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Report on communication, dissemination, collaboration, and community building

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List of abbreviations

AI	Artificial Intelligence
CoE	Centre of Excellence
CFD	Computational Fluid Dynamics
CSA	Coordination and Support Action
EPI	European Processor Initiative
EuroHPC JU	European High Performance Computing Joint Undertaking
HPC	High-Performance Computing
HRB	Horizon Results Booster
ISV	Independent Software Vendor
KER	Key Exploitable Result
KPI	Key Performance Indicator
M	Month
ML	Machine Learning
MS	Milestone
NCC	National Competence Centre
PMT	Project Management Team
SME	Small and Medium-Sized Enterprises
STAI	Steinbeis-Beratungszentrum AI Consulting Center
TGCC	Très Grand Centre de Calcul du CEA (= Computing Center for Research and Technology (CCRT)
UC	Use Case
WP	Work package

Executive Summary

This report provides a comprehensive overview of the communication, dissemination, collaboration, and community building activities undertaken by EXCELLERAT P2 during the reporting period (M1-M12). The document outlines the implementation of the communication and dissemination strategy developed in D7.1, emphasizing activities such as social media engagement, website updates, and multimedia content creation. In contrast to D7.1, this deliverable includes a report on ongoing collaboration actions (see section 3). The exploitation efforts are now part of WP6 deliverables.

Key Performance Indicators (KPIs) are closely monitored, ensuring activities are aligned with strategic goals. The report highlights successful branding efforts, including updated promotional materials, digital flyers, and roll-ups. The EXCELLERAT P2 website serves as a central information hub, attracting a high number of monthly visitors. Social media channels, including LinkedIn and X/Twitter, are effectively utilised for engagement and outreach, fostering interactions with diverse stakeholders.

Multimedia content, such as videos, podcasts, and blog posts, enhances community engagement. The participation in the “Code of the Month” initiative promoted by CASTIEL 2 showcases EXCELLERAT P2's contributions to the HPC ecosystem. Collaboration efforts with all stakeholders from this ecosystem, e.g. external HPC resource providers and industrial end-users are ongoing, with strategic engagements planned for the future. Internal collaborations among EXCELLERAT partners are facilitated through structured discussions and joint initiatives. In addition to that and with the support of CASTIEL 2, EXCELLERAT P2 had been granted access and started deploying onto several EuroHPC JU supercomputers, all of them being characterised by different partition types and architectures.

EXCELLERAT P2's community-building efforts are guided by a clear stakeholder prioritisation strategy, ensuring targeted interactions with engineering communities, HPC resource providers, open-source projects, and more. During this first year, EXCELLERAT P2 updated the list of priority stakeholders in alignment with the evolved objectives after the end of phase 1. Several actions were launched and organised to start interacting with several of these priority stakeholders. In parallel, WP7 ensured the communication and community building aspects within EXCELLERAT P2 itself by supporting and initiating various elements like internal meetings, discussions or the preparation by WP6 and the PMT of future “onboarding” guidelines, that will be used to attract industry stakeholders and monitor their interactions with EXCELLERAT P2.

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1 Introduction

After the initial start of the second phase of the project, EXCELLERAT P2, in January 2023, the first year of activities in terms of awareness creation and outreach focused on the re-evaluation of the project's communication strategy, including targets, audiences, messages and channels. In addition, the communication, collaboration, and community building activities planned according to D7.1 *Plan for dissemination and exploitation including communication activities* [1] have been put into place and will be reported in this deliverable. WP7 of EXCELLERAT P2 runs from M1 until M48 of the project with the following four tasks:

- 7.1: *Communication and dissemination*
- 7.2: *Collaboration with CASTIEL 2*
- 7.3: *Further collaboration with the ecosystem*
- 7.4: *Community Building*

The following Table 1 is an overview of all deliverables (to be produced) to track the progress of EXCELLERAT P2 WP7.

Number	Title	Due	Status
D7.1	Plan for dissemination and exploitation including communication activities	M6	Submitted
D7.2	Report on communication, dissemination, collaboration, and community building	M12	Submitted
D7.3	First Updated Report on communication, dissemination, collaboration, and community building	M30	To be submitted
D7.4	Final report on communication, dissemination, collaboration, and community building	M48	To be submitted
D7.5	Collaboration plan with definition of common objectives and activities including milestones	M6	Submitted
D7.6	Updated collaboration plan with definition of common objectives and activities including milestones	M30	To be submitted

Table 1: WP7 Deliverables

In this reporting period, WP7 has submitted a total of three deliverables and reached three milestones (see Table 2) with the support from other WPs. The pending milestones for this work package are going to be achieved at a later stage of the project. MS11 has faced a delay, since the legal negotiation process of the Collaboration Agreement with all involved parties (13 projects) proved to be more time-consuming than expected.

