

Intersession report

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ALADIN PM

# Content

- I report on the past year (from my perspective)
- Select a number of points that are relevant for the next year [others will be treated in more detail later during this meeting].
- This will structure the meeting
- I will then provide a summary

# GOALS (for myself)

- Start with some short-term activities as tasked by the GA in Prague of last year (see minutes): 3MT in ARPEGE, SURFEX, post-Brac-HR analysis of one of the open issues [*this will be discussed under highlights and plans and under strategy*]
- Get experience with the management (FR budget, organization of workshops and meetings, coordination, some (as yet) limited effort on manpower)
- Establish a good relationship with the partners, in particular MF (sorry I was biased here with respect to the other countries...). I will start to make it up next year.
- Study the “dossiers” (using the AMA workshop, ALADIN workshop and later EWGLAM). My weak point is DA and observations.
- Get clarity for myself of the strategic goals: this was achieved by organizing the strategic meeting in Brussels in September. This resulted in a strategic report (that was already distributed). This will be reported later in this meeting. I expect to get comments/endorsement during this GA and then I
- The next year, I will start to focus on people in the consortium to translate it down to the operational levels.

# Specific activities

- Planning of the FR budget
- Organization of SURFEX WW, to be discussed in highlights and plans
- Some organization of the ALADIN/HIRLAM workshop, chairing the LTM-CSSI meeting
- Organization of PAC
- Organization of the strategy meeting in Brussels
- EWGLAM meeting + chairing the LTM meeting
- Investigating whether a more flexible FR budget accounting could be possible in Brussels
- Some effort on a request of Ukraine to join ALADIN
- Research (supervising; much less actual work than before ...) on:
  - A better technique than the standard coupling mechanism (Boyd's method instead of Davies)
  - Some work on testing SURFEX
  - The numerics of parameterisations
  - Verification of EPS systems.
  - SURFACE EKF
  - Regional climate (supervision of master student and setting up climate modeling with ALARO)

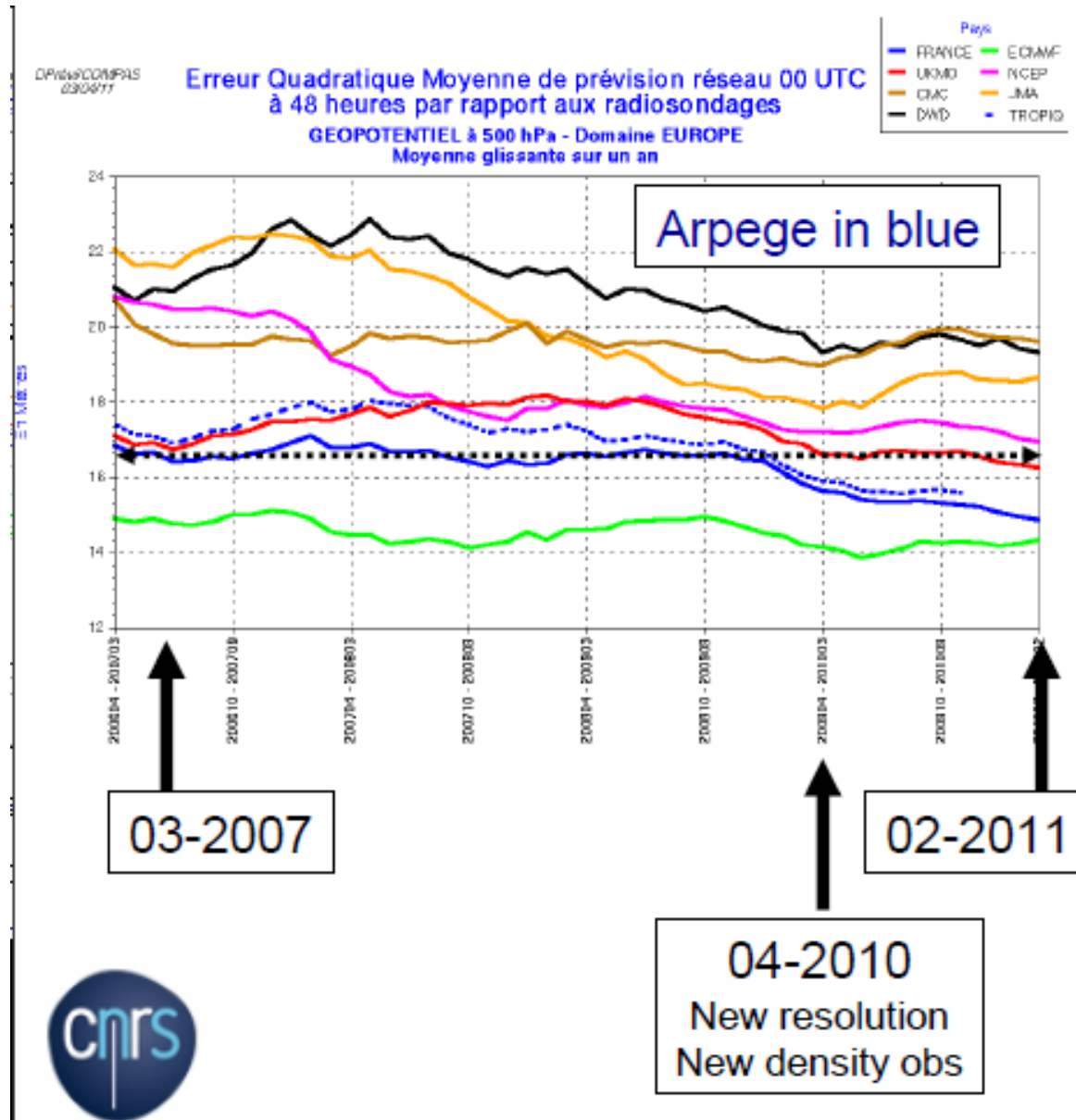
# Missions: voluntary contribution of the RMI

