

Minutes

Participants

Flat-Rate ALADIN MoU5 Representatives	Nuno Lopes (Portugal) - until 10h30
	Mehmet Fatih Büyükkasabbaşı (Turkey)
	Subs.: Siham Sbi (Morocco)
RC-LACE-MoU5 Representatives	Florinela Georgescu (Romania), chair
	Radmila Brozkova (Czech Republic)
HIRLAM-C Representatives	Jussi Kaurola (Finland), vice-chair
	Jørn Kristiansen (Norway)
Météo-France Representatives	Alain Joly - joined at 11:00
	Marc Pontaud
ACCORD PM	Claude Fischer
ACCORD CSS	Anne-Lise Dhomps

1. Opening

Florinela (PAC chair) welcomed everybody. The meeting is recorded and the recording will be deleted after the minutes are accepted. The solution for video-meeting is a good practice for PAC meetings, and was already agreed for the last meeting in 2022.

2. Adoption of the draft agenda

Florinela reminded that the 6th ACCORD Assembly on 26 June decided to convene PAC with the following goal.

“The Assembly instructed the PAC and PM to prepare a 2-3 page document analyzing how an expanded collaboration could fit into the ACCORD overall strategy and ambition, the advantages versus disadvantages, including a risk analysis and the drafting of a series of questions or requirements for potential candidates, paying attention to the possibilities for ACCORD to provide support.”

An additional decision by the Assembly might be worth adding here: “*Claude is also tasked with exploring ECMWF’s potential position on sharing the code with BMKG.*”

Florinela also recalled that the PM prepared an analysis document which was sent to the PAC members before the meeting.

The agenda was unanimously adopted. Florinela gave the floor to Claude for a brief introduction of this analysis.

3. Introduction to the topic by the PM

Claude presented a shortened version of the content of the preparatory document. The document is organized in two parts, the first one is a collection of relevant material or information from several sources. The second part contains intermediate questions and draft proposals (some of them conditional to how PAC or ACCORD members answer the intermediate questions).

Overview of existing material (Part 1 of preparatory document)

- Provisions of the strategy and in MoU
 - there is no geographic limitation, though no strong focus on expansion either
- Link with ECMWF
 - any new membership is pending approval by the Council (link with the IFS codes) on case-by-case basis
- Link with Destination Earth
 - specific provisions on eligibility, on IPR and on the use of Results apply in EU-funded projects
- Technical requirements
 - for a new member, to have access to HPC infrastructure, to express the intention to use the ACCORD system in operations, to adequately staff the activity
 - expected support level by ACCORD members: $0.5 + 0.5*N$ FTE (as a “rule of the thumb”)
- The preparatory document contains a Table listing advantages versus disadvantages in its Part 1 (this is part of the request from the Assembly)
- Additional info on how other consortia organize the sharing of the codes
 - several kinds of in-house licensing exist at the Met Office (for the UM code)
 - an on-pay user licensing scheme exists in COSMO and also will apply to COSMO/ICON

Other comments received (Saji, chair of STAC, by email to Claude)

Claude explained in a summary the main points stressed by Saji, who was invited by the chair of PAC to also provide feedback on the preparatory document (Saji could not attend the meeting in-person).

- we should take into account the careful balance of resources in our consortium:
 - We do face important challenges (new HPC, VHR/DE, ML, etc.) which require staffing with high priority (this increases the pressure on our human resources). This need has to be balanced against providing knowledgeable staff for training new teams to our systems (which might take several years before these teams can in turn provide experts to priority issues)
- increased geographical coverage of membership can be an advantage
 - for assessing the performance of our models in different regional areas where climate change occurs (for instance for convective weather regimes in the Tropics)
 - for exploring a variety of regional areas where potentially the DE on-demand Extremes DT could be applied
- link with ECMWF: start exploring any boundary condition beyond case-by-case by informal discussions ?