Number	Title	Due	Status
MS1	Project Kick-Off	M1	Done
MS2	Plan for dissemination and exploitation including communication activities available	M6	Done
MS8	Verification and update phase of the EXCELLERAT P2 services has been performed. More Success stories available	M32	Pending

MS10	Final Reports of all project outcomes and project close	M48	Pending
MS11	Collaboration agreement has been signed	M6 (delayed) M12	Pending (Deadline delayed)

Table 2: Milestones with WP7 contribution

This deliverable reports on the progress of WP7 according to the communication and dissemination plan outlined in D7.1 and developed for EXCELLERAT P2. After a short summary of the target audiences and channels addressed in EXCELLERAT P2 in section 2, the current performance based on established KPIs is assessed in section 2.1. The communication strategy is constantly being checked on its applicability and will be adapted if need be.

The EXCELLERAT brand, created in the first phase of the project, maintains continuity and recognisability. As reported in section 2.2.1, in line with the updated corporate design, several materials, such as the general flyer (update only), a one-pager leaflet, a project roll-up, and a standard presentation have been developed according to the needs of the consortium in the reporting period. The usage of the communication channels and formats in this reporting period, such as website, blog, newsletter, social media, and more, is described in sections 2.2.2 to 2.2.8.

The efforts performed and planned for tasks 7.2 and 7.3 with a focus on collaboration with other entities and projects will be reported in section 3. Subsection 3.1 is focused on the collaborative activities initiated so far with the CASTIEL 2 CSA and its ecosystem, while subsection 3.2 is dedicated to collaboration with further entities.

During this first year, EXCELLERAT P2 updated the list of priority stakeholders in alignment with the evolved objectives after the end of phase 1. Several actions were launched and organised to start interacting with several of these stakeholders. WP7 also ensured the communication and community building aspects within the consortium itself by supporting and initiating several activities, e.g. internal meetings, discussions or the preparation by WP6 and the PMT of future “onboarding” guidelines to be used to attract industry stakeholders and monitor their interactions with EXCELLERAT P2.

2 Reporting on Strategy Implementation

This section of the deliverable reports on how the communication and dissemination strategy that was developed by WP7 for EXCELLERAT P2, described in detail in D7.1, was implemented so far, and which activities have taken place. This is mainly being tracked by monitoring measures, each month analysing the performance on social media, the website visitors, engagement, media coverage, and collecting information on events (undertaken and planned), as well as scientific publications the technical work packages have released. KPIs with measurable results were defined in D7.1 and their current status (M11) is being reported in the following section 2.1. The KPIs help to keep track on the status of the strategy implementation, as they include the goals set in the strategy, translated into numbers. The strategy will continuously be re-evaluated and regularly updated, according to the results of the performance measurement, and external circumstances that cannot be foreseen at this stage. As stated in D7.1, the identified stakeholders that are mostly relevant for EXCELLERAT P2 are:

- Broader public/Policy makers (P),

- Academia/other European research actions (R),
- Engineering Companies/Industrial end users (I),
- Software developers, Code developers/ISVs (CD),
- Hardware and technology providers (HP).

The communication and dissemination channels and formats being used for EXCELLERAT P2 are displayed in Table 3. The table includes an overview of which audience they are directed to, and in which time frame they will be used in the further project runtime. More details on each channel and format will be provided in the following sections.

