A Consortium for COnvection-scale modelling Research and Development

3rd Assembly of ACCORD Partners

8 December 2021 09:00-15:45
video-conference

Minutes

1. Opening and welcome

Marianne (Chair) opened the 3rd ACCORD Assembly meeting and welcomed the delegations (see Appendix I) and the ECMWF observer, Andy Brown.

2. Adoption of the draft agenda

The agenda was adopted.

3. Governance

3.1. Changes in PAC & STAC rep., MG, LTM

Marianne proposed the Assembly to approve some changes in positions:

- Christoph Wittmann as STAC representative upon proposal by RC-LACE,
- Samuel Morin as PAC representative, François Bouyssel as STAC representative, Ghislain Faure as LTM, upon proposal by Météo-France,
- Reima Eresmaa as LTM, upon proposal by FMI,
- Guðrún Nína Pedersen as LTM, upon proposal by IMO,
- Susanna Hagelin as LTM, upon proposal by SHMI.

The Assembly approved these nominations and the proposed new organisation chart of ACCORD was adopted (see Appendix II).

3.2. Update of MoU annexes IX & X

Marianne explained that the research and benchmark license templates provided in the Annexes IX and X of the MoU1 need to be updated and modernised. Members had the opportunity this autumn to comment on the new texts: 9 positive answers to the new texts were received and KNMI suggested three additional changes.

The Assembly accepted the proposed templates[1], including the last changes proposed by KNMI.

1 *The text of the licenses is provided on the MoU page on the ACCORD webiste: http://www.accord-nwp.org/?ACCORD-MoU-2021-2025*

4. Reports

4.1. Report on Rolling Work Plan 2021 (RWP2021) and STAC recommendations

Marianne invited Claude to briefly report on the execution of the RWP2021 and Saji to give the STAC recommendations.
Claude presented[2] the PM progress report and insisted on the organisation of the Management Group (MG), the management tools established in ACCORD, the new organisation of the work in the different Areas, with enhanced interactions between the ACCORD teams and families. Claude pointed the specific efforts carried on by MG regarding various aspects of interoperability and sharing common work practices across ACCORD such as the start of the exploration for a common working environment for code integration, the WG for physics code interoperability, the questionnaires about meteorological quality assurance or system aspects etc. Claude gave a few headlines of results obtained in the scientific and technical Areas. A comprehensive report[3] was co-edited by the MG and the Support Team, and was scrutinised by STAC. Saji reported that STAC appreciated this comprehensive report, the good start and good progress of the MG and their efficient effort for enhancing the consortium-wide collaboration and share of transversal knowledge. STAC recommended the Assembly to adopt the progress report.
Claude presented some manpower figures: the work realised during the first semester of 2021 (as reported by the LTMs in the Common Manpower Register managed by the Scientific Secretary, CSS) corresponds to half of what was committed for the whole 2021.

Marianne acknowledged the impressive progress since the beginning of the MG, the quality of the Newsletter and the engagement by ACCORD scientists as illustrated by the manpower figures.
Many Members (Anne, Eoin, Gerard, Daniel, Jussi, Arni, …) expressed their appreciation for the impressive coordination and organisation work done by the PM and the MG and welcomed the huge amount of work by the management and the teams. The efforts that have started, on technical code adaption, were particularly appreciated as an essential first step to make the ACCORD common codes fit for the new HPC infrastructures.

Marianne concluded that Claude and the MG have the full support from the Assembly and the Assembly formally approved the 2021 report. Claude thanked the Assembly for their support, that he will forward to the MG.

4.2. Realisation of the DAP2021

Claude recalled that the ACCORD financial procedures[4] were approved at the ACCORD kick-off Assembly on the 27th of November 2020 and have been implemented: bilateral agreements have been signed between KNMI (only for 9 HIRLAM Members as AEMET had not signed the MoU at that time), ZAMG (for the 10 LACE Members) and the NMSs of Algeria, Belgium, Bulgaria, France, Morocco, Portugal, Tunisia and Turkey; Météo-France (who manages the ACCORD 3rd party account) issued bills to collect the memberships fees for 2021[5] and has started payments to Members according to the costed Detailed Action Plan 2021 (DAP2021).

In parallel with these financial procedures, the PM and the CSS finalised the costed Detailed Action Plan (DAP2021) in accordance with the ACCORD MoU rules (reimbursement for PM salary, MG and LTM missions, committed meetings, participation to scientific visits and WW, all

2 *PM presentation at the 3rd ACCORD Assembly: http://www.accord-nwp.org/IMG/pdf/pm_css_slides.pdf*
3 *Execution of RWP2021 by MG&ST: http://www.accord-nwp.org/IMG/pdf/execution_rwp2021.pdf*
4 *Financial procedures as approved by the kick-off Assembly: http://www.accord-nwp.org/IMG/pdf/budget-2.pdf*
5 *Addendum to Claude's explanations: MF recommends that the partners outside the EU transfer their contribution or their reimbursement by checking "charge to the sender" for the banking transfer*

reimbursements being based on the approved compensation rates), the decisions of the kick-off Assembly, and based on the Rolling Work Plan 2021 (proposals for WW by the MG and for scientific visits by the LTMs and the MG).

