Croatian Operational Status report for LSC 09 (2nd meeting in 2007)

1.Summary

A significant reduction in the number of persons to maintain the operational suite is expected. A plan to simplify the operational suite is set-up based on a number of reductions and a new computer for visualization is provided to replace 5 computers used now.

The operational suite is run on the same computer using two set-ups, one with AL29T2mxl and another using the Alaro0 physics based on the same cycle. The first will be stopped early in 2008 to simplify the maintenance of the operational suite. The forecast runs on 8km resolution, starting from Arpege analysis with DFI, twice a day for 00 and 12 UTC runs, up to 72 hours.

High resolution dynamical adaptation of wind will move from 6 small domains to one large.

The visualization and post-processing software is being ported to the new machine that will be used as an Aladin html intranet server. The corresponding intranet pages are already created and some of the software is already ported and used operationally (gribeuse, GrADS, HRID). The software that process the measured data and does the model to measurements comparison is waiting for the effort from persons involved in the data-assimilation.

Internet address with some of the ALADIN products, like total precipitation and 10 m wind: http://prognoza.hr/aladin_prognoza_e.html .

2.Operational suite

2.1Porting

AL32T3 is ported. Using optimisation level 1, the strange cputime per timestep behaviour of AL32T1 with optimisation level 2 is not reproduced, but the overall cost is larger due to lower optimisation level. The possible usage of it for the Alaro0 operational set-up is still being considered. The switch would happen simultaneously with the already mentioned reduction in operational suite.

2.2New high resolution dynamical adaptation domain

High resolution dynamical adaptation of the wind field from 8 to 2 km resolution is still done on 6 small domains shown in Figure 1, on the left. Since 7th November 2007, high resolution dynamical adaptation of the wind field is done on a single large domain, shown in Figure 1, on the right.

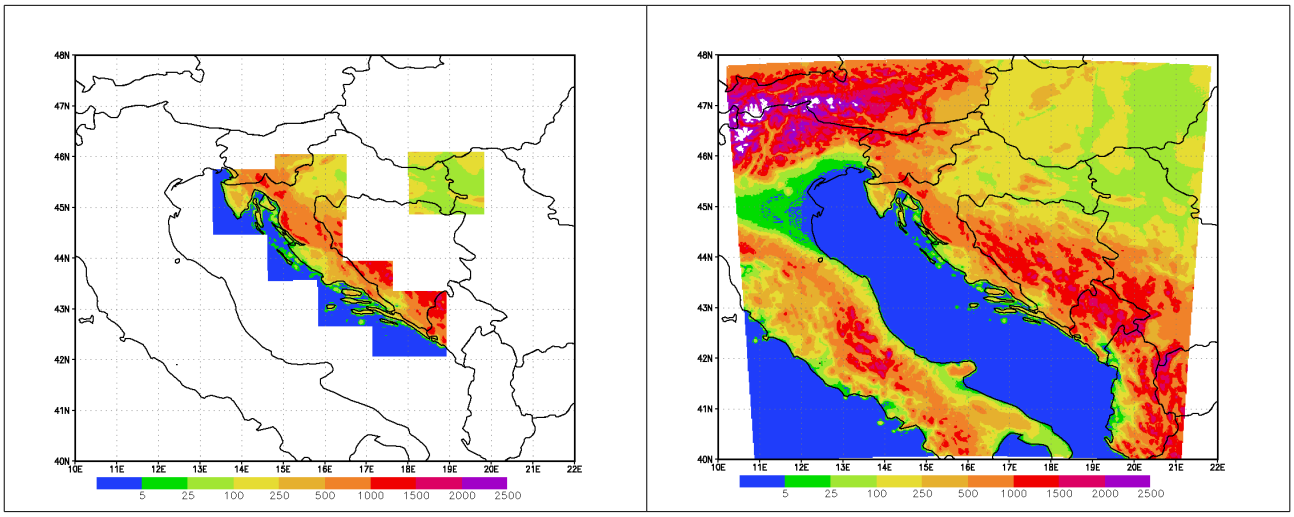

Figure 1. 6 small 2-km resolution dynamical adaptation domains (left) used so far and the single large domain (right) to be used.

Running the dynamical adaptation operationally on the 6 small domains will be stopped in the beginning of 2008 simultaneously with other actions planned for the big switch.

2.3New post-processing products

Hourly HRID

So far, the pseudo-TEMP data has been extracted from Aladin forecasts with a 3-hourly interval to provide input for HRID. With the new visualization computer being introduced, a number of modifications has been proposed, one of them being to move to 1hour interval. The new product is not only more informative, but also avoids some strange behaviour present in the one using the 3hour interval, but unfortunately not all.