- other ways of collaborating on the codes could be interesting to explore, however they will require additional resources which ACCORD currently doesn't have
- the emergence of AI/ML and data driven forecasting might provide the basis for new ways of collaborating with candidate NHMSs, especially from emerging/least developed countries

Formulation of intermediate questions (Part 2 of preparatory document)

Claude then presented the four kinds of intermediate questions that he believed should be addressed before drafting a complete answer to the Assembly's request (hereafter shorter than the full formulation from the preparatory document).

1. Membership: confirm the intention not to limit the geographical area of membership in any way
2. Link with ECMWF and Destination Earth (DE)
 - a. access to the codes: authorization on case-by-case ?
 - b. What are the possible consequences of an expanded international collaboration on the negotiations about IPR and licensing in the context of DE ?
 - c. should ACCORD Members (in some future) come from Member States or Cooperating States of ECMWF ?
 - d. Should these questions be addressed with ECMWF beyond a case-by-case process ?
3. Organization of code distribution: should ACCORD consider new ways of collaboration and distribution of its codes ?
 - a. if yes, this would require additional exploration and certainly an additional organization and staffing
4. Relevance of ASSOCIATE membership procedure in the future (MoU2)

Claude explained that, to further make progress on drafting questions and recommendation for any potential new candidate, or to draft a set of keynotes for a strategic position paper, tentative answers to these intermediate questions had to be made. Claude summarized them as follows.

Assuming the following answers for the intermediate questions ...

1. no geographical reservation formulated by ACCORD Members *in general* regarding membership
2. With respect to ECMWF, including the link with EU Programs like Destination Earth, a case-by-case appreciation of any new candidate NHMS applies. No obligation for such candidate to come from an ECMWF Member or Cooperating State (or in the process to become an ECMWF/Cooperating State)
3. ACCORD common code collaboration and code distribution continue to follow the present (MoU-1) principles (i.e. no new licensing scheme, no open source, no distribution via a Cloud organization etc.)
4. the ASSOCIATE Membership procedure is confirmed and recommended for potential candidate NHMSs from distant geographical areas and with a fair low in-depth knowledge of NWP codes

then a set of guidelines and questions for any potential candidate NHMS can be drafted:

Questions and recommendations to a candidate NHMS

- Claude referred to the preparatory document to check/discuss the detailed draft formulations of the questions and recommendations ([magenta text in the preparatory document](#)). A short list of the content of the questions/recommendations was displayed by Claude on the screen and reads:
 - questions about policy and international cooperation
 - check the candidate's intention to use the ACCORD codes for operational production
 - check the candidate's ambition regarding resources, including infrastructure (HPC/IT, staffing, funding scheme, observational network)
 - check the candidate's view on training and scientific cooperation
 - (from Saji's comments) insist with potential candidates on the need to invest in hybrid and GPU HPC architectures

Claude also presented an overview of what the keynotes for drafting a strategic position paper on the expansion of international collaboration in ACCORD could be (also conditioned to answers to the intermediate questions).

Keywords suggested for drafting a strategic position paper (short version of the [blue text](#) from the preparatory document)

- confirm the intention of ACCORD to welcome new Members sharing the same goals and ambitions than ACCORD
- any new acceding membership shall be carefully evaluated and monitored in terms of progress and resources, and that the impact of a wider range of geographical areas involved in ACCORD shall be regularly assessed
- (*confirm some of the details regarding how ACCORD wants to collaborate on the codes*)
- confirm the strong wish by ACCORD members to continue to closely collaborate with ECMWF. Remind that a large number of ACCORD members are involved in European-funded projects which imply specific IPR-related issues. Explain the consortium will do its best to enable all Members to benefit from these collaborations
- make explicit the high interest of ACCORD members to collaborate with and make use of results from the European Meteorological Infrastructure, and that these collaborations set standards (for ACCORD)
- formulate the main questions and recommendations for any new candidate NHMS ([repeat the list drafted in the preparatory document in the magenta text ?](#))
- (*question: should the Table listing the advantages and disadvantages be added as an Annex to such a strategic position paper ?*)

For the PAC discussion, Claude suggested to start addressing the intermediate questions since they condition the way one may draft the recommendations further on.

