Introducing GLAMEPSv2

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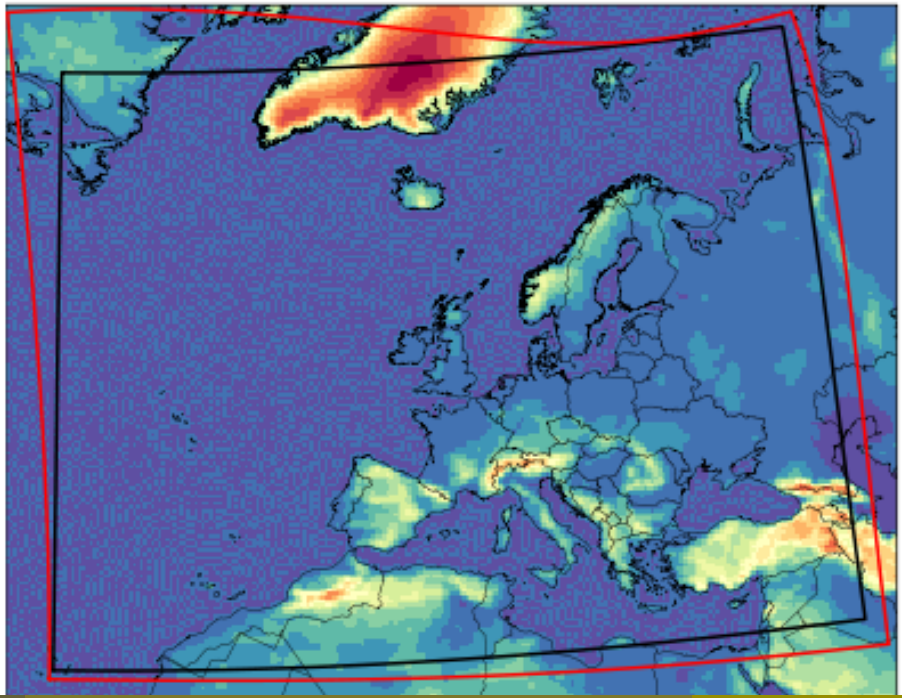
What/Who is GLAMEPS?

- **G**rand **LAM-EPS**
- A collaboration of the ALADIN and HIRLAM consortia
- A multi-model LAM-EPS over Europe
- Between global EPS and local high resolution ensembles
- Aimed at lead times up to about 2-3 days.
- 2 versions each of ALARO and HIRLAM
- Coupled to LBC's from ECMWF-ENS
- Running 2(4)x per day at ECMWF

GLAMEPSv2: domain

- Alaro: 853x709, 8.9km, L40
- Hirlam: 870x660, .075^o, L40
- Notice the difference in prjection: Lambert vs Rotated Lat/Lon!
- Final products on Hirlam domain



Introduction: v1

Current version (v1) (until end of September 2014):

