

REPORT OF THE WORKING GROUP ON THE ALADIN MoU's RENEWAL

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A. The Working Group, set-up at the fourth Assembly of ALADIN Partners in Lisbon, **met once, in Ljubljana on 24/1/2000**, and worked otherwise by e-mail exchanges. The present report, compiled by J.-F. Geleyn, is strongly influenced by the recent change of emphasis resulting from the idea to prorogue the current MoU for a few months, in order to allow the fifth Assembly in Vienna on 24/11/2000 to debate all open subjects, before any firm consolidation effort is done. It is thus hoped that the material presented below will be an incentive for fruitful discussions at the forthcoming Assembly and *its components are hence surely not meant to be definitive solutions*.

B. The Working Group nevertheless decided to be more definitive in its conclusions when delimiting the parts of the current MoU that could be reused without modification (or only with small technical adjustments). The list is as follow:

Section 1 : The first 3 paragraphs: «.../... the initial signing of the MoU.»

- *The last 4 paragraphs: «All other questions .../...»*
- *Section 2 : "B"*
- *Section 3 : The whole of the Section.*
- *Section 4 : "A"*
- *Section 5 : "D", "E", "F", "G" & "I"*
- *Section 6 : "A", "C" & "D"*
- *Section 7 : The preamble; "C"*
- *Section 9 : The whole of the Section.*
- *The delegations to the Assembly are invited to check this list in order to get it modified if necessary.*

C. Otherwise the Working Group identified four areas of action, a rather technical one having to do with the adjustments made necessary by the start of the ALATNET EU-funded, ALADIN-based but not fully-ALADIN-enclosed sub-project (nothing yet done on this issue) and three «political» ones. Those will now be studied one by one, the Working Group having had no time to work further on all potential interactions between the issues that are raised below.

The problem of Membership and of its potential extensions

Aside the adhesion request from Tunisia that can be considered as belonging to the old framework (four years of advanced contacts already), the quite impressive increase in demands either for potential future Membership, or for access to ALADIN-based products and/or services, as well as the quite diverse geopolitical origin of those requests, makes it clear that the current yes/no system, temporarily reaffirmed at the third Assembly in Prague, is no longer fully adequate for the four years to come.

In view of the evolution of the meteorological context since the signing of the current MoU, the Working Group proposes to separate the «geographic» issue (linked both to the area of interest of the ARPEGE coupling model and to the potential for easy exchanges between Partners) from the «right of use» one.

In the first case there would be two categories: (A) Countries of the Euro-Mediterranean area (which definition will be mentioned later) and (B) Other parts of the world.

In the second case one would distinguish between (a) full participation, (b) access to services (i.e. products with some implication in their preparation) and (c) sole access to products.

This leads to the following table (the name of categories are surely provisional)

	(a)	(b)	(c)
(1)	Full Member (FM)	FM on probation	Privileged User

(2)	Associated Member (AM)	AM on probation	User
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- Only Countries of the area (A) can be associated with the line (1) but the reverse is not true (i.e. some entity of the area (A) unable to fulfil all conditions for Full Membership can aim for Associated Membership).
- The distinction between column (a) and (b) is in principle more a question of timing in the integration process to the project than a structural difference (an entity interested in the preparation of the products it buys should sooner or later be able to contribute significantly to the progress of the ALADIN ensemble of tasks) but this is not an absolute necessity (i.e. one could think of a permanent probation state).
- A «Privileged User» gets its products from an already existing application, unlike a «User» that has a tailor-made application under the control of one «confirmed» Member. This rule excludes the possibility of «second hand deals» with ALADIN products.
- Unlike the difference between confirmed Members and Members on probation which is of a more commercial nature (paid services and restricted access to the code), the difference between full and associated Members is in rights (financial return, IFS/ARPEGE agreement's benefit, right of vote, etc...) and duties (maintenance- and scientific contribution commitments, etc...).
- Whenever possible, transition rules (the adhesion ones are rather obvious) have to be established and applied under the control of the Assembly of Partners. The existence of six categories makes it more easy to have changes in both directions (increased or diminished implication).

The above proposal is surely perfectible but the Working Group believes that its basic principles are sound ones. There are however two very specific issues to be debated, if an improved version of the above can be worked at:

(I) The exact delimitation of area (A): there are a lot of criteria that can be applied for the European definition (ECMWF -present or potential- membership, EU and its negotiating states, territorial continuity, EUMETSAT «helping» policies, ...) while the easier Mediterranean concept will have to be limited to the Occidental and Oriental basins in order to remain compatible with the ARPEGE proximity constraint. In any case, it would be preferable that the new MoU fixes a -then necessarily arbitrary- List of Countries that cannot be revised for its whole duration. Otherwise, whatever combination of the above-mentioned criteria should be applied, there is a risk that some fluctuations lead to reopen the question on how to classify this or that participating entity.

(II) Whether the freedom offered by the new framework is enough to cope with all possible situations while keeping the WMO-like system of PRs as anchor points to the ALADIN participation or that one accepts that participating entities may be regional and/or non NMSs ones? Whatever the answer to this crucial question may be, it would be better that Membership (full and associated) is linked with some NMS-based operational duty, in order to avoid the risks of an uncontrolled proliferation of ALADIN products and/or applications.