4. Discussion on the general conditions for membership

Florinela opens the discussion.

Nuno: Point 1 (geographical scope) should be unanimous. About point 4 (associate member), should there be an “observer” phase at first ?

Radmila: Thanks Claude for this very detailed analysis. Open to considering no limitation in terms of geographical area however how simple is it going to be ? There can be practical difficulties due to distance, due to very different time zones and so on. Furthermore, how really useful is such a larger scope extension for ACCORD ? Radmila also pointed to the need to obtain ECMWF’s agreement.

Florinela: Maybe any new candidacy should be handled case by case. For very distant countries, if ACCORD refuses the collaboration, other consortia might accept it.

Radmila: Agreed, however we should bear in mind that each consortium collaborates with its partners in different ways.

For instance, on-pay licensing gives the impression that we would like to make business with our codes.

Jussi: has mixed opinion for the time being. We should support openness. However the collaboration potentially could expand to become very global and this may raise some problems. There are pluses and minuses to expanding the collaboration.

Florinela: Try to formulate a recommendation about geographical openness while keeping some kind of limitation ?

Claude: One possibility now for PAC could be to draft a recommendation on openness, including some mitigating precisions (however how to draft those ?). Or go straight to Q3. New ways of sharing the codes could facilitate the access for potential new member institutes. As an example we could put the codes in an accessible place (not public, but easily accessible with modern IT facilities, like the cloud). Let acceding institutes have access to our codes from there, assuming the case-by-case support by ACCORD members would then be less demanding. Nevertheless, exploring and setting up new ways of sharing the codes always

would require an additional organization and additional manpower (update, maintain).

Radmila: we should not forget the link with the ECMWF code. They should be approached in relation to such exploration. Furthermore, new ways of sharing the codes, as a more plug-in solution, looks like providing the codes as a black box, and it is against my convictions.

Claude: is not fully convinced of the scientific improvements of the codes by sharing if this is done as a black box.

Marc: ACCORD is a scientific cooperation. It is difficult then to be opposed to openness, but each membership application should be studied carefully without any discrimination on geography. There should be no limit in geography but we have to be very strict and insist on the scientific cooperation we expect with a new candidate.

Claude: In the questions we are addressing to them, we can insist on scientific collaboration and also on the practical aspects that are at stake (how do they plan to organize themselves to be able to join the ACCORD RWP activities, WWs, ASW, committee and governance meetings?). Make sure that we address with them communication, the interaction with ECMWF, training, practical aspects such as time lag, distance etc.

Jørn: supports exploring a new way to distribute the code. It is a bit challenging though. Nevertheless, we'll improve the contributions by reaching out to more research partners and it is worth it. Regarding membership, it is difficult to limit the geographical area and new ways of collaborating on the codes could help potential candidates to build capacity.

Claude: Should we now consider the distribution of the codes both for academia and for NHMSs ? ie both research and operational-oriented purpose ?

Jørn: have a broad approach. Think of the example of African countries (capacity building) and how other consortia handle these requests.

Radmila: What is the current status of the OpenIFS project at ECMWF ? How many people are working on it ? This is an example to keep in mind, and it only refers to academic collaboration so far.

Claude: OpenIFS still is in place, the code distribution only is for academia (research-oriented license, ECMWF text, not a standard open source license). It involves two FTEs at ECMWF. There seems to be no clear intention currently to extend the scope of OpenIFS to more complex configurations like DA or EPS.

Jørn: confirmed there is no data assimilation with OpenIFS.

Claude: Agrees that to discuss code distribution toward academia or toward new NHMS membership has a different final goal (research versus operational-oriented). Therefore expectations are different.

Radmila: We should focus on the NHMS membership.

Jørn: to share the codes bears a cost. We need some win-win situation.