The DAP2021 was finalised mid-June (the MG was only nominated at the end of March, this delaying the DAP2021) with the hope that the pandemic would allow travels during the second semester. The preparatory document presented to the Assembly contains the full DAP2021 document (list of all planned actions and their status: all but one WW and all committees were converted into on-line meetings, and many scientific visits were cancelled; Claude pointed out some WW cannot be held on-line when they should have gathered people for technical work on parts of the code).

According to the ACCORD budget mechanism, should a Member not be able to complete a given task for which it has received a payment, this is reimbursed to the ACCORD budget on the following year and should be billed together with the following year Membership fee. The table for reimbursement of non-realised actions was distributed to Members for approval (see Appendix III).

Claude explained that AEMET paid the ACCORD 2021 membership fee to KNMI but AEMET was not part of the bilateral KNMI-Météo-France agreement, thus KNMI could not pay the AEMET fee to the ACCORD budget in 2021. It is proposed that KNMI pays the AEMET fee 2021 in 2022: this amount will be billed together with the 2022 membership fees of the 10 HIRLAM NMSs. An amendment to the Météo-France/KNMI agreement will be prepared to include AEMET.

Marianne thanked Claude for this clear explanation of the mechanism and the status of the DAP2021.

Radmila commented that, the Covid situation being very demanding, RC-LACE had been striving to realise the actions planned in the DAP2021 however many DAP2021 scientific visits could not be completed. RC-LACE scientists had realised other visits. Radmila would like more flexibility in the DAP2021 to replace actions, instead of considering that actions are not realised and should be reimbursed. Gerhard added that all RC-LACE Members at their last Council asked for more flexibility in the DAP mechanism, especially as the pandemic situation may also impact the work next year.

Claude answered that the financial mechanism doesn't allow a complete level of flexibility. Patricia added that, besides the administrative constraints, any changes that Members would like to propose in the actions funded by the ACCORD budget should be discussed with and approved by the MG first, then the PM and the CSS will do their utmost to ensure these changes fit in with the financial procedures.

The Assembly formally approved of the reimbursement figures for non-executed actions in 2021 (Appendix III), the payment of the AEMET 2021 by KNMI in 2022 and the amendment of the bilateral agreement between KNMI and Météo-France to include AEMET.

The Assembly encouraged the MG and the CSS to develop flexible mechanisms in order of maximise the rate of realisation of the DAP, especially in this pandemic situation.

4.3. Météo-France: status and plans.

Marianne invited Marc to take the floor to present Météo-France status and plans[6]. Marc focussed on two key points: the new Météo-France HPC and the characteristics and the scores of the first e-suite on this new HPC: CY46T1_op1:

- cy46t1_op1 contains new ARPEGE physics, alignment of the spatial resolution of the EPS systems with respect to the deterministic ones, increased resolution of AROME Overseas configurations, technical and scientific evolutions in data assimilation, new diagnostics and outputs, …
- A general significant improvement of ARPEGE is noted (better diurnal cycle of convection, improvement of the precipitation frequency biases, general improvement of the synoptic elements). As a coupling model, the improvements in ARPEGE also slightly benefit to AROME. AROME itself also benefits from its higher resolution and its other own modifications, i.e. to correct the underestimation of the convection.
- From the technical point of view, some pieces of the code of the AROME overseas configurations run in single precision mode (32 bits configuration), allowing to save 40% of the computing time.
- This e-suite runs since February 2021 and the switch into operational is planned for the summer 2022. For post-processing needs (ensemble approach), one year of re-forecasting of the whole e-suite, in particular AROME-EPS and ARPEGE-EPS is being performed.

This e-suite is the first step of the Météo-France 2021-2025 implementation plan. Next steps encompass:

- moving assimilation to an ensemble-variational approach using OOPS and adding new data (Mode-S, ...),
- adapting the codes to different types of architectures (like CPU-GPU). This effort requires to first reorganise the physics codes (point of attention, due to the needed expertise and manpower, and the calendar of the next benchmark),
- including dust in-line in AROME (the result of the collaboration with the ONM-Algeria), with a demonstration version by the end of 2022
- an experimental campaign in summer 2022 on the theme of the "future Weather Forecasting systems at 100m (or finer) resolution for urban areas" (with the aim of running operationally AROME configurations at 500m during the Olympic Games in 2024, and testing for higher resolutions).

Siham, as member of the Scientific Steering Committee of the WMO World Weather Research Programme (WWRP)[7] that endorses this "Research Demonstration Project Paris 2024 Olympics"[8] underlined the importance of this Project to WMO-WWRP. The science questions it tackles are of importance for all ACCORD Members (high resolution DA, urban modelling, ...). Marianne added that WMO wants to make visible the positive impact of the collaborations between NMSs: ACCORD NMSs being members of RDP Paris 2024 and ACCORD systems being used at very high resolution is a good opportunity to promote the name of ACCORD.

