The ALADIN/SHMU operational news

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1. Summary

The current status and the evolution of the ALADIN/SHMU operational application during the first half of the year 2005 is described together with the other ALADIN-related activities at the Slovak Hydro-Meteorological Institute.

2. Operational ALADIN/SHMU system

There were no changes in the ALADIN/SHMU domain or computer characteristics during the described period.

Since 01/01/2005 the operational suite is non-stop (24/7) human monitored. Five persons are responsible for this monitoring, working on weekly shifts. The on-line monitoring and documentation system is used, accessible also via pocket communicator (PDA, see Fig.1). PDA enables remote login to the computer system and necessary fixing of the aborted jobs in the emergency cases.

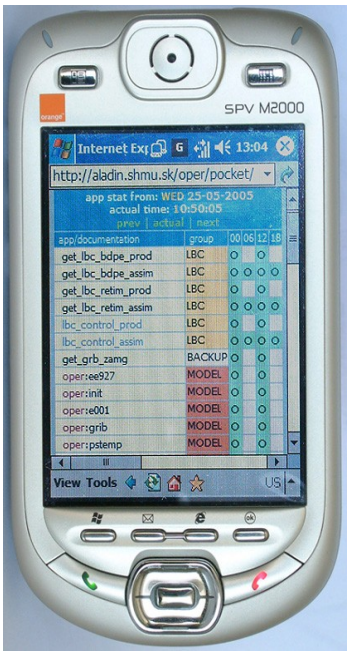

Figure 1 The PDA used to monitor the ALADIN/SHMU operational suite displaying its current status

Within the last 6 months there were 11 serious crashes or substantial delays of our operational suite (end of suite delayed more than 2 hours) and about 30 minor problems mainly in the products distribution to final users. The failures were originated by the following occasions (ordered by frequency):

1. Data distribution problems due to LAN/NFS crashes and remote servers connection errors.
2. Problem with LBC fetching because of weak internet connection, Local Area Network problems at SHMI, RETIM disfunctionality, Meteo-France HW/SW problems. (This problem is partly solved by sophisticated parallel LBC fetching via RETIM (usually fully available at 03:45 and 15:45 UTC) and INTERNET (usually fully available at 03:00 and 14:55 UTC)).
3. Problems with model output visualization (the visualisation software is sometimes not capable to contour too complicated fields – it is usually good indicator of severe weather conditions such as high precipitation rates.
4. HW/SW problems on SHMI HPC and other workstations (LoadLeveler queueing system bugs, storage problems, UPS weakness (one of the biggest crashes ever) => inevitable UPS upgrade for IBM HPC on 22/03/2005), insufficiently tested suite modifications.

The switch to +54h integration happened on the 12/01/2005.

The export versions of CY28T1 and T3 were ported. CY28T3 was validated in parallel suite, with non-satisfactory results, mainly in the cloudiness forecast. Later the so-called "_czphys" package was implemented and tested (but without SLHD and still using the old version of the gravity wave drag parametrisation with envelope orography, so, basically, cloudiness and radiation was changed). Good results were found both in the parallel suite and in the case studies (see Fig. 2). The CY28T3_czphys version became operational on 31/03/2005 12 UTC.

