Participant Call September 9, 2021

Participants: Rohit Mathur, Christian Hogrefe, Richard Kranenburg, Saurabh Kumar, Paul Makar, Stefano Galmarini, Aura Lupascu, Donna Schwede, Jesse Bash

- Technical notes
  - Activity 1 technical note: received minor reviewer comments, revised version submitted. Added COSMO-MUSCAT scheme and table, updated LOTOS-EUROS and CMAQ-STAGE schemes and tables, removed HZG/CMAQ and CIEMAT/CHIMERE from list of participating models
  - Point intercomparison / Activity 2 technical note: After interactions with special issue guest editors and ACP executive editor, the Activity 2 leadership team decided to resubmit revised manuscript and is currently discussing the best approach for doing so.

- Grid intercomparison (Activity 1)

  - Participant updates on postprocessing, data upload, and analysis
    - Summary of current upload status – see table on pages 3-4 of these call minutes
    - Christian to follow up with Richard regarding post-processing of effective fluxes, grid-scale diagnostics
    - Aura working on revisions to selected variables, adding some variables previously not uploaded (PM concentrations, wet deposition), plans to upload revised files by ~September 20
    - Saurabh: CMAQ runs are starting (discovered and fixed emissions issues in previously-started simulations), WRF-Chem not running yet due to emissions issues, expect to start in a few days. May start uploading CMAQ results by the end of the September.
    - Paul: will upload effective fluxes for 10704 (GEM-MACH Zhang case) which are currently missing
  - Screening plots to check for spatial and seasonal patterns, data ranges
    - Christian prepared and shared screening plots (seasonal maps and time series) with participants ahead of the call
    - Christian asked participants to view, comment, and ask questions
    - Stefano suggested to share the screening plots with Ioannis, Christian will do so
    - Paul: groups should start thinking about analyses and manuscripts they'd like to lead:
      - Ioannis will lead overview operational evaluation manuscript
      - Paul: interested in multi-model critical loads exceedance calculations NA – EU; Paul to follow up with Julian Ahern and Johannes Bieser. EPA: Jason Lynch, Chris Clark, Jesse Bash, Robert Sabo. Donna will facilitate
      - Christian: CMAQ-M3DRY and CMAQ-STAGE comparison and analysis
      - Paul: may do GEM-MACH intercomparison
      - Expect several point-model-focused manuscripts (e.g. Olivia, Jesse)
  - Receptor processing tool - email sent by Stefano on June 3, 2021:

    - Code and observational data were initially posted in early June - see email sent by Stefano on June 3 and June call minutes
    - In July, the code and data for North America were updated with the capability to compute averages over arbitrary time periods based on hourly model output data (e.g. weekly wet deposition totals matching NADP measurement time periods)
    - The updated code and data are available to participants – see information on pages 5 – 6 of these minutes
- Point intercomparison (Activity 2)
    - Last call August 24, notes are posted on the github site
    - Distributed data to modelers, initial results were presented
    - Goal: have all "base" model runs completed by mid-to-end September.
    - After "base" runs are submitted, will work on revising TN2 for resubmission
    - After that, planning to perform sensitivity simulations with perturbed inputs and data obtained from grid models
    - Driving box models with grid model data:
        - Christian drafted revisions to grid model met TSDs and sent them to Chris, Paul, and Donna for review
        - Christian also noted in an email to Chris, Paul, Olivia and Donna that there is limited overlap between the time periods for which the grid models were run and the time periods when measurements are available at the 8 observational sites:
            - NA: Borden Forest (2010 only)
            - EU: Easter Bush and Hyytiälä (2009 and 2010)
        - Paul: may still be worth doing, even with limited data

- Upcoming meetings:
    - MAC-MAQ September 14 - 17, 2021
    - ITM October 18 - 22, 2021
    - CMAS November 1 - 5, 2021
    - AGU December 13 - 17, 2021
    - AMS January 23 - 27, 2022

- Next call October 14, 9:00 EDST / 15:00 CEST

Upload Status September 8, 2021:

