

United Weather Centres (UWC) Memorandum of Understanding

between



Danish Meteorological Institute (DMI),



Estonian Environment Agency (ESTEPA),



Finnish Meteorological Institute (FMI),



Icelandic Meteorological Office (IMO),



Irish Meteorological Service (Met Éireann),



Latvian Environment, Geology and
Meteorology Centre (LEGMC),



Lithuanian Hydrometeorological
Service (LHMS),



Norwegian Meteorological Institute (MET
Norway),



Royal Netherlands Meteorological
Institute (KNMI)

and



Swedish Meteorological and Hydrological
Institute (SMHI)

concerning cooperation on the project phase to implement a collaboration on common
operational NWP/EPS production from 2027.

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Introduction

This MoU replaces the earlier MoU NordNWP between DMI, ESTEA, FMI, IMO, LEGMC, LHMS, MET Norway and SMHI, signed in Oslo, 19 December 2016.

The primary goal of UWC is to provide the best short-range weather forecasts for the geographical areas of interest. These forecast data will support the National Meteorological Services in enhancing safety and securing life and property for the citizens of the member countries. In order to facilitate a collaboration on joint operational exploitation of a world class short-term numerical weather prediction (NWP) system from 2027 onwards this Memorandum of Understanding (hereafter referred to as the “MoU”) between the Danish Meteorological Institute (DMI), the Estonian Environment Agency (ESTEA), the Finnish Meteorological Institute (FMI), the Icelandic Meteorological Office (IMO), the Irish Meteorological Service (Met Éireann), the Latvian Environment, Geology and Meteorology Centre (LEGMC), the Lithuanian Hydrometeorological Service (LHMS), the Norwegian Meteorological Institute (MET Norway), the Royal Netherlands Meteorological Institute (KNMI) and the Swedish Meteorological and Hydrological Institute (SMHI) (collectively referred to as “the Parties”) state the governance structure, decisions and principles of the Project to implement operational runs of common NWP model configurations.

Recitals

ACKNOWLEDGING that provision and improvement of accurate information regarding climate, weather and water is increasingly important due to the changing climate and to reduce weather and water related threats to life, health, economy and property;

RECALLING that the Parties are all government entities with common official duties providing important services to the public;

STRESSING that the Parties all desire to establish a long term collaboration and cooperate as equal partners in this area of numerical weather prediction to the common strategic objective of increasing quality and service based upon their combined available resources;

STRESSING that the Project should be governed in the spirit of collaboration and cooperation and aiming to be agile rather than bureaucratic;

RECOGNIZING that the collaboration enables the Parties to strengthen their shared ambition to invest in the development of a world class NWP model system and thus keep up to date with the advances in the meteorological field;

RECOGNIZING that most of the Parties are members of the HIRLAM Consortium that, in cooperation with Météo-France and the ALADIN Consortium, have developed the non-hydrostatic convection-permitting HARMONIE-AROME model system which will be the common numerical weather prediction model that this cooperation project is built on;

RECOGNIZING the development within the meteorological community towards open data policies and the Parties ambition to promote and further this development;

CONFIRMING their wish to recognize each other's unique authority and capabilities in order to learn from each other, and to state their understanding regarding certain joint activities in which they plan to engage;

CONFIRMING their wish to continue and expand existing collaborations, as well as engage in new collaborations;

IN CONSIDERATION of the mutual benefits anticipated from entering into this MoU the Parties agree as follow:

Article 1

Purpose, objectives and duration

1. This MoU with annexes sets forth the purpose and general objectives agreed by the Parties for their cooperation and the terms and conditions under which they will cooperate to achieve these purposes and objectives.
2. The overall purpose of this collaboration is to enable the Parties to accomplish joint operational exploitation of a science-based short-term numerical weather prediction system and related pre- and post-processing activities from 2027 onwards.
3. The overarching operational collaboration is based on two sub-cooperations:
 - a. The existing MetCoOp cooperation, based on agreement 19 December 2016 between SMHI, MET Norway and FMI, will from 2022 be extended with LHMS, ESTEA and LEGMC and be named UWC East;
 - b. A cooperation, based on an MoU 3. July 2018 between DMI, IMO, MetÉireann and KNMI, will be established from 2022 onwards and be named UWC West.
 From 2027 the operational collaboration will be based on an agreement between all ten institutes mentioned above, that establishes a collaboration on joint HPC/NWP operations where operational systems and infrastructures are merged.
4. This MoU shall enter into force on the date it is signed and remains effective until replaced by any other agreement, or until terminated unanimously by the Parties.
5. This MoU states the governing principles for cooperation. Agreements and contracts made under this MoU should reflect these principles and also be interpreted in light of this MoU. The MoU shall be supplemented with an Annex listing the agreements, contracts and amendments made under this MoU.