The delegations to the Assembly are invited to prepare their comments and proposals for improving, consolidating and concretising the above draft proposal.

The question of commercialisation and protection of ALADIN-produced data

Here, the result of the Working Group's investigations is that the rules established by the current MoU, if correctly enforced and if updated wherever necessary at the time of rewriting (e.g. new ECOMET rules as reference in Appendix) are going to be sufficient but for two exceptions:

- the need for a Catalogue, or at least for a common tariffication policy, for the case of «Privileged Users» (the other cases being of a more contractual nature), in order to avoid any counter-productive competition between ALADIN-Members and to allow a better visibility of our offers; here the initial proposal would be to start from the ECMWF example and to simply redefine the value of the basic unit, owing to the denser geographical information obtained

- from meso-scale modelling.
- the need to better adapt the ALADIN MoU to the rapid evolution of Internet as a major vehicle for all types of meteorological information; the protection of each ALADIN Partner against an uncontrolled use of ALADIN results originating from other ALADIN applications and circulating on the Web is an absolutely necessary task in order to preserve the spirit of the project and its attraction for potential newcomers.

The delegations to the Assembly are invited to consider the two above-mentioned issues and to define their positions in view of an open and constructive debate.

The issue of the link between operational and research/development (R&D) structures

This issue is even more difficult to deal with than the two previous ones. Indeed it touches a lot of untold principles that must be applied under conflicting constraints and, up to now, fortunately in a general spirit of reciprocal goodwill and positive dedication. While it would obviously be impossible to codify such a situation in the new MoU, Météo-France (that is most at risk of an implosion effect if all Partners would turn to it asking for the same level of help and coordination in operational matters than in R&D ones) feels that the subject can no longer be totally ignored in the new MoU. Yet, the balance will not be easy to find in order to keep the whole ALADIN project away from the above «implosion» syndrome and from the lethal risk of a decoupling between a more and more centralised R&D and a more and more diverging set of local operational applications.

Looking back to the period of application of the current MoU, it is obvious that the above-mentioned balance has been maintained thanks to two factors: (i) the emergence of a few teams reaching the necessary critical mass to take away tasks from the Toulouse main activity centre, one of them (RC-LACE Prague Team) being even the welcome result of a concerted and controlled effort of six ALADIN Partners; (ii) the fact that each ALADIN Partner tried to find a mode of contribution to the whole effort that was more or less in phase with its respective manpower- and financial potentialities. Obviously this self-adaptation process of the ALADIN community to better meet the challenges of the modern NWP competition should be further encouraged but, here again, finding a convenient wording for the new MoU could become a quasi-impossible task.

Because of all uncertainties associated to this issue, it is felt that proposing guidelines or asking questions is unlikely to lead very far. Hence the starting point for the discussion of the Assembly should be the following three draft paragraphs, to be later incorporated at the most appropriate place, probably in the Preamble, in a manner to be decided after their discussion and editing.

Only the research and development (R&D) part of the ALADIN project was codified by the original MoU. Given the technical situation at the time of signing the latter, it was indeed felt that the anticipated growth of the departed applications and their coordination could easily be handled along very similar goodwill practices of everyone and implicit implication of the Toulouse team as it had been the case for R&D up to then. This proved to be true at the beginning but the situation evolved since then into two contradicting directions: (i) the diversification of the computing platforms and the obsolescence of the «CRAY programming model for parallelisation» induced a heavier local maintenance burden than anticipated; (ii) the study of the likely evolution of the data assimilation part of the ALADIN project raised the fear that application requirements could become so stretched (between Partners of differing economic potential) that the coordination of a partially decentred R&D programme would become impossible. This slowly growing tendency for less symmetry between the two main components (R&D and operations) of the project represents an important danger that could lead to the loss of what has made the main originality of the ALADIN endeavour, namely its reciprocity and interdependency.

While potential further difficulties associated with the two above-mentioned tendencies cannot be ruled out, technique and science are perhaps giving now better guidelines on how to act: (i) there seems to be signs of convergence towards a new standard and open programming model for parallelisation; (ii) first trials with the variational data

assimilation tools of ALADIN indicate that, more than the choice of algorithms, the key for future successful meso-scale full assimilation applications will probably be the capacity to correctly use higher resolution data than at synoptic scale, a very federating goal given its high logistic costs.

Hence, like it did in the past for the purely dynamical adaptation effort (search for maximum numerical efficiency, ascending compatibility in the parameterisations' development, interest in the coupling issues, ...) Météo-France, in its coordination role between ARPEGE/(IFS) and ALADIN developments, will go on seeking algorithmic and coding solutions taking into consideration the constraints for deported, relatively small domain, very high-resolution ALADIN applications, including simplified use of data assimilation tools (blending, diag-pack, ...). In return, the other Partners will aim at a reasonable balance between the human/technical investment into their deported applications on the one hand and the exact scope of those applications, especially in terms of data assimilation options, on the other hand. In this way, all ALADIN Partners will contribute to a further progressive decentralisation of the project, in nearly parallel terms for R&D, training and operations.

The delegations to the Assembly are invited to consider this text and to take stand on both its formal content and its implications for their role inside the ALADIN project.

PS: The delegations are also reminded to prepare their 2001 official commitments.