PP CARMA

Common Area with Rfdbk/MEC Application

STATUS REPORT

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OVERVIEW

1. Tasks advancement

2. Issues (Past)

3. Issues / Requests / Questions (New)

4. Summary for each center

1. Tasks advancement

Task 1. First Level Support Implementation and Training Start 12.2018 – End 06.2019 – DONE

1.1 Documentation review (MEC-Rfdbk), analysis of resources required – **done**
1.2 Documentation preparation (MEC-Rfdbk) – **done**
1.3 Preparation of a complete example set of data (one season, one model) to be used – **done**
1.4 Training provided by DWD experts for first level support to the PST – **done**
1.5 Implementation of the MEC-Rfdbk system @NMA and @HNMS* – **done**
1.6 Adaptation of scripts for the production of the CP requirements – **done**

1.7 Setup of web interface with the use of Shiny R routines on COSMO server
Start 05.2019 – End 06.2019 **done**
- it was decided to use the existing shiny platform also used for the NWP Test Suite

Task 2. Second Level Implementation and support Start 05.2019 – End 10.2019 ON-GOING

2.1 Remote training PST for users from each center. Dissemination of instructions, mailing list creation for problems solving, videoconferences, etc. - **ON-GOING**

2.2 Implementation of MEC-Rfdbk system in each participating center with support of PST - **ON-GOING**

REMINDER – Documentation

- **Documentation uploaded to the WG5 Repository:** **http://cosmo-model.org/view/repository/wg5/PP-CARMA/Task1**

How to install
Task-1.2_Install_notes_CARMA_v1.2.pdf

How to use (example based on NWP Test Suite @ECMWF)
NWPTest-Suite_Doc4CARMA.docx

About RFDBK
FFverificationsuite[at]DWD.docx

About feedback files
cosmoFeedbackFileDefinition.pdf

REMINDER – Data available on the FTP server

- Observations in netcdf format
- Template for running MEC
- Template for running Rfdbk

For FTP server credentials, write to us (Amalia or Bogdan).

REMINDER – Data available on GITHUB

- Source code for DACE
- Sources for the Rfdbk package
- Scripts to run verification using Rfdbk

For GITHUB access, see documentation ***Task-1.2_Install_notes_CARMA_v1.2.pdf***

ON-GOING & Next

Task 3. Cross-validation of implementation Start 03.2020 – End 08.2020 - delayed

3.1 Performance of a complete seasonal test with all the necessary output for the CP reports.
Start 03.2020 – End 08.2020

3.2 Transfer of statistical output to COSMO web server and visualization of results.
Start 03.2020 – End 08.2020

3.3 Optional comparison of test output with VERSUS system or any other “home” verification system.
Start 04.2020 – End 08.2020

Task 4. Elaboration of guidelines for CARMA (MEC-Rfdbk) system use

Start 08.2020 – End 09.2020

- *delayed, dependant on previous tasks*

2. ISSUES (PAST)

1. obtaining the code for some participants – **OK**

2. processing of cumulated parameters in MEC (mainly precipitation) – **solved**

HOW: switch in the MEC namelist (see next slide)

3. missing gust data from observations – **solved**

HOW: (see next slide)
- using a new set of observations

- **use the archives named with AED (if several archives are available)**

Q: does anyone still need the old observation archives (those without wind gust)?

4. some issues with defining verification area in Rfdbk – **tackled before distributing the template**, so should be **OK**

5. COMMUNICATION – please write back!

2. processing of cumulated parameters in MEC (precipitation) – solved

HOW: switch in the MEC namelist

Thanks @DWD

```
&veri_obs
  fc_times      = TO_FILL ! forecast lead times (hhmm)
  rm_old        = 2                          ! overwrite entries in verification file ?
  fc_file       = 'INAME_fcday-vvVVVMM.grib'     ! template for forecast file name
  prefix_out    = 'ver'
  det_suffix =''                          ! suffix for determ. file name
  fg_check   = 0                             ! quality check switch
                                             !  0: no QC (quality control)
                                             !  1: QC against deterministic run
                                             !  2: QC against ensemble mean
                                             !  3: QC against all ensemble members
                                             !  4: check for blacklisting + gross
  interpolation = 1                         ! time interpolation
                                            ! -1: linear
                                            !  0: nearest leadtime
                                            ! >0: use nth slot (nearest upper leadtime)

  time_range    =      1
/
```

Before producing FF files

Adapt your MEC namelist, if you haven't already!