Article 2

Definitions and abbreviations

MoU	means this Memorandum of Understanding.
EPS	means Ensemble Prediction System.
INFORMATION	means any information exchanged or used under this MoU, regardless of form or type.
NWP	means Numerical Weather Prediction.
PARTY	means any signatory to this MoU.
THE COLLABORATION	means the overarching collaboration that has been defined in Article 1

PROJECT	the work related with the preparation of the operational collaboration
THIRD PARTY	means any person or other entity whose government or entity thereof is not a Party to this MoU.
OBSERVER	Any Third Party NMS that after a decision by Council has been given Observer Status.

Article 3

Governance, organization and responsibilities

1. The Parties organizes their collaboration as described in detail in Annex 1. The organization consists of:
 - a. the UWC Council (Council)
 - b. the UWC Steering Committee (SC)
 - c. the Project Manager (PM) + Advisor(s)
2. The Council, which consists of the Director Generals from each of the Parties, will exercise executive-level guidance and oversight for the Project. In exercising its executive-level guidance and oversight of the Project, the Council will perform functions including, but not limited to:
 - a. Reviewing progress towards accomplishing the purposes and objectives of the Collaboration.
 - b. Consulting on any matters that affect the Collaboration and resolve any issues brought forth by the SC.
 - c. Decide the ToR for the SC, listed in Annex 1.
 - d. Decide on the structure of the Project as described in detail in Annex 1.
3. Under the Council the established SC will provide a forum for discussions, consultations, and decisions on matters relating to the establishment of the Collaboration. The SC presents the Council with the annual budget and yearly project plan of the Collaboration for its approval and monitors their realizations. Further procedures and tasks of the SC are stated in the ToR of the SC (Annex 1).
4. The SC establishes a Project Group (PG) led by the Project manager (PM) with support from one or more Advisor(s). The PM reports directly to the SC, and will manage the Collaboration on behalf of the Parties in accordance with this MoU. The procedures and tasks for the PM and Advisors (i.e. the ToRs) and further work breakdown structure within the PG are described in Annex 1 to this MoU.
5. The chair of the SC and the PM should preferably be from different Parties.

Article 4

Financial Provisions

1. The Financial Provisions in this Article 4 only covers the distribution of costs for the overarching UWC Project. The distribution of costs for the sub-collaborations are stipulated in the respective MoU or Cooperation Agreement.
2. The SC will propose a budget. The budget will be decided by the Council on a yearly basis. The budget will normally follow the fiscal year (1 January - 31 December). The budget will after its approval be included as an annex to this MoU.
3. Each Party shall cover its own costs and expenses with respect to its activities under this MoU, i.e costs related to the respective party's participation in the Project, including but not limited to in kind contribution as per Article 4:4, below.
4. In kind contribution, in form of man hours, will be negotiated and stated in the project plan. The negotiated man hours are binding to the parties.
5. Common cost, i.e. cost the Project incurs as a whole and which cannot be assigned directly to any Party, shall be shared between the Parties as follows:
SMHI, FMI, DMI, KNMI, MET Norway and Met Éireann: 15 % each
IMO, ESTEA, LEGMC, LHMS: 2.5 % each
6. Before signing the MoU the Common costs will be distributed in accordance with the agreed upon cost share, unless explicitly decided and stated otherwise.
7. Under exceptional circumstances a supplementary budget can be proposed by the SC and decided upon by the Council during the fiscal year.

Article 5

Liability

1. For liability arising out of, or in connection with, activities undertaken in performance of official duty in the execution and for the benefit of the Project, the following provisions will apply:
 - a. Each Party waives all claims against the other Parties for damage of any kind caused by one of the Parties' personnel or contractors. If, however, such damages result from willful misconduct or gross negligence of a Party, its personnel or contractors, the costs of any liability will be borne by the Party alone.
 - b. Claims from third parties for damage of any kind caused by one of the Parties' personnel or contractors will be processed by the most appropriate Party, as determined by the Parties. The cost incurred in satisfying such claims will be borne by the Parties each paying a reasonable amount of the claim, as decided

- by the Parties. If, however, such damage results from contractors, the costs of any liability will be borne by the Party alone.
- c. Should the Parties not be able to agree upon a reasonable amount of any liability from claims from a third Party, the claim will be shared in accordance with the agreed shares for the common costs.
2. Claims arising under any contract awarded under this MoU will be resolved in accordance with the provisions of that contract.

Article 6

Intellectual Property Rights and Data policy

1. Software, methods or any other intangible asset developed within the Project in accordance with this MoU shall be the common asset of the Parties and may be used independently within the Parties respective public tasks.
2. Should a Party develop any of these assets within the Project but in a way that the Party is considered the sole owner of the copyright to the asset, the other Parties shall have a free and irrevocable license to the asset to be used within that Party's public task.
3. Any asset developed by a Party outside the cooperation stipulated in this MoU introduced in the Project shall remain the property of the developing Party. Should this asset be essential for the utilization of the result of the Project the other Parties shall have the right to acquire a license to said asset on fair and reasonable terms.
4. Model output may be used independently with no restrictions by the Parties in accordance with the respective Parties' public tasks.
5. The Project stipulated in this MoU shall not have a data policy. Any distribution or dissemination of data or other assets generated within the Project shall rest on applicable national interpretation of applicable EU-law, e.g. the directive 2003/98/EC on the re-use of public sector information (PSI Directive) and Directive 2007/2/EC establishing an infrastructure on Spatial Information in the European Community (INSPIRE Directive) and be in accordance with the respective Parties' own data policies.
6. The IPR related to HARMONIE is regulated in the associated HIRLAM and the relevant HIRLAM-ALADIN agreements.

Article 7

Confidential information, duty of confidentiality

1. The Parties understand and agree that the exchange of information under the auspice of this MoU may result in the exchange of information that is stated as confidential by the disclosing Party and must be kept confidential.

2. Information which is shared between the Parties in this collaboration shall be treated according to the information act for the public sector in the respective countries.
3. If a Party by law is required to disclose any of the above mentioned types of information, that Party will notify the originating Party as soon as this is apparent.
4. Joint press statements or other public announcements outside the cooperation should be agreed at the appropriate level. All Parties can, however, in general terms, refer to the cooperation under this MoU on their webpage or in other publications.

Article 8

Voting procedures

1. The basic principle for decisions made by the governing bodies under the MoU is unanimity.

Article 9

Dispute resolution

1. Any dispute between the Parties arising out of the interpretation or the execution of this MoU shall be settled by mutual agreements of the Parties.
2. Disputes shall be settled according to the principle of subsidiarity, meaning that disputes are going to be settled at the level where it occurs, and if not solved there lifted to the next appropriate level, with the members of the Council being the final body for dispute resolutions.
3. Dispute resolutions under any contract awarded under this MoU will be resolved in accordance with the provisions of that contract.

Article 10

Amendment

1. This MoU may only be amended in writing by the Council. The amendments shall be dated and listed in the Annex mentioned in Article 1 to this MoU.

Article 11

Withdrawal and termination

1. Any Party can, without cause, withdraw from the Project and terminate its involvement in the activities set out in this MoU. Such withdrawal can only be effectuated in the completion of a fiscal year (31 December).

2. The withdrawing Party shall notify the other Parties of its desire to withdraw without delay and the matter will be subject to immediate consultation among the Parties to enable a full evaluation of the consequences to the Project as a whole.
3. If, after the consultation, a Party considers it necessary to withdraw, the following procedure will apply:
 - a. the withdrawing Party will notify the other Parties in writing of its decision to withdraw no later than the 30 September;
 - b. the withdrawing Party will continue its participation, financial and otherwise, until the effective date of withdrawal;
 - c. at the request of the other Parties, the withdrawing Party will take all necessary actions within its control to ensure that the project can be continued by the remaining Parties;
 - d. the withdrawing Party will be liable for two types of costs:
 - i. its shares, in accordance with the agreed shares for the common cost, of the project cost expended under this MoU up to the effective date of withdrawal; and,
 - ii. all direct costs arising as a result of the withdrawal, including the cost of any contract termination or modification caused by the withdrawal; the Parties will endeavour to keep all direct costs of withdrawal as low as possible;
 - e. the total contribution by any withdrawing Party, including withdrawal costs, will in no event exceed the amount the withdrawing Party would have contributed had it remained in the Project; and
 - f. the withdrawing Party shall not take part in the preparation and the decision concerning the budget for the coming fiscal year.
4. In the event of an unanimous decision to terminate the Project, the Parties shall consult to decide upon the appropriate course of action, including terms or procedures to resolve any remaining issues or obligations. The Parties shall continue to fulfill their obligations up to the effective date of termination. The Parties will jointly meet the cost of termination in accordance with the agreed shares for the common cost.

