

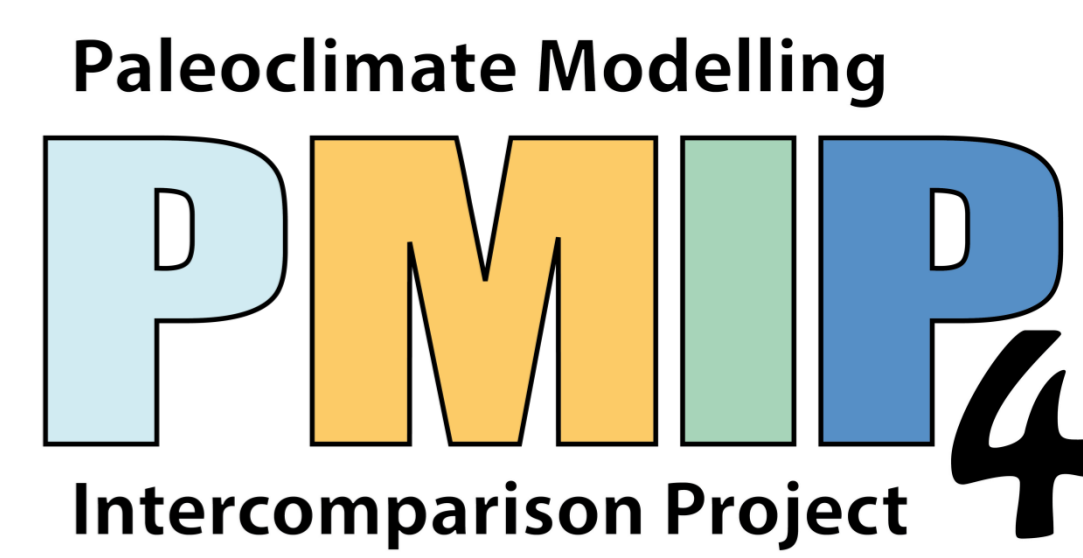


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Latest news of the PMIP4 Database

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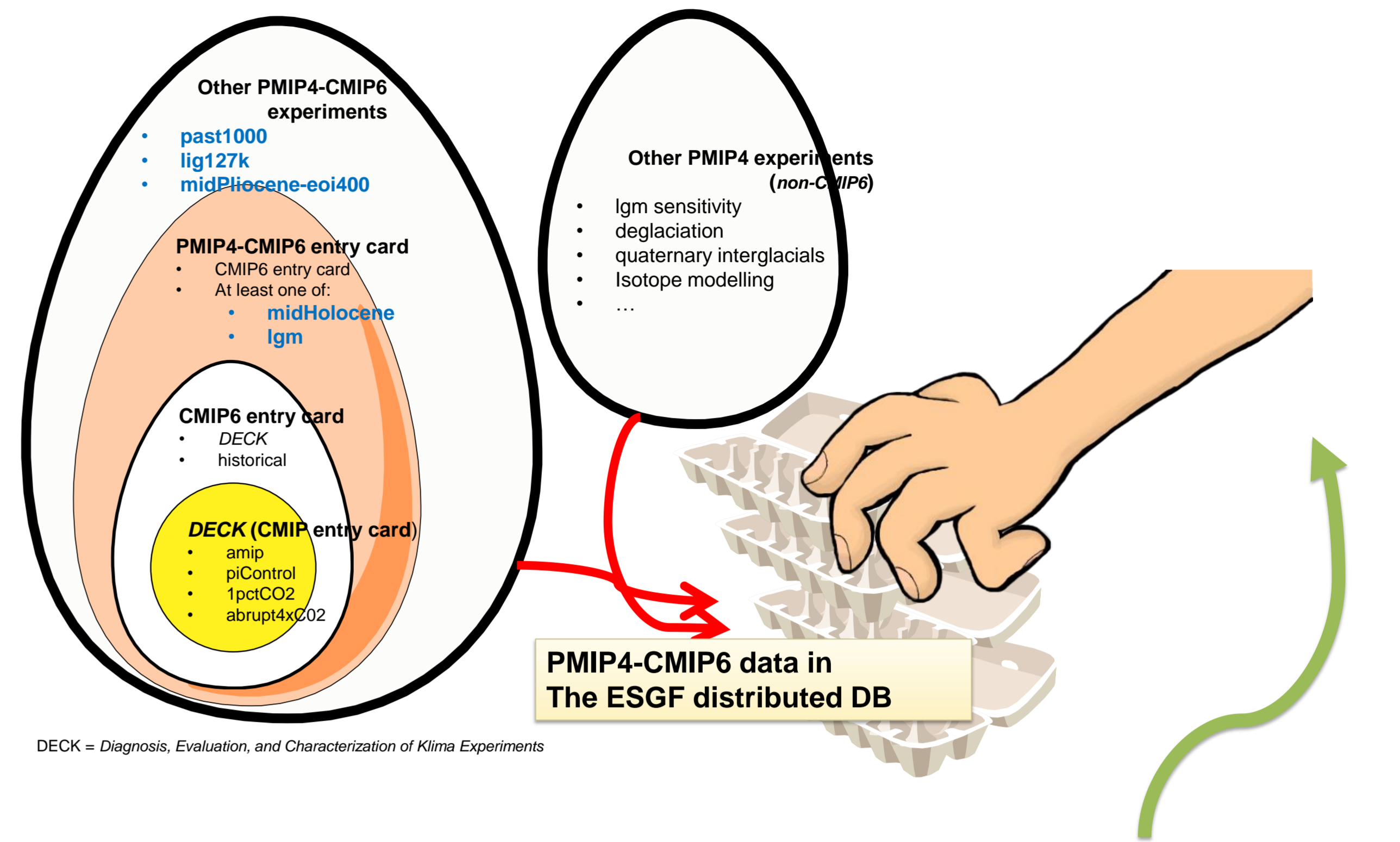
Where are we (going)?

PMIP4 participants as of September 21st 2017

	Institute	Country	0k piControl	LM past1000 (1000 years)	6k midHolocene	21k lgm	Last Interglacial	Mid Pliocene warm period	Atm i_lon x j_lat x lev	Ocn i_lon x j_lat x lev	Model id	Term of Use	Data Node
1	AWI	Germany	No				Yes	No	192x96 x L47	256x220 x L40 12688 x L46	MPIESM-1-2-LR AWI-CM-1-0-LR		DKRZ
2	CAU-GEOMAR	Germany	No				No		96x48 x L19	182x149 x L31	IKCM2		
3	CNRM	France	No		?		No		256x128 x L91	362x294 x L75	CNRM-CM6-1		CNRM
4	CAS-ESM	China	No	No	No			No	256x128 x L30	360x180 x L50	CAS-ESM-1-2		
5	CAS-FGOALS	China	No	No	No			No	180x90 x L26	360x180 x L50	FGOALS3		
6	INM	Russia	Done		Yes	No	Yes	No	180x120 x L21	360x318 x L40	INM-CM4-8		
7	IPSL	France	No mid-2018	No mid-2018	No mid-2018	No mid-2018	No mid-2018	No mid-2018	144x142 x L79	144x142 x L79	IPSL-CM6-LR		IPSL
8	MIROC	Japan	No mid-2018	No mid-2018	No mid-2018	No late-2018	No mid-2018	No late-2018	128x64 x L40	360x256 x L63	MIROC-ES2L		DIAS Japan
9	MPI-M	Germany	No	No	No	No			192x96 x L47	256x220 x L40	MPIESM-1-2-LR		
10	MRI	Japan	No	No	No	No	No	No	320x160 x L80	360x364 x L61	MRI-ESM2-0		
11	NASA GISS	USA	No	No	No	No	No	No	144x90 x L40 Cube90 x L96	288x180 x L32 360x180 x L56	GISS-E2-1-R GISS-E3-R		
12	NCAR	USA	No end-2018	No end-2018	No end-2018	No end-2018	No end-2018	No end-2018	288x192 x L32	320x384 x L60	CESM2		
13	NCC	Norway	No July 2018	No July 2018	No July 2018	No July 2018	No July 2018	No July 2018	144x96 x L32	360x384 x L70	NorESM2-LM		NCC Norway
14	NIUST	China	No mid-2018	No mid-2018	No mid-2018	No mid-2018	No mid-2018	No mid-2018	96x48 x L24	182x149 x L77	NIUST-CSM		
15	Stockholm University	Sweden	No	No	No	No	No	No	320x160 x L62 512x256 x L91	362x292 x L75	EC-EARTH3-LR EC-Earth3-GIS		
16	UK Academic Community	UK	No	No	No	No	No	No	192x144 x L85	360x292 (ORCA1) x L75	UKESM-0-LL HadGEM3-GC31-LL		
17	University of Tasmania	Australia	No	No	No		No		64x56 x L18	128x112 x L31	CSIRO-Mk3L-1-3	Non- commercial	ANU NCI
18	University of Toronto	UK	Done		No	Done		Done	288x192 x L26	320x384 x L60	CCSM4-UoT		
19	VUAmsterdam	The Netherlands	No mid-2018		No mid-2018	No mid-2018	No mid-2018		64x32 x L3	120x65 x L20	ILOVECLM1.2		IPSL?

The PMIP4-CMIP6 experiments...

...contribute to the CMIP6 question:
How does the Earth System respond to forcing?



You are here!

What you want...

...How it actually works

Who can use my data?

The institutes have to choose between the 2 Creative Commons licenses used by CMIP6:

- **CC BY-SA 4.0** Attribution-ShareAlike 4.0 International
- **CC BY-NC-SA 4.0** Attribution-NonCommercial-ShareAlike 4.0 International

Details: <https://wiki.creativecommons.org/images/6/6d/6/licenses-flat.pdf>

Which variables do I have to output?

- Official answer: use the **CMIP6 Data Request**
 - <https://earthsystemcog.org/projects/wip/CMIP6DataRequest>
 - Click on the *Spreadsheet view* or *A browsable HTML view of the request*
- PMIP4 case: the DR is still a work in progress, so it's safer to compare the official information above with:
 - **PMIP4 web → Database → PMIP4 and the CMIP6 DR → Resulting request**
- Depending on the different MIPs you have joined, you may have different sets of variables (and frequencies) to output. Hopefully your model can output everything!

Where is (will be) my data?

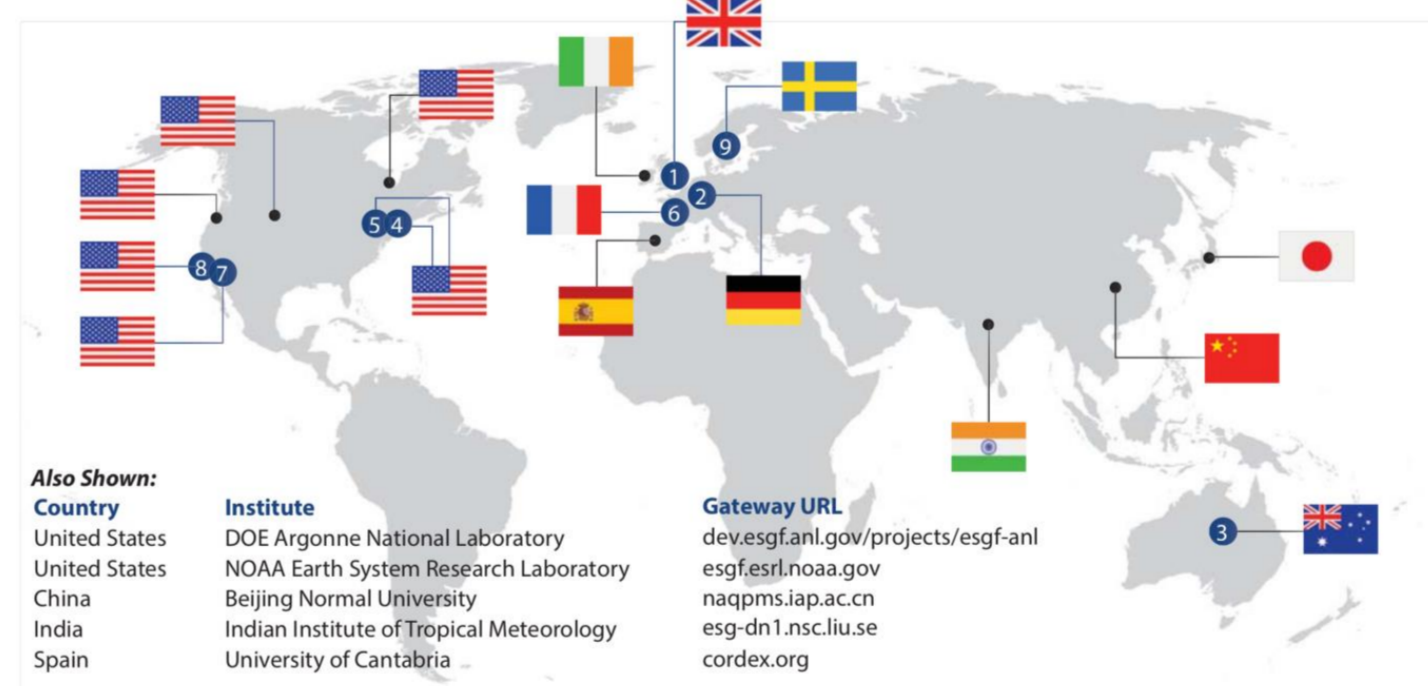
The data files are:

- Stored on the Data Nodes of ESGF
 - Referenced on the Index Nodes of ESGF
 - Discoverable from the Gateways of ESGF
 - E.g. IPSL Gateway: <https://esgf-node.ipsl.upmc.fr/>
- Data Nodes list and status: <https://esgf.anl.gov/monitor/>

Modeling groups have to get in touch with the closest DN administrator to settle practical details

Major ESGF Node Sites

Institution	Gateway URL	Version	Country	Project(s)	Contact
CEA	esgf-index1.ceda.ac.uk	2.4.0	UK	CMIP5, CORDEX, Obs4MIPs, SPECS, ESA CCL, EUCLEA, CLIPC	alan.wip@cea.fr
DKRZ	esgf-data.dkrz.de	2.4.0	Germany	CMIP5, CORDEX, Obs4MIPs, ISI-MIP	berger@dkrz.de
ANU NCI	esgf.nci.org.au	2.4.0	Australia	CMIP5	ben.evans@anu.edu.au
NOAA GFDL	esgfdata.gfdl.noaa.gov	2.4.0	USA	CMIP5, nccp2013, Obs4MIPs	hans.vahnenkamp@noaa.gov
NASA GSFC	esgfncs.nasa.gov	2.4.0	USA	CMIP5, Obs4MIPs, AnaMIPs, NES-GRID, NEX-CO2s, CREATE-IP	daniel.q.duffy@nasa.gov
IPSL	esgf-node.ipsl.upmc.fr	2.4.0	France	CMIP5, CORDEX, Obs4MIPs	sebastien.denvil@ipsl.jussieu.fr
NASA JPL	esgf-node.jpl.nasa.gov	2.4.0	USA	Obs4MIPs, GASS-10TC, CMAc	luca.cinquin@jpl.nasa.gov
DOE LLNL	esgf-node.llnl.gov	2.4.0	USA	CMIP5, CMIP3, inputMIPs, ACME	sasha@llnl.gov
UIU	esgf-dn1.ncslu.se	2.4.0	Sweden	CMIP5, CORDEX, SPECS, CLIPC	pchen@ncslu.se



Controlled Vocabularies?

Using standards is the only hope we have to make things work! You have to register your Institute and your Models in order to make sure that they are always referenced the same way:

- https://github.com/WCRP-CMIP/CMIP6_CVs

What is the CMIP6 DRS?

- DRS = **Data Reference Syntax**
- The Controlled Vocabularies are an element of the DRS
- **PMIP4 web → Database → PMIP4 and the CMIP6 DRS**
- Example: CMIP6 standard file names:
 - file name = <variable_id> <table_id> <experiment_id> > <source_id> <member_id> <grid_label> [<time_range>] .nc
 - Example: values allowed for **grid_label**:
 - **gn**: output is reported on the native grid
 - **gr**: output is regridded by the modeling group to a "primary grid" of its choosing
 - **gr1, gr2, ...**: output is regridded on another grid than the primary grid (that was already different from the native grid)

Combining everything?

Model + DRS + DR ?

Use the CMOR3 library!

- CMOR = Climate Model Output Rewriter
- <https://cmor.llnl.gov/>

Useful references

- **PMIP4** wiki: <https://pmip4.lsce.ipsl.fr/>
- **ESGF** (Earth System Grid Federation): <https://esgf.llnl.gov/>
 - Overview: ESGF → Press → Brochures → **2017 ESGF Brochure**
- **CMIP6** web site: <https://pcmdi.llnl.gov/CMIP6/>
 - Make sure you read the *Modelers carrying out CMIP6 simulations* section!
- Using **es-doc** to document your participation to CMIP6:
 - <https://es-doc.org/cmip6/>

For questions about this poster, or joining the pmip-announce list, get in touch with Jean-Yves Peterschmitt: pmip4web@lsce.ipsl.fr

The long path to Data and Papers publication

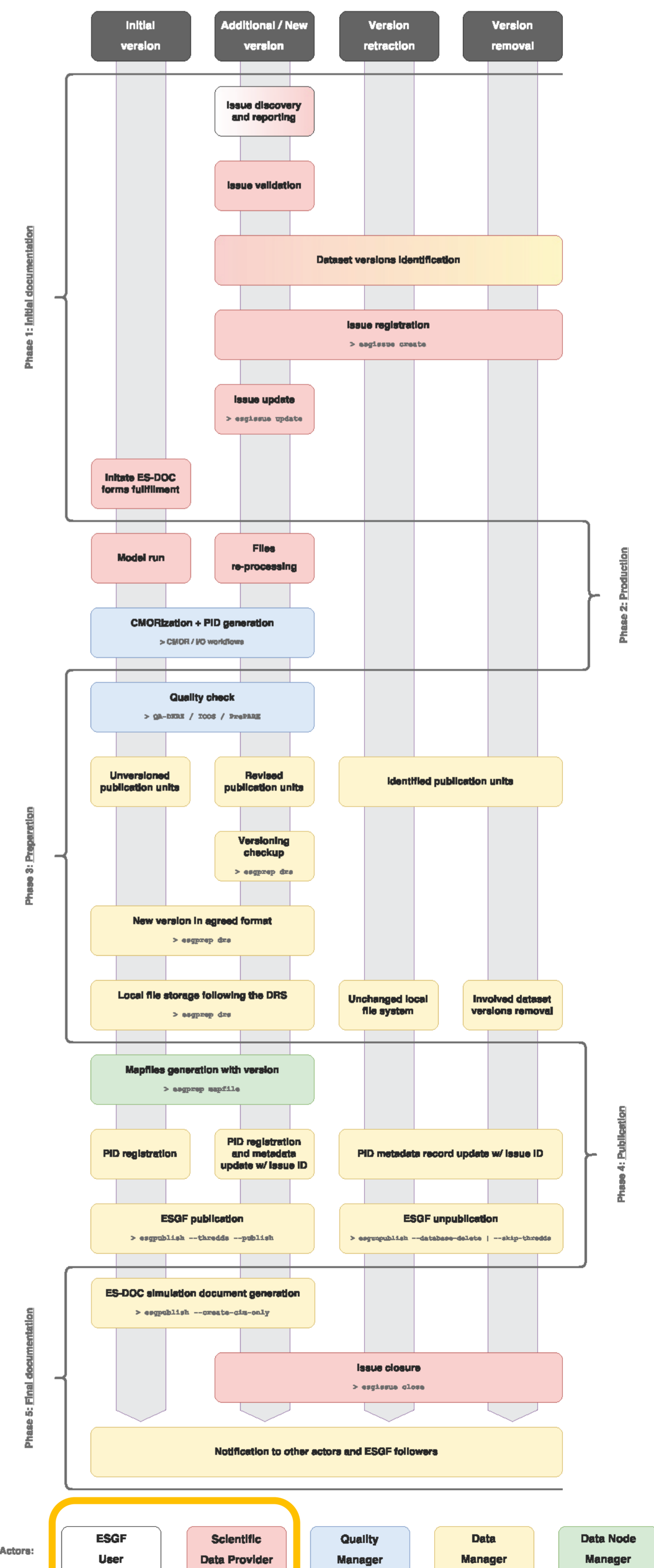
Publishing data files means making them available on the ESGF network so that:

- They can be discovered from any ESGF Gateway
- You can download files that are probably located in several very different locations

The data life cycle is quite complex and can be iterative:

- Document your model and how you actually implemented the experiments' boundary conditions
- Use your model to generate the data
- Put your data in standard form using the CMOR library
- Check the quality of the data
- Publish the data
- Download and use the data
- Redo several of the steps above, if some errors are found...
- Publish your results and cite the PID (persistent identifier) of the data files used

ESGF publication workflow for CMIP6



YOU!

PMIP is endorsed by

