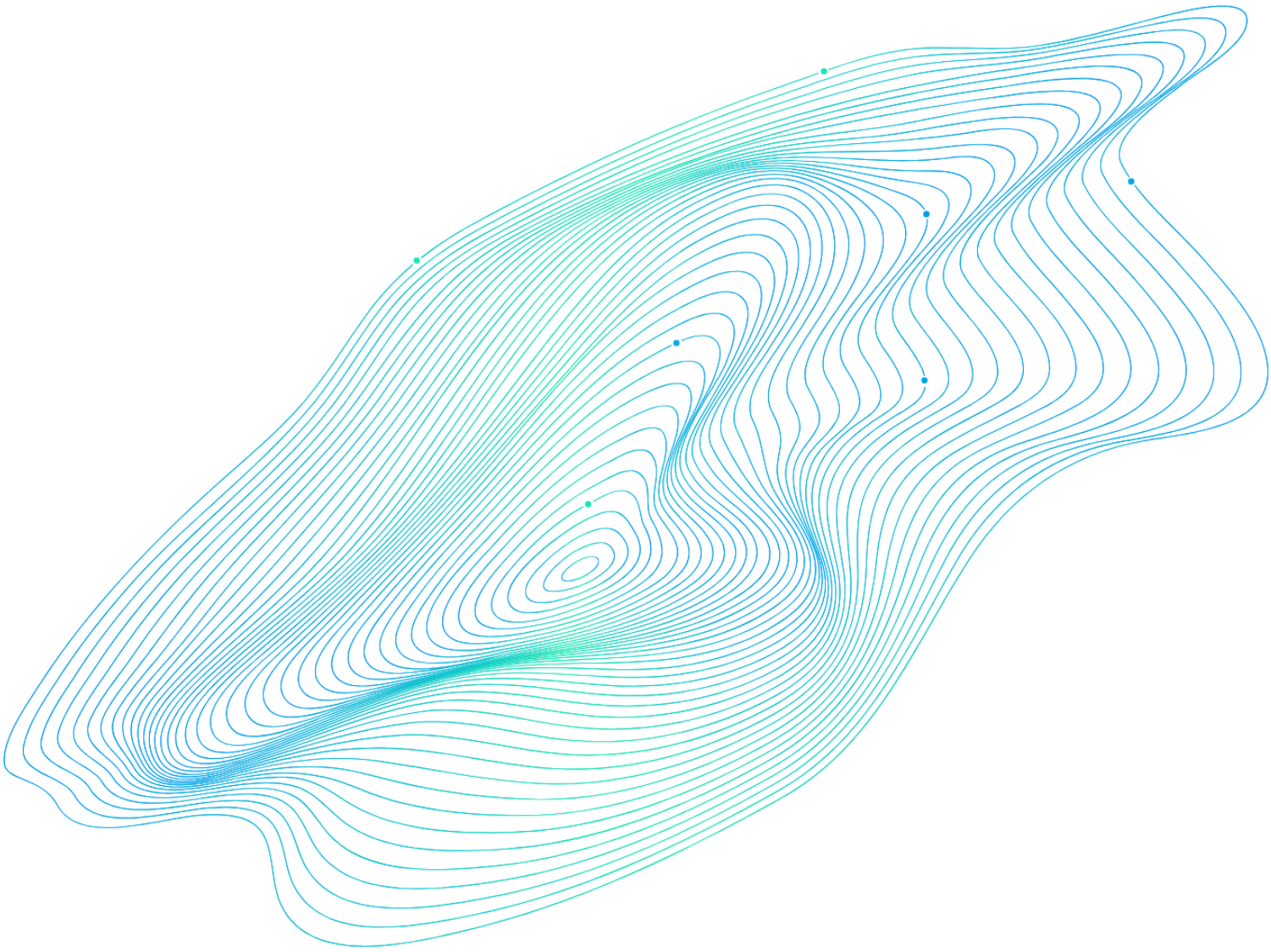
EPICURE

Unlocking European-level HPC Support

HIGH-LEVEL SPECIALISED APPLICATION SUPPORT SERVICE IN HIGH-PERFORMANCE COMPUTING (HPC)



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This project has received funding from the European High Performance Computing Joint Undertaking under grant agreement No.101139786. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or EuroHPC Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them.

