Monthly updates for Norway, Slovenia, Germany, Finland, the Netherlands, the Czech Republic, Luxemburg, Wageningen-Haarweg, and how to make the monthly E-OBS files

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1 Introduction

This document describes how the monthly updates for Norway, Slovenia, Germany, Finland, the Netherlands, the Czech Republic, Luxemburg, and Wageningen-Haarweg are included into the ECA&D database.

2 Norway

The Norwegian updates will be received in the morning of the first day of the month via email at eca@knmi.nl. The data includes days for the last three months. All steps are relative to the directory ∼`/Else/Countries/Norway/AllElements` on the ECA&D development system bhlbontw.

Steps to take

New reports have been ordered from Eklima (met.no) so now all stations reports have the same format:

1. Check directory `Data` for datafiles. If they exist, move them to a directory *yyyymm* with *yyyy* year and *mm* the month of the previous update.
2. Copy the files from the emails to `Data`.
3. Typing './run_updates_allelements.sh' should be enough.
4. The script should copy all datafiles to the directory *Data/yyyymm* with *yyyy* year and *mm* the previous month.
5. If problems arise, probably something has changed in the format of the data. Changing the program `update_norway_allelements.c` and using 'make update_norway_allelements' might be needed. (Not happened so far.)

3 Slovenia

Conny Schiks downloads the data from the website `http://meteo.arso.gov.si/met/en/app/webmet/` (icon Archive). She sends an email to `eca@knmi.nl` with information on where to find the data. All steps are relative to the directory `~/Else/Countries/Slovenia` on the ECA&D development system bhlbontw.

Steps to take

1. Check for datafiles in the directories `Datacumulative`, `Datameans` and `Dataprecip`. If there are datafiles present, move them to a directory *yyyymm* with *yyyy* year and *mm* the month of the previous update.
2. Copy the datafiles from the directories including 'cumulatives' of Conny's email to `Datacumulative/`
3. Copy the datafiles from directories including 'Measurements and Means' of Conny's email to `Datameans/`
4. Copy the datafiles from the directories including 'precipitation' of Conny's email to `Dataprecip/`
5. Make sure that in `update_slovenia_cumulative.c` lines 394 to 416 are commented out (with // in front of the line or /* ... */ (this is the part that actually includes the data into the database).
6. Type 'ls Datacumulative/*.txt > inputdatacumulative.txt'
7. Type 'ls Datameans/*.txt > inputdatameans.txt'
8. Type 'make update_slovenia_cumulative'
9. Type 'update_slovenia_cumulative'
    - Most likely some errors are produced saying that certain stations don't exist in `series_slovenia.txt`. Usually this means that Conny made a typing error in the station name which is part of the filename. Check `series_slovenia.txt` for the correct name (ignore uppercase/lowercase differences). Also the first line of the datafile gives the station name. Change the filename to the correct name and also in `inputdatacumulative.txt` (please do not change `series_slovenia.txt` as that might give problems when, for some reason, we need to include earlier data again).
    - Other errors might come from something in the datafile. For example some commas are missing somewhere in the file due to the copy-paste work from Conny. Include the missing commas and it should work. As of March 2013, Conny no longer includes comma's since the Slovenian website has changed. She will use Excell and save as csv which gives ; separated files. The programs changes these to comma's, no need to do it yourself.
    - It could also be that the filename does not end with `####-####.txt`. If this is the case, include *monthyear-monthyear* so that the format is correct (values itself are not used, Conny uses them to see what she has already downloaded).

- If a certain datafile keeps giving problems that you can not solve, put a `#` in front if it in `inputdatacumulative.txt` (than it will be skipped) and put the datafile somewhere separately. I can have a look at it later.

10. Type 'update_slovenia_cumulative' again until no more errors are seen.
11. Remove the // or /* */ in `update_slovenia_cumulative.c` in front of the include parts and type 'make update_slovenia_cumulative'
12. Type 'update_slovenia_cumulative' again to really include the data into the database.
13. Move the datafiles to a new directory *yyyymm* in `Datacumulative/` with *yyyy* year and *mm* the month of this update.

Repeat steps 5 to 13 for `inputdatameans` and `update_slovenia_means.c` (lines 439 to 494 need to be commented out at first) and also for `inputdataprecip.txt` and `update_slovenia_precip` (lines 397 to 411 need to be commented out at first).

