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EoCoE-II
Energy Oriented Center of Excellence:
toward exascale for energy

Grant Agreement Number: 824158

D7.1 - M3
Project Handbook

Project and Deliverable Information Sheet

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Executive Summary:

This project handbook is an aggregate of procedures and good practices developed and implemented with success during the second phase of the EoCoE project. It will serve as a Quality Insurance reference document for the further phases of the Energy oriented Centre of Excellence in computing applications.

This HandBook is intended to be a living document where each procedure and good practice is upgraded to a more efficient procedure or better practice as the EoCoE experience grows.

EoCoE Project HandBook overview

Abstract This project handbook is an aggregate of procedures and good practices developed and implemented with success during the second phase of the EoCoE-II project. It will serve as a Quality Insurance reference document for the further phases of the Energy oriented Centre of Excellence in computing applications.

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Table of content This HandBook contains the following procedures or good practices:

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Glossary

The following abbreviation can be found throughout this document:

| | |
|-------------|------------------------------------|
| QA | Quality Assurance |
| QC | Quality Control |
| PSB | Project Steering Board |
| PEC | Project Executive Committee |
| PCO | Project Coordinator |
| PM | Project Manager |
| AC | Advisory Committee |
| ECG | Exascale Co-design Group |
| IP | Intellectual Property |
| WP | Work Package |
| WPL | Work Package Leader |
| EC | European Commission |
| PO | Project Officer |
| CoE | Center of Excellence |
| API | Application Principal Investigator |
| SCL | Scientific Challenge Leader |
| TCL | Technical Challenge Leader |
| DoW | Description of Work |
| HPC | High Performance Computing |
| HLST | High Level Support Team |
| SME | Small and medium-sized enterprises |

EoCoE Management

Management structure

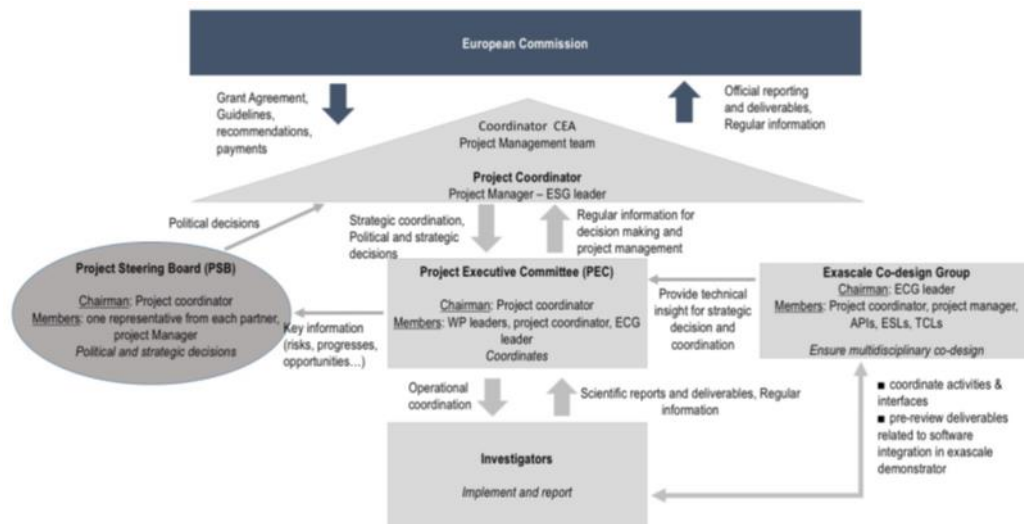


Fig. 1 – Overall project management structure

Organisational structure

The EoCoE-II project is regulated by the terms and conditions of:

- The Grant Agreement and its annexes: it fixes the rights and obligations of the participants towards the European Commission
- The Consortium Agreement and its annexes: it fixes the rights and obligations of the beneficiaries towards one another
- The Project Handbook: it establishes the operating rules of the project and the Quality Assurance (QA) and Quality Control (QC) for performing, reporting and delivering the best management practices. The Project Handbook is updated during the course of the project, as new procedure/processes are required.

| | |
|-----------------------------------|---|
| Decision-making structure | <p>The Decision Making structure has been designed to ensure effective and efficient investment of public and private funds in the project. This is composed by:</p> <ul style="list-style-type: none">- Consortium- Project Steering Board (PSB)- Project Executive Committee (PEC)- Project Coordinator (PCO)- Project Manager (PM)- Work Package Leaders (WPLs)- Advisory Committee (AC)- Exascale Co-design Group (ECG) |
| Consortium | <p>18 Partners, representing altogether 27 European teams from 7 EU Member States and Associated Countries, form the Consortium. As is expected in such a consortium, all formal partners will stand on the same foothold in the decision-making processes.</p> |
| Project Steering Board (PSB) | <p>The Project Steering Board (PSB) includes one representative from each beneficiary, plus the Project Manager. The Project Coordinator chairs the Project Steering Board. Each member of the PSB has a voting right except for the PM, who has consultative power.</p> <p>The PSB meets twice a year, to make political and strategic decisions for the project including IP and innovation management and risk review</p> <p>The PSB will be in charge of making all decisions affecting more than one Beneficiary, such as:</p> <ul style="list-style-type: none">- Assessment of project progress and objectives achievement (milestone reviews, go/no go decisions, activation of contingency plans);- Resolution of conflict situation among the consortium partners;- Approval of all significant changes of the project content; <p>The PSB is the only management body with the authority to alter the project work plan significantly.</p> |
| Project Executive Committee (PEC) | <p>The PEC comprises all the work package leaders, the project coordinator, the project manager, and the ECG leader. The PEC's role is to monitor the scientific and technical work in the project, and to ensure proper coordination between all WPs. The PEC meets every 6 months in face-to-</p> |