- Forecasting Drafting Team (2 missions Budapest, Zurich)
- Stays in countries:
  - Toulouse: (AMA) 7-9/2, 9-11/3, 25-26/4, 30/8
  - Prague: 26-27/5 and 2-4/11 (3MT in ARPEGE)
- ALADIN/HIRLAM workshop/ASM 4-8/4 including LTM meetings.
- HIRLAM Advisory Committee (HAC) 18-24/5 (Grimsvotn ...)
- 17/6, observer HIRLAM Council (replacing the GA chair)
- Phasing coordination meeting ECMWF 27/6
- Invited talk COSMO General meeting, Rome, 6-8/9
- SURFEX SC, Toulouse, 5-7/9
- EWGLAM meeting, Tallin Estland, 9-14/9
- Bureau meeting, Ljubljana 23-25/9
- Utrecht KNMI, 14/6, ALADIN-HIRLAM coordination with Jeanette Onvlee
- NON ALADIN mission 22/6, SAF land meeting
- 15-16/11 GA
- 17-18/11 HIRLAM Advisory Committee.
- OOPS SC 30/11

# LTM meetings

- The attendance of the LTMs in this meeting was low. This explains the rather large sum of the un-executed missions in 2011.
- Most of the discussions this meeting were reports of problems related to the code. Specifically the presence of “External code” that is not following code norms, and not properly coded, i.e. where the *hybrid parallelism* is NOT properly dealt with. This has to become a point of attention, see later in this meeting.
- Some actions/conclusions:
  - Recognition of the importance of radar data assimilation and already a first action point (use the LACE software with the national radar data)
  - Everyone agrees with the switch to the SURFEX scheme in all applications

# The global model



# Short-term I (gathered from the strategy meeting):

- Priorities for the ALADIN consortium, next year. MF showed very convincing result on radar DA. So we will focus on:
  - \_ Extend OPLACE to other countries ALADIN/HARMONIE countries
  - \_ Work on software to give freedom to local data developers: local radar format (*ANY, including HDF5*) – CONRAD – M-F BUFR – Bator – ODB – screening
  - \_ RUC, in particular the initialization
  - \_ Get prepared for new data that is coming our way: radar, GPS, MTG, modeS (in order of priority).
- **Bottleneck: exchange of radar data in Europe and the role of OPERA**
- More data (IASI, IARS, SSMI F18) MF's ARPEGE.
- New techniques (more details from Claude talk): heterogeneous B matrix (precipitating vs. non-precipitating area's, Montmerle, Berre), Wavelets (Be), Ensemble techniques (MF, Pt, Mo), Hybrid methods (Hu, LACE)
- Discussion within HIRLAM/ALADIN: relative merits of 4Dvar with respect to hybrid 3Dvar methods (Ensemble methods, ETKF):
  - 4Dvar is expected to become important for the long scientific evolutions: the local moist balances, and the way how to handle comparable magnitude of model errors vs. observation error
  - Hybrid 3Dvar is attractive in the short term for its computational cost.
- **The OOPS overhaul of the code** to facilitate the organization of 4Dvar operations: study its impact and role for the LAM versions within HARMONIE.



