Editorial part 3

ALADIN 2

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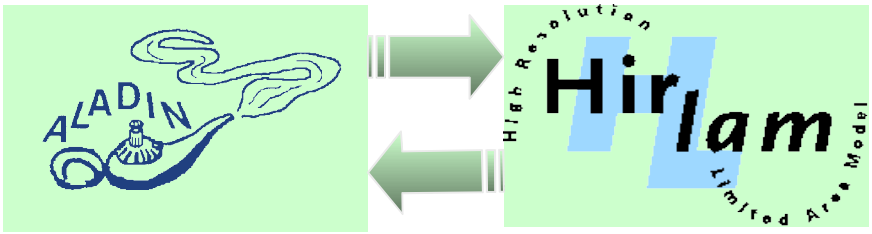
Introduction

This section is dedicated to the project's life. Up to now, contributions were only French ones, but this must change. So don't hesitate to send input next time !

A closer ALADIN-HIRLAM cooperation

The "code collaboration" between the ALADIN and HIRLAM consortia did start, officially and practically.



At the 9th Assembly of Partners (30-31 October), ALADIN directors welcomed the HIRLAM proposal, presented by the chairperson of the HIRLAM Advisory Committee and the Project Leader, of a closer "code" collaboration (i.e. towards the use of a common model allowing historical specificities for all operational applications). The following resolution was adopted, and presented to the HIRLAM Council on December 15th by Dr Ivan CACIC. HIRLAM directors gave a very positive answer.

Resolution on ALADIN-HIRLAM cooperation
Adopted by the ALADIN General Assembly on 30 October 2004

The ALADIN General Assembly, meeting in Split, Croatia, on 29-30 October 2004:

Considering the common goal of HIRLAM and ALADIN to develop, implement and maintain operational NWP systems at the meso-gamma scale, while maintaining state-of-the art meso-beta operational capabilities, based on their respective scientific, technical and managerial heritage;

Considering the proposal of the HIRLAM Council for cooperation with ALADIN, based on code collaboration and scientific exchange;

Noting that cooperation with HIRLAM should be consistent and compatible with the ALADIN high level objectives, strategy and short term plans, in particular the priority assigned to:

- the continuing development of a meso-beta model improving the current operational capabilities available to ALADIN partners, capitalising on the ALADIN scientific and technical heritage and new agreed concepts;
- its necessary and timely convergence with the parallel development of the AROME meso-gamma model, based on the ALADIN data assimilation and core dynamics, and the Meso-NH physics;

Stressing the importance of the guidelines for relations among National Meteorological or Hydrometeorological Services regarding commercial activities attached as Annex 2 to the WMO Resolution 40 (Cg XII), that aim at maintaining and strengthening in the public interest the cooperative and supportive relations among NMSs in the face of differing national approaches to the growth of commercial meteorological activities;

1- Welcomes the decision of the HIRLAM Council to explore full code cooperation with ALADIN and appreciates the relevance of the preparatory work performed by ALADIN and HIRLAM scientists;

2- Agrees that an efficient cooperation based on code collaboration, leading ultimately to a common library available for use by meso-beta and meso-gamma scale NWP models, would be beneficial to both HIRLAM and ALADIN, in particular, but not exclusively, in areas including the following:
   - Extended use of the ALADIN core dynamics;
   - Data assimilation techniques and assimilation of high resolution, remotely sensed observations from radars, satellites, etc.;
   - Limited area model ensemble prediction systems (LAMEPS);
   - Mesoscale-oriented physics;
   - Boundary conditions and coupling at high resolution;
   - Training.

3- Considers that operational complexity needs to be minimised and efficiency maintained through the adoption of a common code maintenance approach based on best practices across the IFS/ARPEGE/ALADIN/HIRLAM chain, and taking into account the HIRLAM needs related to their near-real time Reference Control Run;

4- Agrees that efficient joint arrangements should be established without delay at science and project levels, aimed at defining consistent scientific strategies and short term work plans, including common elements to be agreed by HIRLAM and ALADIN;

5- Supports, and proposes to HIRLAM, the following approach:
   - The ALADIN Committee for Scientific and Strategic Issues (CSSI) and the HIRLAM Management Group (HMG), should establish, on behalf of the ALADIN and HIRLAM scientists and relevant bodies, a joint science plan addressing common issues, that would become part of the respective ALADIN and HIRLAM science plans;
   - The ALADIN Workshop and the HIRLAM All Staff Meeting should derive and propose a common annual work plan consistent with this joint science plan and with maintenance constraints, that would become part and parcel of their respective work plans;
   - The HIRLAM and ALADIN/AROME project management should approve this common work plan, taking into account committed resources and agreed priorities, and capitalising on the work of the respective advisory bodies.
   - This process should be consolidated by July 2005.

