OPERATIONAL STATUS AUSTRIA 2018.1

AROME-Aut and AROME-RUC:

General characteristics:

- Model Version: **CY40T1bf07**
- Horizontal resolution: **2.5 km**
- Number of levels: **90**
- Number of grid points: **600 x 432**
- Time-step: **60 sec**
- Coupling model: **IFS (time lagged)**
- Coupling frequency: **1 hours**
- Initialization**:** **OI/CANARI for surface, 3DVAR for upper air**
- Assimilation cycle length: **3h**
- Forecast runs: **00, 03, 06, 09, 12, 15, 18, 21 UTC**
- Forecast range: **60h**
- Output every: **1 hour**
- Physics: **AROME**
- Orography: **mean**
- Grid: **linear**
- Hardware: **SGI ICE XA / HPE APOLLO 8600**

Table 1: model setup for "AROME-Aut"

In December 2017 the primary operational model runs were switched to the new HPC at ZAMG. At the same time the AROME ESUITE which was running already since September was put into operations. Main changes with respect to the previous version were: switch to cy40 for atmospheric assimilation, change of canopy drag tuning, slight changes in diffusion setup, extended model diagnostics.

The new HPC:

HPE Apollo 8600 (= SGI ICE XA)
192 (nodes) x 2 (cpu) x 18 (cores) Intel Skylake 6140
96GB RAM per node
320 GB HPE Apollo / Lustre Filesystem

In addition to operational AROME, a new AROME-RUC (Rapid Update Cycle) system is under development producing 12h forecast every hour. This system is run on a slightly smaller domain than AROME, so it can be coupled to it. Compared to oper. AROME, radar data and soon also ModeS-data are assimilated in an hourly (open) cycle.

- Model Version: **CY40T1**
- Horizontal resolution: **1.2km**
- Number of levels: **90**
- Number of grid points: **900x576**
- Time-step: **30s**
- Coupling model: **AROME-AUSTRIA**
- Coupling frequency: **1 hour**
- Initialization: **soil:downscaling AROME, 3DVAR for upper air, LHN**
- Assimilation cycle length: **1h**

- Forecast runs: **every hour**
- Forecast range: **12h**
- Output every: **1 hour / (15min for selected parameters)**
- Physics: **AROME**
- Orography: **mean SRTM**
- Grid: **linear**
- Hardware: **SGI ICE XA / HPE APOLLO 8600**

Table 2: model setup for "AROME-RUC"

ALARO5-Aut:

General characteristics:

Model Version:	**CY40T1bf07**
Horizontal resolution:	**4.8 km**
Number of levels:	**60**
Number of grid points:	**600 x 540**
Time-step:	**180 sec**
Coupling model:	**IFS (time lagged)**
Coupling frequency:	**3 hours**
Initialization**:**	**OI/CANARI for surface, IFS for upper air**
Forecast runs:	**00, 06, 12, 18 UTC**
Forecast range:	**72h**
Output every:	**1 hour**
Physics:	**ALARO-0, SK scheme**
Orography:	**mean**
Grid:	**linear**
Hardware:	**SGI ICE XA / HPE APOLLO 8600**

Table 3: Operational model setup for "ALARO5-AUSTRIA"

The operational ALARO setting has been upgrade to cy40t1bf07 version.

LBC retrieval/backup:

- IFS LBC files are fetched from ECMWF dissemination; Backup: ARPEGE LBC files via Internet from MF

Archiving:

- ARPEGE and IFS LBC files (LACE domain) are archived for 00, 06, 12 and 18 UTC runs
- subset of operational GRIB files are archived

ALADIN-LAEF:

General characteristics:

Model Version:	**CY36T1**
Ensemble size:	**16+1**

Horizontal resolution:	**11 km**
Number of levels:	**45**
Number of grid points:	**500 x 600**
Time-step:	**450 sec**
Coupling model:	**IFS EPS (SV vectors, first 16 members)**
Coupling frequency:	**6 hours**
Initialization**:**	**ensemble OI/CANARI for surface, IFS for upper air**
Forecast runs:	**00, 12 UTC**
Forecast range:	**72 h**
Output every:	**1 hour**
Hardware:	**ECMWF cca/ccb**

Table 5: model setup for “ALADIN-LAEF”

A convection permitting ensemble system “C-LAEF” based on AROME is currently under development. The main components of the system are: stochastic physics scheme for upper air (total and/or partial tendencies and/or parameter based), EDA (perturbed observations and/or Jk). In 2018 further developments are planned before the afre combined to a first pre-operational system. The ECMWF HPC is used to perform the tests.