

Minutes of the PAC fifth Session (Paris, 29th May 2009)

The PAC Chairman will make a short verbal report about the fifth PAC Session and will invite the delegates to the General Assembly to ask for precisions, to comment the issues that were dealt with and to confirm or infirm PAC's orientations for the issues that shall not be specifically dealt with during a regular Agenda Item of the 14th General Assembly.

The delegates to the GA are invited to take note of the content of the PAC's fourth Session Minutes, to hear the verbal report of the PAC Chairman and to raise any linked issue for questions, comments and discussions at the Istanbul General Assembly.

**Minutes of the Fifth ALADIN PAC Meeting
Paris, May the 29th, 2009**

Participants: P. Bougeault, V. Cassé, G. Hello, C. Fischer, M. Alestalo, R. Tolasz, A. Mokssit, P. Termonia, G. Radnoti, A. Serrao, M. Monteiro, D. Klaric, C. Soci (chair)

1. Welcome and opening of the meeting.

J.-F. Geleyn apologizes for late arrival of documents and absence due to illness.

Welcome of new members: Philippe Bougeault, Gwenaëlle Hello, Vincent Cassé, Aderito Serrao (head of I.M.)

2. Adoption of the draft agenda.

Item 4 passes to A.O.B.

3. Final approval of the Minutes from the fourth PAC meeting.

Minutes approved.

4. PAC matters:

- a) Formal matters arising from the Cascais General Assembly, if any;
- b) PAC advices/recommendations about the priorities to which the Cascais GA drew specific attention.

5. ALADIN planning:

- a) Comments of the HIRLAM Management Group on the ALADIN four-year plan; CSSI proposal for handling the consequences;

Piet recalls history of 4 year plan writing and main comments from Hirlam on its form (heterogeneous) and content (mainly physics and system aspects):

DA: too short term

Physics: not coping with specific big issues (outflow problem)

EPS: plans start to be in phase, progress is noticed

System: maintenance and software collaboration issue

- b) Listing the issues where PAC wishes its own opinions to influence the evolution of the 4-year plan.

Mikko points out “straight language” used in the Aladin/Hirlam collaboration, which is probably a good sign; convergence may however take longer than expected (3/4 years ?).

Piet raises lack of manpower in dynamics within ALADIN, but that HIRLAM is now finding more and more manpower, and that common plans still are somewhat out of phase.

Document N°4

Dijana mentions that LACE has some firm planning for concrete realizations in the short/mid term, which may hamper ambitions in the long term issues (temporarily).

PAC acknowledges the documents presented and the general comments made in the process of redaction and reactions.

Claude mentions that DA plan structure (format) was found too much looking like a one-year plan, while its content certainly is longer term.

Dijana raises the issue of the update frequency of the 4-year plan => every 2 years. 1-year plans are very important for local team management. Abdalah says it is enough to consider the 4-year plan as dynamic and in coherence with 1 year progress.

Aderito mentions that G.A. should decide on progress evaluation. Dijana recalls that PAC should play its role of advisement and recommendations.

PAC recommendation:

4 year plan next update: 2011 (new rewriting), physics and maintenance in 2009 still (to be rewritten)

1 year plan: 2010

Mikko mentions redaction of next MoU in Hirlam => the writing of the MoU for the next phase after Hirlam-A starts in early 2010 for a start of the program in 2011. Some common streamlines should be found with the Aladin next MoU redaction and calendar of redaction should be in phase (they will be).

6. ALADIN programme definition:

a) Update on important recent events:

i. 'Convergence days' (Toulouse, September 24th & 25th 2008);

Vincent recalls background of Convergence days and the outcome proposal: "Arome is a system for capitalizing quickly on R&D results for operations (mostly from Méso-NH); Arpège/Alaro is seen as a more long term NWP software evolution".

Piet mentions that Convergence days have clarified the psychological aspects in a very positive manner.