Channel/Format	Target audience(s)	Time frame
Website & blog	all	M 1-48
LinkedIn	I, R, CD, HP	M 1-48
X/short message service (new)	P, R, CD	M 1-48
Podcast	P, I, CD	M 1-48
YouTube (new)	all	M 3-48
E-Flyers	all	General flyer: by M12
Newsletter	P, I, R	M 3-48 bi-monthly
Press releases/media relations	all, indirectly via media coverage	M 1,48
Events (Workshops, Conferences, Exhibitions, Web seminars)	all, with different events/focus each	M 3-48
Scientific Publications	R, CD, (HP)	M 8-48

Table 3: Communication channels and formats

2.1 Performance measurement

In order to measure the success of EXCELLERAT P2 communication and dissemination activities, and to boost the motivation of the project team, KPIs with trackable target values were defined by WP7. These are in line with the strategy outlined above. For instance, LinkedIn is used as a mean to interact with the more business-oriented stakeholders (as a general mean of information and to interact with potential users, to create connections for and during events, etc). Events are organised for all target audiences. With a regular monitoring process via a metrics table, social media and web analytics, as well as media monitoring in place, the following Table 4 is kept up to date. If a KPI target cannot be met according to the time frame, mitigating measures will be put in place on time, to ensure that these can still be reached.

Dissemination and Communication KPIs	Target Value by M48	Status in M11
Scientific Publications	At least 20 journal publications and 10 conference papers	1 conference paper 1 journal publication
Workshop attended/organised	At least 10/2	4/5

Conferences attended and exhibitions	At least 20 conferences and 4 Exhibitions	10 conferences, 2 exhibitions
Web Seminars organised	10	1
Participants per web seminar activity	20-50, depending on the scope of the webinar	n/a
Unique website visitors	3,000 average per month = total of 144,000 in M48	6,665 average per month, total: 73,310 in M11
LinkedIn	1,000 total followers At least 4 updates per month (average) 2,000 average monthly impressions 4.0% average engagement rate	732 11 monthly updates (average) 4,492 average monthly impressions 5.64% average engagement rate
X/Twitter (or short message service)	1,000 total followers At least 10 updates per month (average) 5,000 average tweet impressions 2.0% average engagement rate	591 followers 12 monthly updates (average) 1,783 average tweet impressions 6.29% average engagement rate
Press clippings	20 neutral-positive media articles released with mention of EXCELLERAT 2	6 media clippings
Newsletter	250 total subscribers Bi-monthly issues, starting in M4, total = 23 issues	182 subscribers 5 issues

Table 4: KPIs and target values

As shown in the Table 4 above, for M11, the current progress is on track and in some parts (e.g. website visitors, social media engagement rates, workshops organised) even exceeding the set target values. The lower average of tweet impressions can be mitigated with the higher engagement rate. Updates concerning the usage of X/Twitter will be further described in section 2.2.5. Scientific publications will be released at a later stage of the project, when research results can be disseminated. Publication processes in scientific magazines usually take about one year, so this metric is expected to increase especially in year 3 and 4, towards the second half and end of the project runtime. A stronger focus on web seminars will be put at a later stage of the project, in line with the dissemination activities of EXCELLERAT P2. So far, WP7 does not encounter any issues with the strategy and KPIs set in D7.1.

2.2 Communication Activities

As outlined in the previous sections, this subsection will provide more details on the channels the EXCELLERAT P2 team is using in order to reach their external stakeholders and the targets set.

2.2.1 Update on Branding

To continue establishing the EXCELLERAT brand as the central entry point to HPC-powered engineering, the EXCELLERAT brand was taken over and modernised from phase 1 of the project, as described in more detail in D7.1. New materials will be developed from time to time, according to the needs for communication and dissemination purposes, such as events, social media campaigns and the like.

During the reporting period, the general flyer (see Figure 1) of EXCELLERAT was updated to reflect the changes of EXCELLERAT P2, e.g. the core codes and partners. The flyer was provided digitally to all partners and via the website (see section 2.2.2), and will be printed for future major events, e.g., ISC24 in May 2024.

Figure 1: EXCELLERAT P2 General Flyer

In addition, for the SOR23 Conference booth and conference proceedings (brand placement), a leaflet was created, including the key information on EXCELLERAT P2 on one page (see Figure 2).

Figure 2: EXCELLERAT P2 Leaflet

Furthermore, as an additional marketing tool for events, a roll-up was created and displayed for the first time at SOR23 in Bled, Slovenia (see Figure 3).

Figure 3: EXCELLERAT P2 Roll-up

As a supporting tool for communicating about EXCELLERAT P2 at conferences and exhibitions, at the project partner institutions internally, and at workshops together with other initiatives, a standard presentation was created for EXCELLERAT P2 and shared with all partners. This enables a consistent communication, and an efficient preparation of future talks. For more in-depth presentations, the PPT slides can be used as a basis and adapted according to the specific needs of the presenter and its audience.