EPICURE

DELIVERABLE 1.3

KPIs reporting year 2



Project Title	High-level specialised application support service in High-Performance Computing (HPC)
Project Acronym	EPICURE
Project Number	101139786
Type of Action	DIGITAL JU Simple Grants
Topic	DIGITAL-EUROHPC-JU-2022-APPSUPPORT-01-01
Starting Date of Project	2024-02-01
Ending Date of Project	2028-01-31
Duration of the Project	48 months
Website	epicure-hpc.eu

Work Package	WP1 | WP Project Coordination and Management
Task	T1.2 | Technical Management and Operation
Lead Authors	Ville Savolainen (CSC)
Contributors	
Peer Reviewers	Radovan Pasek (IT4I@VSB), David Vicente (BSC)
Version	1.0
Due Date	31.01.2026
Submission Date	29.01.2026

Dissemination Level

X	PU: Public
	SEN: Sensitive – limited under the conditions of the Grant Agreement
	EU-RES. Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
	EU-CON. Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
	EU-SEC. Classified Information: SECRET UE (Commission Decision 2005/444/EC)

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Version History

Revision	Date	Editors	Comments
V0.1	12.12.2025	Ville Savolainen (CSC)	Table of Contents
V0.2	17.12.2025	Ville Savolainen (CSC)	First complete draft of the deliverable
V0.3	07.01.2026	Radovan Pasek (IT4I) David Vicente (BSC)	Review conducted by the appointed reviewers
V0.4	12.01.2026	Ville Savolainen (CSC)	Reviewers input consolidated
V0.5	22.01.2026	Alberto Lanzanova (CSC) Virvatuli Uusimäki (CSC)	Review conducted by the Project Management Board
V0.6	27.01.2026	Ville Savolainen (CSC)	Project Management Board feedback consolidated and final version of the deliverable made available to the PMO
V1.0	29.01.2026	Virvatuli Uusimäki (CSC)	Final quality check performed by the Project Management Office and submission of the deliverable

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Glossary of Terms

Item	Description
AST	Application Support Team
DoA	Description of the Action
EAB	External Advisory Board
HPC	High Performance Computing
KPI	Key Performance Indicator

Executive Summary

The European supercomputing landscape of systems and services is now consolidated by EPICURE, a EuroHPC JU funded project that provides Level 2 and Level 3 support in a unified way. This four-year project brings together the Application Support Teams (ASTs) of all the current and future Hosting Entities of the EuroHPC JU systems.

This document presents the key performance indicators (KPIs) for the second year (M12-M24) of application support to the projects managed by EPICURE. By M24, project completion and application support KPIs are proceeding according to targets, while some of the documentation and training KPIs are slightly behind the linear progression and require increased effort.

This document also provides the summary and recommendations of the External Advisory Board (EAB) meetings held between M11 and M24, as requested in the M18 review.

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1. Introduction

The European supercomputing landscape of systems and services is now consolidated by EPICURE, a EuroHPC JU funded project that provides Level 2 and Level 3 support in a unified way. This four-year project brings together the Application Support Teams (ASTs) of all the current and future Hosting Entities of the EuroHPC JU systems.

This document presents the key performance indicators (KPIs) for the second year (M12-M24) of application support to the projects managed by EPICURE. The more detailed reports on code porting, enabling, scaling and optimization for Year 2 are given in D2.2 and D3.2 released at the same time. The advanced technical trainings given in Year 2 are described in D5.2, also with the same due date. The KPIs are compared to their targets for the full duration of the project, and progress is assessed. Communication, dissemination and outreach activities in Year 2 are not part of this deliverable and are reported in D6.4.

The structure of this document is as follows: The projects supported are summarized and then the KPIs analysed one by one. These KPIs include the number of 1) codes ported and/or optimized, 2) users and applications supported, 3) documents, 4) technical trainings, 5) scientific publications by the supported user groups, 6) software developed or improved.

