

# Monthly updates for Norway, Slovenia, Germany, Finland, the Netherlands, the Czech Republic, Luxemburg 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 and Luxemburg 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` on the ECA&D development system `bhlbontw`.

### Steps to take

Elements other than wind:

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 that do not have 'wind' or '1950' in the name to **Data**.
3. Typing `./run_updates.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.c` and using 'make update\_norway' might be needed. (Not happened so far.)

Wind elements were included later and therefore are treated separately:

1. Type `'cd Wind'`

2. 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.
3. Copy the files from the emails that do have 'wind' in the name to **Data** (in the directory **Wind**).
4. Typing './run\_updateswind.sh' should be enough.
5. The script should copy all datafiles to the directory *Data/yyyymm* with *yyyy* year and *mm* the previous month.
6. If problems arise, probably something has changed in the format of the data. Changing the program `update_norwaywind.c` and using 'make update\_norwaywind' might be needed. (Not happened so far.)

In August 2011 additional stations were added that started later and these have all elements included:

1. Type 'cd AllElements'
2. 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.
3. Copy the files from the emails that do have '1950' in the name to **Data** (in the directory **AllElements**).
4. Typing './run\_updates\_allelements.sh' should be enough.
5. The script should copy all datafiles to the directory *Data/yyyymm* with *yyyy* year and *mm* the previous month.
6. If problems arise, probably something has changed in the format of the data. Changing the program `update_norway_allelements.c` and using 'make update\_norwaywind' 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](mailto: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 340 to 362 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 upper-case/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.
  - 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 of 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` 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 387 to 442 need to be commented out at first) and also for `inputdataprecip.txt` and `update_slovenia_precip` (lines 344 to 358 need to be commented out at first).

## 4 Germany

The German data will be put on the ftp-server `ftp.pro.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 `ftp.pro.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 months. 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 necessary. These scripts are: `update_NL_rrsd.sh`, `update_NL_txtgtgtsspphucc.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 `ftp.pro.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: `yyymm`).

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 Luxembourg

The Luxembourg 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: `updateLuxembourg.sh`.

### Steps to take

1. save the attachment in the directory `/usr/people/schrier/ECAD/participantdata/luxembourg/`.
2. the attachment 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 `updateLuxembourg.sh` and change the year and month to the year and month of the data provided.
5. run the script `updateLuxembourg.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 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.

### 9.1 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 `~/Gridding/Data/{$year}/data_input` on the `bhle4m` machine.

On the `bhle4m` machine:

5. Remove the files in `~/Gridding/Data/{$year}/gridded_daily/` and `~/Gridding/Data/{$year}/gridded_climatology/`.
6. In `~/Gridding/Data/{$year}/final/` remove only the files starting with `tn|tg|tx|pp|rr` AND ending with `nc` or `nc.gz` (the other ones need to stay there!)
7. Check number of stations with `"select count(sta_id from stations)"` in `mysql` on the development system `bhlbontw`.
8. Go to `~/Gridding/Program/final_gridding` (on the `bhle4m` machine) and change the number of stations at the top of `grid.inc` (`nstns`) to the one from the query above. Check also the directories `data_dir`, `clim_dir`, `daily_dir` and `final_dir` if these are the same as the ones from the steps above. Also check the elements that are going to be gridded. These are given with `var` and `dovar` in `grid.inc`. `var` only shows the other of the elements (do not change this!), `dovar` shows what elements to grid.
9. The directory `final_gridding` should do the gridding *only* for `pp|tn|tx`.
10. The directory `final_gridding_rr` should do the gridding *only* for `rr`.
11. The directory `final_gridding_tems` should do the gridding *only* for `tg`. This is done to have the `tg` and `rr` files ready a.s.a.p. for the climate diagnostics.
12. If only one year needs to be gridding, only the main `grid.inc` needs to be changed. If all years need to be gridding, change also the `grid.inc` files in the directories `Do#####` (`nstns`, `dovar` and directories) as these do the gridding for 10 years each. Then also change `do_gridding.sh` so that it uses the `Do#####` directories instead of the `grid_daily_trim_else` in the `final_gridding` directory.
13. Type `'do_gridding.sh'` in `~/Gridding/Program/final_gridding` on the `bhle4m` machine. You can also run it via a `nohup` option if preferred.
14. If errors occur during `ascii_to_uf` (quite quickly after starting the gridding procedure) it usually means that the number of stations in `grid.inc` is not correct and/or the file `~/Gridding/Data/{$year}/data_input/ensembles_all_stations` is not updated.

15. If errors occur 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.
16. After `do_gridding.sh` is finished without errors, go to `~/Gridding/Data/{$year}/final/` and run `makemonths.sh`. It usually gives some errors as it expects some files to be zipped, which aren't, but this is no problem. Just ignore it.
17. Copy `~/Gridding/Data/{$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 `*2011##.nc.gz` and `*2011.nc.gz`.)
18. 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.
19. Copy the files in `~/codebase/download/ensembles/data/months` to the operational system (same directly) and change `~/codebase/download/ensembles/downloadmonths.php` there.

## 9.2 Preparing the plots for the climate diagnostic talk

1. Go to `~/Gridding/Plot/KlimDiag/` on the `bhl4m` 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 produced 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 are 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. Convert the postscript files to png using `convert -rotate 90 <filename>.ps <filename>.png`
13. Make a directory `yyyyymm` and move the postscript and png files to that directory.
14. Go to that directory and make a zip-file `klimdiagmmyyyy.zip` including the png files.
15. Email the zip-file to Rob Sluijter (someone else if he is away).

### 9.3 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 2011 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.