face meetings, and monthly via web conferences to share the work done, check the deliverables statement of each work package, handle issues raised during the past month, and take decisions on the management, strategy and day-to-day running of the project. The project manager is responsible for organizing this meeting, which is chaired by the project coordinator. Flash reports presentations are done by every WPL at PEC meetings in order to monitor the progress and allow for early identification of potential difficulties. The PEC is responsible for:

- Validating the project results presented via the organisation of workshops
- Making suggestions regarding their potential exploitation and implementation
- Monitoring the scientific and technical work in the project according to the strategic decisions of the PSB

The PEC meets every 6 months in face-to-face meetings and on a monthly basis via web conferences.

Project
Coordinator
(PCO)

The PCO promotes collaboration between the strategic and operational levels. He ensures transparency between the consortium members, through proper communication channels.

The PCO regularly reviews the project's status progress, scheduling, contents for relevant publications, deliverables and reports, etc. before their circulation to the European Commission or stakeholders.

The PCO chairs the PSB and the PEC, and participates in the Exascale Co-design Group.

The PCO oversees the distribution of the EC funding among partners, liaises with the EC, and coordinates amendment requests and partner accession and withdrawal if the need arises. He ensures all partners understand EC rules and the provisions of the Grant Agreement, and he undertakes administrative, contractual and day-to-day management, ensuring that all partners carry out their contractual tasks.

Project Manager
(PM)

The PM is responsible for the project operational management. He maintains close contact with all beneficiaries, fosters interactions between them, and provides the information needed to make decisions regarding the project's implementation.

The Pm supports the PCO on the following aspects:

- Coordination and facilitation of the collaborative work

- Conflict resolution
- Preparation of the agendas, modalities and minutes of Project Steering Board (PSB) and Project Executive Committee (PEC)
- Regular overview of project progress through appropriate and up-to-date dashboards, and consolidation of partner's contributions into project-level documents.

The PM supports the partners for project implementation, including management procedures, templates, reminders of upcoming deadlines, and answering questions.

The PM supports WP leaders for project monitoring tasks, including preparation, consolidation and review of reports.

The PM supports the PSB for decision-making, through the preparation and documentation of PSB meetings, and their diffusion on the project's platform.

The PM is also in charge of the Project Handbook preparation, and of the implementation of the procedures described in this deliverable. He handles the relation with PRACE regarding access to the PRACE computing dedicated to CoEs

Exascale Co-Design Group (ECG)

The ECG is the co-design core of the project. It initiates and oversees technical discussions and cooperation between WPs when mission-critical application design decisions are needed.

The ECG is composed of technical experts from all WPs, providing a direct communication channel between application developers, HPC experts and mathematical algorithm specialists, and ensuring that all project partners follow a strong co-design ethic. More precisely, it is composed of the ECG leader, the PCO, the PM, the Application Principal Investigators (API), the Scientific Challenges Leaders (SCL), and the Technical Challenges Leaders (TCL).

The ECG leader is a full member of both the PEC and the PSB, providing technical input for strategic decisions and prioritization adjustments. Conflicts between WPs or within the ECG will be handed first to the Coordinator, and ultimately to the PSB.

The ECG monitors and recommends cross-WP actions that were not foreseen in the DoW.

The ECG is animated and fostered by the ECG leader. The meetings of the ECG take place monthly, generally via videoconference. The ECG is responsible for:

- Establishing and maintaining multi-disciplinary co-design teams for each Energy Science Challenge flagship code, working orthogonally to the WPs

- Fostering an integrated co-design process between the Scientific Challenge Leaders (SCLs) and the technical WPs
- Thinking ‘out of the box’ to resolve technical conflicts or bottlenecks in the design process, and devising potential solutions together with the SCLs and WPLs
- Maintaining close links with the various hardware exascale initiatives, especially the EsD project, promoting the EoCoE flagship codes as candidates to engage co-design work with exascale hardware projects.
- Issuing guidance to the individual WPs responsible for their execution
- Previewing deliverables related to software integration in exascale demonstrator flagship codes
- Monitoring technical developments and requirements within the wider HPC community beyond EoCoE (partner CoEs, PRACE HLSTs) and considering them in the development strategy of the project flagship applications

Advisory
Committee (AC)

The Advisory Committee is composed of external scientists and experts relevant to the various fields of expertise of EoCoE and of representative of industries and SMEs for which the EoCoE project is relevant. Its composition is decided by the PSB. All the organisations that gave a letter of support to the EoCoE-II project will be part of the AC, which will also be completed by other members at the start of the project.