Gerard asked about the increase of capacity of Météo-France's new HPC and its lifetime. Marc answered that the computing power is increased by a factor 5 with respect to the previous HPC. The procurement was for 4 years, with the possibility for one additional year. Thus, the migration to the next HPC is planned for mid-2025. Taking into account the needed time for preparing benchmarks, the timing for preparing the next Call for Tender is very short, and this even more if taking into

6 *MF status and plans presentation: http://www.accord-nwp.org/IMG/pdf/ag_accord_2021_red.pdf*
7 *https://community.wmo.int/wwrp-scientific-steering-committee*
8 *RDP Paris 2024: http://www.umr-cnrm.fr/RDP_Paris2024/*

account the efforts to port the codes for instance from scalar-vectorial (CPU-only) solutions to CPU-GPU ones.

Marianne shared Marc's concerns about the modernisation of the code in preparation for CPU-GPU HPC. Piet commented that, within ACCORD, a few members (RMI, Met.no) have allocated manpower to work on code adaptation. Marc confirmed that Météo-France has also identified key actors for this action. Piet underlined the importance of intensifying the exchanges between ACCORD, Météo-France and ECMWF teams working in this quickly evolving area.

4.4. ECMWF: status and plans

Marianne gave the floor to Andy for the ECMWF status and plans presentation[9]. Andy gave some highlights from 2021:

- Implementation of two cycle upgrades (cy47r2 in Spring and cy47r3 in Autumn 2021) with the single precision, unified vertical resolution, a major revision to improve the physical and numerical basis for moist processes and changes in observation use and DA. The single precision at cy47r2 had a neutral impact but saves computational cost allowing the vertical resolution increase in the ensemble that had a positive impact.
- 3 site configuration: formal opening of Bologna data centre and Bonn offices, agreement of ECMWF Council for the new HQ in the University of Reading.
- The ATOS supercomputer is going through its acceptance process. The first science upgrade after migration with be cy48r1 which will include an increased horizontal resolution (9 km) of the ensembles, daily extended-range ensembles, introduction of the multi-layer snow scheme (a feature of interest to several Member States regarding winter-type conditions) and OOPS operational implementation. Andy commented on the positive impact on the scores.
- To prepare for future HPC, ECMWF has been experimenting on Summit CPU-GPU hybrid computers (spectral transforms, physics codes) but also on other architectures (e.g. Fugaku). Andy pointed the importance of assessing which part of our codes can run on CPU-GPU. Andy welcomed the upcoming discussions with ACCORD and MF teams involved in code adaptation.
- A number of projects to use Machine Learning for observations handling, DA, NWP and post-processing are now ongoing.
- The Council approved Destination Earth and the signing with the European Commission.
- The Council previously discussed code licensing options, not recommending the status quo, nor the declaration of the whole IFS as open source; the Council recommended to make open source selected model components and to further investigate the possibility to make open source the whole model. ECMWF is planning to consult with Member States on their views on the latter in the coming months.
- Development of remote work possibilities to ensure balance and flexibility between in-situ and remote work: virtual training courses, workshops and seminars, efficient organisation of the teleworking, ..

Daniel asked for possibilities to go farther than the single precision. Andy answered that experiments with half precision in very specific parts of the code are being conducted. ML could also be used to gain efficiency in specific parts of the codes or new ones, for instance for 3D effects in the radiation scheme. Marianne commented that any possible way to make more of our computer should be investigated.

9 *ECMWF status and plans presentation: http://www.accord-nwp.org/IMG/pdf/accord_2021_ecmwf.pptx.pdf*

5. Plans for 2022

5.1. Proposal for RWP2022 and STAC recommendations

Marianne invited Claude to outline the main plans proposed for 2022. Claude explained that the RWP2022 has been reorganised in most Areas by the MG who invited co-leads for many packages and liaised with the LTMs. A first version of the RWP2022 was proposed to STAC. The comments from STAC have been taken up by the MG (revision of the SPTR work plan and proposal for an additional work plan on a high priority code work). The RWP2022[10] proposed at the Assembly takes into account the STAC recommendations and it contains the manpower figures as committed by LTMs. Claude presented some highlights of the RWP2022: modernisation of working practices and common working environment for code releases), code adaptation to new HPC architectures (the SPTR work package was adjusted after STAC recommendations), improvement of the stability of our current dynamical core, enhancement of consortium expertise on OOPS-based versions; steady progress on the use of observations, use of SURFEX in all CSC and use more new options, collaboration on model and surface perturbations in EPS, enhancement of the possibilities of "harp", finalisation of the roadmap on physics interoperability and continuation of the work of the transversal WGs (Physics Interoperability, Machine Learning, Very High Resolution Modelling).

The manpower commitments are rather stable with respect to the previous years. An effort on code adaptation is visible through the commitments. The commitments also indicated an increase of the staffing dedicated to Meteorological QA (as it also appeared in the 2021 manpower reporting and through presentations at ASW or articles in the Newsletter).

Saji gave the STAC recommendations. STAC recommended to adopt the RWP-2022, however it asked that the plans in SPTR should be adapted. STAC further suggested to enhance transversal communication (ECMWF, Météo-France, ACCORD), revise the work plan for 2022 taking into account up-to-date information especially from ECMWF, finding solutions for the lack of trained or expert staff for code adaptation (on a priority basis).