PAC acknowledges the progress obtained in the Convergence-days.

ii. HMG/CSSI joint Meetings (Utrecht, May11th & 15th) report;

Piet summarizes the discussions:

- E-zone issue and Boyd's solution to be tackled
- Obs pre-processing: BUFR2ODB from ECMWF or not ? => Claude says that probably not on the short-to-mid term, as oulan/bator can be extended to Aladin/Hirlam needs
- Dynamics: some topics are unstaffed => but it is currently taken over by Hirlam; re-start work on DFI => search for new manpower; write common dynamics plan (Aladin/Hirlam)
- GLAMEPS: work on Mercator projection has started for big domain integrations
- Surface: lack of manpower for surface assimilation developments
- 3D D.A.: 3D-VAR installed in some Hirlam countries, 4D-VAR workshop end of the year in a Hirlam country
- LAM-EPS to be assessed in terms of added value w/r to global EPS; GLAMEPS Aladin contribution is in phase with Hirlam. Mikko asks about LACE contribution to GLAMEPS; Dijana answers that LAEF had strong operational goals and thus had a different timetable than

Document N°4

GLAMEPS. Now that LAEF is operational, it will provide some specific work and manpower to run specific tests cases decided for GLAMEPS evaluation with the LAEF system. Dijana also recalls that the LAM-EPS systems need to increase resolution. Mikko says that Hirlam now is addressing the issue of how to have some GLAMEPS ported to operational status => Hirlam is more tending towards a centralized system at ECMWF; in Aladin, Belgium for instance would test distributed work and computations. Dijana raises the issue of CPU resources at ECMWF (will be requested again at next G.A. ?)

- SURFEX: still some interfacing problems for ALARO (but problems are understood and under work); OpenMP not supported (Ryad's estimate: 6 person.month); one should ask Ryad to write specifications in order to better sketch the profile of a possible candidate for the work (probably somebody from LACE). Philippe asks if flat rate funds could be used for sub-contracting somebody for such topic => Claude answers "no" (actually, amounts are too small for sub-contracting)
- Maintenance and cycles: (to be discussed more in depth later in the meeting)
- Model performances (outflow, strong convergence): Mikko stresses that this aspect is felt as a serious one and that there could still be problems of model setup and wrong technical usage of Arome => Claude confirms that technical cross-checks especially with MF's Arome version certainly are possible but that the overall feeling from the Utrecht discussions was that the problem very likely is of a complex scientific nature.
- Dijana mentions that format of the all staff meeting is overall good and proposes that PAC should recommend all countries to send participants to the yearly workshop; call it "all staff meeting" in future ? Mikko wonders if the costs of a workshop with about 100 participants are shared evenly; Dijana answers positively. For instance, some contribution to the workshop is accounted for in the Aladin and LACE budgeting system.

PAC takes note of the discussions and acknowledges the complexity of the scientific topics. PAC recognizes the lack of manpower for DFI , SURFEX.

PAC also recognizes the importance of further work on deep convection. Mikko welcomes that Aladin also recognizes the importance of this issue.

111. LTM meeting (Utrecht, May 14th) report;

Piet summarizes the discussions. Aspects related to SURFEX: operational porting not before beginning of 2010. Change of resolution in Arpège and consequences for partners.

112. CSSI-ST meeting (Utrecht, May 14th) report;

Piet summarizes the discussions, and focuses on the main issue: physics convergence. Piet recalls PM's opinion that the work on Equations and Interfaces has a high priority and should be further pushed and surveyed. Météo-France should produce fairly soon a specification document (see continuation of discussion in item 6.b.iii).

113. Third C-SRNWP AC meeting (Zürich, April 2nd-3rd) oral report by ALADIN and RC-LACE representatives.

Dijana summarizes the A.C. discussions. She mentions the advertisement for the ESF/EUROPredict project raised by University of Hohenheim, with the "mesoscale weather research centre" at European level. This item has been spotted and heavily criticized by the A.C. A new proposal has been written, where the European center item has been erased. Some consortium leaders will appear in this proposal.

Document N°4

Dijana stresses the general dilemma of such proposals: there are many of them, giving the opportunity of raising funds, but they are sometimes very “cleverly” written ... yet, “we (SRNWP consortia and members) should join some”.

A.C would write a “white paper” describing who/what is SRNWP and how it works, and stressing the question of the link with other Eumetnet programs. A.C. would ask Eumetnet Council about the possible links between NWP-oriented programs and SRNWP. Aderito points out that this may be the right moment since Eumetnet is starting to write its next strategy document. The goal would be to better arrange the coordination and collaboration between SRNWP and other Eumetnet programs first, but also to give a better recognition of the already existing collaboration inside SRNWP and the hope for a better recognition even at the level of European Union. One example of concrete action (Dijana) => extend the coordinated work on observation quality control taking the example of what is already done for radar data in OPERA (“small centres cannot perform full obs QC at home”). Steve Noyes should send most recent version of Eumetnet strategy paper to Andras Horanyi; Andras would send white paper to Steve.

PAC takes note of the recommendations issued by the SRNWP/A.C. and the need for clarification of the link between the Eumetnet strategy and the SRNWP coordination.

