ACC≋RD
A Consortium for COnvection-scale modelling
Research and Development

Minutes

Participants

(R): means remotely for the 1st part (1): means only for the 1st part, (2): means only for the 2nd part

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FRANCE	Ghislain Faure	SPAIN	Javier Calvo
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ICELAND	Guðrún Nína Petersen (R)	TUNISIA	Haythem Belghrissi (R)
IRELAND	Saji Varghese (R)	TURKEY	Yelis Cengiz

PM: Claude Fischer, CNA: Maria Derkova (Mariska), CSS: Patricia Pottier
Observer: LACE PM: Martina Tudor
Invited (2): Integration Leader (Alexandre Mary)

Adopted agenda

Item	Introduced by
Agenda (1st part on 27 September)	
0. Opening and adoption of agenda	CNA
1. Introduction of new LTMs	CNA
2. Reporting in the CMR	PM
3. Commitments in the RWP2023	PM
4. Detailed Actions Plan 2022	PM
5. AOB	CNA
Agenda (2nd part on 5 October)	
6. Informations from MG + ST	PM
7. Information about MF progress on e-suites	G. Faure
8. Information about cycles	A. Mary,
9. Update on DEODE proposal	PM
10. Next meeting(s)	CNA
11. A.O.B.	

Meeting (1st part on 27 September)

1. Introduction of new LTMs

Mariska opened this first in-person LTM meeting

Meeting split in 2 parts, managerial items in Brussels and the other items in the on-line meeting next week.

Mariska introduced herself as the new LTM for SHMU, with Michal Nestiak acting as deputy when relevant.

2. Reporting in the CMR

Claude thanked the LTMs for really timely reporting in the CMR each quarter (only 1 or 2 teams were beyond deadline). Claude kindly reminded LTMs of :
- the next deadline which is the end of October for Q3/2022.
- to do not forget to report the development and coding work by your teams; use the "CEpQA" type of work in the CMR to flag reported work as code engineering , only in association with those WPs for which CEpQA is accounted for (SPTR, COM2.1, COM2.T, COM3.1, SY2, SY4 and MQA3).
- when you have an Area Leader or a WP co-lead in your team, you can register part of his/her work on R&D Work Packages as "mngt" type of work. This enables it to be accounted for as management.

PAC will discuss in an upcoming meeting how to account for the DEODE-funded activity at a

governance-level (share of IPR). Already from now on, we provide LTMs with the possibility to make the DEODE-funded activities in their team visible in the CMR tool (by a DEODE yes/no checkbox).

- by default, registered work is considered as funded at "NMS level",,
- only for HIRLAM LTMs, there is the possibility to declare work funded "at HIRLAM level",
- only for MF LTM, there is the possibility to declare PM work funded "at ACCORD level",
- for LTMs whose NMS is a DEODE member, there is a possibility to declare work funded "at DEODE-level",
- LTMs see only the relevant checkboxes for their NMS.

More generally, PM recommended that LTMs do report the work on tasks that are part of the RWP when done by staff funded by external projects (including DEODE), unless it is impossible for administrative reasons (national rules or project rules that forbid declaring funded staff outside their funding project).

Jelena (Q): what about external other fundings ? Claude/Patricia (A): this is considered as NMS level DEODE is different than other external fundings, visibility required

Jelena (Q): what about work to install the system, ie MetCOOP system? Claude (A) it doesn't count when the work is devoted to development or maintenance of the local system software. Software relative to local implementation doesn't count. Work on adapting the code to the local system may count but it should be reported and documented.

Radmila (Q): why is there no LACE funding for scientific stays foreseen in the CMR ? => Patricia (A): in the CMR, we don't take into account the funding of the visits/missions (nor LACE, nor ACCORD). The work by a staff done during a visit/mission is considered as funded at "NMS-level".

Radmila: the Assembly encouraged to work on the code and declare it under CEpQA.

3. Commitments in the RWP2023

LTMs had until 20 Sept to provide their commitments; this limit was extended to Wed 5 October and additional guidelines were sent by email on 22 September.