Claude explained that, following the recommendations from STAC, the SPTR Work Package has been updated and the transversal communication has already increased and will be carefully considered for 2022. Claude also proposed a procedure for setting up the re-factoring activities in ACCORD in 2022 (this step is necessary before porting the code to CPU-GPU). The proposal is to prepare early 2022, with the SPTR Area Leaders and in close liaison with the CSC Leaders, a detailed work plan (with manpower estimates) on "code preparation for code adaptation" (cp4ca) i.e. the plans for re-factoring the existing codes, including codes that control the organisation of the physics (as ECMWF did for IFS physics). This work plan will be reviewed by STAC and presented to the Assembly.
Code experts should be identified first and might have to be freed from other tasks (to be discussed with the code experts and their LTMs). Claude stressed that local management might have to take priority decisions, possibly slow down or delay other tasks in order to free experts for "cp4ca". The MG will analyse the impact on the other Work Packages of the RWP2022.

Claude presented other management aspects:

- Claude proposed to enlarge what is accounted for as "CEpQA" (Code Engineering, Phasing & QA, as defined in *the MoU item 9*: all the teams should provide 1 FTE per year on CEpQA, *MoU item 59*) to add code adaptation work, exploration and design about the evolution of work practices, prototyping. Concretely, starting from 2021, SPTR, COM2.T and SY4 would come in addition to COM2.1, COM3.1, SY2 and MQA3.

10 *Adopted RWP2022: http://www.accord-nwp.org/IMG/pdf/rwp2022-approved.pdf*

- In 2022, the MG will work on a *multi-year roadmap* with scientific and interoperability milestones, as a complementary document to the RWP and the Strategy (2021-2025). Brainstorming in the MG will continue about the scope and contents of Research to Operations (R2O) interfaces (action trigged by discussions with some ACCORD members) and a *white paper* will be produced and could serve as input to any specific discussion by Members or Groups of ACCORD, which want to assess their own R2O transitioning. (i.e. Hirlam-to-UWC). This material (roadmap and white paper) will be presented to STAC and to the Assembly.

Marianne thanked Claude for his proposals: the RWP2022, the procedure for setting up and additional work plan on "cp4ca" to cope with the challenge of running our codes on future HPC, the reformulation of CEpQA and the MG working on a roadmap and a R2O white paper. Marianne opened the floor for discussion.

Anne supported Claude's proposals and pointed the importance and the urgency of the efforts on the code adaptation. Météo-France has already prepared a roadmap and allocated resources (AROME experts) on this topic but physics experts of the 3 CSCs are needed. Gerard appreciated Météo-France's efforts and will try to find HARMONIE-AROME physics experts. Eoin also supported Claude's proposals and Met Éireann will participate in the effort on code adaptation. Daniel also supported and RMI will make their best efforts to find resources. Jorn added that Met.no is recruiting a portable performance solutions architect[11].

Jussi and Jesus gave the FMI and AEMET support to the RWP2022 and the additional refactoring activities.
Marianne underlined and agreed that some resources will probably have to be reallocated. Nuno supported the changes in the RWP to reallocate manpower and, as Jorn, asked if STAC has identified priorities in the RWP and in which tasks experts could or should not be withdrawn. Saji answered that the code adaptation is a high priority, also in preparing for DestinE. Machine Learning, physics interoperability and scripting system are also very important but the modernisation and the improvement of the working practices on the common codes (item 5.2) should come first.

The Assembly approved the proposed RWP2022.

The Assembly gave their full support to the procedure for setting up the additional work plan on code preparation (for code adaptation) in ACCORD in 2022: identifying code experts, preparation by PM, CSC Leaders and SPTR Area Leaders (in close collaboration with Météo-France and ECMWF experts) of a detailed work plan for refactoring of the code, proposals by MG for reallocation of resources.

The Assembly did understand than an investment on code adaptation must be done urgently in order to develop the main ambition of the ACCORD Consortium (in line with *MoU, item 21:* to deliver to its Members a set of common codes that can be assembled under diverse configurations to support the production of world-leading quality numerical weather predictions on limited geographical domains*)*.
The Assembly gave mandate to the PM, the MG, the STAC to work together on putting emphasis on the code adaptation and look forward to being proposed with a detailed work plan.

The Assembly approved the new formulation for CEpQA.

The Assembly is most in favour of the roadmap and the white paper, approved the MG working on these documents and would appreciate STAC recommendations on them.

11 *https://www.jobbnorge.no/en/available-jobs/job/216136/portable-performance-solutions-architect-for-next-generation-numerical-weather-prediction-nwp*

5.2. Source forge & modernisation of working practices

Claude explained the high strategic importance of the modernisation of working practices on the common codes, in order to ease the collaborative work (increasing the level of technical validation which is a prerequisite to meteorological evaluation of new versions of the codes, more shareable and traceable information and documentation, compliance with IFS-ARPEGE practices), via the use of a source code forge (which concretely would address a repository for the common code, additional facilities for collaborative work, traceability, automatic testing). The MG proposed to explore GIT-based technical solutions through prototyping: this technical exploration may raise precise questions on code policy (security of access, privacy of data, LAM codes at ECMWF), maintenance and manpower, pricing, … to be considered by the advisory committees then the Assembly.