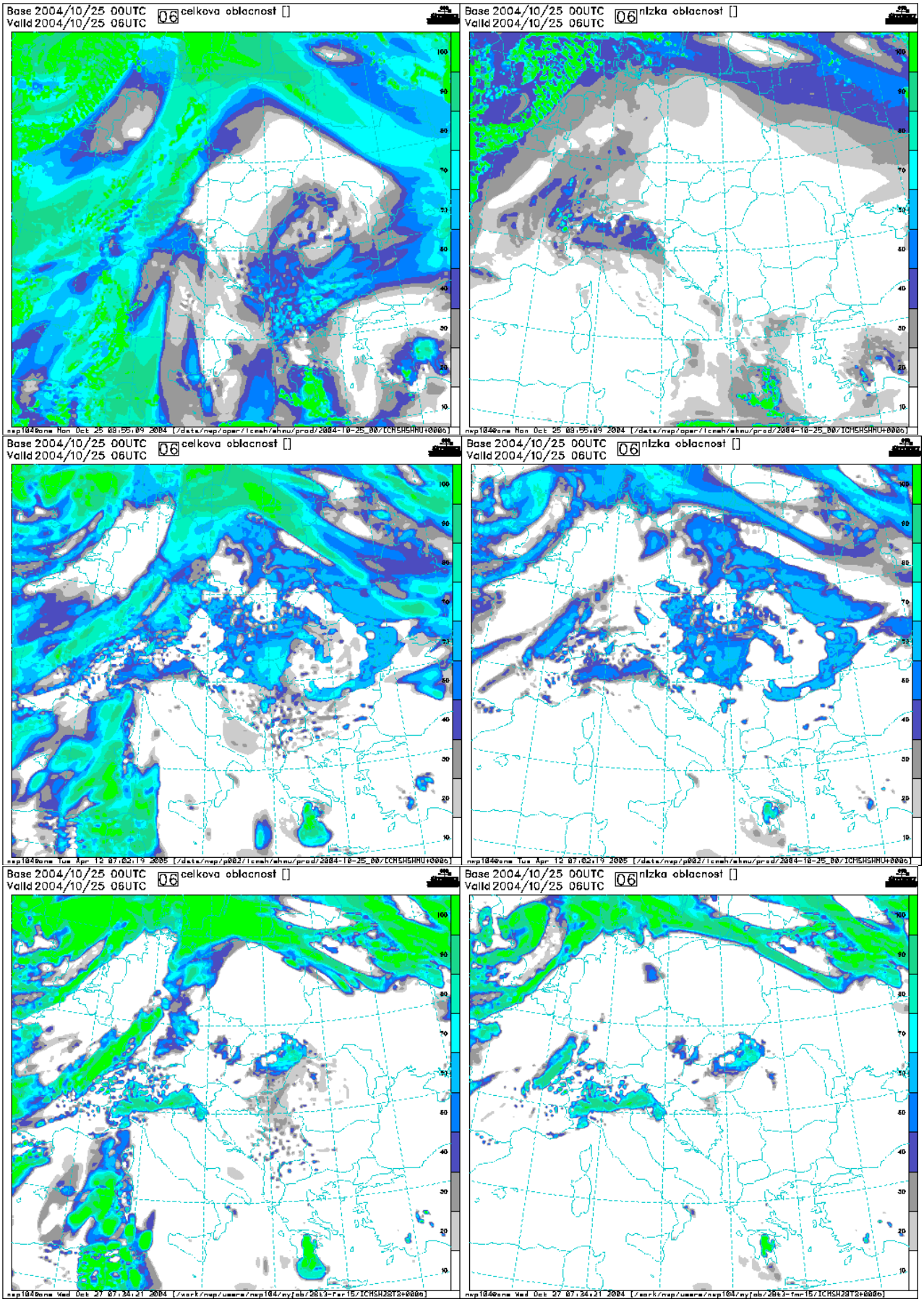

Figure 2 The total (left) and the low (right) cloudiness for
the CY25T2 (top), the export version of CY28T3 (middle) and the "_czphys" modifications (bottom)

On the 10/05/2005 the backup jobs ("fullposes") for ZAMG were activated.

On the 29/06/2005 a new automatically generated product - the meteogram based on the ALADIN/SHMU forecast, was introduced .

3. Other ALADIN-related activities

The 15th ALADIN workshop "Quo vadis, ALADIN?" was organized in Bratislava, 6-10/06/2005.

Some tests with the Lopez microphysics scheme were made.

The feasibility study of the application of the MOS technique was performed.

4. Future plans

The archiving machine IBM Tivolli (IBM TotalStorage 3584 Tape Library with 8TB LTO Data Cartridge and IBM Tivoli Storage Manager 5.3 software) shall be operational during this summer. Once ready, 4 runs per day will be introduced (these were already experimentally tested). The prolongation of the forecast range up to +72h is scheduled when the LBC data are available from Météo-France. Testing of the linear grid and of the mean orography are planned together with the porting of the ODB software and consequent testing of the assimilation tools like VERAL, Diag-Pack and DFI blending.

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