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Joint Land Modelling Programme (JLMP)

Eleanor Blyth and Andy Wiltshire

What is JLMP?

Partnership: CEH, NCAS, NCEO, Met Office

Aim: To support, release and update the **core land** configurations used in the JWCRP partnership and broader community

Enable world-class national capability in physical (weather, climate) and earth system modelling, as well as hydrological applications.

Scope: Code, platforms, configurations and evaluation tools

How does JLMP differ from JULES?

- JULES is the modelling framework that will underpin the JLMP Programme.
- JLMP is a programme of work developing and supporting configurations of the JULES model.
- The existing JULES JWCRP project only focuses on provision of model code.
- JLMP includes the model code, model configurations, platform support and evaluation/benchmarking tools.
- There will a joint workplan and strategy.

Why is this necessary?

JULES is governed under the Joint Weather & Climate Research Programme (NERC and Met Office Partnership)

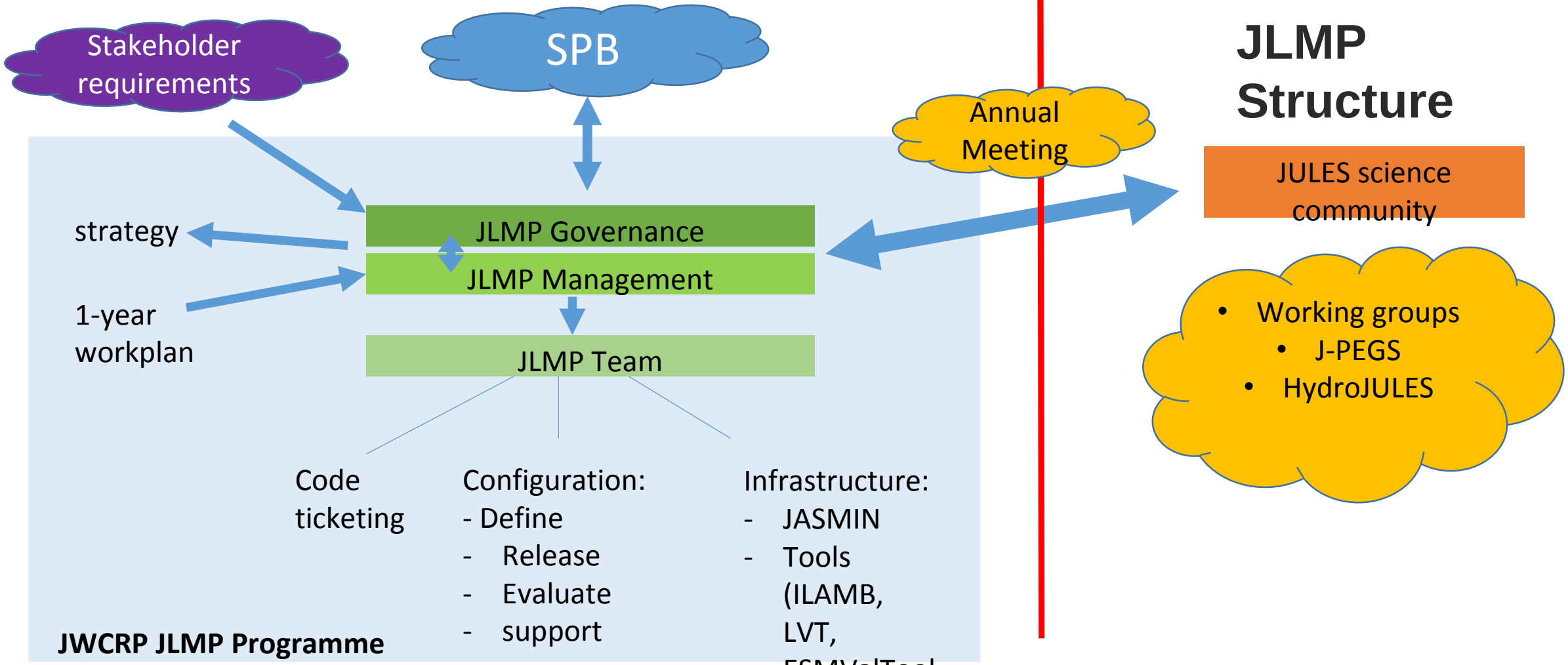
JULES has come along way and this is seen as a next step

Primarily to:

- address weaknesses in pull through of science into application
- assist with everyday frustrations experienced in using JULES

JWCRP aims with JULES to enable world-class national capability in physical (weather and climate) and earth-system modelling and hydrological applications.

Learn and apply good practice from other joint activities including UKCA and JMMP (Joint Marine Modelling Programme)


Stakeholder requirements
SPB
Annual Meeting
JLMP Structure
JULES science community
strategy
JLMP Governance
JLMP Management
1-year workplan
JLMP Team
Working groups
J-PEGS
HydroJULES
Code ticketing
Configuration:
- Define
- Release
- Evaluate
- support
Infrastructure:
- JASMIN
- Tools (ILAMB, LVT, ESMValTool)
JWCRP JLMP Programme

Governance Group

- Governance group will be responsible for the strategy through engagement with stakeholders inc. funders and scientific community
- Members will have the ability to set core, identified and directable resource.
- Monitor and own a 5 year strategy
- Meet 6 monthly
- Oversee the management group
- Take responsibility for partner accountability and conflict resolution
- Report to SPB

Management group

- Management group will be responsible for maintaining a 1 year workplan
- Cover code and platform requirements, scientific configurations and evaluation.
- Functional and/or line management over the ‘JLMP team’.
- Meet monthly via teleconference
- Report to the governance group

Governance:

TBC - NCAS

TBC - CEH

Chris Jones – MO

Keith Williams – MO

Management:

Andy Wiltshire – MO

Doug Clark – CEH

Eleanor Blyth - CEH

Martin Best – MO

Pier Luigi Vidale – NCAS

Rich Gilham - MO

Tristan Quaife - NCEO

What will be better?

- Regular, use and testing of standard configurations including benchmarking and evaluation
    - Quickly find and fix bugs, biases, structural errors etc.
- Further engage the broader community including PhD students, PDRAs, etc broadening the profile of UK land expertise.
- Promote pull through of science into configurations
- Avoid negative publicity around use of ‘incorrect’ setups
- Separating from coupled model means we are splitting the issue of land vs climate biases.

What will it do?

Early days – so plans still being made

JLMP initially aims to support and release three main configurations of JULES – Global Land, Earth System and UK Hydrology.

These will be available on both the Met Office CRAY and JASMIN

Standard benchmarking tools – iLAMB, ESMVAL, LVT, … will be available

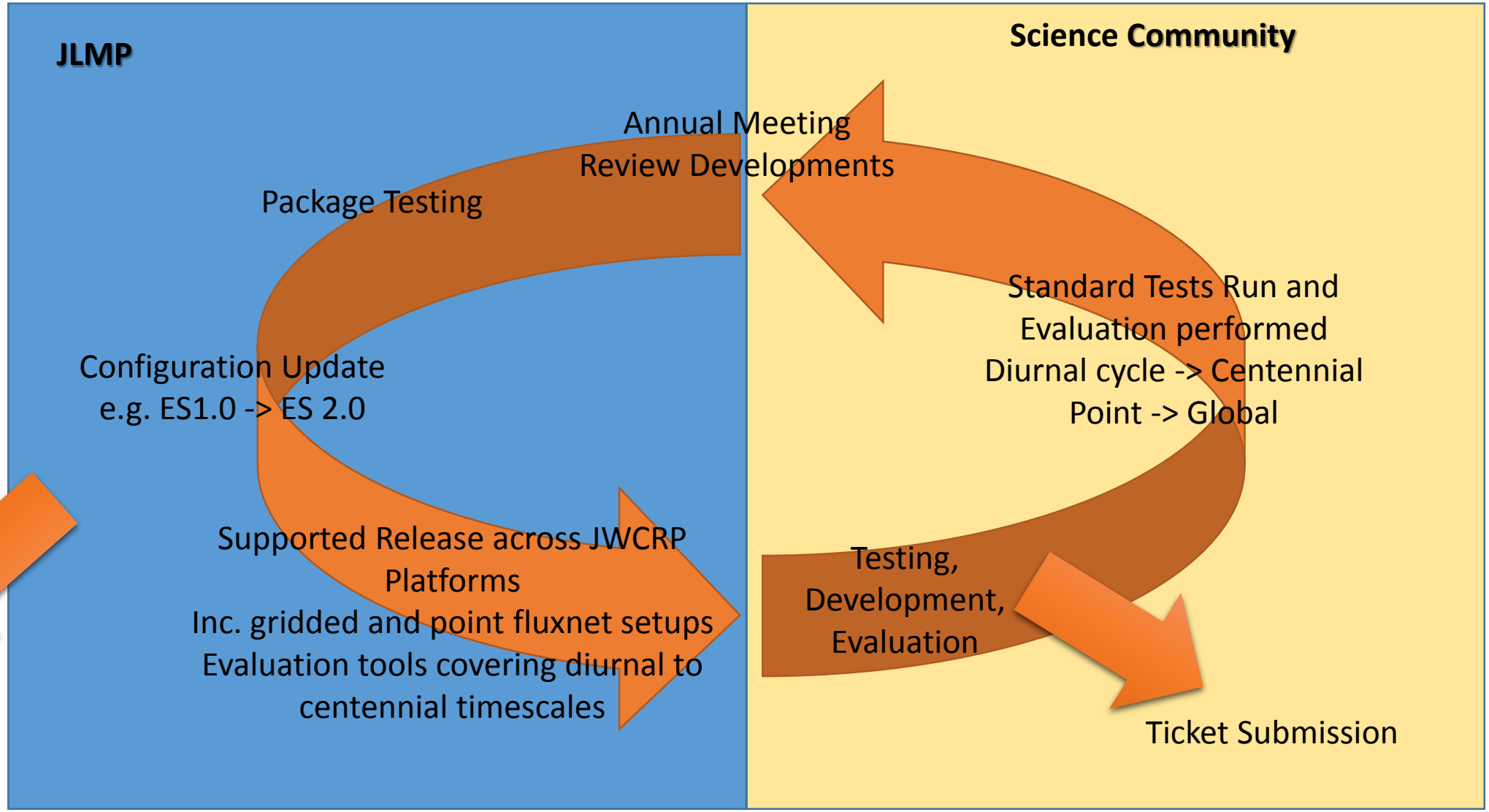
Promote and enable pull through of capability to application: weather, climate, flood modelling, air quality, …. - ‘Enable the Route to Impact’

What doesn’t JLMP do?

- **Lodge code for you**
- The ticketing system will continue being guided by the community science leaders.
- Responsibility for testing remains with the developer, however we hope to make the testing tools more available on JASMIN to ease the process.
- Fix/address all issues relating to community support outside standard rose suite configurations. Some resource at CEH and the MO will continue to help where possible and there is the community mailing list.

How does it effect you?

- Many of you are already actively engaged in developing, testing, evaluating configurations as part of the Earth-System, Global Land and UK Hydrology projects.
- Offer opportunity to get your science into use – for example, as part of the Earth System model as used in CMIP for IPCC, or BVOCs into Air Quality forecasts, or soil evap scheme into UK hydrology outlook, …
- Hopefully, **easy access to standard setups that just work!** Check out a suite for the Met Office Shared Repository, click submit and the suite will build and submit and produce bit comparable output to standard output (providing you have setup JASMIN access).
- There is an expectation that if you say in your funding application that you will contribute to national capability that you engage in the JLMP. JLMP may be able to provide letters of support where applicable given an appropriate level of prior engagement.


JLMP
Science Community
Annual Meeting
Review Developments
Package Testing
Standard Tests Run and
Evaluation performed
Diurnal cycle -> Centennial
Point -> Global
Configuration Update
e.g. ES1.0 -> ES 2.0
Supported Release across JWCRP
Platforms
Inc. gridded and point fluxnet setups
Evaluation tools covering diurnal to
centennial timescales
Testing,
Development,
Evaluation
Ticket Submission
Coupled
Configuration Update
e.g. ES2.0 -> ES 2.1
Takes into account
necessary tuning for
climate biases and
other UM limitations
Core Activity
Larger Development Activity
- JWCRP partners very active
on this side as well

Global Land 7 Rose Suite (GL7)

- GL7 is the defined configuration of JULES that underpins the HadGEM3-GC3.1 climate simulations for CMIP6 and core applications of JULES.
- A small group: Carolina Duras Rojas and Eddy Robertson have been working hard to provide this setup on JASMIN and MO CRAY including standard benchmarks via ILAMB.
    - Necessary ancils and standard forcing all available on JASMIN JULES workspace
- In the next few weeks we should be ready to release these. We will announce via email when it's available.

Summary thoughts

- In the view of the JLMP centres, this programme will substantially bolster UK land surface modelling capability
- This is all very new and only just launching and will take some time to get up to speed.
- Welcome any feedback/comments – please talk to any of the JLMP Board members.

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Questions and Answers