Claude gave the status reporting prepared with Patricia:

- those teams who are a bit late with their commitments have been contacted (only 2 without commitments as of 27 September)
- some teams might not have yet fully been providing their manpower, for instance
    - because of lack of name for expected newcomers: use "NewcomerNMS1-2-..." for any staff you expect to recruit in 2023 (in the case where you are confident with the recruitment process)
    - or for DestinE-funded manpower: do so when you have a DestinE-funded staff to recruit (and its work falls within the tasks of the ACCORD RWP2023)
- several NMSs have not been indicating any DEstinE-funded manpower yet. Make sure this is normal (for instance because all your local DE-work would fall outside the ACCORD RWP2023 tasks)

Maria M (Q): why to commit manpower for newcomers if we are not yet sure about all conditions and don't know what the work will be ? Why is it important ?

Claude (A): If you do not know on what topic you would recruit somebody, then you shouldn't commit.

If you do know (i.e. the call already is launched), add it to the commitments, so that the leaders of the WP and the MG know about newcomers and where the teams plan to be active.

Jelena (Q): where should I indicate persons working on external fundings ? Claude/Patricia (A): You don't distinguish between people paid by the NMS or by external fundings. Just for DEODE, please indicate when

it is DEODE-funded.

Reima (comment): will modify the FMI commitments to indicate the number of months (and not 0) for external fundings.

Jan (comment): for 0 which was meant to indicate staff which disappears from the KNMI list, Patricia should remove the corresponding lines in the "Commitments Table" google sheet.

Jelena (Q): what DEODE work to commit ? Claude (A): when the work funded by DEODE is fairly well in-line with the RWP2023 tasks => not all DEODE work is to be committed. Claude gave as an example a situation where a staff is working half-time on implementing the DEODE models into the Digital Twin Engine (not to be counted for ACCORD) and half-time on adapting the ACCORD model codes to EuroHPC machines (to be counted as part of SPTR). Indeed, some cases might be tricky to decide, and some level of good faith will probably be needed in this separation.

4. Detailed Actions Plan 2022

Claude thanked the LTMs for their really good survey of the DAP2022 actions and providing timely information to the CSS about planning and realization and encouraged them to continue doing so, and help finalize the next actions. LTMs should also remember their staff to produce the report for their scientific visits.
In February, the MG and the PM agreed on the list ("list1") of scientific visits and WWs to be funded by ACCORD budget. Additional actions, mainly WW ("list2"), are discussed by the MG before summer.
In July, the MG decided on these additional actions (not planned by the end of February when the initial DAP document was signed by the PM). These additional actions will be taken into account in the budgetary compensation mechanism of ACCORD in 2023, within the regularization step for the 2022 figures (unrealized or additional actions). These additional actions ("list2") are visible on the shared document : ACCORD_DAP2022_follow-up.

Patricia: please let me know about the actions that are still not in green (realised) or in brown (cancelled).
Check the DAPfollow-up document. This document will be translated into financial figures at ACCORD level, presented to the Assembly for approval.

Petra (Q): what is the right procedure to propose actions for next year ?
Claude (A): Contact the relevant MG member.
Petra (Q): she proposed in 2022 an action that was not in the DAP. How to learn more of what happened with the proposal ?
Claude (A): ACCORD cannot fund all proposals- and the MG is making some choices. The relevant MG should contact those who proposed actions that are not funded. Conversely, LTMs can contact the MG members since they are the focal points.

5. A.O.B

Think about contributions to the Newsletter: deadline for contributions to NL3 is 30 September => extended by 2 weeks (14 October). Let us know when you have a contribution in preparation.

Meeting is closed at 18:45.

6. Informations from MG + ST

The deadline for sending contributions to the next NL was extended to 14 October. PM/CSS will publish the NL n°3 soon after.