2.2.2 Website

The EXCELLERAT P2 website [2] is the content hub for everything concerning the project and its offerings. The website consists of an informative homepage with a strong visual identity, including the most relevant information with teasers, and additional pages that give more details

on the project, as “about”, “news”, “services” and “success stories” (produced in phase 1 at the moment this deliverable was written). Currently, the website has an average of 6,205 unique visitors per month, which is higher than the stated target (see Table 4). The website homepage includes the updated project explanatory video, as well as a contact opportunity and links to the social media accounts. The connections to the EXCELLERAT Service Portal [3], as in the pages “Services”, “Reference Codes”, and “Events” are still available and will be updated, once the new EXCELLERAT Service Portal will be released. The new Portal release is planned for the next few months. As the Portal development, content update and further maintenance are held within the T5.1 – WP5, T5.1 partners will carry out the activities of the portal content updating and further user support.

The website contents, such as funding disclaimer, the pages “Partners” and “Interest Groups”, “Related Activities” for ongoing collaborations or institutions of interest to the EXCELLERAT P2 community were updated according to the status of the second project phase. All information concerning core codes was changed to reflect the current project phase. The general flyer on the download page was replaced. The first publication was added to the respective website space. As the website is a “living” instance, it will continuously be updated and new information will be added.

2.2.3 Blog

The EXCELLERAT P2 blog is a type of format to interact with the community and provide the content in a more “casual” way. It covers topics directly from the project and related content, e.g. trends in the world of HPC in a language understandable to wider public. Each partner was asked to contribute to the blog content: a rotating mechanism was set in place to this aim, especially for the partners with more efforts in WP7. Throughout the project runtime, an average of one blog post per month should be released, to keep the engagement high and have enough content for social media sharing. From M7 to M12, six articles have been released (see Table 5).

Publication date	Title	URL
13 Feb 2023	EXCELLERAT begins its second funding phase	https://www.excellerat.eu/excellerat-begins-its-second-funding-phase/
27 Feb 2023	Studying the geography of a software	https://www.excellerat.eu/studying-the-geography-of-a-software/
21 Apr 2023	An analogy to understand supercomputers	https://www.excellerat.eu/an-analogy-to-understand-supercomputers/
26 June 2023	HPC for industry: driving innovation in Manufacturing	https://www.excellerat.eu/hpc-for-industry-driving-innovation-in-manufacturing/
29 June 2023	HPC for industry: driving innovation in Aeronautics	https://www.excellerat.eu/hpc-for-industry-driving-innovation-in-aeronautics/
9 July 2023	Engaging Supercomputer Users to Optimize Workloads and Reduce Waste	https://www.excellerat.eu/engaging-supercomputer-users-to-optimize-workloads-and-reduce-waste/
20 September 2023	EXCELLERAT 2 proudly joined the Joint Workshop – exaFOAM, exasim, EuroHPC CoEs and CASTIEL2	https://www.excellerat.eu/excellerat-2-proudly-joined-the-joint-workshop-exafoam-exasim-eurohpc-coes-and-castiel2-2/

27 September 2023	Removing the warm up period from the output of a time-dependent simulation	https://www.excellerat.eu/removing-the-warm-up-period-from-the-output-of-a-time-dependent-simulation/
9 October 2023	EXCELLERAT P2 at SOR23	https://www.excellerat.eu/excellerat-p2-at-sor23/
23 November 2023	EXCELLERAT CoE presented at the Day of the Slovenian Supercomputer Network	https://www.excellerat.eu/excellerat-coe-presented-at-the-day-of-the-slovenian-supercomputer-network/
27 November 2023	EXCELLERAT Partners at SC23: Nominations, Collaborations, and Cutting-Edge HPC	https://www.excellerat.eu/excellerat-partners-at-sc23-nominations-collaborations-and-cutting-edge-hpc/

Table 5: Blog Overview Year 1

2.2.4 Newsletter

As reported in D7.1, the bi-monthly EXCELLERAT newsletter is an already established format of external communication from phase 1 of the project. It includes the highlight articles (e.g. blog posts and, in the future, success stories) from the project, and news concerning events, training courses and more. An archive of previous newsletter issues is available on the EXCELLERAT website [4], where users can sign up for regular inbox updates. The number of subscribers is currently 182, with the aim to reach a total of 250 subscribers by the end of this project phase. Five issues have been released by the end of M12. Table 6 below shows the issues released in 2023 and provides the links.