The members of the Advisory Committee act in an advisory capacity and are in charge of making strategic recommendations towards the project, especially for the project’s scientific aspects and for the production and dissemination of results and know-how.

The AC members meets every 6 months in face-to-face meetings, participates to plenary sessions they are relevant to, and can be invited to the ECG when their expertise is needed.

Decision/implementation process novelties

The EoCoE-II project novelty, compared to its first phase, is that a dedicated Exascale Co-design Group (ECG) has been set up to streamline the co-design approach (hardware, software, codes).

The ECG is responsible for:

- coordinating activities and interfaces
- pre-approving the deliverables related to software integration in Exascale Demonstrators.

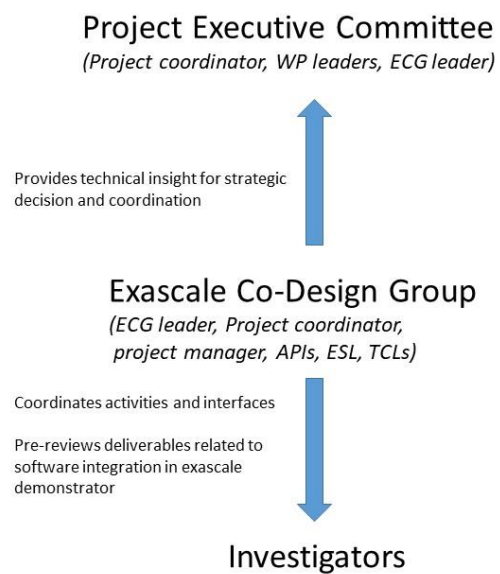
Therefore, the project coordinator will be directly supported by the leader of the ECG and by the project manager, to review overall project implementation and the achievement of project objectives. They are to discuss this during weekly phone conferences.

As a management structure, the Exascale Co-Design Group will ensure multidisciplinary technical discussions, flow of important information between work packages and coordination of software integration.

The ECG has been specifically created to ensure a close co-design approach. It gathers applications users/developers, HPC and applied math experts in order to maintain multidisciplinary co-design for all applications. By hard-wiring the interactions between domain scientists within the EoCoE-II management structure, the ECG will ensure that technological and design decisions are made by the code owners in close consultation with HPC experts.

From a strictly managerial position, here is how the ECG operates:

- It provides technical inside to the PEC, in order to improve strategic decisions and coordination
- It coordinates activities and interfaces with the project's investigators
- It pre-reviews deliverables related to software integration in exascale demonstrator



Deliverable review process

Standard deliverable review process

Decision procedure: definition The decision procedure consists in explaining the EoCoE-II deliverable review process approved during the PEC Meeting of June 26, 2019

Decision procedure: description The decision is taken according to the following steps:

1. The PEC members chose, during the EoCoE-II project's first semester, two PEC members whose expertise is relevant to the theme of each deliverable. These PEC members ("lead reviewers") are tasked with leading said deliverable review. The lead reviewers list will be made freely available to all consortium members on the EoCoE-II OnlyOffice online platform.
2. Consortium members can download templates for all deliverables from the EoCoE-II OnlyOffice online platform.
3. The Project Manager sends a reminder two months before the due date to the WPL concerned.
4. Between 1 month and two weeks before the due date the deliverable is sent by the WPL to the PEC (and eventually other experts) for internal review; PEC members that were appointed as lead reviewers for the deliverable spearhead the process.
5. At least 1 week before the due date, if needed, the PEC members send their comments and suggestions to the WPL, who will amend and improve the deliverable.
6. The deliverable's final version is sent to the PEC at least two days before the due date.
7. Without notice from the PEC members, the PM uploads it into the Participant Portal before the due date.

Handling of late deliverable

In the case of a deliverable running late, the following steps will apply:

| | |
|---------------------|--|
| Warning procedure | As soon as the risk of the deliverable being late is identified, the relevant WPL warns the PEC of said risk |
| PEC response | During the next PEC meeting, the PEC discusses the situation and determines the updated, realistic timetable for the deliverable to be ready |
| Delay under a month | <p>If the deliverable, according to the updated timetable, can be submitted with less than a month's delay, a simple warning of the EC will be issued by the PM, through an e-mail to the Project Officer (PO).</p> <p>If the EC does not request further action, the PM will then upload the deliverable, according to the usual process, as soon as it is ready.</p> |
| Delay over a month | <p>If the deliverable, according to the updated timetable, cannot be uploaded without going over a month's delay, the PM will coordinate with the PCO and the relevant WPL to explain the situation to the EC through the usual communication channels (i.e. mail to the project officer + via the EC portal).</p> <p>Depending on the EC's response, the PCO and PM will take the requested corrective actions, if need be.</p> <p>The PM will then upload the deliverable, according to the usual process, as soon as it is ready.</p> |