progress made for ing deliverables)	218 750.00
[]					[]
				TOTAL	218 750.00
Remarks					



Summary of cost break-down for payments linked to COST-REIMBURSEMENT activities*:

WP	Name (sub-)contractor	Personnel costs (EUR) (incl. overhead)	Travel costs (EUR)	Computing costs (EUR)	Other costs (EUR) [specify]	Total Amount (EUR)	Deliverables and milestones
WP1						[]	
WPn							
		[]					

* The selected payment procedures are specified in Annex 3C of the Service Contract. Details shall be in line with the Report on the Use of Resources as submitted for the Contract Performance Verification of the payment.

Not applicable for this Quarterly Report Q4/2015.



Anticipated costs, expenses and price claims

Below an overview is given on the evolution of the use of Funds from the start of the service contract up to the next two calendar quarters.

						Amount (EUR)		
Price Frame	work Contract				36 months	2 824 999.00		
Price Servi	ce Contract 1	L	15 months	1 222 259.00				
Calendar Quarter	Payment number	Date request for payment	Period of activities /Milestone covered	Activities covered by payment	Amount (EUR)	Percentage	Cumulative budget (EUR)	
Q1/2016	2	29/01/2016	Milestone 84.2.2	Upon acceptance by ECMWF of the "specification and design" document of WP 84.2, to be delivered in month T0+3.	25 000.00	2%	243 750.00	
Q1/2016	3	20/04/2016	Q1 2016	Upon acceptance by ECMWF of the deliverables due for WP 84.1, 84.4, 84.5, 84.6, and upon acceptance by ECMWF of the progress made for WP 84.2, WP 84.3, WP 84.7 and WP 84.8 (including deliverables)	218 750.00	18%	462 500.00	
Q2/2016	4	20/07/2016	Q2 2016	Upon acceptance by ECMWF of the deliverables due for WP 84.1, 84.4, 84.5, 84.6, and upon acceptance by ECMWF of the progress made for WP 84.2, WP 84.3, WP 84.7 and WP 84.8 (including deliverables)	218 750.00	18%	681 250.00	
	1	1	1	TOTAL				

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Remarks	S&T WP 84.2 delay T+04 (February 2016)

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Checks, audits and risk management

Checks and audits

According to section 4.7 "Control Mechanisms" of the CAMS-84 Financial Project Manual, which is part of all sub-contracts, twice per year costing details will be asked from two arbitrary sub-contractors.

Also, for every quarterly invoice from the sub-contractors KNMI will also ask for financial details.

Such regular checks/audits by the contractor KNMI have not been taken place yet.

Ex-post audits are not relevant yet considering the current phase of the CAMS-84 project.

Update on the risk and mitigation plan

From the risks, identified in the risk table as contained in Table 5 of the Pricing Tables, only the risk "Loss of persons" shown below has been updated. With most contracts either being finalized or almost final, the likelihood of this risk has therefor been reduced from 3 to 2.

Risk Name	Description	Likelihood	Impact	Response Strategy
Loss of persons	Risk of non-availability of persons, due to illness, job mobility or other causes, that may result in missing inputs for the validation report	2	3	Transfer/share: Most partners will have a team of persons involved, and will be able to take over the duties. If this fails, the consortium will check options to provide the contributions with the help of the other partners; Avoid: Delays are detected early, and appropriate measures will be taken to ensure that all contributions are in place before the deadline. <u>The following mitigation action has been carried out</u> : Due to contractual limitations of A. Wagner from DWD, her CAMS-84 work at DWD could not start. It has been proposed by KNMI to shift 75% of the DWD budget from DWD to MPG in Garching. This enables A. Wagner to start her CAMS-84 work at MPG instead of DWD. The official approval from DWD for this budget split is expected in week 3 of 2016. KNMI will approach the CAMS-84 board on Jan. 20 th , 2016 for the approval of the cost neutral transfer of funding. Then, the KNMI-DWD and KNMI-MPG sub- contracts will be updated to reflect this change.

Note:

For the risk and mitigation plan in future Quarterly Reports, KNMI proposes a somewhat different presentation in the form a Risk Register containing a matrix. This provides "at a glance" a better insight in the current status of the identified risks. An example of such an approach will be issued for discussion.



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Fixed assets (equipment)									
None	None According to Table 5 in the Pricing Table, fixed assets will only be acquired by sub-contractor MED-NO for an amount less than 7000 euro's. Therefore, details do not need to be provided here.								

Note:

For all the IPR assets from sub-contractors S&T and AU as mentioned above, article 3.3.3 of the Prime Contract applies.



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