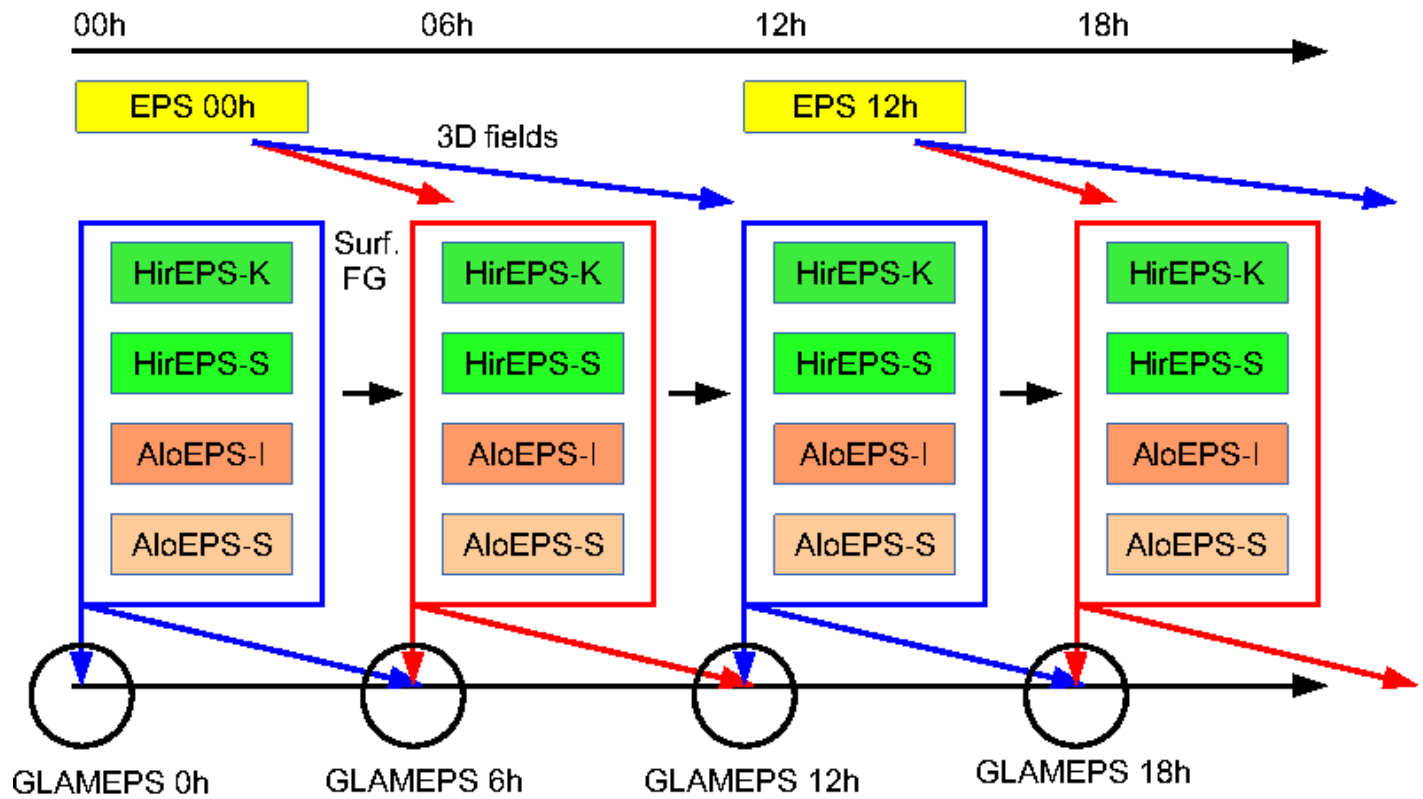
- run at 06 and 18 to +54h
- (12+1) x ALARO + (12+1) x HIRLAM_K + (12+1) x HIRLAM_S + ECDET + 14 x ECEPS = **54**
- Alaro: 629x529, 11.8km, L37
- Hirlam: 646x492, $.10^o$, L40

v2 basics

- Run at 00, 06, 12, 18 to +54h (+60)
- Two versions of Hirlam (Straco, Kain-Fritsch) , two versions of Alaro (Isba, Surfex). Each has 12 perturbed members plus control.
- Half of the members are lagged by 6h. Controls are run every 6h.
- To combine +54h forecasts, we have to run all members to +60. In fact, we now run to **+72** as back-up procedure.
- 2 x (6+1) x ALARO_S + 2 x (6+1) x ALARO_I + 2 x (6+1) x HIRLAM_K + 2 x (6+1) x HIRLAM_S = **56** (52)
- Include 4 control runs from lagged ensemble? You would then have 8 "controls" for 56 members in total.

v2 basics

At every forecast time, you combine the 28 new members with the members calculated 6h earlier.