# Short-term-II: SURFEX, Prioritizing for the next year

- Bring the (large) user communities (meso-NH, climate, NWP, academia) together: wiki, enquiries (of future plans), the creation of a SURFEX SC (first meeting last was last week).
- Increased and needed work on technical facilities (file format, change of geometries in surface data files, optimization work)
- Reanalysis/extension of the Best *et al.* (2005) interface and specifically the role of the so-called enquiry mode (which provides maximum freedom of upper-air experts and surface experts to develop their own schemes)
- Preparation for the Multi-Energy-Balance (MEB) scheme developed within the HARMONIE context, which is considered to become instrumental for addressing temperature biases in the HARMONIE system.

**Lack of skilled code experts.**

# Forecasting capability area

- I assisted in two meetings of the Forecasting capability Area roadmap.
- FYI: There is a new SRNWP PM: G. Boloni, from Hu.
- Currently the situation is very unclear after the last STAC.
- In my opinion the following issues are important for our consortium:
  - There is definitely a role for C-SRNWP
  - As you will see later in this meeting: we need OPERA
  - I believe there is a role for the EUR-EPS proposal, I will come back to that later.
  - I see a role for the problem of the evolution of the High-Performance Computing in Europe. I explain this later, and come back to this.

# About manpower

- I did not (yet) focus on manpower so far.
- But, given my limited experience, I believe I should search for leadership in the consortium, especially for my weaker points:
  - DA and observations: R. Randriamampianina
  - Verification: not settled yet
  - System: I had excellent help from Claude Fischer so far.
- As explained on the previous slide I focused on the tasks, coordination, strategic planning. And I will shift to people management in 2012. I will come back to that later in the meeting.

# Extra activities PM

- Management RMI, ALADIN team + some administration of the dep II, as *acting* Head of Department
- Teaching *Dynamical Meteorology* and *Climatology* at Ghent University, Tuesday afternoon, first semester. I am the chair of the Educational committee of the postgraduate program Weather and Climate Modeling, Ghent University.
- Supervising collaborators in Be (Steven Caluwaerts)
- Scientific Papers:
  - Termonia, P., D. Degrauwe and R. Hamdi, 2011: Improving the temporal-resolution problem by localized gridpoint nudging in regional weather and climate models. *Mon. Wea. Rev.*, **139**, 1292 – 1304.
  - Hamdi, R., H. Van de Vyver, and P. Termonia, 2011: New cloud and microphysics parameterization for use in high-resolution dynamical downscaling: Application for summer extreme temperature over Belgium. *International Journal of Climatology*, in press.
  - Hamdi, R. D. Degrauwe, P. Termonia, 2011: Coupling the Town Energy Balance (TEB) scheme to an operational limited area NWP model: Evaluation for a highly urbanized area, Belgium. *Wea. Forecasting*, in press.
  - Termonia, P., G. Smet, and J. Van den Bergh: On the role of tunings in diffusive physics parameterisations. *Q. J. R. Meteorol. Soc.*, under revision.
  - Carrassi, A. R. Hamdi, P. Termonia and S. Vannitsem: Short Time Augmented Extended Kalman Filter for Soil Analysis. *Atmospheric Science Letters*, under revision.
  - Smet, G., P. Termonia and A. Deckmyn: Added economic value of meso-scale multi-EPS applications, *Tellus*, **A**, under revision.
  - And three papers in preparation (2 on the implementation of Boyd's solution) and one on the SURFEX (reporting on the COSP action in Brussels to be submitted in GMD)

# In summary

- DA: there is a total consensus that radar DA is our (remote) target, and we have an action planned for this year.
- SURFEX: there is a consensus we need to use SURFEX in all applications. But there is a lot of work to do.
- There is a lack of code expertise among the partners.
- I produced a strategy synthetic document, to be discussed later during this meeting.
- Requested action from GA: take note/comment.