Claude informed the Assembly that with these Git-based solutions, the LAM codes would be copied to the IFS code repository at ECMWF (and thus become potentially visible to any collaborator from ECMWF who has access to this repository), although these codes won't be used by ECMWF. Currently, the LAM codes only are present in the MF/ACCORD T-cycle repository in Toulouse (and in other places in ACCORD teams). Concretely, the ACCORD teams will access the ACCORD source forge (cloud-based or in premises) or will have clones at home. No ACCORD team will need access to the LAM codes at ECMWF. The LAM codes will only be there to ease the work of the integration leader and the synchronisation of releases. Radmila commented that the solution will be technically different but not politically, as ECMWF already sees the LAM codes in the present situation.

As already pointed by Saji during the discussion on the RWP2022 (item 5.1), this modernisation is a priority topic for 2022, as it will ease the work on code adaptation. STAC supported the exploration proposed by MG and agreed to review the progress in their meeting in 2022.
There is a high interest in adopting the chosen solution as soon as possible and implementing the source code forge by mid-2022.

Daniel approved the use of modern tools to manage the codes as they will also ease the knowledge transfer. Daniel recommanded not wait too much. As PAC chair, he approved the proposal of meeting together with STAC to give policy and organisational expertise on the proposed solution when the MG has finalised it. Saji supported the proposed joint PAC-STAC meeting.

The Assembly supported the exploration of solutions for modernising the working environments for code collaboration and approved the prototyping by the MG. The Assembly recognised that specific questions on code policy and organisational aspects can arise. The Assembly agreed to delegate to the Bureau the decision to convene PAC for addressing them, jointly with STAC.

5.3. 2022 budget and 2022 fee

Claude proposed to keep the same membership fee in 2022 (11kE).

Besides the regular expenditures (*MoU item 125*, compensation for PM salary, management and committees meetings, scientific visits considered of highest priority by the MG), for team building and to enhance cooperation between inter-Members and inter-family scientists, Claude proposed to fund 2 instead of 1 travel by NMS to the ACCORD All Staff Workshop and the EWGLAM meeting, and to increase by 30% the budget allocated for WW and scientific visits.

Taking into account the reserves and reimbursement from 2021 non-executed actions (see item 4.2), this leaves a surplus of 104kE in the 2022 budget.

The MoU (*MoU item 125)* foresees that part of the budget can be used for expenses of general interest or, in exceptional cases, for new human resources on specific tasks. The PM proposed procedures for these kinds of expenses:

- for organising the recruitment of an expert (by one ACCORD Member): MG identifies understaffed priority tasks (and tries to staff them); if staffing within ACCORD proves impossible, draft a complete proposal (the definition of the task, a specific work plan proposal, the identification of the recruiting Member and the supervising team, the proposed compensation rate to be taken from the budget surplus), for submission to STAC; submit to Assembly for approval;
- for identifying expenses of general interest: discuss goal of expense in MG; submit for recommendation to STAC; propose to Assembly for approval.

Marianne commented that the surplus could probably be employed on code modernisation, as discussed in *items 5.1&5.2*. Nuno proposed to reserve part of the surplus for the forge. Claude answered that it is one possibility, in case a chargeable solution is adopted. Radmila warned to be cautious when spending a surplus on recurrent running costs.

Radmila pointed another solution to reduce the surplus, by lowering the Membership fee. Marianne preferred to keep the same fee in 2022, as the Consortium may need additional resources to realise its ambitions and, through additional missions and scientific visits allow the scientists to better know each other. Claude explained that newcomers arrive in the local teams, and it would be interesting for them to meet other ACCORD colleagues physically when possible. Radmila approved the increase in budget for missions and cross visits. Gerard also preferred to keep the level of the budget to allow more physical meetings and funds for additional resources needed for code adaptation.

The Assembly approved the Membership fee for 2022: 11kE per member.

The Assembly approved the partitioning of the budget (see Appendix IV).

The Assembly encouraged the PM to proceed with the proposed procedures to spend the surplus on human resources or on general expenses. A proposal should be submitted to the Assembly at the end of 2022 meeting or earlier if possible.

6. DestinE Initiative and ACCORD

Claude first recalled that the last Assembly concluded that DestinE is interesting for ACCORD members and the development of ACCORD as a consortium and Members were invited to join the DE Provisional Advisory Board (PAB) and the drafting team. Claude then provided a status of progress on the bid preparation, on behalf of the PAB. A core Management Team was formed to lead the drafting team (draft Work Packages have been defined with leads and co-leads, and interested teams are addressing their content).

Claude presented potential benefits for ACCORD, mainly to accelerate work on code adaptation to new HPC and efforts on very high resolution modelling, with also some possible positive feedback from post-processing or implementation (link with Digital Twin Engine). The MG will analyse the impact of DE on the ACCORD RWPs and STAC will review this impact.