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2. Technical KPIs

The technical KPIs as presented in the EPICURE DoA (Description of the Action) Part B are assessed in the following subsections one by one. The summary table of all the KPIs at M24 is given below, with a comparison to the numbers at M12 and M18, and their targets for the end of the project at M48.

KPI	KPI number at M12	KPI number at M18	KPI number at M24
Codes successfully ported or optimised on the EuroHPC supercomputers	**9/81 (total)** 3/18 (long term) 6/27 (mid-term) 0/36 (short term)	**27/81 (total)** 7/18 (long term) 12/27 (mid-term) 8/36 (short term)	**44/81 (total)** 7/18 (long term) 12/27 (mid-term) 25/36 (short term)
Users supported	90/400	192/400	266/400
Number of applications supported	26/150	71/150	84/150
Number of support documents, best practice guides and publications	0/3 (best practices) 0/6 (support docs) 0/6 (publications)	1/3 (best practices) 2/6 (support docs) 0/6 (publications)	1/3 (best practices) 6/6 (support docs) 2/6 (publications)
Number or technical trainings	1/8 (hackathons)	2/8 (hackathons)	3/8 (hackathons)
Scientific publications by the supported user groups in the context of accessing the EuroHPC systems	0/12	0/12	3/12
Ancillary software developed or improved in the context of EPICURE support	6/64	18/64	23/64

Table 1: The summary of all the KPIs at M24

2.1 Number of codes ported and/or optimized

The number of completed projects by M24 is 44. In addition, there are 43 projects in progress, 21 stalled and 64 were archived or did not start.

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The target number of completed projects for the full project duration is 81. The projects completed in M13-M24 as well as ongoing supported projects are listed in Deliverables 2.2 and 3.2.

Furthermore, we will categorize the supported projects as long term (Extreme Call), mid-term (Regular and AI Calls) or short term (Benchmark and Development Calls) by the type of the EuroHPC Call. Thus, there are 7 completed long-term projects, 12 completed mid-term projects, and 25 completed short-term projects.

From M12 to M24 the number of completed projects increased from 9 to 44, exceeding slightly the expected linear progression at M24 (54 % of the M48 target). The project subtype targets are also in excellent progression towards their targets.

2.2 Number of users and applications supported

The number of users supported by M24 is 266. The target number for the full project duration is 400. The users here refer directly to the number of users in the computational projects supported and don't include any possible users outside that scope.

The number of applications supported by M24 is 84. This includes the completed projects and those in progress. The target number for the full project duration is 150.

D2.2 and D3.2 discuss the scientific applications and work in more detail.

Both the number of users and applications are in line with the targets.

2.3 Number of documents

During Year 2, two best practice guides were published: Best Practice Guide on Power Consumption Measurements in EuroHPC Systems, and Best Practice Guide to Running AI Workloads on Leonardo CINECA. The first one was an official milestone and counted towards the KPI. The work on the second official best practice guide milestone has started and is due M28.

There are six Support Documents available in the Knowledge Base of the European HPC Application Support Portal (https://eurohpcsupport.eu/knowledge-base/). The Support Documents are:

- Best Practice Guide to Running AI Workloads on Leonardo CINECA - European HPC Application Support Portal
- Case study: Placement pingpong - European HPC Application Support Portal
- How to optimise process/thread/GPU affinity, NUMA placement and topology-aware rank ordering - European HPC Application Support Portal
- How to Automate Leonardo Access with SSH Configuration - European HPC Application Support Portal
- How to Profile your Python Code (From cProfile to GPU Timelines) - European HPC Application Support Portal
- LLM-using-llama - European HPC Application Support Portal

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There are two additional publications of the EPICURE activities which were published in Year 2:

Barbosa, J., Riha, L. & Vicente, D. A Pan-European Collaborative Model for High-Level HPC User Support: The EPICURE Approach, HPC Centers Around the World – Science and Computing Perspectives for the Latin American and Caribbean Community, Jamaica, 2025

Silva, P., Smolková, P., Slaninová, K., Martinovič, J., Špeťko, M., Barbosa, J. & Vitali, E. Scalable Alternative Route Computation with ACE: A C++17 Library for HPC Traffic Simulations, Super-Computing 2025, USA

2.4 Number of technical trainings

During the second year of the project, two hackathons were organized: HPC in ARM architecture in February, and Python meets HPC in December. The target number for the full project duration is 8 hackathons. The project is thus slightly behind the linear progression for the technical training KPI. Additionally, five webinars have been held. D5.2 describes in detail the advanced technical training activities given in Year 2.