6- Agrees to further investigate the details of the cooperation, including political and legal aspects, in the context of the preparation of the next ALADIN and HIRLAM respective Memorandums of Understanding, with the objective of agreeing the articles permitting the HIRLAM-ALADIN cooperation.

7- Agrees in this regard that appropriate reference to the guidelines for relations among National Meteorological or Hydrometeorological and Meteorological Services (NMSs) regarding commercial activities, attached to the WMO Resolution 40 (Cg XII), should be included in the next ALADIN and HIRLAM MoUs.

8- Notwithstanding the above, concurs with the views of HIRLAM that, subject to appropriate cooperation agreements:
   - Both consortia would share ownership for commonly developed code;
   - Ownership of pre-existing codes would not be transferred;
   - All members of each Consortium would have rights to use shared software/common libraries for their operational and research activities;
   - All members of each Consortium would have rights to make available research versions of shared software to their national research communities, for exclusive research and education purposes.

9. Proposes that HIRLAM and ALADIN should have observer status at the ALADIN General Assembly and the HIRLAM Council, respectively, in order to facilitate communication and

common understanding.

As concerns common actions, the following ones started along the last months, beside the previous cooperations :
- training of the "mesoscale" group on ALADIN environment,
- implementation of the HIRALD setup at ECMWF and first experiments, with the help of the French team (see the dedicated paper),
- coupling HIRLAM physics with ALADIN dynamics, contribution to the discussions on the rules for physics-dynamics interfacing.

Cooperations on the following issues have also been or should be launched soon : use of frames, penta-diagonal semi-implicit operator, implementation of configurations 923 and 901 at ECMWF. They won't involve only the French team.

STORMNET

Introduction

During the dedicated SRNWP session of the last annual EWGLAM/SRNWP meetings, it was decided to answer the first coming (deadline December 2nd, 2004) call for proposals of Research Training Networks within the Marie Curie actions of the 6th Framework Program of the EC. In case of failure, since this call was restricted to "Interdisciplinary and Intersectorial" projects, a second attempt should be possible, in September 2005.

Thanks to intense networking and the efficient help of the SRNWP coordinator, Jean QUIBY, we managed to prepare everything in time. This proposal relies on the fruitful ALATNET experience, but with an enlarged basis : SRNWP cooperation, with 16 participants from all consortia, wider training and research program, and a more decentralized management.

Hereafter is the "identity card" of the project, more informations are available on the STORMNET web site : *http://www.cnrm.meteo.fr/stormnet/* , the first SPIP web site of Patricia Pottier. And thanks to Claude Fischer for the name !

Description

Title : STORMNET (Scientific Training for Operations and Research in a Meteorological NETwork), a European training network for local short-range high-resolution numerical weather prediction and its applications

Short abstract :

European meteorological services now have to face the challenge of a quick march towards very high resolution applications for limited-area modelling and short-range prediction. Beside the research work specific to numerical weather prediction, the increased complexity of equations and the huge amount of data to handle at a reasonable cost will raise new problems in numerics and code organization. The positive feedback on downstream applications like hydrology or air-pollution modelling will have to be checked too. As experts are spread among many small teams, an enhanced transfer of knowledge through training actions is needed.

Full Partners :
Meteo-France / National Meteorological Research Centre,
Central Institut for Meteorology and Geodynamics (Austria),
Royal Meteorological Institute of Belgium,
Meteorological and Hydrological Service of the Republic of Croatia,
Czech Hydro-Meteorological Institute,
Finnish Meteorological Institute,
German Weather Service,
Hungarian Meteorological Service,
Irish Meteorological Service,

Royal Netherlands Meteorological Institute,
Norwegian Meteorological Institute,
National Meteorological Administration (Romania),
Slovak Hydro-Meteorological Institute,
Swedish Meteorological and Hydrological Institute,
Federal Office of Meteorology and Climatology (MeteoSwiss),
Met Office of United Kingdom.