- b) PAC advices/recommendations on matters linked with these meetings or of special independent importance:
 - i. CSSI and ST Membership;

Edit Hagel leaves CSSI (LAMEPS); PAC approves the nomination of A. Deckmyn to CSSI/Predictability and LAMEPS.

- ii. HARMONIE maintenance issues;

Claude summarizes the historical background (misunderstandings, very different language and practices) and the recent proposals discussed in Utrecht (quality-assured cycles – QA - and system expert work, help by Aladin on QA validation in Harmonie, usual phasing work and visits to Toulouse, Arpège-IFS background, upstream analysis of possible scientific or technical conflicts etc.)

PAC is pleased by the outcome of the Utrecht discussions, and takes note of the positive progress on this issue, towards more “internal operability”.

Dijana stresses again the requirement for Hirlam staff, especially the younger staff, to come for more than two weeks to Toulouse. This would both foster transversal spirit and be a more efficient contribution to the core centralized phasing work.

- iii. HARMONIE ‘physics’-linked issues;

Piet exposes the situation based on PM’s opinion and discussions at CSSI in Utrecht: PM has produced a synthetic paper discussing the complexity of the physics and physics/dynamics issues, especially the question whether convection at the 2 km scale should still be parameterised or not. Tests in Hirlam and Aladin show that convection there still should be to some extent parameterised (not all effects of convection are fully modelled, for instance sub-grid evaporation and re-saturation below precipitating areas).

Piet mentions that there is so far a disagreement between Aladin and Hirlam on the R&D strategy on how to parameterise these effects: rather start in the multi-scale thinking (like Alaro) than building in a “classical” convection scheme into a model like Arome.

Document N°4

Third issue: physics / dynamics interactions; Piet recalls that, for instance, recent ALADIN work suggests that the time-step organization of the physics-dynamics coupling in the AAAH¹ models is not optimal from a numerical point of view (allowing large amplifications).

The overall opinion of CSSI is that the whole problematic is multi-form, and complex. The message to Hirlam is that Aladin/CSSI believes that Hirlam's possible strategy for "built-in" solutions is not suitable. Mikko asks why Hirlam Harmonie/Arome forecasts show problems that MF's Arome version seems not to have => problems of setup ? => MF is ready to re-run tests cases from Hirlam (E. Bazile), but problems are of a deeper scientific nature.

Philippe confirms that MF's Arome version is running with problems "sized down" to an operationally satisfying level, but that the core issues (existence of fireworks problems) still exist. This analysis is backed by Gwenaëlle who confirms also the complexity/multiform aspect of the problem which is not so obvious to tackle (difficulty with the advection scheme at convective scale, convection to some extent parametrized, physics/dyn interface and/or a combination of the 3 aspects).

Dijana recalls the "moist physics workshop" to be held in Norrköping in mid June, where a number of Aladin and Hirlam physicists will meet.

Abdalah proposes to keep possibly a two-stage approach with both work on short-term operative solutions and the long-term R&D investigation.

PAC takes note of the good work performed by Hirlam on the Arome and Alaro physics validation. PAC encourages the continuation of the scientific discussions and R&D about the convection-question between scientists from the two consortia. PAC is ok with the two stage strategy: short-term efforts towards operations and their improvement, and the long term scientific evaluation. PAC stresses the complex nature of the issue, including the link between physics and dynamics.

Doc 6.b.iii is handed over to the Hirlam observer.

10. Follow-on of the 'Convergence days' (monitoring executive decisions, link with manpower mobilisation, interaction with the HARMONIE physics issue, importance of the operational steps that happened since last PAC Session, ...);

Gabor summarizes the documents: need for more manpower into scientific maintenance because of the evolution of the physics/dynamics issue with more and more transversal and cross-cutting issues => requires local scientific involvement and help on maintenance. This would be a further step beyond the already decided efforts from the convergence days.

Claude stresses that if really these issues will be the dominating stream for future high-resolution NWP, then the scientific and technical maintenance of the physics and dynamics software will become a bigger problem than in past years (for 10 km LAMs).

Piet proposes that PAC asks PM to evaluate carefully the manpower requirements of such proposal, at the same time as the 4-year physics plan is re-written.

Dijana recalls that after the ALARO training two years ago, many centers who promised manpower and involvement eventually did not comply with their commitments.

¹ Arpège/Aladin/Alaro/Arome/Hirlam common model code

PAC makes the following recommendations to PM: PM should add a manpower estimate for both the 1-year and 4-year plans on physics, in link with the scientific challenges of the physics/dynamics problems, the needs for scientific and technical maintenance and operational local knowledge building.