Publication date	Number of newsletter issue	URL
9 March 2023	#14	Link
9 May 2023	#15	Link
26 July 2023	#16	Link
27 September 2023	#17	Link
30 November 2023	#18	Link

Table 6: Newsletter overview 2023

2.2.5 Social Media

The social media channels used for EXCELLERAT P2 are **X/Twitter** [5], with currently 585 followers, **LinkedIn** [6], with 732 followers at the moment of writing this deliverable, and YouTube [7]. YouTube will be covered in the upcoming section 2.2.6, dealing with video content. Social media is commonly used for promoting content, especially from the website, and for creating a strong two-way communication flow, as these platforms allow for users to respond to the content, comment, and send reactions or even personal messages. Especially short social media services, such as X, which might be replaced by e.g., Threads [8] in the near future, depending on the further evolution of X (formerly Twitter) [9], are ideal for interacting with and creating the scientific, political, and HPC communities. The situation of X is still being observed, as a lower increase of followers, lower numbers of impressions, and sometimes incomplete analytics have been noticed by the WP7 team managing the X account of EXCELLERAT. However, a followership of almost 600 persons was already built, and the

team wants to avoid losing this group before having the ideal alternative and/or running several channels in parallel during a transition phase.

While X has a stronger focus on short updates, like tweets from recurring events, new releases, etc., LinkedIn is more useful for generating business leads – e.g. inviting people to events, receiving contact information, leading them to relevant website content, such as blog articles, new podcast episodes, and multimedia content. Engaging content that also might attract new users is constantly being developed. For instance, a new series of the HPC Trivia Quiz by EXCELLERAT was started and is running through the end of 2023. In addition, since there have been new core codes added in this project phase, a social media series introduced all EXCELLERAT core codes over the summer 2023. The main hashtags the project is using are: #HPC #engineering #simulation #CFD #aerospace #energy #automotive #manufacturing #HorizonEU. Tags of all relevant accounts, such as partners and funders, are included when suitable.

In line with the social media guidelines and shared rotating content plan set up in the beginning of EXCELLERAT P2, contributions to the accounts' content are regularly being made by project partners.

2.2.6 Video Content

The communication efforts have put a stronger focus on video content for this second project phase, since multimedia content was found to be an effective tool for engaging communities and attracting new stakeholders. A **YouTube** account [7] was set up in order to host video content of EXCELLERAT P2.

The following plans were made for creating engaging video content throughout the project runtime. For year one, a simple update of the explanatory video that was produced in project phase one was undertaken. The logo, partners, and codes were respectively updated in the video, in order to reflect phase two. In addition, the existing video promoting the EXCELLERAT service portal will be updated with the portal's new look and feel, structure, and contents, once the new portal is released (January/February 2024). The video should be ready for the launch of the new service portal, with the aim of highlighting and promoting it. This video might also serve as a creative content element for a LinkedIn paid promotion, which could attract further users.

For Year 2, the plan is to take advantage of the onsite all-hands meeting planned for end of January 2024. Short tailored questions for selected project participants will be prepared by WP7. A small camera team is planned to join the all-hands meeting and record short statements of the project team (15-30 second snippets). These shall be edited after the all-hands meeting, and be released throughout 2024 via social media. The content of these video snippets should, for instance, cover the objectives of EXCELLERAT P2, the current progress of the project, as well as the roles of certain partners and people involved.

For Year 3 and 4, the team will plan accordingly with the technical WPs, to produce selected videos for success stories, which highlight the EXCELLERAT P2 use cases, so there will be a strong focus on results and impact. The basis for these videos will be the success stories that a task force from WP7, WP6, and WP5 will create together with the technical experts for the EXCELLERAT P2 website and flyers. The focus here is on dissemination of successful results towards the end of the project runtime.