3. missing gust data from observations – solved

HOW:

- using a new set of observations
  - compared to those from VERSUS, this set contains both the common_new* observations and the common_wg (both sets of data, continuous parameters and wind gust)
  - more on the observations: follow-up presentation with some results

- **use the archives named with AED (if several archives are available)**

Q: does anyone still need the old observation archives (those without wind gust)?

- If not, can they be removed to avoid confusions?

Consequence: **when comparing results to VERSUS, scores might differ!**

3. NEW ISSUES / REQUESTS / QUESTIONS to be tackled

- **Some centers are unable to verify COSMO bc.**
  - MEC model data requirements
  - storage resources / not all required model data are archived
- **Migration from COSMO to ICON** – use MEC+Rfdbk for ICON
  - In fact, more people are interested in applying to ICON instead of COSMO
- **ICON-global** is usually included in the CP graphs - we are working on this
- **Shiny server** on the COSMO web site is used
  - OK for CP needs, but **not for individual verification** by each center

These were not foreseen in the initial PP request!

PP CARMA – STATUS

Status: DELAY in the COMPLETION of some TASKS / need for Additional ones

Extension for 1 year required, pending approval from SMC / STC.

Task 3. Cross-validation of implementation

NEW TASKS : Deadline August 2021

3.4 Set-up and testing of MEC+Rfdbk capabilities for ICON-LAM

3.5 (optional) Set-up of individual shiny server for visualization

Resource distribution and timeline for extended tasks

Task	0	1	2		3					4
			2.1	2.2	3.1	3.2.	3.3	3.4	3.5	
Remaining to be done	0.16	0	0.165	0.15	0	0.08	0	1.41	0.4	0.08
Additional (New)	0.1	-	0.2	-	-	-	-	0.33	0.4	-
Redistribute res. (to other task)	-	0.025 (2.1)	-	-	0.9 (3.4)	-	0.18 (3.4)	-	-	-

4. Summary for each center

	Implementation		Run		VERSUS comp	CP
	MEC	Rfdbk	MEC	Rfdbk		
NMA	y	y	y	y	y	y
HNMS	y	y	x			
DWD	-	-	y	y	-	y
MCH	-	-				
IMGW	y	y	y	y	y	y
COMET	y	y	p	y		
RHM	y	(y)				
IMS	y	y				
ARPAE	y					
ARPA-PT						

PP CARMA – STATUS

STATUS of IMPLEMENTATION – NMA (*A. Iriza-Burca, B. Maco, R.C. Dumitrache*)

- ➔ DACE and RFDBK implemented (*Thanks to H. Anlauf, R. Potthast, F. Fundel!)*
- ➔ bufr2netcdf software implemented (*Thanks to D.Cesari*)
- ➔ Extraction of bufr observations from MARS and conversion to netcdf.
- ➔ adaptation of scripts for the production of the CP requirements (*with F. Fundel, DWD*)
- ➔ **MEC runs for MAM on own data**
- ➔ **Rfdbk runs for MAM on own data**

➔ *Results in next presentation*

Tasks finished

STATUS of IMPLEMENTATION – DWD (*F. Fundel*)

- ➔ adaptation of scripts for the production of the CP requirements
- ➔ **MEC runs for MAM on own data**
- ➔ **Rfdbk runs for MAM on own data**

@Felix: Thank you for the support!

➔ *Results in next presentation*

Tasks finished

PP CARMA status at IMGW-PIB

1.	Installation of MEC, Rfdbk and Shiny Server	✓
2.	Test Rfdbk using feedback files examples downloaded from github	✓
3.	Test MEC configuration with hindcast data from the Test Suite (provided by Amalia)	✓
4.	Preparation of COSMO PL model data and observational data: - implementation of bufr2netcdf software - creation of cdfin_synop.nc files, based on our local synop data, (not from MARS)	✓

PP CARMA status at IMGW-PIB

5.	Creation of COSMO PL feedback (season MAM)	✓
6.	Run of starter_Rfdbk_template.bash	✓
7.	Verification Scores creation SYNOP_bs_.Rdata CATEG_.Rdata CATEG_bs_.Rdata CONT_.Rdata CONT_TS_.Rdata	✓

➔ *Results in next presentation*

Tasks finished

HNMS - CARMA

1. Successful run of test cases MEC @ECMWF (cca)

2. Installation of Rbdfk @ECMWF (ecgate)

3. Problems for continuing the Task work

➔ **No upper-air fields available** for COSMO-GR4 for CA
Only surface data available for CA / complete set over Greece

➔ Only option to skip COSMO CP verification and **continue with ICON-GR**

➔ Adaptation of running routines and necessary data archiving need to be done.