Send Patricia the update on the operational configurations:
http://www.accord-nwp.org/IMG/pdf/domains_accord.pdf

Claude gave a point of attention: the MF/CNRM IT support was upgrading the server that hosts the ACCORD website on 5 October. Please do not register anything in the CMR on 5 October.

Reminder: The LTMs can update their commitments for the RWP2023 into the shared document until 5 October. On the 6th of October, Patricia will freeze the document and use it to fill the table of participants and of tasks in the RWP2023. The MG members and the co-redactors of the Work Packages may then contact the LTMs directly in case they miss some expected participants in the WP. For SPTR, organisational meetings are still taking place currently, and their outcome will be discussed with the relevant LTMs.

Claude thanked the LTMs for their good job when filling the commitments document.

7. Information about MF progress on e-suites

Ghislain presented MF progress on e-suites. The same information is available on the MF poster presented at EWGLAM the previous week.

fig 1: operational global systems based on ARPEGE

Regional operational NWP systems based on AROME
operational suite: cy46t1_op1

3DVar
◦ 3DVar with 1h cycle
◦ 8 forecasts per day

EDA (AE-Arome)
◦ 3.25 km, 100 s timestep
◦ 3DVar with 3h cycle
◦ 25 members

Nowcasting (Arome-PI)
◦ 3DVar, guess from 3dvarfr, 10' cut-off
◦ 24 forecasts per day up to 6h

EPS (PE-Arome)
◦ 16 perturbed members + control
◦ 4 forecasts per day (+ 51h)
◦ Initial perturbations from Arome-EDA
◦ SPPT
◦ LBCs from Arpege-EPS
◦ random surface perturbations

Arome-IFS
◦ downscaling of IFS
◦ Arome surface
◦ 4 forecasts per day

Common features
(except otherwise noted)
◦ 1.3 km, 50 s timestep
◦ 90 levels (5m to 10 hPa)
◦ 51 h forecast lead time