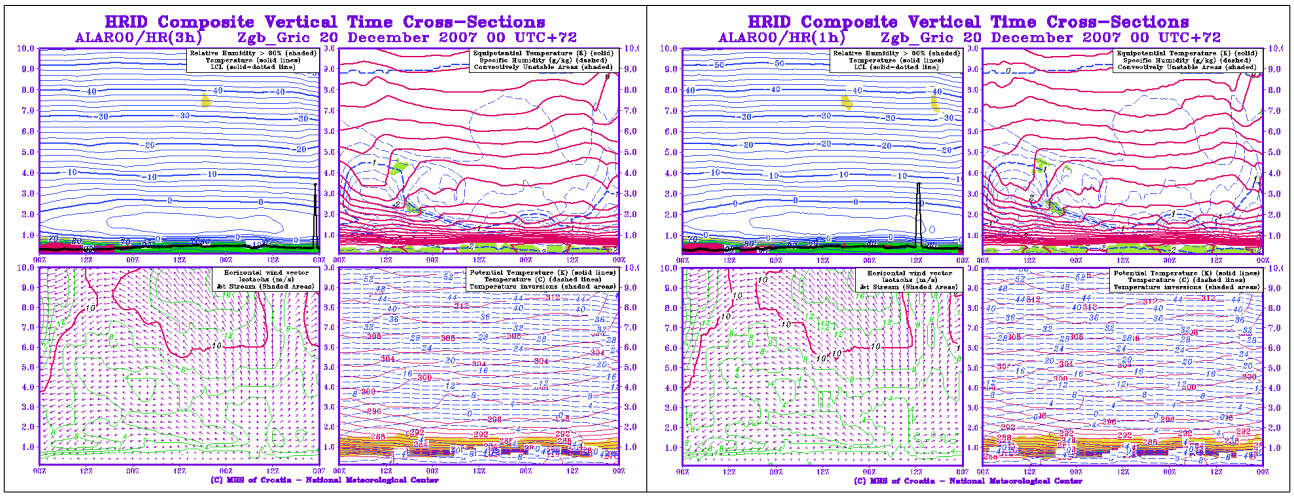

Figure 2. HRID vertical cross-sections using 3hourly input data (left) and 1 hourly input data (right).

