

WIP Terms of Reference

Drafted: 7 June 2024 by CMIP IPO

Final draft: 23 August 2024 by WIP co-chairs Paul Durack and Matt Mizielinski

Confirmed by WGCM and effective as of: 02 October 2024

Approval note: - we extend the WIP membership that have expired (or will expire by the end of 2024) to the end of 2025, after that, the members who wish to continue can request an Emeritus membership, as per ToRs. For each of these “expired” memberships, the panel will find a new member through open call to cover / be trained for that expertise. The panel will be bigger for a year, but this ensures the transmission of knowledge between the experts who will be rotating off / become Emeritus, and the newly nominated members. We would expect the new members to be nominated by the end of 2024 with a start of membership in January or February 2025.

Version 1.0

This document complies with the [WCRP Guidelines on Membership and Responsibilities](#) and ensures that the Working Group on Coupled Modelling (WGCM) Infrastructure Panel (WIP) of the WGCM Working Group has in place transparent, accountable, and effective procedures which honour the commitment and contribution of volunteering individuals, and ensure fairness, inclusion, and equity. Should the WCRP and/or Earth System Modelling and Observations (ESMO) Core Project guidelines change, this document will be updated.

Definitions

- **Body** - Body to whom the ToRs apply, the WGCM Infrastructure Panel (WIP)
- **Parent Body (PB)** - the Working Group on Coupled Modelling (WGCM) is the Parent Body of the WIP.
- **Parent Body Liaison Member (PBLM)** - member of the WGCM appointed as key liaison point and to perform specified duties set out in the ToR. If that member is unable to carry out duties, the WGCM can appoint a temporary replacement or replace the member holding this position.
- **Task Team (TT)** - a group of people temporarily working together to accomplish a specific task/set of tasks within the planned programme of work of a Body. Once that work is completed, the TT is closed.
- **Ex-officio member** - member of the Body by virtue of occupying an existing position within another organisation/body of importance or relevance to the Body. An ex-officio member is someone who holds a relevant position within a relevant committee/body/organisation. The membership position is assigned to the individual holding the office. Their membership ceases when they cease to hold that office. Their successor becomes the replacement ex-officio member.
- **Emeritus member** - a member who has reached their term limit/is no longer in employment but is invited to stay on the Body in an advisory capacity.
- **Conflict of interest:** A “conflict of interest” refers to any current professional, financial or other interest which could: i) significantly impair the individual’s objectivity in carrying out duties and responsibilities for the [Body], or ii) create an unfair advantage for any person or organisation. For the purposes of this policy, circumstances that could lead a reasonable person to question an individual’s objectivity, or whether an unfair advantage has been created, constitute a potential conflict of interest. These potential conflicts are subject to disclosure. [as defined by the IPCC in their [Conflict of Interest Policy](#)]

Purpose

1. The WGCM Infrastructure Panel (WIP) is a panel of the Working Group on Coupled Modelling (WGCM), of the ESMO WCRP Core Project. The body is tasked with the coordination and implementation of “infrastructure” that defines a CMIP project phase, and the information that these infrastructure components require in order to build and deliver their services. The WIP is also tasked with providing guidance and feedback on other non-CMIP activities, within the interests of the WGCM, and as resources allow. This coordination role includes interaction with infrastructure delivery partners, ensuring that the technical requirements of infrastructure contributors to meet CMIP project infrastructure delivery are met. The WIP is supported in delivery of its objectives set out in clause 5, and with decision making in accordance with clause 7, by the CMIP International Project Office
2. The WIP was initiated in 01 October 2013, by unanimous support of modelling groups at the WGCM-17 Annual meeting.
3. Goal of the WIP: The WIP is a WGCM panel charged with coordinating and promoting a robust and sustainable global data infrastructure in support of the development, dissemination and evaluation of Global and Regional Climate Model Intercomparison Project (MIP) data through the Coupled Model Intercomparison Project (CMIP) and other WCRP and community modelling activities as resources are available.