2.5 Scientific publications by the supported user groups

We are aware of the following three scientific publications produced by the supported user groups in Year 2 that relate to the work done in EPICURE:

Polak, E., Zhao, H. & Vuckovic, S. (2025). Real-space machine learning of correlation density functionals. *Nat Commun*. https://doi.org/10.1038/s41467-025-66450-z

Nakano, K., Sorella, S. & Casula, M. (2025). Load-balanced diffusion Monte Carlo method with lattice regularization. J. Chem. Phys. 21; 163 (19): 194117. https://doi.org/10.1063/5.0296986

Orlando, G., Benacchio, T., & Bonaventura, L. (2025). Improving the scalability of a high-order atmospheric dynamics solver based on the deal.II library. *ArXiv, abs/2505.00384*.

2.6 Software developed of improved

The number of the ancillary software programs developed so far is 23. These refer to code or scripts that can be reused by different sites and have been developed or improved in the context of support.

These codes are available in the repository https://opencode.it4i.eu/epicure/

The target number for the full project duration is 64, thus we are currently slightly behind the target KPI.

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3. Summary of the KPI progress

In the second year of EPICURE, we have made significant progress in porting and optimizing multiple projects both under WP2 and WP3. In terms of most of the KPIs, EPICURE is currently at the linear progression towards the targets.

The work completed by EPICURE has been highly impactful and greatly benefited users of EuroHPC resources, as showcased by the summary provided in this document. All KPIs related to the of projects supported are close to targets, and those related to documentation, training and publications are in good shape, too.

We expect the project to continue and improve its impact in the last two years.

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4. EAB meetings

The External Advisory Board (EAB) provides guidance on internal processes, alignment with strategic initiatives, and user engagement. It also advises on outreach strategies to ensure that EPICURE's activities remain relevant and impactful across the entire EuroHPC community, not just among the projects directly supported.

The current members of the EAB are experts in HPC and support service, both from the industry and from the research. Its composition and more information can be found on the EPICURE website: https://epicure-hpc.eu/about/external-advisory-board/

The first EAB meeting was arranged and took place online in January 2025. The second meeting was held in hybrid format in March 2025 alongside the project annual event in Helsinki. The third meeting was held online in January 2026. The general content of these meetings is described in the following.

4.1 Meeting on January 27, 2025

Janne Ignatius chaired the meeting and gave a presentation of the EPICURE project.

Members of the EAB, Elisabetta Boella, Maria Grazia Giuffreda, Simon McIntosh-Smith and Pedro Alberto, expressed their interests in the EAB member role. Topics discussed included collaboration with CoEs.

4.2 Meeting on March 7, 2025

The second meeting, chaired by Janne Ignatius, was held in conjunction with the EPICURE annual meeting in Helsinki. The EAB members present at the event, Maria Grazia Giuffreda and Pedro Alberto, expressed positive feedback of the overall meeting and about discussion that took place. The WP leaders summarized the main discussion points of the two days of the event to facilitate the discussion also for the EAB member online, Elisabetta Boella.

Open discussion included topics such as supporting users outside CoEs and in the AI Factories, EPICURE visibility within scientific communities, balancing the distribution of the projects between the consortium members, and increasing the project intake and shortening the time for starting the support as well as the time for completion of the support.

4.3 Meeting on January 13, 2026

The third meeting was held online and was chaired by Janne Ignatius. Alberto Lanzanova and Noora Tiihonen presented the M18 review feedback and overall project status. The EAB members Pedro Alberto, Elisabetta Boella, Simon McIntosh-Smith, and Maria Grazia Giuffreda attended the meeting.

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The recommendations by the EAB in the previous meetings and project's actions regarding these were discussed. Other topics discussed included use of resources, communication with other initiatives and feedback from the project PIs.

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