Claude: A new way of distributing the code could be studied with academia. That could help understand the technical solution and how much manpower is needed on ACCORD side to set it up and maintain it.

Radmila: Let's not forget we cannot distribute our codes without the consent of ECMWF even if ECMWF itself is in a process of sharing the IFS code. The level of requirement for an academic institute will be different from the one for a new NHMS member.

Florinela suggests to hold the coffee break now (10:25) and continue the discussion afterwards (10:40).

5. (Discussion continued after coffee break)

Florinela: suggests to continue the discussion by addressing the Table of advantages versus disadvantages.

Jørn: We could also consider whether we are talking just about a specific single application, like now for Indonesia, or about any potential membership. What's the ambition we should reach depending on the scale of the problem we're addressing ?

Radmila: Let's not forget that, even if we can have some general kind of rules, we'll surely have to stick to a case by case assessment, and also take care of the political situation.

Claude added that in terms of scope of the discussion on collaboration, it could indeed be worthwhile to focus on NHMS membership, not on collaboration with academia, because the level of expectations and the goals of the collaboration on the codes is different in the two cases.

Following Florinela's proposal, Claude suggests making a tour de table and getting each participants' comments on the Table, then getting back to the question of scale of membership and Indonesia as a specific, known request.

Fathi: thanks Claude and Anne-Lise for the comprehensive presentation of the document. Fine with the Table. Agrees with not limiting the geographical scope. For shared codes, we should try to follow the rules ECMWF has. Our codes are not independent of the ECMWF ones.

Florinela: About training mentioned in the last row of the Table, reformulate the left column with a focus on NWP training and the possibility to complement this training by ECMWF training.

Jussi: Fine with the table and agrees with the last comments.

Jørn: OK with the Table. R&D is more in link with academia and could also imply some consideration about scaling and scope of partnerships.

Marc: Table is OK, no further comment so far.

Siham: OK with the table. Regarding the possibility that new members also bring in new competences, we could consider AI/ML as an area where new members could bring in expertise (from their institute or by the ability to connect to other, national labs)

Radmila: OK with the Table.

Claude: concluded that the Table of advantages and disadvantages seems fine as is; we will modify the last row to focus on NWP training. Then the Table could be shown to the Assembly as an outcome of the PAC discussion.

Regarding new ways of sharing the codes, any further exploration should be done with some additional requirements to avoid a black box solution: take into account the request that any new solution should enable a new member to also effectively work with ACCORD teams and provide scientific contributions for improving our codes. So in the end, exploring new ways of sharing the codes involves several levels of specifications, technical (how to efficiently share the codes), scientific management-level (be able to connect to the RWP programming and scientific improvements), governance-level (be able to monitor the benefits for ACCORD).

These considerations will require some time to become more mature.

6. Discussion on the case of Indonesia

Claude: We could deal with the request by Indonesia within our current MoU1 provisions (Associate membership). and then settle the basis for the following membership requests for instance in the preparation of the next phase of ACCORD.

Jørn: It is fine.

Florinela asked whether ECMWF had already been approached regarding Indonesia (BMKG).

Claude: had an informal exchange with ECMWF. A recommendation was to ask other European members.

Radmila: who from ACCORD would be a support member for BMKG ?

Claude: MF won't support it right now (due to other high priorities), but MFI would be ready to help setting the partnership with a few other ACCORD countries. So far, there is no firm interest expressed by an ACCORD member, however the ACCORD/PM could help facilitate discussions between BMKG, MFI and potentially interested ACCORD members. At a stage, the Associate membership process should lead to an Agreement based on a negotiation between BMKG and one or several ACCORD members.

Ramila: Have we had other membership requests from Asia in the past ?

Alain: There was a request from Vietnam quite many years ago (Aladin consortium). ECMWF at that time opposed it (the reason was that it was outside the scope of Europe and the Mediterranean area).

Radmila: Is that then a matter of a geographic limitation (but seen from the side of ECMWF) ?

Alain: It had been justified this way.