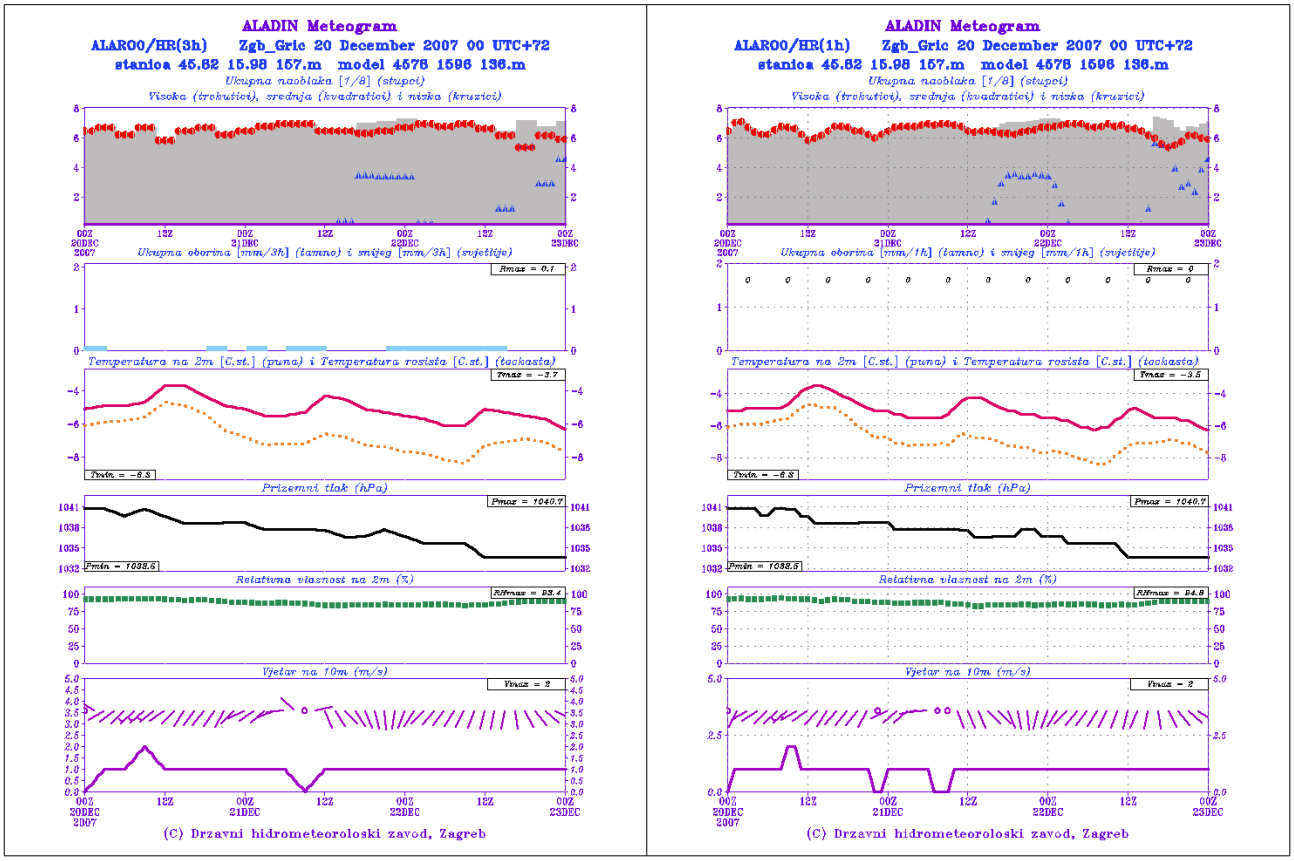

Figure 3. HRID meteograms using 3hourly input data (left) and 1 hourly input data (right).

ANEMO-ALARM

The Numerical modelling department of the Croatian NMS participates in the ANEMO-ALARM project which aim is to develop and apply operational warning service for maintain road traffic safety in regions with severe bura winds. The ANEMO-ALARM is based on the ALADIN forecast products as a main triggering mechanism for assigning different alarm status. The possibility of the ALADIN to forecast the strength and onset time of bora wind has been studied on the base of 10 most intense severe bura cases during the period 2003-2006 as the first stage of the program. Obtained results show that the ALADIN give appropriate tool to solve the users demands and maintain road traffic safety.

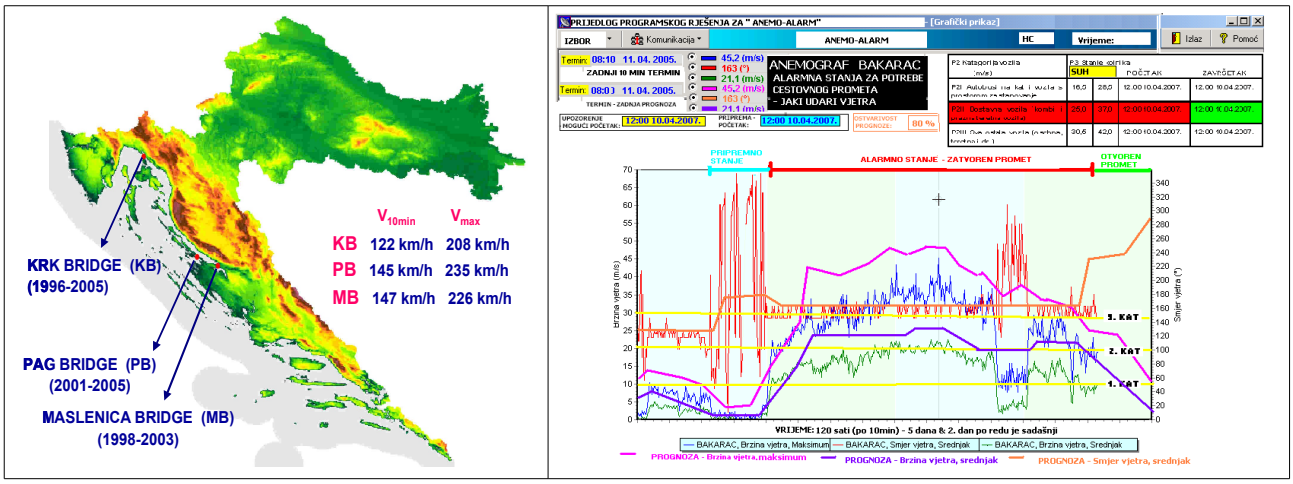

Figure 4. Locations with the measured maximum bora wind speeds. V10min – 10-minutes wind speed, Vmax - maximum wind gusts (left) and an example of the ANEMO-ALARM warning system screen that will be available for the operational road maintenance service (PROGNOZA=forecast).