2.2.7 Podcast

During phase 1, the WP7 team developed the format "HPC Podcast powered by EXCELLERAT" with a total of four podcast episodes produced (length between eight and 21 minutes) and released on Spotify [10]. These efforts have continued in EXCELLERAT P2, since it is an engaging and personal way to interact with the target audiences – especially those who are less familiar with the content of the project and HPC overall yet. A task force from WP7 and WP6 has developed an editorial plan for the podcast, with quarterly releases. As the setup of the second project phase is different than in the first phase, the focus of the podcast content is on explaining and promoting use cases and content from the project partners. At a later stage, external speakers will be invited. The first episode was recorded with Matic Brank from University of Ljubljana in Gothenburg, in conjunction with the attendance of the EuroHPC Summit in March 2023. The topic was nuclear fusion research and in particular the engineering design and digital twin of the first wall of fusion tokamak, one of the new use cases of EXCELLERAT P2. On 2 May 2023, the first post-produced EXCELLERAT P2 episode was released via SoundCloud, Spotify, and further podcast platforms via a distribution tool, as well as embedded in the EXCELLERAT P2 website, and shared via social media and the newsletter. In April 2023, the second podcast episode was recorded with SSC-Services GmbH, the SME partner of EXCELLERAT P2 who developed the Data Exchange & Workflow Portal from phase 1. This episode was released in July 2023. Two further recordings were made at SC23 with project partners SiPearl (on the topic of EPI) and KTH (on the Gordon Bell Prize nomination with EXCELLERAT P2 involvement) in November 2023. These are currently in post-production and will be released following the quarterly release plan (one in the end of 2023, one in Q1/2024). Further recordings are being planned by the key podcast task force for the all-hands meeting in January 2024.

2.2.8 Media Relations and Publications

As a kick-off communication, the communications department of the WP lead from HLRS, the High-Performance Computing Center at the University of Stuttgart produced a press release that was coordinated with the EuroHPC Joint Undertaking, in conjunction with the renewal of EuroCC and CASTIEL (EuroCC 2 and CASTIEL 2). It was released to a media distribution list with 27 contacts from international HPC and computing press, e.g. InsideHPC, HPCwire, The Next Platform, and ZDNet on 3 February 2023. Building media relations is valuable for EXCELLERAT P2, as media clippings (earned media) have more credibility than owned media, and more, as well as other audiences can be reached beyond the existing community. However, with all the information overload and editorial mechanisms in place, it can prove difficult to earn coverage among other specialised press. At least one further press release will be issued at the end of EXCELLERAT P2, with highlights and achievements of the project. When further newsworthy (in terms of media coverage) results are ready for publication during the project, additional press releases will be written in an agile manner and distributed to the respective media outlets.

Partners were asked to place articles about EXCELLERAT P2 in relevant institutional media, e.g. the annual report of the High-Performance Center Stuttgart [11] and newsletters of the EuroCC National Competence Centres (NCC), such as the NCC Slovenia [12], in order to generate more reach for the project on a national level. In addition, the EXCELLERAT P2 project was covered in a podcast episode [13] by partner Sicos BW (in German).

The first media clippings and related publications can be found in the following overview Table 7.

Media type	Source	Release date	URL
Online News Article	BigData Insider	22.06.2023	https://www.bigdata-insider.de/europaeisches-innovationszentrum-fuer-digitalisierungsvorhaben-a-39abe54b4f3aeb22122690c2a660302b/
Online News Article	PR-Inside	24.05.2023	https://www.pr-inside.com/de/edih-suedwest-neues-europaeisches-innovationszentrum-r4921846.htm
Newsletter	NCC Bulgaria	11.05.2023	http://eurocc-bulgaria.bg/2023/05/data-analytics-for-engineering-data-using-machine-learning-june-12-14-online/
Newsletter	NCC Slovenia	01.04.2023	https://informator.arnes.si/?p=preferences&uid=b6e7cd58f5d36fbfbe0e01a82a9fa518
Online News Article	Bioengineer.org	03.02.2023	https://bioengineer.org/eurocc-and-castiel-begin-second-funding-phase-of-initiative-to-strengthen-hpc-capabilities-across-europe/
Online News Article	InsideHPC.com	03.02.2023	https://insidehpc.com/2023/02/eurohpc-ju-renews-support-of-eurocc-and-castiel/
Online News Article	HPCwire	03.02.2023	https://www.hpcwire.com/off-the-wire/eurocc-and-castiel-begin-2nd-funding-phase/
Online News Article	HPCwire	26.01.2023	https://www.hpcwire.com/off-the-wire/eurohpc-announces-launch-of-10-centers-of-excellence/

Table 7: Media clippings & related publications

In addition to media relations and featured articles, at a later stage and as part of the dissemination activities, the technical experts of EXCELLERAT P2 will focus on submitting suggestions for peer-reviewed articles in scientific journals and conference proceedings. The goal is to achieve at least 20 journal publications and 10 conference papers by the end of the project runtime. WP7 will support the other WPs when it comes to questions related to open access and acknowledgements, and keep track of submissions and releases for the performance measurement.