Arome-Overseas (Arome-OM)
◦ 5 domains
◦ 4 forecasts per day (+78h on demand)
◦ Downscaling of IFS
◦ Use of Arpege surface (continent)
◦ 1D ocean model
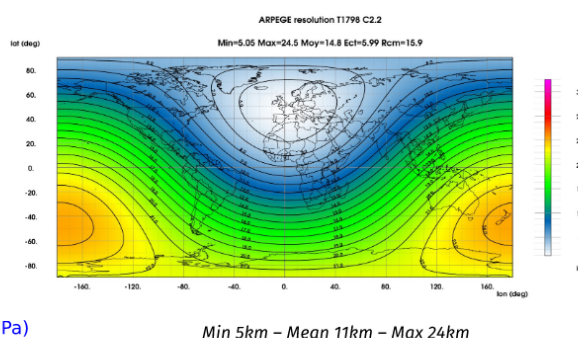
References
◦ Brousseau et al 2016, Improvement of the forecast of convective activity from the AROME-France system. Q.J.R. Meteorol. Soc., 142: 2231-2243
◦ L. Raynaud et F. Bouttier, 2016: Comparison of initial perturbation methods for ensemble prediction at convective scale, Q. J. R. Meteorol. Soc.
◦ Bouttier et al. 2016 Sensitivity of the AROME ensemble to initial and surface perturbations during HyMeX. Q. J. R. Meteorol. Soc.
◦ Merlet et al, 2017: Arome for nowcasting, Aladin-Hirlam Newsletter n°9
◦ Faure et al, 2020: Operational Implementation of the AROME Model in the Tropics, Weather and Forecasting, 35(2), 691-710
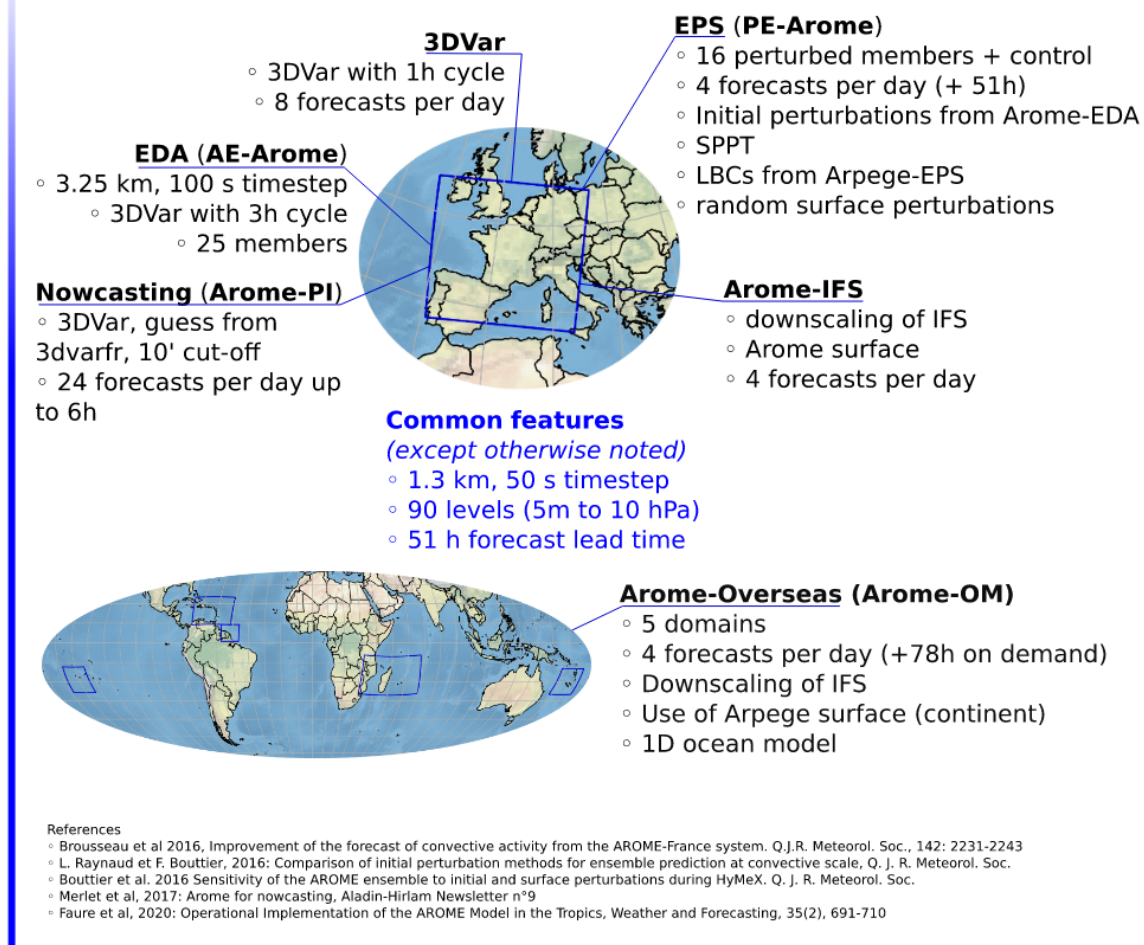
fig 2: operational LAM systems based on AROME (1.3km, 90 levels)

Further perspectives (2022-2023)

- Transfer to operations of EFI and SOT diagnostics on Arpege EPS and Arome EPS
  - Operational switch planned in winter 2022-2023
- Preparation of Arome overseas EPS:
  - 16 members at 2.5km L90, twice per day, 5 geographical domains
  - Operational switch planned beginning of 2022
- OOPS in 3DVar and 4DVar analyses
- Assimilation: 3DEnVAR Arome, hybrid B matrix in Arpege 4Dvar
- Arome EDA: 50 members (instead of 25 currently)
- Physics: EcRad (Arome), use of SST from Mercator-Océan global model and enhancement of Tiedtke deep convection scheme (both for Arpege), change of aerosol and ozone climatologies (from CAMS, Arome)
- Dynamics : use of WENO interpolations for T and Q in stratosphere (Arpege)
- Observations: "all sky" assimilation of microwave obs, Arpege: GOES-17, CrIS mode «FSR», GNSS-RO (GRACE-C, Sentinel-6, Spire), scatterometers HY-2B & HY-2C(Arome), AMV IMAWARI/AHI, Mode-S from EMADDC (Arome), WIGOS adaptations
- PEARP: revision of singular vectors and of the range of perturbed parameters

