Slovenia
Status of ALADIN operational activities
(February 2010)

Computer system SGI ALTIX ICE 8200

Technical characteristics:

- 36 compute nodes installed in a single rack, every compute node has a 16 GB of memory and 2 Quad core Intel Xeon 5355 processors (288 cores)
- two Infiniband DDR networks, one for IO and the other for MPI communication
- additional 7 service nodes are used for login, management, control and IO operations (308 cores all together)
- a dedicated NAS IO node is installed with 30 TB FC disk array

Programs:

- OS: SGI ProPack on top of SLES 10
- MPI: OpenMPI, *SGI MPI*
- queuing system: Altair PBS Pro 9.2
- Tempo 1.3 cluster management system
- Intel 10.1. and 11.0 Fortran compiler

OPERATIONAL SUITE

Domain and geometry:

- 258*244 points, (with extension zone 270*256), E134x127
- 9.5 km horizontal grid spacing
- 43 vertical model levels
- linear spectral elliptic truncation
- Lambert projection

Integration:

- four runs per day: 00 UTC (72h), 06 UTC (72h), 12 UTC (72h),18 UTC (48h)
- initial and lateral boundary conditions from ARPEGE
- digital filter initialization
- coupling at every 3 hours
- 400 s time-step

Operational model version:

- AL35T1 using ALARO with 3MT physics

The model integration is using now 64 processors on 8 nodes, 72 hour forecast is finished in a half of an hour, optimal with the coupling files availability. Whole production suite is completed in an hour.
Operational suite is running in Supervisor Monitor Scheduler, ECMWF product. The computer system and operational suite is controlled by NAGIOS supervision system.

LBC download:

- Production LBC from ARPEGE are downloaded 4 times per day.
- Primary channel is internet/BDPE, backup is done via ECMWF.

Archiving:

- production LBC files for runs 00 and 12 are stored on DVD

OTHER OPERATIONAL ACTIVITIES

- parallel suite A, differences to operational suite are:
  - 4.4 km
  - 439*421 points, (with extension zone 450*432), E224x215
  - domain is smaller
  - two runs per day: 00 UTC (54 h), 12 UTC (54 h),
  - 180 s time step
  - The model integration is using 128 processors on 16 nodes, 54 hour forecast is finished in 60 minutes,
- parallel suite B, differences to operational suite are:
  - four runs per day: 00 UTC (72h), 06 UTC (72h), 12 UTC (72h),18 UTC (72h)
  - initial and lateral boundary conditions from ECMWF model
- INCA analysis and nowcasting system is routinely running in pre-operational mode under SMS
  - temperature, humidity, wind and several convective indices are updated hourly
  - precipitation type, rain and snow rate products are updated every half an hour
- experimental assimilation cycle
  - same setup as in parallel suite (4.4 km)
  - 6-h forecasts as first guess (long cut-off LBC's from ARPEGE)
  - SST analysis from ARPEGE (with BLENDSUR)
  - CANARI surface analysis using surface observations (T and RH at 2 m),
  - 3DVar upper air analysis using OPLACE data and local observations (SYNOP)
- LACE observational monitoring system installed from the first export package

SHORT HISTORY OF CHANGES

Operational changes

22.09.2009
: Update of the production for www.rclace.eu.
Correction in the 3MT setup (LSPRT=true) and in DFI part (LSPRT=false).

23.12.2010
: Forecasting range of 06 run is prolongated to 72 hours.

07.01.2010
: Memory upgrade from 8GB to 16GB per each compute node.

18.01.2010
: Change of the time step in parallel suite (180 s instead of 200 s).

04.02.2010
: Parallel suite B - model integration with initial and lateral boundary conditions from ECMWF model is included in daily production.