Associated Partners :
University of Zagreb (Andrija Mohorovicic Geophysical Institute, Faculty of Science) (Hr),
National Scientific Research Centre (Laboratoire d' Aérologie, Observatoire Midi-Pyrénées) (Fr),
University College Dublin (Ir),
Comenius University (Faculty of Mathematics, Physics and Informatics, Department of Astronomy, Geophysics and Meteorology) (Sk),
Swiss Federal Institute of Technology Zurich (Institute of Geodesy and Photogrammetry) (Ch).

Coordination

A second life for CSSI

The CSSI (Committee for Scientific and Strategic Issues) structure, a coordination team of 6 persons nominated by the Assembly of Partners (Doina BANCIU, Radmila BROZKOVA, Luc GERARD, Dominique GIARD, Andras HORANYI, Abdallah MOKSSIT), has been shelved when launching the ALADIN-2 project. However the new networking didn't prove more successful, especially when one considers the last months.

Since HIRLAM is a very structured project, the Assembly of Partners decided to both push forward and renew CSSI, in order to make it a mirror of the HIRLAM Management Group. The composition was changed, to better take into account the contributions of the various partners : 2 LACE members, 2 French ones and 2 "non-LACE non-French" ones. Luc Gerard and Abdallah MOKSSIT resigned, while Margarida BELO PEREIRA and Gwenaëlle HELLO entered the group. Andras HORANYI was proposed as chairperson by Directors, and the other members agreed.

However, one has to underline that this is a temporary organization, waiting for the new MoU. Proposals for a better coordination structure are welcome and should be addressed to Andras HORANYI, who represents scientists within the working group in charge of the new MoU.

Coordination of operational activities

First let's recall that Maria DERKOVA (Mariska) is responsible for the coordination of the updates of operational suites, with the help of the Toulouse Support Team.

The first step, moving to the most recent export version (cycle 28T3), should be achieved soon (see the section on operations). Some further actions have already been identified :
- coordination around the conception of observation databases, with several partners willing to start data assimilation activities or to update the present tools; CHMI and HMS already provided informations on how to proceed; ANM, NIMH and DMN are likely to organize a working group with joint stays in Toulouse;
- many modifications in coupling files scheduled for summer 2005, with a coordinated operational change expected for September;
- jump to the externalized surface module in 2006.

The misfortunes of the ALARO-10 sub-project, arguments around the physics-dynamics interface, ...

As underlined in Oslo (in October), "this was a difficult year indeed", and the last months of 2004 were even worse, with sharp arguments and again a lack of visibility after re-re-formulations of objectives. The whole drama, from the very beginning, and the present choices are described in a

dedicated paper by Jean-François GELEYN.

Communication problems, obviously

There were complains from ALADIN Partners about the multiple voices of Météo-France, and they were justified indeed, with a poor diffusion of information and significant disagreements within the French team, hence less attention paid to the Partners' opinions.

As an attempt to restart on safer bases, a meeting was organized in Toulouse on January 19th, 2005, with representatives of the various models used at Météo-France. Hereafter are the minutes, written by Jean Pailleux, who is now responsible for coordination at the CNRM level.

Météo-France meeting of 19 January 2005
on LAM NWP (ALADIN, ALARO, AROME, MESO-NH)

The meeting was organised by the Météo-France Research management in Toulouse, involving the Direction Générale in Paris (A. Ratier, C. Blondin) and the Forecasting service (E. LEGRAND). It was triggered by:

- the Prague workshop (22-26 November 2004) which failed to establish a satisfying work-plan, especially for the ALADIN-2 project, and especially in terms of physics-dynamics interface;
- several email exchanges taking place between the Prague workshop and the end of 2004, which were pointing to an insufficient level of coordination between the different LAM projects (ALARO, AROME, etc...) which have been all set up with heavy contraints on their time-tables.

Among the different weaknesses which were identified before and during this meeting, one is the fact that the ALARO prototype has been developed in 2004 in a software environment which is as close as possible to the AROME prototype. As this AROME software environment is a provisional one, which is not expected to converge to its final environment before 2008 (and is quite far from the operational environment which is familiar to the ALADIN world), this is a strong limitation for the scientists working on the ALADIN-2 who have to prepare ALARO runs.