Claude gave some details regarding policy aspects and pointed that the DE bidding consortium will have to establish a license for the use of the ACCORD codes in DE. Some information about the licensing scheme is provided in the DE Contribution Agreement just signed between ECMWF and EC, however the exact licensing mechanism will only be known when the Invitation for Tender (IT) is issued. The (LAM) bidding partners could propose a license based on a similar derogation than

the one for the IFS codes, which would foresee that the codes are provided to DE only for the time the consortium is an active partner and no sub-licensing (by the EU) is possible to other DE partners. The bidding partners also could ask in return ECMWF for a sub-license in order to use any results from DE (for all ACCORD Members). Martina commented that regarding the use of DE Results, it might be more logical if the DE LAM bidding consortium members have an access by default and other countries have to undergo a procedure. Andy commented that the finest details regarding licensing will be negotiated when contracting between ECMWF and the successful bidder. The proposals presented by Claude seem reasonable but it is important to realize that they are not all in ECMWF's gift alone, and so negotiations with the EU Commission would be required. Gerhard added that the negotiation should make sure that all ACCORD members should benefit from the DestinE results.
Claude proposed to make an analysis of the ECMWF-EU contribution agreement and of the IT document when it is published, regarding licensing issues. Marianne asked who should be doing this analysis. Claude suggested core members from the PAB and the MT, with him for ACCORD. Jeanette proposed to invite ACCORD Members IPR specialists to help making this analysis. On suggestion by Jeanette, Gerard confirmed that Frank Lantsheer from KNMI could be used. The Assembly agreed, these specialists should be asked to contact Claude.

Stefan asked if the funding scheme is similar to the Copernicus scheme. Sarah answered that, the indication from ECMWF was that it would be, but this will be confirmed only when the IT is issued.

Claude gave the timeline for DestinE: publication of IT expected in February 2022 with a deadline in spring and the beginning of the 2-year project for the successful bidder in summer. By March 2022, the final Bid submission text should be ready and an extraordinary ACCORD Assembly meeting could be held to decide on granting a licence for the DestinE consortium purposes.

In response to the question by Werenfried, Andy confirmed that the 30 months of phase I of DestinE unfortunately begins from EU-ECWMF signature, not from the signature with the tender.

Marianne proposed that, once IT has been published, the Bureau will analyse the status of the bid preparation and its implications on ACCORD. The Bureau currently considers that several aspects could require evaluation by PAC. Daniel agreed.
The Assembly gave the Bureau a mandate to analyse the ECMWF DestinE Extremes IT (licensing conditions, use of the ACCORD codes) and to decide to convene PAC to address the specific questions that the Bureau will formulate after this analysis. Once PAC has made recommendations, the Bureau will prepare the Assembly discussions on licensing conditions and decide on the way (extraordinary Assembly or electronic procedure) to organise the specific voting in order to approve the use of the ACCORD codes by the DE bidding partners.

Andy thanked ACCORD for their efforts to try to work with COSMO NMSs, although they proved unsuccessful.
Claude asked guidance from the Assembly on a suggestion from COSMO colleagues that an ACCORD-COSMO forum be established. He explained that during the preliminary DestinE meetings between COSMO and ACCORD members, either considerations about NWP strategy in Europe or keep-in-touch about the DestinE phase I realizations had been vaguely addressed as possible items for such a forum, however with no real conclusion. As pointed by Daniel, Claude also stressed that ACCORD should pay attention to not duplicate the existing coordination through the EUMETNET and SRNWP forums. The question of an ACCORD-COSMO forum could be readdressed by the PM and the committees once both DestinE and ACCORD have taken more momentum and their interplay is better understood.

7. Dates of 2022 Consortium events, including next Assembly

A list of ACCORD meetings since the last Assembly, along with the main scientific and management meetings planned in 2022 is given in Appendix V.

The Assembly mandated the Bureau to convene a PAC at the end of February or beginning of March (DestinE IT licensing conditions).
The Assembly mandated the Bureau to organise an extraordinary meeting or an electronic procedure (use of ACCORD codes for DestinE) in March.
The Assembly mandated the Bureau to convene a PAC, jointly with a STAC in spring (solution for modernisation of the working practices and source code forge).
The Assembly approved an ordinary meeting at the end of June or beginning of July: wrap-up about DestinE, proposal for expenses with the 2022 surplus, on priority staffing or expenses of general interest (if not possible at this Assembly meeting, the Assembly will decide about an extraordinary Assembly or a remote procedure in autumn).
The Assembly will meet for a second ordinary meeting in 2022: RWP2022, RWP2023 and associated budgets.
The Assembly didn't conclude on the format (in-situ or on-line) of the next Assembly meetings and mandated the Bureau to make arrangements for these meetings.

8. A.O.B

None.