•	Continent / Year	001 (gases + aerosols)	002 (grid-scale wet and dry dep fluxes)	005 (meteorology)	012 – 122 (grid-scale dry dep diagnostics	132 -442 (LU-specific dry dep diagnostics)	452 (NH3 bi-directional)	462 (AQMEII4 LU fractions)	462 (native LU fractions)
10700 (EPA CMAQ M3DRY)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10701 (EPA CMAQ STAGE)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10702 (IASS WRF-Chem)*	EU 2009	x	x	x	x	x			
	EU 2010	x	x	x	x	x			
	NA 2010	x	x	x	x	x			
	NA 2016	x	x	x	x	x			
10703 (ECCC GEM-MACH BASE)	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10704 (ECCC GEM-MACH ZHANG)**	NA 2010	x	x	x	x	x	x	x	x
	NA 2016	x	x	x	x	x	x	x	x
10705 (ECCC GEM-MACH OPS)	NA 2010	x	x	x	x	x		x	x
	NA 2016	x	x	x	x	x		x	x
10706 (TROPOS COSMO-MUSCAT)	EU 2009	x	x						
	EU 2010	x	x						
10707 (TNO LOTOS-EUROS) ***	EU 2009	x	x	x		x			
	EU 2010	x	x	x		x			
10708 (UPM WRF-Chem)	EU 2009								
	EU 2010	x	x	x	x				
	NA 2016								
10709 (UCAR WRF-Chem)	NA 2010	x	x	x				x	x
	NA 2016	x	x	x				x	x
Hertfordshire CMAQ	EU 2009								
	EU2010								
Hertfordshire WRF-Chem	EU2009								
	EU2010								

Browse uploaded files at https://ensemble.jrc.ec.europa.eu/ensemble/pvt/aqmeii4/ - login required

* Selected variables and cases will have to reprocessed due to unit issues

** Effective conductances for 10704 (part of cases 012 – 122) will be reprocessed, currently reported as missing

*** LOTOS-EUROS 10707 0341 files are labeled “2010”, 0351 files are labeled “2011”? For cases 132 – 442 (LU-specific dry deposition diagnostics), 212 – 242 and 392 – 442 are not currently on ENSEMBLE – LU types 5-6 (Deciduous needleleaf forest and Evergreen broadleaf forest) and 14-16 (wetlands, tundra, and snow/ice) not present in LOTOS-EUROS? For uploaded 132 – 442 cases, not all variables are reported

Code processing gridded data from -001, -002, and -005 .ens.bz2 files for receptor locations:

https://github.com/enviroware/ensemble_rec_manager

Receptor Datasets Prepared by Roberto Bianconi:

NA2016 GAS/AEROSOL/PCHEM:

https://www.dropbox.com/s/seqwfkkshojzfqp/AQMEII4.NA2016.GAS_AEROSOL.PCHEM.20210715.tar.gz?dl=0

NA2010 GAS/AEROSOL/PCHEM datasets (excluding Canadian gas and aerosol):

https://www.dropbox.com/s/by08nv0cvy4sc5q/AQMEII4.NA2010.GAS_AEROSOL.PCHEM.20210716.tar.gz?dl=0

EU 2009 GAS, AEROSOL and PCHEM:

https://www.dropbox.com/s/a9a2kmm8x9ah8xq/AQMEII4.EU2009.GAS_AEROSOL_PCHEM.20210702.tar.gz?dl=0

EU 2010 GAS, AEROSOL and PCHEM:

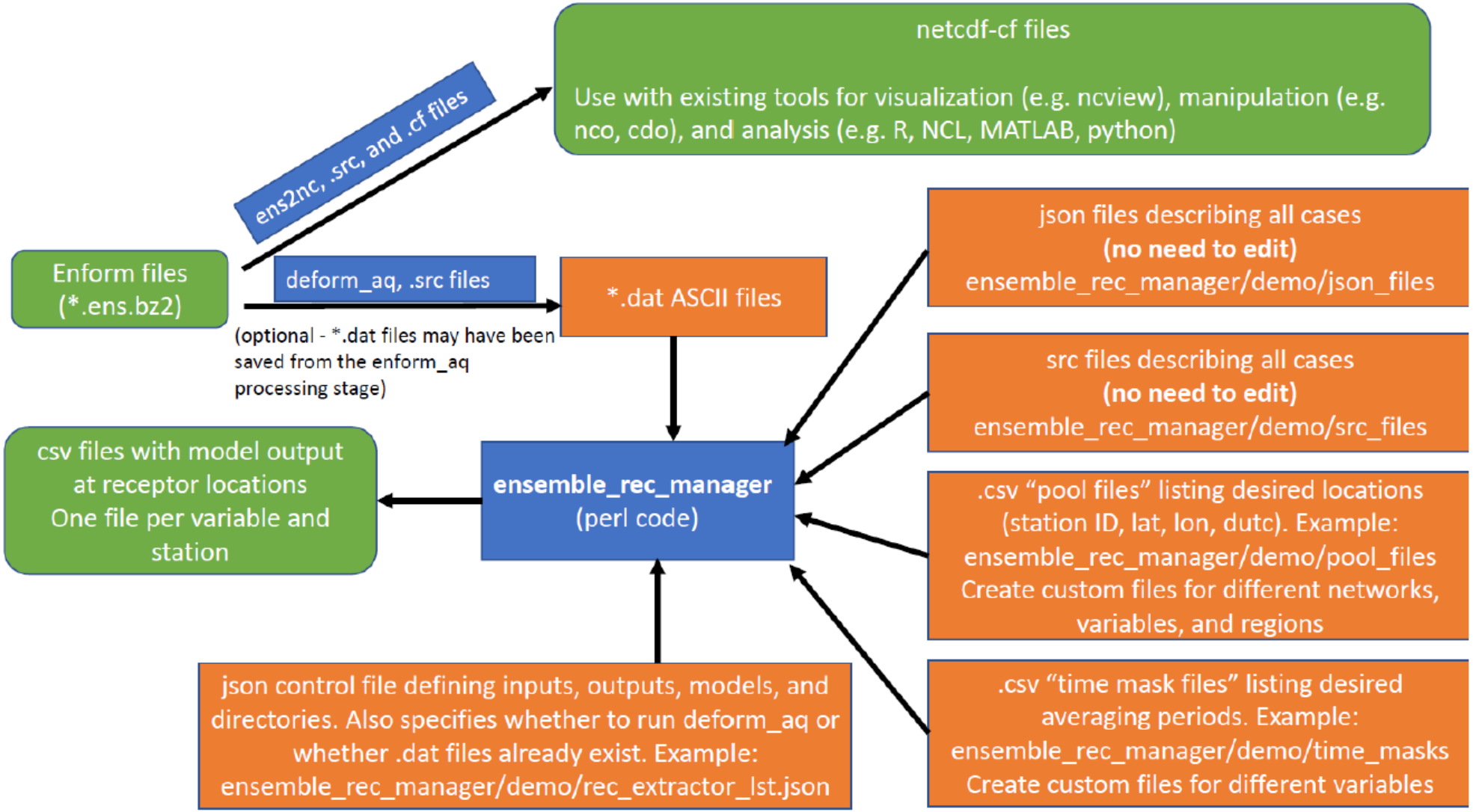
https://www.dropbox.com/s/bj1gqb92iwijrd6/AQMEII4.EU2010.GAS_AEROSOL_PCHEM.20210702.tar.gz?dl=0

2009, 2010 (EU) and 2010, 2016 (NA) Meteorology:

https://www.dropbox.com/s/e0hqihixg6b2vtj/AQMEII4.METEO.EU2009.20210427.tar.gz?dl=0
https://www.dropbox.com/s/fmfk27khyxmhim7/AQMEII4.METEO.EU2010.20210427.tar.gz?dl=0
https://www.dropbox.com/s/e5dc9ap19l7nb7g/AQMEII4.METEO.NA2010.20210427.tar.gz?dl=0
https://www.dropbox.com/s/xr9fe9it8osqorr/AQMEII4.METEO.NA2016.20210427.tar.gz?dl=0

2009, 2010 (EU) and 2010, 2016 (NA) Ozonesondes:

https://www.dropbox.com/s/zefkibw6zpask71/AQMEII4.OZONESONDES_20210416.tar.gz?dl=0


netcdf-cf files
Use with existing tools for visualization (e.g. ncview), manipulation (e.g. nco, cdo), and analysis (e.g. R, NCL, MATLAB, python)
ens2nc, .src, and .cf files
Enform files (*.ens.bz2)
deform_aq, .src files
(optional - *.dat files may have been saved from the enform_aq processing stage)
*.dat ASCII files
json files describing all cases
(no need to edit)
ensemble_rec_manager/demo/json_files
src files describing all cases
(no need to edit)
ensemble_rec_manager/demo/src_files
csv files with model output at receptor locations
One file per variable and station
ensemble_rec_manager
(perl code)
.csv "pool files" listing desired locations (station ID, lat, lon, dutc). Example:
ensemble_rec_manager/demo/pool_files
Create custom files for different networks, variables, and regions
json control file defining inputs, outputs, models, and directories. Also specifies whether to run deform_aq or whether .dat files already exist. Example:
ensemble_rec_manager/demo/rec_extractor_lst.json
.csv "time mask files" listing desired averaging periods. Example:
ensemble_rec_manager/demo/time_masks
Create custom files for different variables