4 Germany

The German data will be put on the ftp-server `ftppro.knmi.nl` using user *eca* in the directory `Germany`. An email at eca@knmi.nl is received when the data is available from the ftp-server, usually around the second of the month. The German data is updated to the end of the month before last (e.g. they are always one month behind our updates). All steps are relative to the directory `~/Else/Countries/Germany/FTPserver/` on the ECA&D development system bhlbontw.

Steps to take

1. Check if there are no tar-files present in `Data/Klima` and `Data/Synop`. If there are, move them to `Data/Klima/Done` and `Data/Synop/Done`.
2. Copy the tar-file with 'klima' in the name from the ftp-server to `Data/Klima`.
3. Copy the tar-file with 'synop' in the name from the ftp-server to `Data/Synop` (this file contains pressure and maximum of hourly precipitation).
4. Type './run_updates_ftp.sh'. This takes care of the untarring and ungzipping of both the synop and klima data and includes the data into the database. It will also move the tar-files to the `Done` directories and removes unnecessary files.
5. If errors occur then it is most likely that one or more of the datafiles have an error in (format of) the datafile.

5 Finland

The Finnish data will be put on the ftp-server `ftppro.knmi.nl` using user *eca* in the directory `Finland`. The data is sent on the first day of the month containing data of the last 2 monhts. All steps are relative to the directory ∼`/Else/Countries/Finland/` on the ECA&D development system bhlbontw.

Steps to take

1. Check if there are no .dat-files in `Data`. If there are, move them to `Data/Done`.
2. Copy the .dat-file from the ftp-server to `Data`.
3. Type './run_updates_fmi.sh'. This takes care of including the data into the database. It will also move the .dat-file to the directory `Data/Done`.

6 the Netherlands

The Netherlands data is extracted from the KNMI KIS-system. In the directory `/nobackup/users/schrier/ECAD/jobs` are the scripts needed to make contact with the KIS database, which extract the relevant data and aggregate the data if neccessary. These scripts are: `update_NL_rrsd.sh` , `update_NL_txtgtnsspphucc.sh` and `update_NL_fgfxdd.sh`.

Steps to take

1. change to directory `/nobackup/users/schrier/ECAD/jobs` on the `bhw323`
2. run the scripts, with input on the command line: the startdate and the enddate for which you want to add data. Format of these dates: yyyymmdd.

   Note that it takes time for the KNMI validation to validate all the precipitation (and snow depth) stations. This means that the startdate for an update of a given month should be *the first day of the previous month.* So, an update for precipitation for the month November 2011 will have as input to the script: 20111001 20111130.

   Note: the precipitation and snowdepth readings of the KNMI network are related to the date of the observing day, while the measurement overlaps mostly with the day preceding the observation day. In the software, this difficulty is adjusted for by shifting the date of the measurement one day back. This means that the enddate for the update script should be the first day of the current month. Example: for November 2011, this should be 20111201. However, the validation usually lags some 20 days, updating very recent data need not take account of this issue.
3. in the directory `../results`, tarred files appear which can be ftp-ed to the `bhlbontw`, directory `Gerard/datainput`. Run the script `insert_data_in_database.sh` with Netherlands on the command line. This script unpacks

the data, inserts it into the database and stores the raw data in the directory `Gerard/Netherlands/Data/yyyymmdd`, where yyyymmdd the date of the day the insert script was run.

7 Czech Republic

The Czech data will be put on the ftp-server `ftppro.knmi.nl` using user *eca* in the directory `CzechRepublic`. The Czech data is updated to the end of the month before last (they are always one month behind our updates). In the directory `/nobackup/users/schrier/ECAD/jobs` is the script which translates the data to a format ready for ECA&D. This script is: `update_CzechRepublic.sh`.

Steps to take

1. ftp the Czech data to `/usr/people/schrier/ECAD/participantdata/czechrepublic/`.
2. change to directory `/nobackup/users/schrier/ECAD/jobs` on the `bhw323`
3. run the script, with input on the command line: the year and month to be updated (format: yyyymm).

   The script will produce a simple txt file in the directory `../results` with data ready to be inserted into the database.
4. ftp the resulting datafile to the `bhlbontw`, directory `Gerard/datainput`. Run the script `insert_data_in_database.sh` with CzechRepublic on the command line. This script inserts the data into the database and stores the raw data in the directory `Gerard/CzechRepublic/Data/yyyymmdd`, where yyyymmdd the date of the day the insert script was run.

8 Luxemburg

The Luxemburg data is send by email early in the new month, usually the first or second of the month. In the directory `/nobackup/users/schrier/ECAD/jobs` is the script which translates the data to a format ready for ECA&D. This script is: `update_Luxembourg.sh`.