4. Objectives of the Body:

- 4.1. Report to the WGCM, and ESMO Scientific Steering Group (SSG) as directed, and brief other relevant WCRP committees and panels on progress, status, and plans for infrastructure and activities overseen by the WIP.
- 4.2. Offer feedback and coordinate when resources are available for funded projects providing infrastructure elements aligned with ESMO objectives and advocate for sustained funding with a view to maintain continuity with previous exercises.
- 4.3. Engage with key infrastructure providers, such as the Earth System Grid Federation (ESGF), in developing infrastructure supporting MIP data delivery and access
- 4.4. Encourage, when needed, proposals for extensions or modifications of established standards, e.g. within the CF (Climate Forecast) Standards community, to meet new needs for sharing climate data. Review proposals and suggest modifications to achieve better consistency with existing standards and to minimize disruption of existing infrastructure. Endorse proposed changes that serve the interests of the WGCM.
- 4.5. Review for consistency with existing standards and infrastructure all specifications defined by model intercomparison projects (MIPs) and related efforts and endorse specifications that serve the interests of the WGCM.
- 4.6. Review and provide guidance on infrastructure requirements (e.g. level of service, accessibility, level of security); across the infrastructure systems connected in support of WGCM activities.
- 4.7. Encourage development of and compose content for a website providing information on standards, policies, infrastructure, and controlled vocabularies endorsed by the WIP; provide machine readable outputs and guidance on infrastructure requirements for establishing new community modelling efforts.
- 4.8. Include in the scope of WIP oversight: a) file formats, structure and metadata, b) controlled vocabularies, name spaces, and naming conventions, c) protocols for interfacing components

of the infrastructure, d) URL and catalogue standards making data accessible regardless of local storage format, e) protocols for data publication (including version identification), node management and data harvesting, f) standardized descriptions of models and simulations, g) security protocol for authentication and authorization, and (h) query formats.

4.9. All technical work will be completed in publicly accessible open repositories, ensuring traceability and allowing WIP membership to engage and provide feedback as available/relevant.

4.10. Report to the WGCM, and ESMO SSG as directed, and brief other relevant WCRP committees and panels on progress, status, and plans for activities overseen by the WIP.

Below this point, except for (26), no need to change anything unless the Body has a specific cause to change them. Bodies are, of course, empowered to change these rules by a vote plus ESMO approval.

Term

5. The WIP, as a panel of the WGCM, remains active until a decision is made to close it by the ESMO SSG.

Membership

TYPES & DECISION MAKING

6. There are three types of members: Voting members, Ex-officio members and Emeritus members. All members with voting rights must be employed by an organisation/institution.

6.1. A voting member of an ESMO body (Task Teams excluded) can not hold more than one voting membership within ESMO.

6.2. Voting members have voting rights in all matters.

6.3. Ex-officio members have no voting rights but if the decision is relevant to them, they can be invited to speak, at co-chairs' discretion, before the vote is made.

6.4. Emeritus members have no voting rights.

6.5. Members of the WIP will:

- a. have regard to the CMIP IPO [Best Practice Note on Conflicts of Interest](#)
- b. review before each meeting, where decisions and/or recommendations are being made, whether there are any interests which may conflict with their duties as members of [Body] and, if so, disclose them to the co-chairs and supporting IPO staff
- c. be asked by the Co-chairs of [Body] at each meeting to confirm they have carried out such a review and made such disclosure
- d. not participate in any activity of [Body] in relation to which they believe they have a conflict or possible conflict of interest without the consent of the [Body] Co-chairs, who will manage the conflict in accordance with the Best Practice Note.

7. Decision making is by consensus. However, if this is not possible, a vote should be taken. For a decision to be approved, there must be a 2/3 majority vote with 75% quorum of Voting Members.

- 7.1. The WGCM should be notified of any significant decisions within the annual report (see 34). In some circumstances, particularly where there are significant community coordination/resources implications, the WIP may wish to seek endorsement from the WGCM for a decision.
- 7.2. If a decision from the WIP is pending on WGCM approval, and the WGCM liaison member does not answer within 1 month and after 2 reminders, the decision can be considered as approved. The last reminder must state that “the decision will be considered as approved in absence of answer by [a given date], as per the Terms of Reference”.
- 7.3. The WIP may make a consensus decision to take a review-led approach under named-member delegated authority. This is restricted to situations where a decision involves a technical implementation project, e.g. it involves software development. In this circumstance, the WIP may choose to follow a review led process rather than the standard consensus based, decision led approach. The review led process will involve the definition of a goal, and set of milestones if appropriate, and regular meetings to iterate over details of associated technical work, its interaction with other parts of the infrastructure and testing. Where the results of the technical implementation project are to be communicated publicly the WIP will be required to approve the final result on a consensus basis.

