Mesoscale modelling: the possibilities of a HIRLAM-Aladin partnership

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The challenges for mesoscale modelling:

Future mesoscale NWP will hold difficult challenges in the next few years:

- Km-resolution non-hydrostatic modelling with appropriate physics
- Mesoscale estimates of predictability using short range ensemble forecasting
- Efficient 4D-variational data assimilation of high-resolution RS data

Each of these topics is scientifically complex. Solving them as a whole within a reasonable timeframe will require joint efforts of the European LAM consortia. In this context, HIRLAM seeks a partnership with Aladin.

Scientific benefits of HIRLAM/Aladin partnership to each consortium:

- **Non-hydrostatic modelling: for Hirlam**
- **4D-Var assimilation of high-resolution data: mainly for Aladin**
- **Predictability and use of RS data: both consortia**
- **In general: a broader base of expertise and manpower for all aspects of mesoscale NWP, and improved training opportunities: both consortia**

In the longer term, scientific and software cooperation would bring benefits to both sides in all these key fields

Foreseeable constraints and drawbacks:

- Larger coordination effort required for software, scientific activities and management
- A unique software framework may discourage scientific pluralism
- Some larger countries may feel that their power is decreased in a bigger consortium
- Rules for ownership and commercialization of NWP software and products need to be clarified

HIRLAM views:

KNMI

Koninklijk Nederlands Meteorologisch Instituut

HIRLAM Adv. Committee point of view:

- **Benefits of partnership outweigh drawbacks**
- **Strive for cooperation with the full Aladin consortium**
- **Aiming at developing a fully integrated, shared NWP mesoscale model code, both parties contributing to this joint system with code and research efforts**

HIRLAM Council:

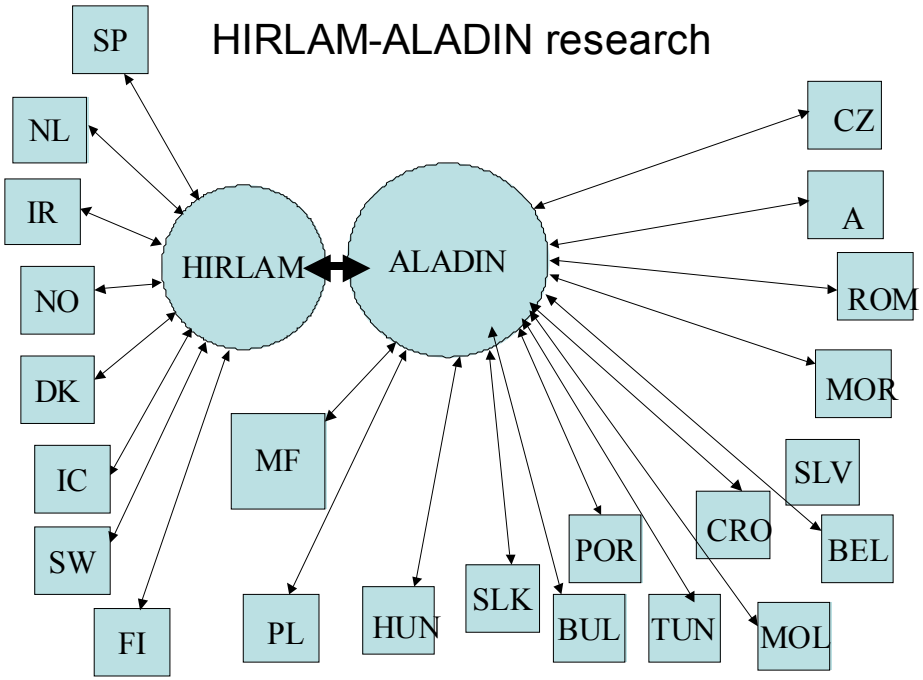
- **full code cooperation on mesoscale model: accepted in principle last June**
- **HAC requested to look at organizational and scientific aspects in more detail**
- **Formal decision: December**

Consequences of full code cooperation

- Full-shared ownership for commonly developed code (not for pre-existent systems)
- All partners have right to use joint software for operational activities
- Code cooperation will be based on the Aladin/IFS system, adding modules where necessary.
- Jointly agreed procedure and mutual commitment for issuing new releases is required, using best practices from both sides.
- Role of HIRLAM meso-RCR-run: considered very important, needs to be defined

Cooperation at project and management level

- Both consortia have more objectives than mesoscale modelling => maintain two projects, but formalize mesoscale cooperation in both MoU's.
- Coordination initially through joint planning and control of activities by the project managements. At later stages, a coordinated project management with thematic organization is possible.
- Division of labour on basis of competence and critical mass. Mechanisms of extended visits or mixed core groups working together are advisable.
- Cross-representation at steering level of Council/ Assembly



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