Steps to take

1. save the attachment in the directory `/usr/people/schrier/ECAD/participantdata/luxembourg/`.
2. the attachement is an Excell file, convert this by running soffice and save as CSV file. This produces a file with the same name as the original file, but with extension .csv.
3. change to directory `/nobackup/users/schrier/ECAD/jobs` on the `bhw323`
4. edit the script `update_Luxembourg.sh` and change the year and month to the year and month of the data provided.

5. run the script `update_Luxembourg.sh`. This produces the file `lux.tar` on `../results` with data ready to be inserted into the database.

6. ftp the resulting datafile to the `bhlbontw`, directory `Gerard/datainput`. Run the script `insert_data_in_database.sh` with Luxembourg on the command line. This script inserts the data into the database and stores the raw data in the directory `Gerard/Luxembourg/Data/yyyymmdd`, where yyyymmdd the date of the day the insert script was run.

9 Wageningen - Haarweg

A special case is the data from Wageningen University (station 'Haarweg'). This station used to be a KNMI 'termijn' station (part of an extensive network of climatological stations measuring various elements at 3-hourly resolution) but is continued under the supervision of the Wageningen agricultural university (WUR).

The Wageningen data is made available via the WUR webpages and is available some days after the start of the new month. In the directory `/nobackup/users/schrier/ECAD/jobs` is the script which translates the data to a format ready for ECA&D. This script is: `update_Wageningen.sh`.

Steps to take

1. run the script `update_Wageningen.sh`. This script requires two input fields: year and month as yyyy mm and extracts the appropriate datafile from the WUR webpages and processes its contents. This produces the file `Wageningen.tar` on `../results` with data ready to be inserted into the database.

2. ftp the resulting datafile to the `bhlbontw`, directory `Gerard/datainput`. Run the script `insert_data_in_database.sh` with Wageningen on the command line. This script inserts the data into the database and stores the raw data in the directory `Gerard/Wageningen/Data/yyyymmdd`, where yyyymmdd the date of the day the insert script was run.

10 Monthly E-OBS update

Below are the steps needed to produce the monthly update for the E-OBS dataset. This can be started when `all_qcblend_eobs.sh` in the update cycle (`fullcycle.sh` on the development system (bhlbontw) has been finished. It will give a message: *Data for E-OBS is ready!*.

Furthermore, the steps to produce the related plots for the climate diagnostics talk as well as for the website Maandoverzicht Wereldweer are given below.

10.1 Updating the gridded files

1. Go to the directory `Else/Ensembles` on the development system bhlbontw.

2. Check `make_ensembles_else.sh`: uncomment (if needed) only the parts for ensembles_tx?, ensembles_tn?, ensembles_tg?, ensembles_rr? and ensembles_pp?. The parts with ensembles_t?_stations, ensembles_rr_stations and ensembles_pp_stations are not needed. What IS needed is the part with `ensembles_all_stations`.

3. Type 'make_ensembles_else.sh'. The files will be put into the directory `data`.

4. Copy the files ∼`/Else/Ensembles/data/ensembles_t?`, ∼`/Else/Ensembles/data/ensembles_pp`, ∼`/Else/Ensembles/ data/ensembles_rr`, and ∼`/Else/Ensembles/data/ensembles_all_stations` (located on the development system bhlbontw) to `/nobackup/users/schrier/E-OBS/data_input` on the bhw323 machine (Gerards workstation).

On the bhw323 machine:

5. Remove the files in `/nobackup/users/schrier/E-OBS/gridded_daily/` and `/nobackup/users/schrier/E-OBS/gridded_climatology/`.

6. In `/nobackup/users/schrier/E-OBS/final/` remove only the files starting with tn|tg|tx|pp|rr AND ending with nc or nc.gz (the other ones need to stay there!)

7. Check number of stations with "select count(sta_id from stations)" in mysql on the development system bhlbontw.

8. Go to `/nobackup/users/schrier/E-OBS/programs/final_gridding` (on the bhw323 machine) and change the number of stations at the top of grid.inc (nstns) to the one from the query above. Check also the directories `data_dir`, `clim_dir`, `daily_dir` and `final_dir` if these are the same as the ones from the steps above. Also check the elements that are going to be gridded. These are given with `var` and `dovar` in `grid.inc`. `var` only shows the other of the elements (do not change this!), `dovar` shows what elements to grid.

9. If only one year needs to be gridding, only the main grid.inc needs to be changed. If all years need to be gridding, change also the grid.inc files in the directories Do###### (nstns, dovar and directories) as these do the gridding for 10 years each. Then also change do_gridding.sh so that it uses the Do###### directories instead of the grid_daily_trim_else in the final_gridding directory.