SIZE

8. In accordance with the ESMO ToRs, membership consists of two co-chairs, a minimum of 5 and a maximum of 15 members, including the voting members and co-chairs. Emeritus members and ex-officio members can be appointed if needed. Emeritus and ex-officio members count within the maximum member number.

TERM, TERMINATION & EXTENSION

9. In alignment with the [WCRP Guidelines on Membership and Responsibilities](#) (WCRP guidelines) all appointments are initially for a maximum of 4 years, with up to two 2-year extensions possible.
10. The four-year terms of the two co-chairs shall be staggered by at least one calendar year as far as possible to prevent gaps in leadership and enhance resilience.
 - 10.1. When an existing member moves up to chair or co-chair, the appointment length “clock” is reset, with the condition that the member can serve on the committee up to a maximum of 10 years altogether. Only in rare circumstances (which would require ESMO SSG approval) would any individual serve on the same committee for longer than 10 years. Permission to do so must be sought from the WGCM and ESMO using the form in Annex B.
 - 10.2. For an outgoing chair or co-chair, an extension of up to 1 year as a voting member is possible, where a handover period is deemed necessary with the successor co-chair.
 - 10.3. Outgoing chairs/co-chairs, along with any other members who have exceeded their term, can be made *Emeritus members* at the discretion of the current co-chairs and WGCM chairs.
11. Emeritus members have their membership reviewed annually, there is no limit on this term.
12. The relevance of Ex-Officio membership is reviewed every 4 years.
13. All members can resign from their position at any point and are encouraged to give three months’ notice. Resigning members are encouraged to first discuss their circumstances with a chair/co-

chairs. It might be more suitable to pause the membership in circumstances where ability to participate is restricted for a specific period (e.g., parental leave), or change the membership type. A membership pause is excluded from the service calculation in 10.1.

MEMBER APPOINTMENT

14. Co-chairs, Voting and Emeritus members are appointed on the basis of their personal experience and expertise and should be willing to represent relevant geographical or specialist science/technical areas, beyond their existing affiliations, as set out in the membership call text and table of Body members (25).
15. All new appointments should be made with consideration of compliance with the [WCRP Guidelines on Membership and Responsibilities](#) on diversity. Restrictions may be included to address under-representation within the Body. An open call should be issued with a specification of requirements in line with membership responsibilities set by the co-chairs. The open call should run for at least a month. A deadline will be set for applications, which will be collected by the CMIP IPO. The CMIP IPO will coordinate all open calls for all CMIP bodies, which can be requested through standard reporting mechanisms or by special need.
16. All applications should contain as a minimum:
 - a. A statement (up to 500 words) demonstrating why they are a good candidate for that position
 - b. A 1 page Curriculum Vitae (CV)
17. For Voting member positions, the applications will be collected by the CMIP IPO and issued to the selection committee to make a decision. Decision options are Appoint, Waitlist and Reject. Applicants should be excluded from any selection committees/votes relating to this process.
 - 17.1. For regular members positions, the WIP co-chairs are responsible for the selection. A shortlist of minimum two candidates and maximum three candidates should be provided in priority order from 1 (with 1 being the first choice). The length of the shortlist can be extended if several positions are available. The WGCM liaison member either approves or proposes a new ranking until agreement with the co-chairs is reached.
 - 17.2. For Chair/Co-chair positions, the whole WIP is responsible for the selection. A shortlist of maximum three candidates should be provided in priority order from 1 (with 1 being the first choice). The WGCM co-chairs either approves or proposes a new ranking until agreement with the WIP is reached.
18. Members involved in short-listing can refer to the WGCM, and ESMO SSG if required, for arbitration.
19. No communication to candidates can take place until WGCM approval has been obtained.