8. Informations about cycles
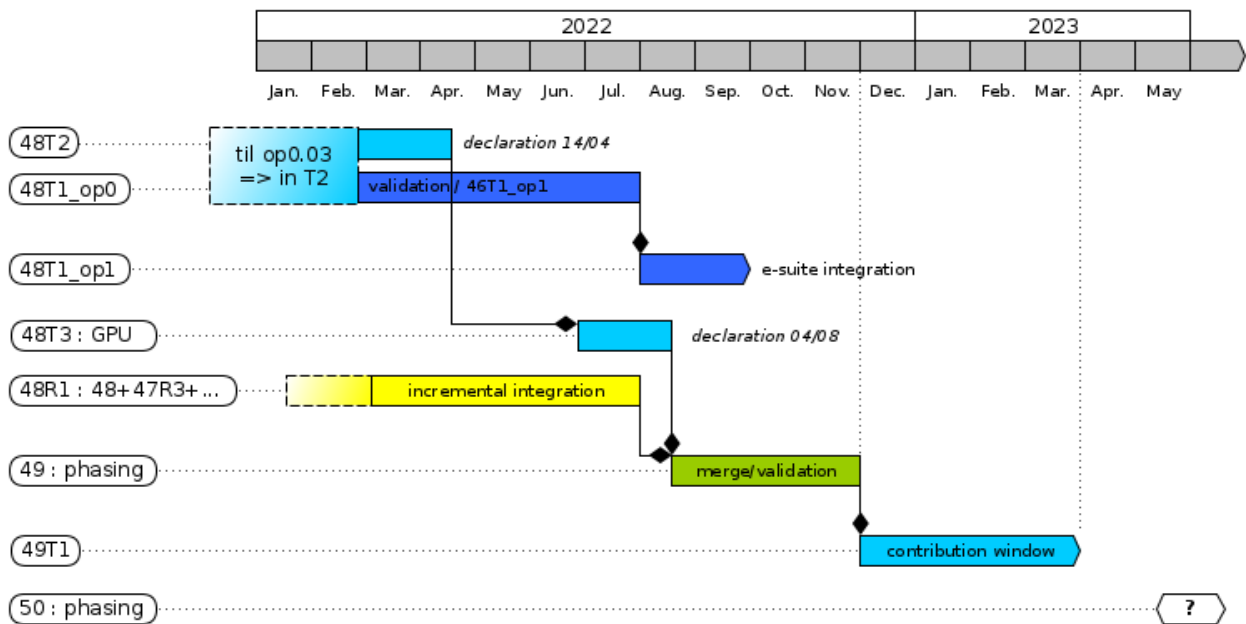
Presented by Alexandre.

fig 3: latest planning about the cycles

CY48T1 is the last development cycle that had a very open call for contributions on R&D. CY48T2 contains OOPS major upgrades and oper/pre-oper rephasings from various centres. CY48T3 is dedicated to refactorings in preparation for GPU and is a bit reproducible with respect to CY48T2.

CY48T3 was declared in August and the merge started with 48R1 to build CY49. CY49 is the first cycle with convergence of the ECMWF & MF Git histories (this will allow exchange commits and versions). CY49 is close to full compilation and is expected to be 2 months late (declaration by the end of November).

The expected contents of CY49T1 are wide: ACCORD developments, re-phasings, common SURFEX (branch ACCORD_NWP_v81), PHYEX (this is a library containing Meso-NH codes with some significant IFS-Arpege style refactoring, prepared by the GMME team), Arpege-climate. Developers are expected to communicate their contributions to their LTM and the relevant Area Leaders and the Integration Leader, as soon as possible. Call for contribution early December with a deadline at the end of March.