Visualization of the new fields from Alaro0

Alaro0 provides 5 new forecast fields, as cloud water and ice, rain and snow as well as TKE became available. To avoid hyper-production of output figures produced by the operational suite, forecasters have defined those they find the most important. Modifications in ASCS software that would allow plotting more than two variables have also been considered. Unfortunately, this had to be given up due to lack of manpower and very short time available to switch to the new operational visualization regime.

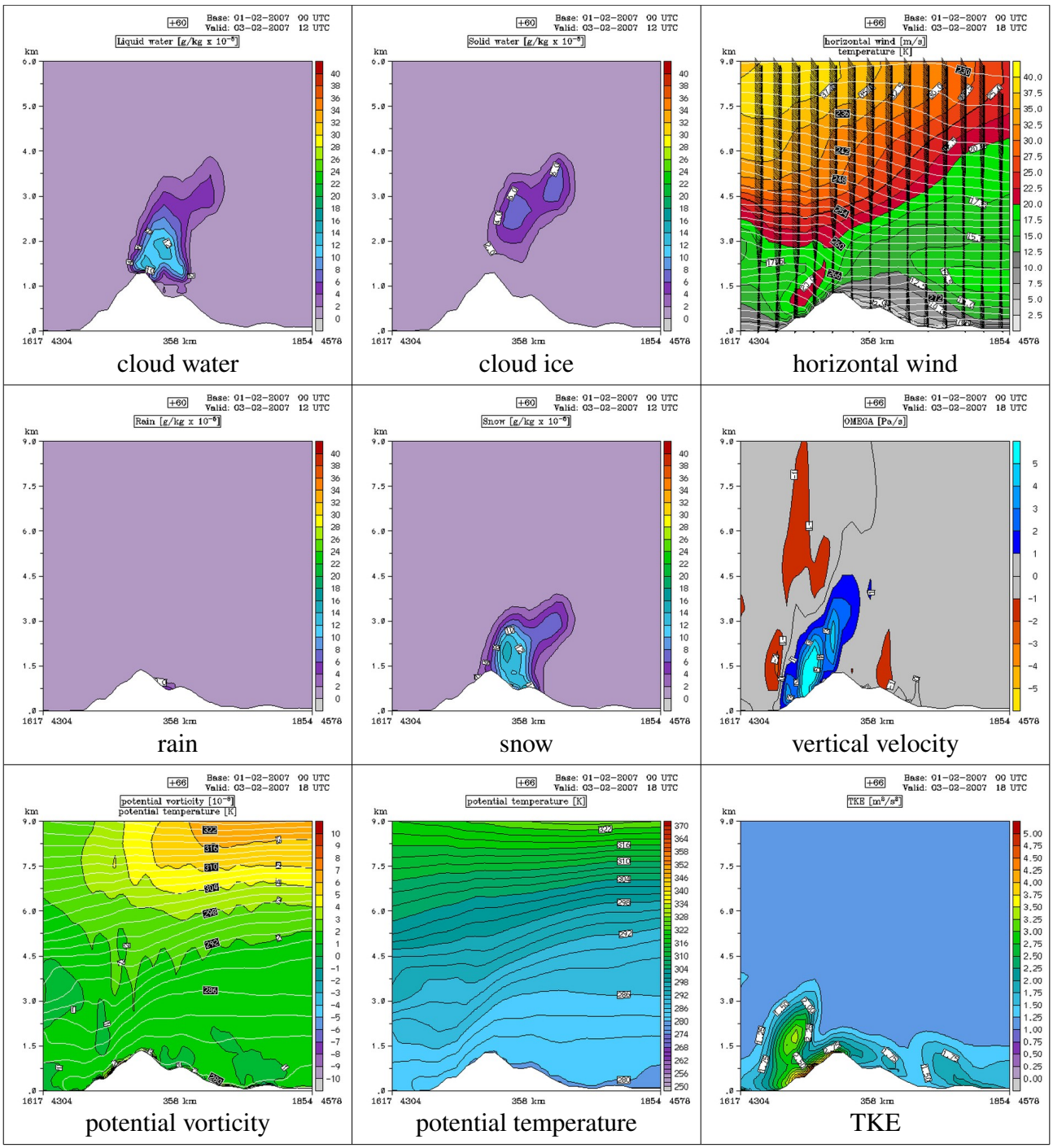

Figure 5. Vertical cross-sections through Split and Osijek ploted using ASCS.

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