REVOKING MEMBERSHIP

20. Unproductive members may be removed by the WIP co-chairs if any of the following criteria are met:
 - 20.1. Two unexcused meetings in a row.
 - 20.2. Violation of the [WCRP code of conduct](#).
 - 20.3. Undeclared conflict of interest.
21. All member removals, including the reasoning for the removal and a copy of the removal communication, must be shared with the WGCM and ESMO IPO.

Roles and Responsibilities

22. It is the responsibility of all members to ensure the activities of the WIP are in accordance with the Goal and objectives set out in (3) and (4).
23. It is the responsibility of all members to ensure the CMIP IPO supporting their activity has up to date contact details for them and is notified of any changes to role and employing institution.
24. Co-chairs are responsible for reviewing the table of member types every two years. Any amendments to the table should be issued as a new version of this ToR (51)

25. TABLE: MEMBER TYPES OF THE WIP, limited to 5-15 Members by (8)

Member type	Appointment process	Term	Responsibilities /Justification
Co-chairs (2)	Open Call	Minimum 2 years	<p>The co-chairs' roles are to provide:</p> <ul style="list-style-type: none"> a. To chair meetings of the Panel. b. To provide leadership of the Panel and vision and drive to achieve the Panel's aims and objectives. c. Oversight and ensure coordination of the infrastructure system, its maintenance and appropriate development to meet scientific need d. High level liaison with ESGF Steering and Executive Committee e. Interaction with CMIP Core Panel f. Assist in technical areas that have relevant expertise in g. To make operational decisions about the work of the Panel between meetings. h. To actively promote the work of the Panel. i. To liaise with the WGCM co-chairs and the CMIP Panel co-chairs and provide guidance to the WIP regarding project priorities. j. To report, as relevant, to the WGCM, ESMO and WCRP Joint Scientific Committee (JSC).
Voting members – WIP (up to 6)	Open Call	4+2+2	<p>These members, along with the co-chairs, cover the following expert input:</p> <ul style="list-style-type: none"> i. CVs, CF Conventions and data standards ii. Software meeting standard climate model experiments requirements including CMOR, PrePARE iii. Documentation including expertise to cover liaison with services continuing to support past phases including ES-DOC iv. International data delivery infrastructure including, but not limited to ESGF nodes, e.g. CDNOT v. Data citation services including expertise to cover liaison with services continuing to support past phases. vi. Data Request vii. Errata systems and integration, and overview of issues raised by users viii. Environmental sustainability ix. Liaising with commercial cloud operators/Data accessibility <p>Members are expected to:</p> <ul style="list-style-type: none"> a. Attend and contribute to meetings, typically convened monthly, to drive progress and review issues and risks arising in the delivery of CMIP.

			<ul style="list-style-type: none"> b. Work with other Panel members to develop white papers and other publications as relevant and to support delivery of the objectives of the WIP c. Ensure adequate availability to be able to respond to requests for support from Panel co-chairs and the IPO. d. Promote the work of the WIP and gather community feedback within their own networks and wider community. e. Commit to promoting diversity, equality, inclusivity, and environmental sustainability within the activities of the WIP. f. Assist the co-chairs with liaison with the task teams and stakeholder panel
Ex-officio (1)	CMIP Panel Co-Chairs	Reviewed every 4 years	Provide linkage to CMIP Panel
Ex-officio (1)	WGCM Liaison Member	Reviewed every 4 years	Provide linkage to WGCM (Parent Body)
Ex-officio (1)	ESGF XC Co-chairs	Reviewed every 4 years	Provide linkage to ESGF compute & analysis platforms close to CMIP archives, including representation of the WIP interests in external liaison with downstream users.
Ex-officio (1)	FEOC Steering Committee Infrastructure co-leads	Reviewed every 4 years	Provide linkage to FEOC community
Emeritus (3)	Body & PBLM (annual review)	1y annually renewed	Provide historical knowledge and experienced insight

*The WIP can seek to add members should other CDNOT geographic academic node communities require technical liaison. This is separate to stakeholder representation on the Stakeholder Panel.