The ACCORD forge will be soon official and the preferred way of contributing to CY49T1 (via Pull Request). A tutorial webinar (how to contribute in a T-cycle) will be soon announced.

A new version of Davaï is available, with a tutorial webinar to come soon: the dashboard is accessible from outside MF, quasi-systematic compilation in Double Precision, Single Precision (mixed reduced precision actually) & Boundary Checks. In the near future, Davaï will be ported to Atos HPC in Bologna.

Radmila: for contributions to CY49T1, refactoring for ALARO physics is still being discussed. Alexandre: I will provide a shared sheet where the LTMs can indicate their future contributions (please announce them even if they are not ready, deadline for providing the contributions is end of March, but it is interesting for the MG to know about the future contributions as soon as possible).

Radmila: in which repository will the interfacing routines with SURFEX be available ? => Alexandre: "mse" and "surfex" remain in the "IAL" (IFS-ARPEGE-LAM) repo for CY49/CY49T1, then the SURFEX code

will be externalised, however "mse" will remain in "IAL". Radmila confirmed that for ALARO+SURFEX, they will provide changes both in the interface routines ("mse") and in the core routines ("surfex"). Radmila also pointed out that they want to propose fixes for specific bugs and would like to discuss them further. Alexandre suggested that the CHMI team liaise with Patrick Samuelsson and himself.

Radmila: the CHMI team has noticed a 5% increase of compute time in the model forecast with CY46T1 compared with CY43T2. Part of the increase is explained by the new C-code in the LFI-package (related to code for swapping bytes before writing out fields into FA). Another part of the increase remains unexplained for the time being. CY46T1 model forecasts also require some more memory. What are other teams' experiences with this ? Ghislain confirmed + 8% of elapsed time in MF experiments.

Radmila will send a note on the findings and proposed code change by the CHMI team with CY46T1. They will continue to investigate which routines could explain the additional cost and see if a fix can be proposed. @Radmila: to send the CHMI outcome note to Ghislain and Alexandre; the results also will be shared with the ACCORD MG (via IL for instance). Let MF and the IL know about any further results from the side of CHMI.
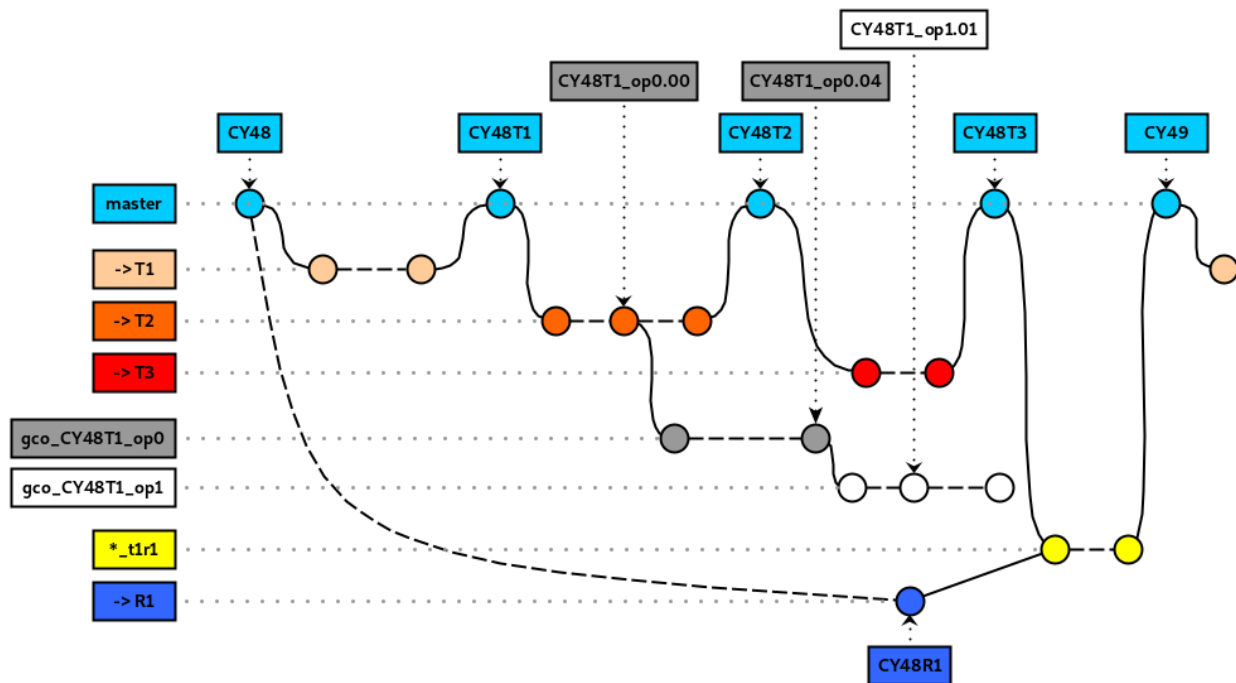