Model versions: Alaro

ALARO:

- Harmonie 37h1.2 (adapted to fit in GLAMEPS SMS suite).
- ISBA and SURFEX schemes.
- Every member has seperate surface assimilation cycle.

HIRLAM:

- Two schemes for cloud parametrisation.
- Stochastic physics.
- Perturbed surface obs.
- Surface assimilation.
- 3d-Var in control members.

Status

The operational output (currently v1) can be visited at
https://glameps.org

GLAMEPSv2 is currently running in parallel with v1 (which makes it a bit slower). It will become the operational version at the end of September 2014. Graphical data is available from
https://hirlam.org/portal/GLAMEPS/test

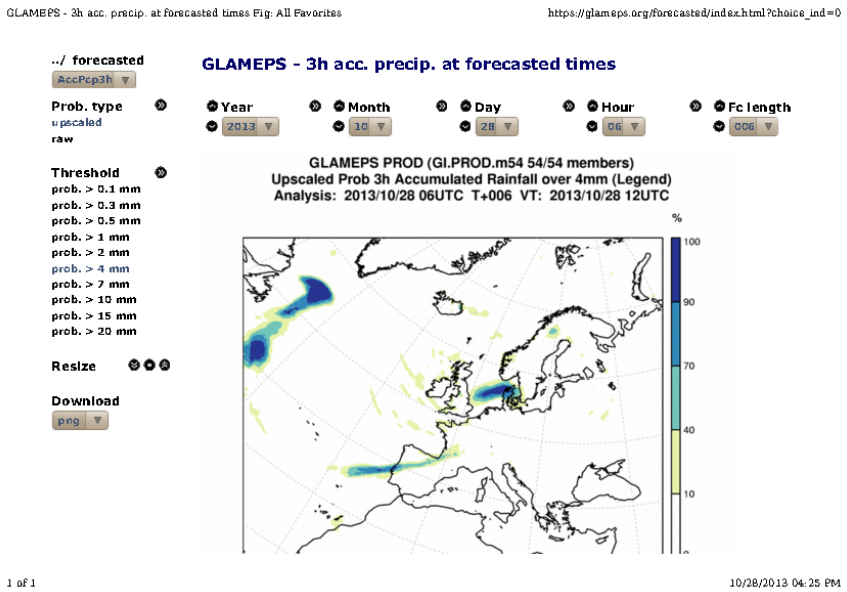
and quite comprehensive documentation can be found at
https://hirlam.org/trac/wiki/Glamepsv2ProductionUserInfo

Output & Products

1. **Graphical products** (on website):
   - Probability maps
   - Ensemble Spread
   - GLAMEPS-o-Grams
2. **GRIB files** (on ecgate):
   - Member forecasts
   - Ensemble forecasts (probability maps)
3. **SQLite tables**
   - Monthly tables of main variables, interpolated to station locations
   - Mainly meant for calibration, verification, meteograms