9. Closing

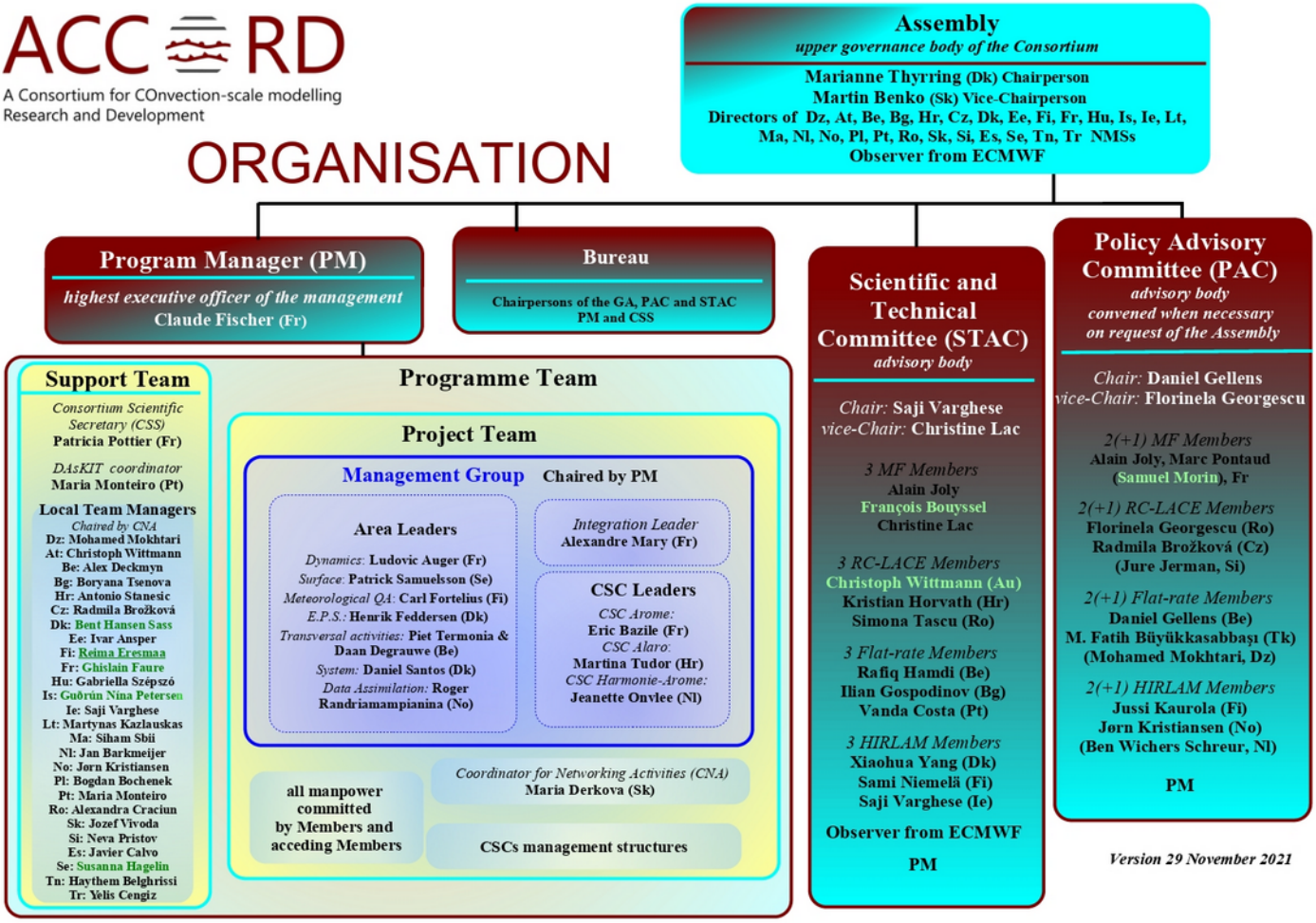
Marianne thanked all delegations for participating and for the good discussions during the meeting. Marianne concluded that the Assembly gave their full support to the PM and the MG and their congratulations for the very good job in settling ACCORD on the right track.

Marianne closed the meeting at 15:45.

Appendix I: Participants

Member	Delegation
ALGERIA	Mohamed MOKHTARI
AUSTRIA	Gerhard WOTAWA
BELGIUM	Daniel GELLENS, Piet TERMONIA
BULGARIA	Ilian GOSPODINOV
CROATIA	Branka IVANČAN-PICEK
CZECH REP	Radmila BROZKOVA
DENMARK	Marianne THYRRING (Chair), Rune Carbuhn ANDERSEN
ESTONIA	Kai ROSIN
FINLAND	Sami NIEMELA
FRANCE	Anne DEBAR, Marc PONTAUD, Alain JOLY
HUNGARY	Mihály SZŰCS
ICELAND	Árni SNORRASON
IRELAND	Eoin MORAN, Sarah O'REILLY, Saji VARGHESE
LITHUANIA	
MOROCCO	Omar CHAFKI, Siham SBII
NETHERLANDS	Gerard van der STEENHOVEN, Werenfried SPIT
NORWAY	Jørn KRISTIANSEN
POLAND	Bogdan BOCHENEK
PORTUGAL	Nuno LOPES, Maria MONTEIRO
ROMANIA	Florinela GEORGESCU, Alexandra CRACIUN
SLOVAKIA	Martin BENKO
SLOVENIA	Jure JERMAN, Jure CEDILNIK
SPAIN	Jesús MONTERO GARRIDO
SWEDEN	Håkan WIRTÉN, Stefan NILSSON
TUNISIA	Hatem BACCOUR
TURKEY	Ersin KÜÇÜKKARACA, Volkan Mutlu COŞKUN
ACCORD PM	Claude FISCHER
ECMWF Obs.	Andrew BROWN
HIRLAM PM (obs.)	Jeanette ONVLEE
LACE PM (obs.)	Martina TUDOR
ACCORD CSS	Patricia POTTIER

Appendix II: ACCORD organisation chart



Appendix III

Table of the reimbursements to be paid to the ACCORD budget at the beginning of 2022