fig 4: git view of the cycles

Claude informed the LTMs that the Assembly approved the building of a 4-5 persons' team to maintain and upgrade Davaï under the leadership of the Integration Leader, including the training of 1-2 newcomers. The point is to build an ACCORD-wide team in support of the IL for enhancing the functions of Davaï and maintain over time the tests (especially update input data sets or namelists when required). The expected manpower effort per person would be 10% FTE. The LTMs are invited to contact Claude and Alexandre in case they have some candidates for this so-called "Davaï-contributors" team. Daniel Santos (System AL) will make the same announcement in the next LTSR meeting.

9. Update on DEODE proposal

Claude informed LTMs about the DEODE (official name is DE_330) proposal:

- Negotiation phase in July-August
- ECMWF and MF signed the main DE_330 contract on 1 September
- Duration of the DEODE project from 1 September until 30 April 2024 (20 months)
- Sub-contracts discussed and in preparation for signature with the (27) DEODE partners
- Links with ACCORD activities:
  - the Assembly has approved the licensing of the ACCORD codes to DestinE after analysis by the Bureau
  - manpower reporting (ref to previous LTM meeting part 1)
    - PAC will discuss on 11 October how to account for the DEODE-funded activity at a governance-level.
  - some of the work plans in DEODE and ACCORD overlap: code adaptation efforts, design of hyper-resolution model configurations, efforts on scripting
  - some other DEODE activities are outside the scope of ACCORD (impact models, etc.)
    - a cross-analysis of the interaction between the DEODE work plans and the ACCORD RWP will be discussed at STAC (3-4 November)

Mariska asked for the status of the signatures of the sub-contracts that were supposed to be signed before the end of September. Claude answered that they are delayed due to comments by DEODE Partners, which MF will answer for each partner, but the sub-contracts should be signed soon. Work has already begun in several places but others indeed require the signed contracts to get started.

10. Next meeting(s)

Next meeting(s):
- confirm in-person meeting in Tallinn in March 2023 (LTM can delegate in-person participation in case they cannot attend the ASW in Tallinn, also consider to delegate remote participation in case you absolutely cannot join the meeting at all - inform CSS+PM in that case);
- no special need for a remote meeting before or if there is a hot topic arising we will organize an online meeting (we would make a poll in this case). Meanwhile, PM/CSS will liaise with the LTMs about ACCORD activities and tasks through the Information4LTM file and the LTM mailing list.

11. A.O.B.

Neva asked about the status of the new procedure for ARPEGE LBC provision (new ftp-pro server). Ghislain answered that it is working for everyone but Austria (installing a new server), Bulgaria (for back-up, Bulgarian IT people are waiting for feedback by MF IT), and it is not set up yet for Spain and Turkey. The use of ftpr-pro for operational retrieval of Arpege LBCs should be implemented as soon as possible, and not later than end of December 2022, as the hard shutdown of IAA will occur in January 2023.

Mariska thanked the LTMs and closed the meeting at 14:55.