To note, a WIP member is assigned to each task team it creates. To avoid conflicts of interest, where possible task team co-leads will not be WIP members. The WIP welcomes attendance of its Task Team co-leads at “Extended WIP” meetings. For the avoidance of doubt, “Extended WIP” is considered a subsidiary body of the WIP

WIP task team (TT) co-leads	Open Call	4+2+2	<ul style="list-style-type: none"> a. Report on areas of responsibility (TT), provide relevant material to support Panel decision making, and adopt actions as needed. b. Develop and deliver white papers and other publications as relevant to the goals and activities of the TT. c. Manage risks relevant to specific tasks of the TT in close coordination with the WIP and IPO. d. TT Co-leads attendance at WIP meetings is welcomed but remains optional and should be driven by relevance of the agenda to their TT or area of expertise.
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Meetings and deliverables

26. The WIP and extended WIP panels shall meet on at least a quarterly basis with additional meetings as required e.g., during periods of high activity.
27. Meetings will be organised by the CMIP IPO and chaired by one of the co-chairs. The CMIP IPO will provide the secretariat function for any Panel meetings.
28. WIP meetings and events shall be professional, respectful, and harassment-free environments for all participants in line with the [WCRP code of conduct](#).
29. The majority of WIP meetings will be held virtually with in-person meetings arranged as required and with due consideration of carbon impact. Meeting timings will be rotated as far as possible to ensure members in certain time zones are not disadvantaged.
30. The agenda will be developed by the IPO and co-chairs and circulated to Panel members in advance of any meeting. Meeting papers should be circulated at least three working days in advance.
31. Meeting formats will reflect the nature of, and topics for, discussion and may include small group breakout sessions.
32. Non-members may be invited to present or contribute to Panel meetings.
33. An annual meeting with WGCM will be held with the CMIP Panel co-chairs.
34. An annual report will be supplied to the WGCM in the format and timeframe requested by them, in line with JSC reporting requirements. This will set out the achievements, significant decisions and recommendations, issues, plans, membership, and financial requests for the next 2 years and updates on Subsidiary Bodies.

Publications

35. All official publications of any activity within CMIP, except for those controlled by the ESMO IPO, or academic or professional publishers, must be published by the CMIP IPO. Where the CMIP IPO has delegated the publication to another IPO, the CMIP IPO must have sight of the final version prior to publication. Publications co-authored by members as part of the WIP goals and objectives published by an ordinary peer-reviewing publisher should be provided to the CMIP IPO and included in the annual report.

Code of conduct

36. All activities of the WIP, and its representations on behalf of it by its members and members of its subsidiary bodies, must be made in compliance with the [WCRP Code of Conduct](#).

Subsidiary Bodies

A list of all subsidiary bodies of the WIP can be found at: <https://bit.ly/WIP-subsidiarybodies>

TASK TEAMS

37. The WIP may set up a Task Team. Notification of task team creation should be submitted by the co-chairs to CMIP IPO following a specific template (see Annex A).
38. Recommendations for stand-alone WIP Task Teams should be submitted to the ESMO SSG for approval prior to initiation. It is anticipated that approval will be granted within 30 working days of receipt of Notification.
39. Each Task Team should have at least one voting member of the WIP as a Task Team member. Non-members, deemed associates, can be added. A list of members should be held by the co-chairs and the CMIP IPO.
40. Task Team activities must comply with the WIP's Terms of Reference. The Voting Member(s) on the Task Team are responsible for this.
41. It is recommended that each Task Team has two co-leads appointed for resilience. These can be self-appointed or appointed through an open call, as deemed appropriate by the WIP.
42. If a Task Team has delivered on the task(s) assigned, the team will be closed and thank you letters issued from the co-chairs to the Task Team members in recognition of their contribution.
43. Should a Task Team be unable to progress delivery of the assigned task(s) or adjudication be required, the lead must report this to the WIP co-chairs.

STAKEHOLDER PANEL(S)

44. The WIP can set up and close stakeholder panels in accordance with the delivery of its goal and objectives (3) (4).
45. A stakeholder panel should be comprised of stakeholders, the WIP co-chairs or Task Team Co-leads of the WIP and any other WCRP members specified.
46. The interest(s) of the bodies/organisations being sought for the stakeholder panel should be clearly set out.
47. Stakeholder Panel membership should be set out in a table and is on an Ex-Officio basis. It should be reviewed by the appointing body on an annual basis to allow for inclusion of new representatives. It is expected that the position is a representative one, therefore if a member changes institution and/or steps down from project leadership, their appointing body should provide a nomination for replacement.
48. For stakeholder panels with an open appointment process, expressions of interest for a position on the stakeholder panel will be opened at least 6 weeks prior to the annual review of membership and considered during the review process.
49. All stakeholders must report Conflicts of Interest to the co-leads before joining a panel, and update their Conflicts of Interest if these change.