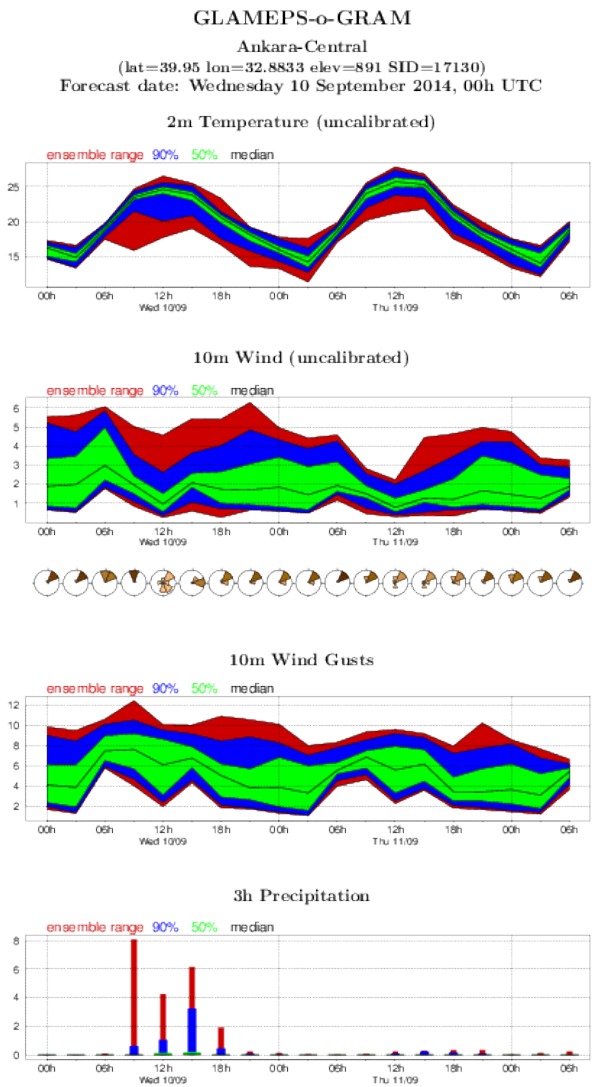
Website

- Probability plots produced at every run
- Upscaled precipitation forecasts (v2)
- downloadable (.png)



GLAMEPS-o-grams

- Available via website
- Basic meteograms produced at every run
- Large selection of locations
- More locations can be added by simple request



Numerical data

Besides the graphical products and the main probabilistic forecasts, we also produce a larger selection of fields in the member output files. Some of these are in a secondary stream that is not archived. These secondary files are availabe for about 1 week.

- Primary: T2m, Tdew2m, Q2m, 10m wind, precipitation, pressure level data
- Secondary: levels P700,P1000,100m wind; Tmin/max, 0^o isotherm, cloudiness ...

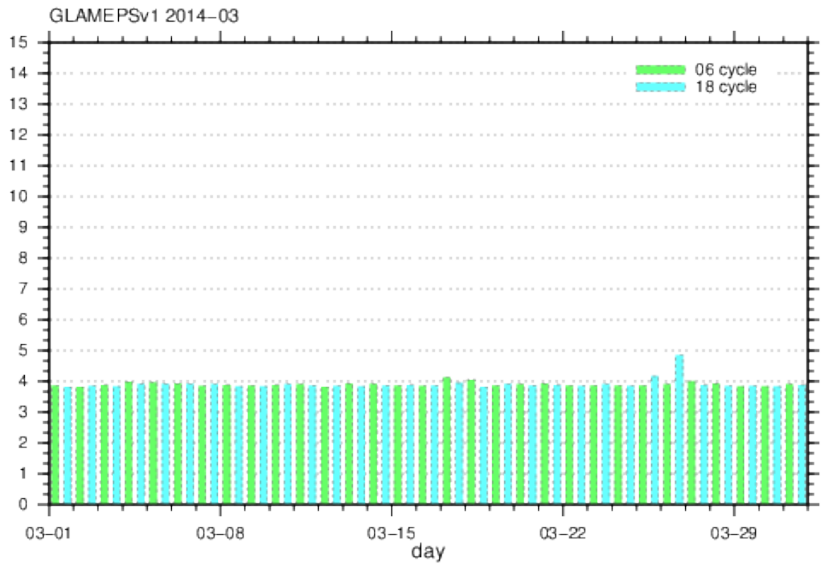
Conclusions

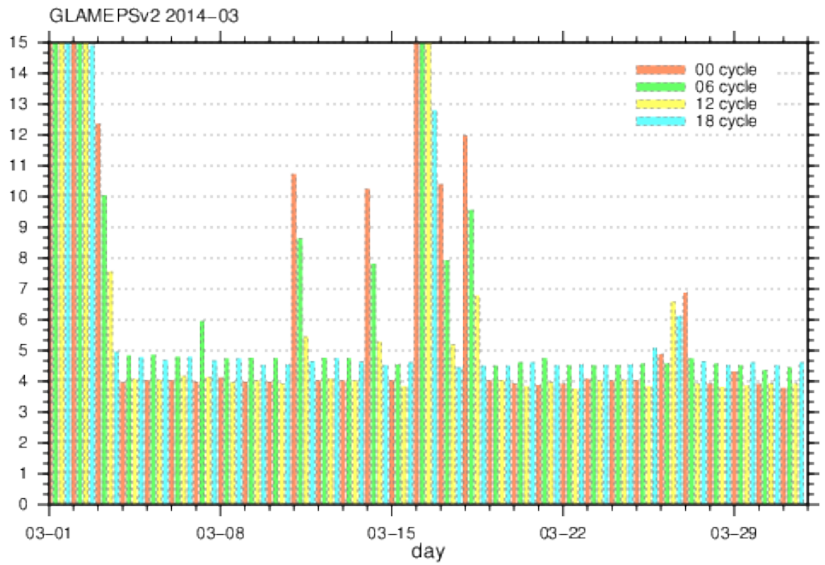
- GLAMEPSv2 is running in parallel to v1
- v2 runs 4 times per day
- Output is available for testing
- Porting to CRAY is still ongoing
- Calibration: in test phase
- New perturbation methods (e.g. CAPE singular vectors)

THANK YOU!

timing 1

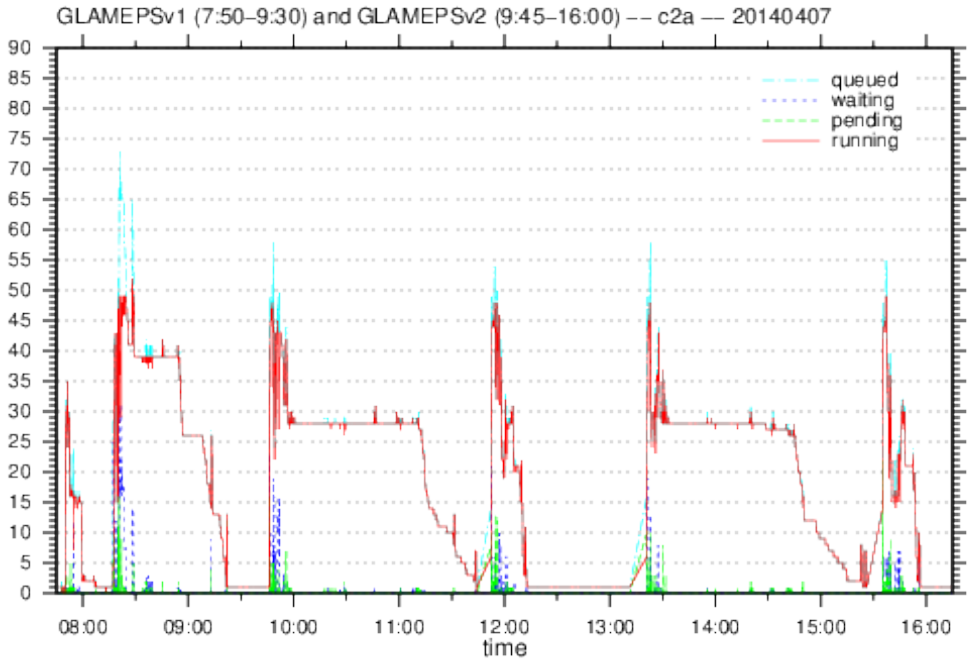
Both are available about 4h after nominal analysis time, but v2 was still in catch-up mode the first days of March 2014.





06 and 18 slightly later because they have to wait for EPS LBC's.

timing details: v1 and v2 runs on 20140407



On 7 April, c2b was switched off. So GLAMEPSv1 and v2 are currently both running on c2a. As v1 is still considered the main result, v2 is currently a bit delayed so as not to interfere with v1.