Alain: Vietnam is now a partner of COSMO, however the scientific and technical collaboration seems difficult according to informal feedback. In-situ expertise seems very insufficient.

Radmila: This kind of risk relates to the black box syndrome we discussed earlier in this meeting, and which

we must avoid.

Claude: Clearly, the PAC discussion is pointing to avoiding any black box syndrome, and it seems clear that any new way of collaborating with new partners must include the requirement that it enables them to provide a scientific benefit back to ACCORD (and this is even expected from ACCORD side).

Jørn:

We should propose a clear signal about the broadening of the membership. The ACCORD Assembly is expecting a signal from PAC on this.

Agrees with the Associate Member approach. Is full membership the next step ? Which requirements are needed to go from Associate Member to full membership ?

The situation about Indonesia has to be clear (exception or not). What will we say to other requests?

Should we handle them differently, once we gain experience from the case with BMKG ?

Regarding exploring new ways of sharing the codes and benefitting from scientific input back to ACCORD, this is indeed a long-term issue.

Jussi: We could say that new membership is always a case by case issue. We are open to new members but always case by case.

Claude:

To some of Jørn's comments, the associate membership certainly assumes that this is a process leading to full membership status. The point is that the Associate Member has no specific duration of time to achieve full membership. The associate process could last several years (there is no explicit duration in the MoU1). This could help the candidate NHMS to very progressively build its capacity and expertise.

From the ACCORD side, we could suggest that the ACCORD members who are engaged in an Associate Membership partnership organize a regular reporting about the status of progress of the membership process, in coordination with the PM. This could help monitor the whole procedure from the ACCORD side and avoid a situation where a candidate remains an Associate Member for ages.

7. Review of recommendations by the participants

Florinela proposes to make a break in order for her and Claude to work on the draft recommendations and share them with PAC (11:45).

PAC resumed the discussion by checking the draft text on the screen:

- added a recommendation to state the openness in terms of geographical scope
- confirmed to recommend the Table of advantages versus disadvantages, with some adaptation (NWP training)
- link with ECMWF: Marc pointed out that ECMWF might not answer them straight away, since the questions really are for the Council. However these questions are relevant. Proposal is to keep the recommendation as proposed in the preparatory document, and let the ECMWF observer react on them at the next Assembly (probably not with an answer, but a reaction or a suggestion on how to proceed). Agreed by PAC.
- about code distribution (code sharing): Radmila pointed out that the proposed draft formulation was too vague. Claude: proposal to remove any specific recommendation (the topic was largely discussed today in PAC with no clear conclusion; it is partly involving technical considerations; perhaps useful to tackle this question also from the scientific-technical angle at first). Removal agreed by PAC.
- recommendations about “questions & recommendations to be formulated to potential new candidates”: postponed for now. The material could be kept and discussed by the Assembly or by PAC at a later stage (using the outcome of the other steps: link with ECMWF, case of Indonesia)
- recommendations about key notes toward a position paper: postponed as well (same as previous bullet)

Recommendation for indonesia: Agreed to keep.

The draft recommendations following the PAC discussion are in Annex I.

For the sake of completeness, the updated Table of advantages versus disadvantages is in Annex II.

8. AOB

None

9. Closing

Florinela thanked the participants for fruitful discussions and the joint work on recommendations to propose to the Assembly. She closed the meeting at 12:20.

Annex I: PAC recommendations formulated to the Assembly

PAC recommends to approve the table of advantages versus disadvantages of an expanded international collaboration with the ACCORD codes. Training should focus on NWP and the possibility to use ECMWF training. PAC recommends that the elements in this Table could be used in future to assess the impact of such an expansion.

PAC recommends keeping an open approach to the expansion of international collaboration in ACCORD, and addressing each new request for membership on a case-by-case basis.