50. TABLE: NAME OF STAKEHOLDER PANEL (1 per stakeholder)

Member type	Appointment process	Term	Body and position
Co-chair/Co-lead			Appointing body representative
WIP Member(s)			Active contribution to body functioning
Stakeholder	WGCM members	2y annually reviewed	Modelling group reps, straddling long-term contributors vs 1st time contributor representative name
Stakeholder	Open Call to identified nodes	2y annually reviewed	ESGF Tier 1 nodes (US-DOE, DKRZ, CEDA, NCI, IPSL, ?)
Stakeholder (multiple as relevant)	Body & Parent Body Liaison Member (PBLM)	2y annually reviewed	ESGF regional representatives
Stakeholder	Body & PBLM	2y annually reviewed	IPCC DDC (Data Distribution Centre) and IPCC TG-Data (Task Group on Data Support for Climate Change Assessments)
Stakeholder	Body & PBLM	2y annually reviewed	CORDEX
Stakeholder	Body & PBLM	2y annually reviewed	Digital Earths
Stakeholder	Body & PBLM	2y annually reviewed	Obs4MIPs
Stakeholder	Body & PBLM	2y annually reviewed	Input4MIPs/CMIP forcings
Stakeholder (multiple as relevant)	Body & PBLM	2y annually reviewed	e.g., downstream services

Amendments to the ToR

51. Any recommendations for amendments to the Terms of Reference should be submitted to the WGCM for approval and validated by the ESMO SSG. This should include a cover table, using this template, providing a summary of the changes from the approved ToRs ([see here](#)):

Page# Section Title, Clause #	Change Description	Rationale / Justification	Decision by ESMO
p9, Meetings & deliverables, Clauses 28-32	Addition of clauses 28-32	To provide more explicit detail regarding WIP meeting requirements	APPROVED
Clause 10	Addition of subclause 10.4	To allow a stable transition in the WIP membership while supporting the CMIP7 Fast Track activities	REJECTED
Clause 7	Addition of subclause 7.3	To allow the WIP to choose to take an iterative review-based approach, rather than a decision based one, for technical developments	APPROVED
Clause 1	Purpose: working change WIP is a WGCM body within ESMO; More explicit definition of WIP remit		APPROVED

VERSION RECORD

Version number	Approval body	Date approved
Version 1	WGCM	02 October 2024
Version 2		

ANNEX A

WIP Task Team creation template

This template is copy of the contents of this form <https://bit.ly/propose-new-task-team> which must be completed and submitted to cmip-ipo@esa.int

1. Name of the Task Team
2. Referent Working Group or Project Panel
3. Current members
4. Starting date
5. Planned duration
6. Purpose & objectives
7. Expected outcome
8. Linkage with existing ESMO activities or other WCRP activities if any

ANNEX B

This template is copy of the contents of this form <https://bit.ly/ESMO-Nomination-Form> which must be completed and submitted.

Nomination for [Appointment/Extension]

Nominated for: [Name of the WCRP high-level steering committee]

As: [role of the nominated person, e.g., co-chair, member...]

1. DETAILS OF CANDIDATE NOMINATED

- Title:
- First Name:
- Last Name:
- Gender (Woman/Man/Non-binary/Prefer not to say/Prefer to self describe):
- Year of PhD (or the final academic degree) obtained:
- Residing country:
- Affiliation:
- E-mail Address:

2. MEMBER SINCE & UNTIL (year, in case of extension)

- Expertise vis-à-vis the role of the [WCRP core activity] (maximum of 8 lines):
- Science Background (maximum of 8 lines):
- Positions held (maximum of 8 lines):
- 5 most relevant publications
- Why is this individual particularly suited to this [steering committee]? (maximum of 5 lines)

3. SUBMITTED BY

- Title:
- First Name:
- Last Name:
- Organisation: