

EoCoE / PoP workshop on Performance Evaluation

Forschungszentrum Jülich, December 2015





EoCoE support activity workflow

An activity within EoCoE is:

- A target code from WP2-5 with an identified contact
- A target WP1 task with an identified contact
- A description or at least a clear framework

A support activity within EoCoE has four states:

1. Proposed
2. Validated
3. Triggered
4. Implemented



To reach *Proposed state*

Responsible: Code developer

Activity definition and submission:

- A target code from WP2-5 with an identified contact
- A target WP1 task with an identified contact
- A description or at least a clear framework
- Submission of the activity on the collaborative platform



To reach *Validated state*

Responsible: Project Executive Committee (WP leaders)

Activity selection

- Feasibility
- Amount of resources required
- Balance between WPs
- Potential impact
- ...



To reach *Triggered* state

Responsible: Code developer

Preparation of the work:

- Push the relevant version of the code on the EoCoE repository
- Push relevant input and output files on the EoCoE data server
 - Small test-cases with expected outputs for development and test purpose
 - Production test-cases for audit and optimisation road map
- Develop a JUBE file able to compile and run in parallel the code



To reach *Implemented state*

Responsible: HPC expert & Code developer

Doing the work:

- Push new versions of the code on the EoCoE repository
- Write minutes of working sessions (mandatory for consulting activities)
- Write a paragraph in the corresponding deliverable
- Acknowledge EoCoE in future paper(s)



Where are we so far ?

- 20+ validated activities: performance audit for each code
- 6 validated activities: triggered application support
- Already some proposed activities

Triggered application support

| WP | Context | Code | Contact | Activity desc. | WP1 Contact |
|----|----------------|------------|--------------------|--------------------|----------------------|
| 2 | Wind farms | ALYA | H. Owen (BSC) | solver + OpenMP? | Y. Ould Rouis (MdlS) |
| 3 | Photovoltaic | NanoPV | U. Aeberhard (FZJ) | DG scheme | S. Lanteri, (INRIA) |
| 3 | Supercap. | Metalwalls | M. Salanne (MdlS) | scaling + vect. | M. Haefele (MdlS) |
| 4 | Hydrology | TerrSysMP | S. Kollet (FZJ) | code coupler | K. Görgen, (JSC) |
| 5 | Plasma transp. | GYSELA | G. Latu (CEA) | IO, ?? | (JSC), (MdlS) |
| 5 | MHD | TOKAM3X | P. Tamain (CEA) | solver | L. Giraud (INRIA) |
| 3 | Photovoltaic | PVnegf | U. Aeberhard (FZJ) | EM solver | E. D. Napoli, (JSC) |
| 4 | Hydrology | SHEMAT | Wei Qu (RWTH) | MPI/OpenMP | W. Sharples, (JSC) |
| 2 | ensemble | ESIAS | J. Berndt | big data analytics | M. Riedel (JSC) |



Actions for code developers

Please fulfil requirements up to triggered status

- Provide contact people
- Provide a description of the activity
- Submit the activity on the collaborative platform
- Push the relevant version of the code on the EoCoE repository
- Push the relevant input files and expected output files on the EoCoE data server
- Develop a JUBE file able to compile and run in parallel the code



Actions for WP1

- Agree on metrics, procedures and tools to extract them
 - Automate the procedure with JUBE
 - JUBE trainings for the remaining code developers
 - Start triggered activities ASAP
- ⇒ Objective: first results expected for the next workshop session in April/May