

Icon-LEPS: updates at 31/08/2025

- Icon-LEPS has been run from **June 14** to August 13 (62 run starting at 18Z, forecast until +126 hours)

- In the proposed configuration, Leps will run twice a day, starting at **06Z and 18Z**.

It is technically possible to run at 00Z and 12Z, but products would be delivered too late for most users (EFAS has very strict time requirements).

Reason: due to the increased resolution, running Icon-LEPS takes much longer than Cosmo-LEPS

The plan was to disseminate 18Z run “as if 00Z of the following day”; we may compare LEPS performance with other ensembles starting 6 hours later (*grib headers may be changed accordingly*)

- Up to now, feedback files have been produced only for 33 runs (from 14 July to 10 August).

*Reason: until July 13, Icon was run with the option “**lmask_boundary=T**”: grib outputs have missing values in the nudging zone at domain boundaries, that are not managed by MEC.*

I will try a workaround; in desperation, these runs could be repeated.

- Feedback files have been produced using the standard **observations available in MARS** archive.

It was (barely) possible to store 3d outputs on Atos filesystem, so re-creating feedback files with extended observations should be relatively easy.

New observations should be in BUFR format, and accessible from an ATOS job (this should be the case for Carmens database)

Note: this will only be possible for a limited time: to run new experiments I need to free disk space

Icon-LEPS: future plans

- SBU allocated for 2025 are sufficient for about two more months of simulation (December 2025 + ???)
- Running LEPS with Icon-EU forcing would be a major change to the suite, and would require a lot of extra-work.
- I agree that verification should focus primarily on precipitation; if possible, high resolution data should be used (*remote sensing?*)

Icon-LEPS: budget of billing units at 31/08/2025

My accounts

Details for account
cosmo

Select an account

cosmo

SBU allocation
300.000.000

SBU remaining
149.948.028

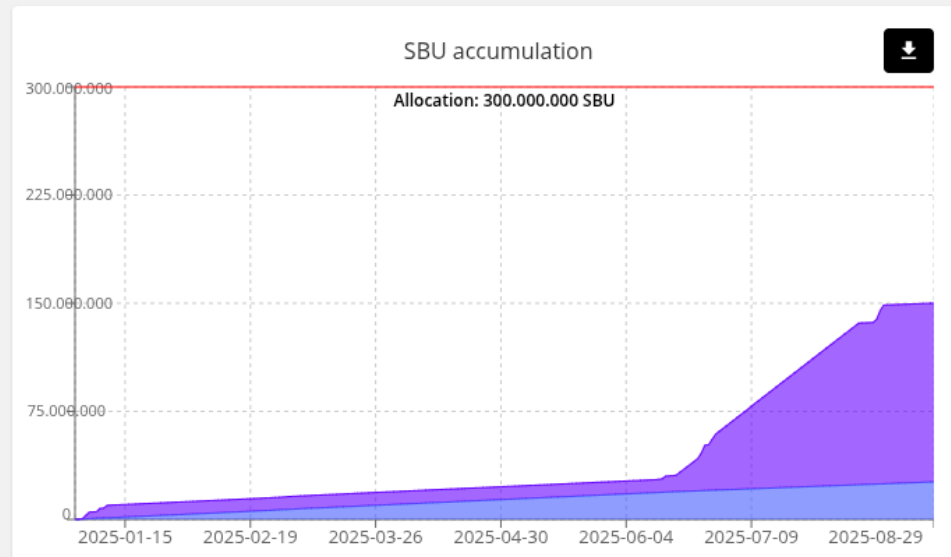
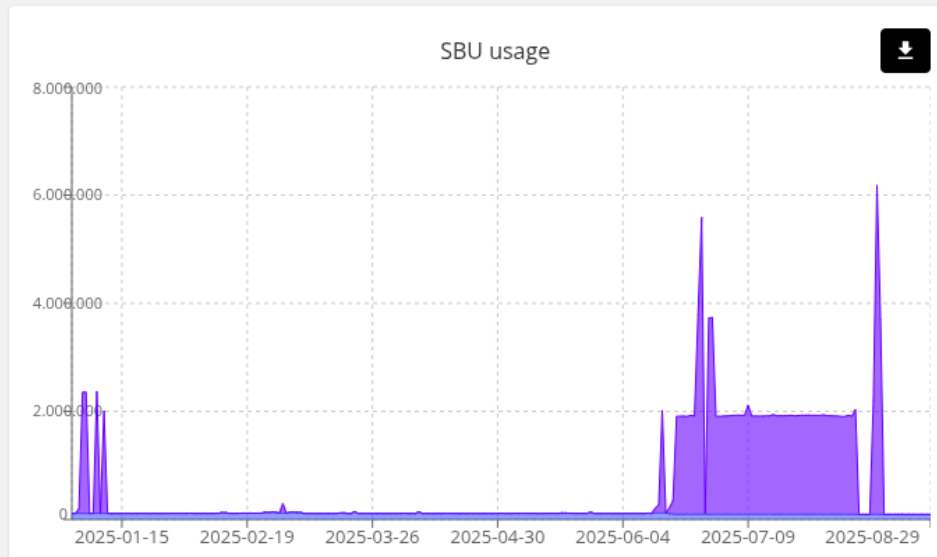
SBU usage
150.051.972

Users
2

Total usage for Current Year

Toggle view

Current Year



Icon-LEPS test runs (June-August 2025)

Icon-LEPS configuration

- One run per day, starting at 18 GMT, forecast range +126 hours
- Icon version 2025.04-1
- Icon namelists as NWP-TS 2024-10, but with 2025 convection setup:
lterra_urb = F
lgrayzone_deepconv = F, lshallowconv_only = T
variable_rain_n0 = T, tune_zcsg = 0.25, tune_v0snow = 20, tune_supsat_limfac = 2.
- BC every 3 hours (with 1h intermediate files would be too large)
- Soil IC including lakes are taken from Icon-EU analysis
- Top Boundary Nudging is active

Data that are being saved:

- input: IC/BC from IFS-EPS (only members selected after cluster analysis), Icon-EU soil analysis
- output: 3D output for MEC, surface fields on regular grid, sample products for future dissemination to DWD and EFAS
- *Post-processing and dissemination are not yet implemented!*

List of fields being saved for MEC:

- 3D fields: U, V, T, P, QV
- surface: TOT_PREC, PS, H_SNOW, T_G, CLCT, ASWDIFD_S, ASWDIR_S
- near surface: U_10M, V_10M, VMAX_10M, T_2M, TD_2M, TMAX_2M, TMIN_2M
- cloud levels: CLCL, CLCM, CLCH

Disk space

- input: 77G / day = 4.7Tb / 2 months
- output: 140 Gb/day = 8.5 Tb / 2 months
- 3D raw data for MEC: 4Tb/day = 250 Tb / 2 months

SBU:

- Total allocation for 2025: 300 MSBU
- Cosmo-LEPS for year 2025: 42 MSBU
- Initial tests Icon-LEPS: 9 MSBU
- Each Icon member: 85.5 kSBU
- Each Leps run (20+1 members, 126h): 1.82 MSBU; 3 months: 170 MSBU
- Resources available for backup and extra tests: 79 MSBU (43 runs)