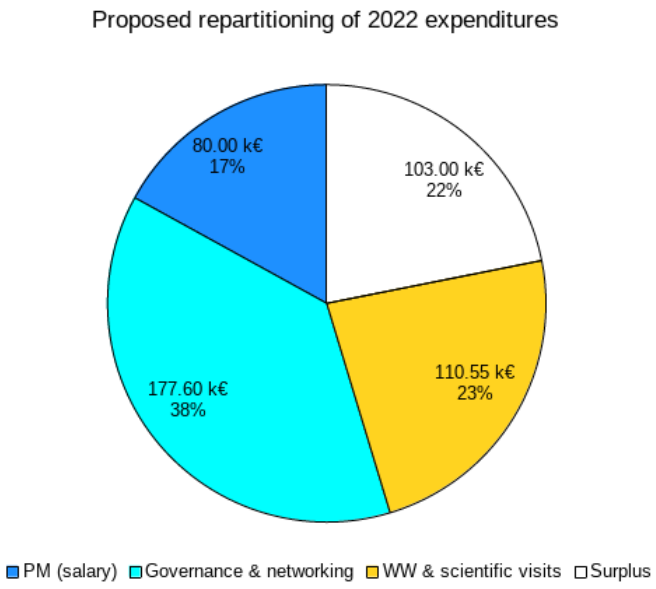
Partners	Tasks reimbursed by ACCORD in 2021	Tasks completed in 2021	**Amount to be reimbursed to ACCORD budget**
ALGERIA	3650 €	0 €	**3650 €**
BELGIUM	8125 €	0 €	**8125 €**
BULGARIA	4575 €	0 €	**4575 €**
FRANCE	109375 €	80925 €	**28450 €**
MOROCCO	3050 €	0 €	**3050 €**
PORTUGAL	11975 €	1850 €	**10125 €**
TUNISIA	2125 €	0 €	**2125 €**
TURKEY	10125 €	0 €	**10125 €**
AUSTRIA	4150 €	0 €	4150 €
CROATIA	17800 €	6475 €	11325 €
CZECH REP	3650 €	0 €	3650 €
HUNGARY	2625 €	0 €	2625 €
POLAND	3975 €	1850 €	2125 €
ROMANIA	4250 €	0 €	4250 €
SLOVAKIA	7950 €	0 €	7950 €
SLOVENIA	2625 €	0 €	2625 €
total for LACE	47025 €	8325 €	**38700 €**
DENMARK	4200 €	0 €	4200 €
ESTONIA	10450 €	6475 €	3975 €
FINLAND	5950 €	500 €	5450 €
ICELAND	1200 €	0 €	1200 €
IRELAND	5500 €	925 €	4575 €
LITHUANIA	1200 €	0 €	1200 €
NETHERLANDS	3325 €	925 €	2400 €
NORWAY	9475 €	0 €	9475 €
SPAIN	0 €	0 €	0 €
SWEDEN	5825 €	925 €	4900 €
total for HIRLAM	47125 €	9750 €	**37375 €**

Appendix IV: Partitioning of the budget 2022

Available budget for 2022

- same Membership fee as in 2021: 11kE per Member (paid by 26 Members)
- AEMET fee from 2021: 11kE
- reserve from 2021: 27.85kE
- reimbursement by Members of 2021 non executed actions: 146.3kE

Partitioning of the expenses



Appendix V: Events since the Assembly in July and 2022 (main) events[12]

ACCORD events (mostly on-line events) since the ACCORD 2nd Assembly on the 2nd of July 2021 and preliminary list of events for 2022:

- 27-30 September 2021: EWGLAM meeting
- CNA meeting on the 13th of September 2021
- 2nd LTM meeting on the 4th of October 2021
- 2nd STAC meeting on the 15th of November 2021
- Bureau meeting on the 19th of November
- regular meetings of the MG (every two weeks)
- many half a day meetings, WD or WW, organised by the MG with the teams in their Area and WG meetings, mostly as on-line events, with the exception of the MUSC WW in Helsinki (15-19 November)

3rd ACCORD Assembly on the 8th of December 2021 (on-line meeting)

2022 (main) events:

- regular on-line meetings of the MG (every two weeks)
- WD and WW to be organised in 2022 are currently discussed within the MG, some have been already agreed:
  - harp training course, Helsinki, 16-18 February 2022
  - DA code training days, Toulouse, spring 2022
- LTM meeting to discuss the scientific visits for the DAP2022 (early 2022, on-line)
- Bureau meeting, 21st of February (to analyse the bid proposal for DestinE and propose the questions for PAC)
- PAC, tentatively end of February or beginning of March, convened by the Bureau
- Extraordinary Assembly or remote voting (about codes for DE): 1st half of March
- All Staff Workshop, 4-8 April 2022, Ljubljana with possibility for MG and LTM meetings in Ljubljana during the same week.
- Bureau meeting (questions about modernization of working practices)
- join PAC & STAC in spring (to treat policy or organisational questions in link with modernisation of working practices)
- STAC in Spring (review progress on modernisation, update of work plan, impact of DE on work plans)
- Bureau meeting (preparation of the Assembly)
- Next Assembly: on-line meeting or 27 June in Bologna, date and place to be decided by the Bureau
- STAC in autumn
- PAC in autumn if convened by the Assembly
- End of the year Assembly: on-line meeting or 5 or 8 December in Darmstadt, , date and place to be decided by the Bureau

12 *more events on ACCORD calendar: http://www.accord-nwp.org/?ACCORD-MG-CSS-calendar*