PAC recommends that ACCORD approaches ECMWF and re-evaluates with them the following aspects:

- how to handle new membership requests in ACCORD w/r to ECMWF. Does ECMWF support the current case-by-case evaluation ?
- What is ECMWF's vision on expanding its own membership ?
- What is ECMWF's view on the impact of Destination Earth or other EU-funded programmes on international collaboration with the IFS codes, with the ACCORD codes (provided to DE_330) ? How do they analyze the impact of IPR-related issues (licensing etc.) ?
- Does ECMWF envisage in the foreseeable future any significant evolution of its software policy regarding the IFS codes (for instance an open source distribution of the full code) ?
- To organize this discussion, PAC suggests that the Assembly forms a small task team including Assembly representatives and the PM. This task team could report on the outcome of the discussion to the Bureau, who could analyze how to finalize the strategic position paper for submission to the Assembly

Recommendation regarding the case of Indonesia.

With respect to the written request formulated by BMKG (Indonesia), to become an ASSOCIATE Member in ACCORD. PAC recommends that this process is being engaged further. PAC recommends that any appropriate step on ACCORD side could be organized by the PM in liaison with the Bureau, following the provisions of MoU-1. As a first step, PAC recommends inviting a representative of BMKG to the ACCORD Assembly by an online participation, in order to present their goals and ambitions, their organization and their resources.

Annex II: Updated table of advantages versus disadvantages

“expanding international collaboration on the ACCORD codes”	PRO (could be an advantage or an opportunity)	CON (could be a disadvantage or a risk)
Membership and international collaboration	<ul style="list-style-type: none"> - enlarge number of members, reach out to NHMSs beyond the Euro-Med area and thus to more WMO Regions - make other NHMSs from emerging countries benefit from the efforts in ACCORD 	<ul style="list-style-type: none"> - Some Assembly decisions require unanimity (acceptance of a new member, amendments to the MoU main text). Unanimity might be more difficult to reach with an increasing number of members - ACCORD management will have to adapt to a wider range of cultures, and take into account an increased level of complexity (time zones, organization of visits)
staffing	<ul style="list-style-type: none"> - the overall manpower available for the ACCORD RWP would increase - new persons could be gained for participating to PAC or to STAC 	<ul style="list-style-type: none"> - new members might require from ACCORD a larger amount of technical support during their first years, leading to an increased pressure on code and system experts from “old members” (<i>note: the number and the availability of such experts today is considered as critical</i>)
other resources	<ul style="list-style-type: none"> - the budget based on the annual contributions would increase 	<ul style="list-style-type: none"> - the budgetary resources inside ACCORD might not be enough to organize the expertise building nor the scientific training (<i>note: for emerging countries, the ASSOCIATE membership concept is pointing to additional financial support, such</i>

		<p><i>as from Development Funds)</i></p> <ul style="list-style-type: none"> - the ACCORD budget might have to be revised for instance to take into account larger expenses for long-distance travels and remote stays
R&D related	<ul style="list-style-type: none"> - the ACCORD models would be used in a wide variety of climates and of geographical zones - new experts could be gained (<i>note: however the past experience rather is that new members require scientific training and do not bring in new competences from scratch</i>) - training a newcomer team may require ACCORD teams to develop their pedagogical skills and make documentation about the models 	<ul style="list-style-type: none"> - The need for scientific training and support for newcomer teams could increase inside ACCORD, at the expense of making progress on R&D. Some RWP tasks might be significantly slowed down, or situations of single point failure might appear - new candidate NHMSs outside Europe nevertheless will have to adapt to procedures and tools coming from the European Met. Infrastructure (this is a risk if they can't for geographical or political reasons)
<p>NWP training (case of candidate NHMSs whose teams have zero initial knowledge)</p> <p><i>Note: graduate-level training on meteorological science should not be considered in ACCORD</i></p>		<p>ACCORD teams might have to organize their own graduate-level training to numerical weather prediction (<i>otherwise usually done in a university</i>). Such an effort however should come in complement, by the candidate NHMS, to use ECMWF training courses for their staff.</p>

Table 1: advantages versus disadvantages, risk assessment of an expanded international cooperation on the ACCORD codes