10. Type 'do_gridding.sh' in `/nobackup/users/schrier/E-OBS/programs/final_gridding` on the bhw323 machine. You can also run it via a nohup option if preferred.

11. If errors occur during `ascii_to_uf` (quite quickly after starting the gridding procedure) it usually means that the number of stations in grid.inc is not correct and/or the file `/nobackup/users/schrier/E-OBS/data_input/ensembles_all_stations` is not updated.

12. If errors occure later on, it probably means that some files were not removed from the `gridded_daily` or `gridded_climatology` directories mentioned in some steps before and therefore the program can not update/write the files it is needed.

13. After `do_gridding.sh` is finished without errors, copy the files in `/nobackup/users/schrier/E-OBS/final/` to directory ∼`/Gridding/Data/$year$/final` on the bhle4m machine.

14. run `makemonths.sh` in ∼`/Gridding/Data/$year$/final` on the bhle4m. It usually gives some errors as it expect some files to be zipped, which aren't, but this is no problem. It also gives errors that some files do not exist, these are the uncertainty files which are not calculated for the monthly updates. Just ignore these errors.

15. Copy ∼`/Gridding/Data/{$year}/final/*.nc.gz` to ∼`/codebase/download/ensembles/data/months` on the development system bhlbontw (usually *.nc.gz only gives the files that are needed, but you can check it. The files needed are *2013##.nc.gz and *2013.nc.gz.)

16. In ∼`/codebase/download/ensembles/downloadmonths.php` uncomment the part for the month that you did your update for by removing the start $<!--$ before the month is written out and the end $-->$ below, but above the place where the previous month is written out.

17. Copy the files in ∼`/codebase/download/ ensembles/data/months` to the operational system (same directy) and change ∼`/codebase/download/ensembles/downloadmonths.php` there.

10.2 Preparing the plots for the climate diagnostic talk

As of March 2013, the climate diagnostic talks are no longer given, but plans are to merge this with the weekly weather talks on Thursday. Therefore the method to calculate these files will still be described below.

1. Go to ∼`/Gridding/Plot/KlimDiag/` on the bhle4m machine.

2. Type 'obs_month_temp' and give the month to plot. Press enter until you receive a plot on your screen. Check the plot and if it is okay, do the same but enter 'n' to the question if you want to show it on the screen. Press enter for the file name, this is the standard file that is used.

3. Do the same for precipitation with 'obs_month_rr'.

4. Do the same for precipitation with 'obs_month_pp'.

5. Do the same for temperature anomaly with 'means_temp'.

6. Do the same for precipitation anomaly with 'means_rr'.

7. Do the same for precipitation anomaly with 'means_pp'.

8. if you need to change something, the (fixed) colour scale range is given at the beginning of subroutine Initializing(...) with the parameters standardmax and standardmin. Also the standarddate is given there, but you can change that from the command line. If you need to change something else, please save the original .c file to another name.

9. Sometimes Rob asks for a specific date. These can be produces with `anomaly_rr`, `anomaly_temp`, `obs_rr` and `obs_temp`.

10. If you get errors like `inq lon: status = 2 No such file or directory` it usually means that the files is zipped in ~`/Gridding/Data/{$year}/final/`. The filename is given in the C-code in the top subroutine.

11. If you need TX or TN, you can do a search and replace in the files with `_temp.c` and use 'make' on that file. Please put it back to TG afterwards.

12. Run the script `convert_and_move.sh` to create png files, move the files to a directory *yyyymm* and create a zip-file.

13. Email the zip-file to Rob Sluijter (someone else if he is away).

10.3 Preparing the files for the website Maandoverzicht Wereldweer

1. To produce the plots for the website *Maandoverzicht Wereldweer* go to ~`/Gridding/Plot/OverzichtWereldweer` on the bhle4m machine.

2. Put into `getplots.sh` the files that you need and run it. The postscript plots are saved in `Plots`.

3. Run `converting.sh` which will convert the postscript plots of 2013 to png files that are needed on the website. (or do it manually with 'convert -rotate 90 -resize 450 <filename>.ps <filename>.png')

4. Copy the new .png files to `/data/web/www2/htdocs/klimatologie/maandoverzicht_wereldweer/{$year}/` (only reachable from your own machine)

5. Usually Else sends an email to Geert Jan to notify him that the files for month xxx have been copied to the directory of maandoverzicht wereldweer.