Article 12

General provisions

1. Fulfilling the provisions of this MoU is subject to the national laws and regulations.
2. None of the Parties shall have the authority to act on behalf of or to obligate any other Party (financially or otherwise) without a decision from the Council.
3. If a Party becomes unable to fulfil the provision of this MoU, it will promptly notify the other Parties. The Parties will immediately commence consultations. If the result of the consultations is not acceptable to all Parties, then the effect will be as if the Party at

hand had given notice to withdraw according to Article 11 and the procedures described therein will apply.

4. This MoU does not affect the Parties responsibilities towards their employees.
5. The Parties shall aim at using the most environmentally friendly solutions available, such as green power.

Article 13

Additional Parties

1. In the event that new Parties wish to join the collaboration, the Parties to this MoU shall consult on that matter.
2. If all Parties agree to the addition of a new party to join the collaboration, the Council shall negotiate the terms for such entry.
3. The results of the negotiations shall be stipulated in an accession agreement, which should be signed by all Parties. The accession agreement shall be attached as an Annex to this MoU.

Article 14

Observer status

1. NMSs that are interested for any reason can apply for an observer status in UWC. The Council may at any given time unanimously decide on a case-by-case-basis to give or withdraw observer status to a Third Party NMS. The decision shall follow an application from the Third Party NMS to receive observer status.
2. The Observer may attend Council meeting with one high-level representative during the parts when UWC is discussed as well as meetings in the SC and PG unless a restricted In-Camera-Session has been declared. Any attendance shall be at the Observers own cost.
3. The Observers shall have access to UWC documents that have been prepared for the meetings unless the documents have been declared as Confidential.
4. The Observers do not have the right to vote on decisions in either the Council, the SC or the PG.

5. The Observer shall have the right to raise issues and to take the floor and take part in discussions at the meetings. The level of further participation is decided by the SC and PG on a case-to-case basis.

Signatures

In witness of the above, the Parties have signed this MoU:

**Mrs. Marianne Thyrring,
Director General of DMI**

**Mr. Taimar Ala,
Director General of ESTEA**

**Mr. Juhani Damski,
Director General of FMI**

**Mr. Arni Snorrason,
Director General of IMO**

**Mr. Eoin Moran,
Director General of Met Éireann**

**Mr. Kristaps Treimanis,
Chairman of the board of LEGMC**

**Mr. Saulius Balys,
Director General of LHMS**

**Mr. Roar Skålin,
Director General of MET Norway**

**Mr. Gerard van der Steenhoven,
Director General of KNMI**

**Mr. Rolf Brennerfelt,
Director General of SMHI**

The MoU is signed in ten copies; one for each party

Annexes

1. Terms of Reference

Steering Committee

In exercising its decision making-level guidance and oversight of the Project during its lifetime, i.e. until 2027 when operational collaboration is foreseen to start, the Steering Committee (SC) will perform functions including, but not limited to:

- A. Reviewing progress towards accomplishing the purposes and objectives of the Project.
- B. Select a Project Manager and, when decided by the Council, Advisors
- C. Establish the Project Group
- D. Propose the Project budget
- E. Resolving issues brought forth by the PM, PG or WGs.
- F. Conduction financial oversight of Project efforts to ensure compliance with the financial section of this MoU and the business case for the Project.
- G. Approving Project plan and business case. Follow up on the allocated resources, making sure that the PG members are given enough time to work on the Project and that other experts from their institute may give contributions to the PG work.
- H. Approving PM-recommended plans to manage the Project.
- I. Approving changes and deviations from the Project plan.
- J. Approve risk assessments and decide on appropriate risk responses.
- K. Approven contract.
- L. Consulting on any matters that affect the Project and resolve any issues brought forth by the Council members.
- M. Ensure that the necessary communication between the Project's organization and external parties is carried out.