Following a planning effort by Jean-François GELEYN just before the 19 January meeting, a list of critical scientific/technical tasks was identified in terms of work-streams (rather than in terms of ALARO project or AROME project). These tasks were then analysed in order to identify the minimum which needs to be achieved for the ALARO project and its time-table. The following points are coming out from the meeting:

- The intermediate calendar of ALARO is relaxed, i.e. no big phasing effort in 2005, but more preparation for a 2006 upgrade, to happen after the technical change to the externalised surface code and files, planned before mid-2006 (see specific plan by D. GIARD, on the ALADIN web). For end 2006, the aim is now a first version of ALARO which would be an improved ALADIN, still preserving further "re-convergence" with AROME.
- A guess of the first version of the ALARO physics can be seen as follows: the use of a sophisticated micro-physics package is postponed and will be revisited in the context of the convection closure; the convection scheme is a modified version of ARPEGE/ALADIN; idem for the gravity wave drag; the radiation code is a simplified and cheap version of RRTM; use of the externalised surface (which is then the first technical jump to the ALARO code, before mid-2006). The new physical routines called in this context should be callable from the Meso-NH side as well as the ALARO side (so-called "symmetric compatibility"). This first version of the ALARO physics is based on pragmatic considerations which have nothing to do with the quality of existing models, or the performance of Meso-NH physics at 10km.
- Most of the coordination problems between ALARO and AROME are now concentrated in the routine APLAROME calling both the AROME and ALARO parameterization routines (APLAROME routine renamed APLXX – see separate short-term plan written by François BOUTTIER on the ALADIN web).

- Some rules on the evolution of the Meso-NH code have now been suggested (document by François BOUTTIER– see ALADIN web). They are of the same type as the rules used for years in IFS – ARPEGE – ALADIN. They should be the guarantee that each LAM project can rely on all the other projects in terms of code, in a way which is flexible enough. Each project is expected to benefit from all the others in a symmetric way.
- The "generalised interface of interfaces" is not cancelled, but in its more ambitious form it is postponed , say beyond 2008. It is currently not compatible with the ALARO and AROME calendars, although it is potentially a very powerful tool for research in NWP and climate modelling.

Fourth medium-term research plan

We have now to build the fourth ALADIN medium-term research plan, for years 2005-2008. The third one was valid till end 2004 only, though prolongated for 6 months by a provisional work plan. The target is to build a first draft with contributions from all partners before the next ALADIN workshop (June), then discuss and finalize it there. Common issues with the parallel HIRLAM research plan will be identified during a preliminary CSSI-HMG meeting on Sunday just before the workshop.

A convivial web site for the preparation of the research plan was created by Patricia Pottier : *http://www.cnrm.meteo.fr/aladin/wp2005-2008/*

So, please :
- do have a look at the site !
- do contribute to discussions !
- do travel to Bratislava in June (financial support is available) !

Support

Next ALADIN training course

Considering the needs expressed by the ALADIN teams (all answered !) and the candidacies, it was decided to organize an ALADIN-HIRLAM training course :
- in Bucarest (in the brand new school),
- at the end of 2005, November as far as possible, because of the numerous meetings before,
- on the following topics : Meso-NH physics, running the AROME prototype, use of NH dynamics.

Documentation

The most recent version of ARPEGE-ALADIN documentation is now available via the ALADIN web site. The next step is the definition of a web site dedicated to documentation. Patricia Pottier and Jean-Marc AUDOIN are in charge of it in Toulouse.

MAE supported projects : AMADEUS, ECONET-SELAM

A proposal for bilateral cooperation between Austria and France (AMADEUS) for 2005-2006 was accepted. Coordinators : Eric BAZILE and Yong Wang.

A proposal for support to a network involving Bulgaria, Romania, Macedonia, Moldavia, and France, for 2005-2006, was submitted in December. Two main issues are considered : training and design of observation databases.

Météo-France financial support

Support to participation to workshops ("KIT") is available for 2005, as last year. Hoping there will be less problems !

Support to stays in Toulouse, mainly for maintenance and training actions, was accepted for the same amount as last year.