ϖ. EUMETNET/SRNWP Interoperability and Verification Programmes.

Claude gives an overview of the history of I-SRNWP (Reading workshop outcome) and insists on the change of technical approach (move from the “common format” approach to “multiple read-only formats” from any other consortium’s format into its own).

Dijana summarizes the goals and decisions for verification => consortia send model data to Met Office’s data repository. Aladin will be present with at least two models (Aladin-France, one Alaro from LACE). Dijana raises the issue of possibly exchanging local national observational data at European level in some distant future, as an extension of the requirements for Verification => this would be an item for the “SRNWP/Eumetnet white paper”.

Abdalah proposes that Aladin verification should aim at becoming a guideline for “best practices” for verification, agreeing on common practices, quality measurements, possibly software. All countries should then follow the same methodology for their local validation work.

PAC takes notice of the provided information for both programs. PAC acknowledges the need for the exchange of high resolution data within Europe.

7. Resource matters:

a) Manpower status.

Cornel gives an overview of the manpower figures prepared by JFG and Patricia for the meeting. PAC takes note of the provided figures, and recommends that some of the figures shall be presented/sent to LTMs (especially the manpower table per country).

Dijana raises the issue whether some shorter term manpower figures also could be provided (over the last 1-2-3 years ?). This proposal shall be re-discussed with PM.

b) Budget matters:

i. Report about the ongoing execution of the 2009 budget;

PAC takes notice of the figures provided. PAC supports PM’s proposal for transferring the non-spent budget (about 10 k€) to the 2010 budget. PAC asks PM to check with MF’s central budget coordinator that this transfer actually is possible.

ii. PAC’s first guidance for the elaboration of the 2010 budget.

PAC supports PM’s proposal to have the 2010 flat rate value at ceiling level (7.8 k€).

Document N°4

Dijana stresses that one should start tackling the issue of the next-MoU flat rate ceiling proposal, or maybe even an alternative funding scheme with some expected scientific goals and needs (funds and manpower). Claude recalls that one should not aim at a complex funding scheme if the amounts to be handled are small (which is the case of the flat rate amounts).

Abdalah proposes a 4-year budget guideline, in order to be able to make a longer term projection in some national centres.

Aderito proposes that PM and chair of PAC work out a proposal document for the next G.A. with several budget scenarios for the next MoU (see above). Aderito also stresses the difficult financial overall situation and some scenarios should be proposed at non-increasing costs.

8. Progress assessment on the question of a simplified HARMONIE model setup available for research at e.g. Universities (CHAPEAU).

Piet summarizes the status of CHAPEAU: first version ready for beta-testing (University of Gent, collaboration with KNMI). The beta-version is ready for further installations in other centres. PAC welcomes the progress with CHAPEAU.

9. ALADIN Membership issues, if any.

No fresh news on potential candidates.

10. Start of the preparation for the new MoU and all associated consequences.

Link with Hirlam: Mikko mentions that Hirlam-A will first undergo an external evaluation. Second, Hirlam will work on the definitions of R&D, operational and commercial use of Harmonie products. The redaction of the next MoU should be completed by end of 2010. Hirlam is open to ways and items for harmonization of the next MoUs (Hirlam and Aladin).

Dijana raises the issue whether Hirlam would get closer to Eumetnet rules, if not Eumetnet programming. Problem for Aladin: not all Aladin countries are in Eumetnet (if not Europe).

Mikko answers that Hirlam has not yet addressed this question.

Dijana raises the issue on finding some legal framework for more efficiently hiring manpower, or how to foster more common budget practices between Aladin and Hirlam for financing stays.

PAC makes recommendations for the redaction committee of the next MoU: PM, chair of CSSI, Claude (support team). Hirlam PM as a contact person for Aladin/Hirlam links.

Mikko asks who from Aladin could be available for the Hirlam evaluation: chair of G.A. or chair of CSSI.

11. A.O.B.

Procedure for the succession of J.-F. Geleyn as PM ? => to be further checked by Meteo-France and PM.

12. Date and place of the next PAC meeting (two scenarios must be envisaged for 2009: an autumn PAC session or a 'bureau-type' meeting [in preparation for the General Assembly in Turkey]).

Bureau meeting: 14th of October, to prepare G.A.

Document N°4

Next PAC: to be held in Bucharest, the first week of June, with two half-days => June 3-4, 2010

13. Closure of the meeting.

Chair of PAC thanks Vincent Cassé for his efforts in the PAC.