The SC consists of one person from each Party. The SC is a multidisciplinary body, staffed by persons at a high level, who report directly to their respective DG. The chair of the SC is appointed by the Council for a period of two (2) years. The chair should alternate between the Parties. The period may be extended by decisions of the UWC Council.

Decisions of the SC should be in accordance with Article 7. The decisions affecting the execution of this MoU will be documented in serially numbered and dated decision memorandum. The SC may change the content of the Annexes to this MoU.

The members of the Steering Committee will meet at least once a year face-to-face. The chair of the SC will have weekly communication with the PM and is responsible for involving the rest of the SC when necessary.

Furthermore, the chair is responsible for:

- Distributing draft documents internally in the SC for comments, suggestions and feedback.
 - Ensuring that all comments and feedback is adequately addressed among the members of the SC.
 - Ensure that the deadlines for submission are met.

Decisions made by the SC shall be unanimous and documented in the minutes. If documents are circulated members of SC will be given a deadline to approve the document and approval should be given in writing (e-mail).

If the deadline is not met, approval will be obtained by utilizing the “silent procedure”. This implies that a draft is approved unless any member raises an objection to it before the deadline.

The SC reports directly to the UWC Council.

Project Manager

The Project Manager (PM) is responsible for overseeing and managing the cost, schedule, performance requirements and the technical aspects of the Project. The PM will perform functions including, but not limited to:

1. Pursuing the ultimate goals of this Project, i.e. paving the way of the UWC operational collaboration beyond 2027
2. Monitoring progress of the delivery of the Project results according to the approved Project plan, regularly advising the SC on this progress, and appraising the SC of significant issues and problems as they arise.
3. Managing the financial aspects of the Project.
4. Preparing progress reports to the SC meetings or on request when needed.
5. Ensure the necessary internal communication in Project organization.
6. Managing the PG and distributing the work and responsibilities among the members of the PG.

Advisors

Whenever the need arises the Council may decide to add Advisors to the Project to support the PM. In such cases a paragraph reflecting the tasks of the advisor are added to this ToR section. The salary and travel cost of the Advisors are part of the project costs as described under 2. Project budget. The need for a Technical Advisor has already been identified.

The tasks of the Technical Advisor include, but are not limited to:

- Overseeing the planning and progress of technical aspects of UWC activities
- Managing and supporting the technical tasks in UWC
- Catalyzing cooperation between the UWC parties and its teams
- Reporting to the UWC PM

The PM, TA and the SC (chair) will have weekly videoconferences. Furthermore, there will be face-to-face meetings, videoconferences and written correspondence with the SC as needed.

The PM reports directly to the SC.

Project Group

The Project Group (PG) is responsible for the content aspects of the Project. The PG consists of experts from the NMSs, and is composed so that the group is able to merge and complement their respective competences in order to support the various investigations and work that must be carried out during the preparation of the future cooperation. The PG can use the resources in its own NMS to perform specific work packages or to solve separate tasks that are identified in or triggered by the Position Paper.

Working Group

For specific tasks the SC in consultation with the PM may establish special Working Groups (WGs) to support the PG and/or the PM directly for a limited period of time. These WGs consist of specialists from the participating NMSs. Each WG will chose a WG leader from their midst who will report to the PM.

2. Project budget

As written in article 4.2 and 4.3 the project budget is based on in-kind contribution from all partners with respect to work done in the SC, the PG or the WG to be described in more detail in the Project Plan.

Common project costs, i.e. costs the Project incurs as a whole and which cannot be assigned directly to any Party shall be shared between the Parties according to the principle as described in article 4.5., are based on the following components:

- Salary costs, incl. 25% overhead costs:
 - PM: 0.5 fte per year
 - advisors: 0.5 fte per year
- Material costs, to be decided year by year, max. 30 k€/yr
 - Travel PM, advisors
 - Meeting organization

This results in a total project budget of N € per year.

The costs for the early preparation phase, 1 April 2018 until 31 August 2018, are $5/12 \cdot N$ €

3. Position Paper

The Position Paper is the basis for all activities undertaken in his Project. It should reflect the position taken by the collaborating parties on the necessity or desirability to collaborate on a variety of subjects as well as the priority or posteriority to do so. The Position Paper is to be finished by the end of 2018.

4. Project Plan

A Project Plan for the first year will be delivered separately together with this MoU. A full Project Plan will be delivered at the end of 2018.