➔ HNMS management decision for continuation of running COSMO-GR4 will influence the timeline of the ICON-GR CP verification.

HNMS - CARMA

Additional issues that CARMA PST could help if project extended to ICON

- **ICON-GR output in netcdf format** – has to be converted in grib2 (**iconremap tools**)
- Some variables not properly converted.
- **Currently testing** to exclude these variables and run MEC with the remaining ones
- **More time needs to be dedicated for these procedures (fall-winter 2020?)**
- ICON-GR output is being verified for now with VERSUS for CP.

@Flora: Thank you for the support!

STATUS of DACE/MEC and RFDBK IMPLEMENTATION – COMET (*F. Batignani*)

➔DACE and RFDBK implemented

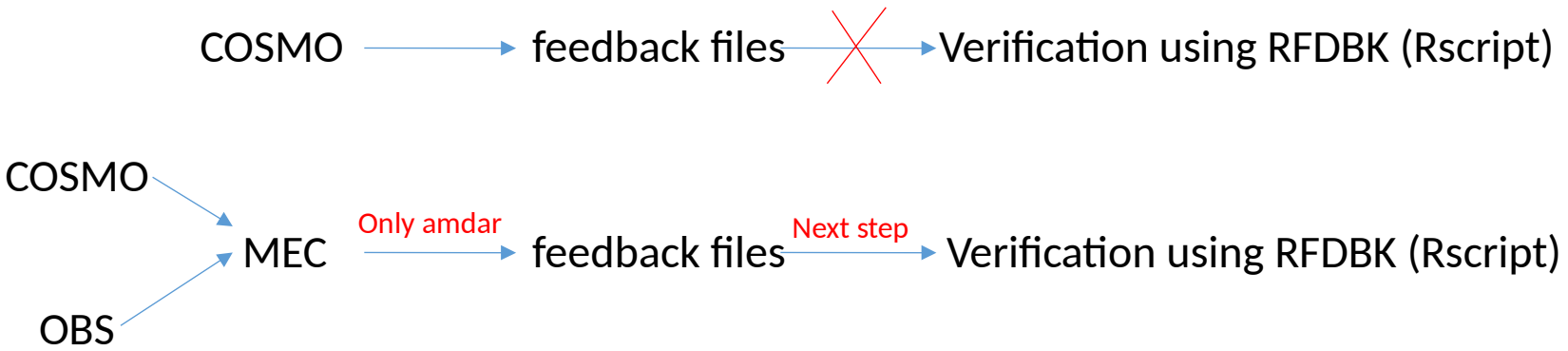
➔FF files from COSMO model produced for test period: 01.03 – 03.03

➔Rfdbk run for test period: 01.03 – 03.03

➔ *Results in next presentation*

CARMA PROJECT

IMS' members: Itzhak Carmona, Pavel Khain, Alon Shtivelman



STATUS of DACE/MEC and RFDBK IMPLEMENTATION – Arpa-PT (*N. Vela*)

no installation yet, work to be done in the next period

discussions during GM for more detailed information about the software and machine specifications

will probably dedicate a machine just for this system

STATUS of DACE/MEC and RFDBK IMPLEMENTATION – Arpa-E (*M.S. Tesini*)

MEC implemented

PP CARMA STATUS

- **STATUS of DACE/MEC and RFDBK IMPLEMENTATION – MCH (*P. Kaufmann, A. Pauling*)**

  - ➔ MEC and Rfdbk installed and in use before the project
  - ➔ MEC is run regularly to produce feedback files from the forecasts for the verification
  - ➔ currently, they use their own scripts based on Rfdbk for upper air verification

- **STATUS of DACE/MEC and RFDBK IMPLEMENTATION – RHM (*A. Kirsanov*)**

  - ➔ Problems with outside ssh connection => dace code uploaded to ftp
  - ➔ MEC installed and tested

Thank you!

Questions?

PLEASE COMMUNICATE...!