The Table 8 below shows the current progress on these efforts. So far, one scientific journal article and one article in conference proceedings have been released. This is an expected status quo at this project stage.

Title	Authors	Title of the Journal/Proc./Book	DOI	Repository Link
A Look at Performance and Scalability of the GPU	Jasmin Mohnke, Michael Wagner	Euro-Par 2023: Parallel Processing	10.1007/978-3-031-	https://link.springer.com/chapter/10.1007/978-3-031-39698-4_43

Accelerated Sparse Linear System Solver Spliss.			39698-4_43	
Effect of Stokes number and particle-to-fluid density ratio on turbulence modification in channel flows	P. Gualtieri, F. Battista, F. Salvadore. C.M. Casciola	Journal of Fluid Mechanics	10.1017/jfm.2023.851	https://www.cambridge.org/core/journals/journal-of-fluid-mechanics/article/effect-of-stokes-number-and-particletofluid-density-ratio-on-turbulence-modification-in-channel-flows/94C2A320E6286F0F2D812D2867697917

Table 8: EXCELLERAT P2 Publications

3 Collaboration

3.1 Collaboration with CASTIEL 2

This section describes specific aspects of EXCELLERAT P2 that refer to the ongoing collaboration with CASTIEL 2 as defined in the umbrella deliverable [14], namely the two access schemes to EuroHPC supercomputers, the code of the month and the CI/CD platform integration.

It is worthy to mention that EXCELLERAT P2 nominated the “champions and deputies” for each of the CASTIEL 2 WPs: they act as contact points between CASTIEL 2 and EXCELLERAT P2. Every WP of CASTIEL 2 organises regular meetings, in which EXCELLERAT P2 participates.

3.1.1 Special and Regular Access Scheme to EuroHPC JU Systems

The Centres of Excellence require a reasonable access scheme to the EuroHPC JU supercomputers for the duration of the projects; CASTIEL 2 is coordinating this activity on behalf of the CoEs with the EuroHPC JU. EXCELLERAT P2 provided the necessary input for all its use cases projected compute resource usage across all EuroHPC JU supercomputers.
A summary of the actual supercomputers’ granted access is depicted in Table 9.

Code name	**System Partition (Productive)**	**System Partition (Work in Progress)**
AVBP	LUMI-C, Karolina CPU, Karolina GPU, Discoverer	
m-AIA		Vega-CPU, Karolina-CPU, Discoverer, MeluXina-CPU

Alya	Karolina-GPU	
NEKO	LUMI-C, LUMI-G, Leonardo Booster	
FLEW	Karolina GPU, Leonardo Booster	LUMI-G
OpenFoam/Raysect	Vega-CPU	LUMI-C, LUMI-G, Karolina-CPU, Karolina-GPU, MeluXina-CPU, MeluXina-GPU

Table 9: EuroHPC JU systems' granted access.

Some codes have already been deployed and ran benchmarking tests (Productive) on some partitions, while for other system partitions/codes the access applications need to be granted or the deployment is undergoing (Work in Progress). In order to better integrate Table 9, an EuroHPC Coverage Roadmap has been presented in D3.1 *Report on Exa-Enabling Methodologies* [15], as a result of a CASTIEL 2 questionnaire.

The EuroHPC JU can grant Special Access to strategic European Union initiatives considered to be essential for the public good, or in emergency and crisis management situations. The Centres of Excellence were identified to be eligible for that.
Nevertheless, at the time of writing this deliverable the Special Access Scheme has not been implemented. In order to proceed with their deployment roadmaps, code owners applied for computing resources uniquely via theRegular Access Mode, which is provided through a monthly Call for Proposals.

3.1.2 Code of the Month

EXCELLERAT P2 took part in the CASTIEL-2-initiated format known as "Code of the Month." A compelling and useful piece of code from a Centre of Excellence has been and will be presented each month to the HPC ecosystem as part of this project. The structure of these events calls for an approximately 20-minute presentation aimed to industrial stakeholders (such as those from the NCCs), followed by a Q&A session.

In addition to the public webinars, additional "internal" sessions concentrate on industrial applications and the potential use of the presented codes by NCCs and their industry connections.

The AVBP code from Cerfacs was presented as "Code of the Month" in two short webinars, on 14th July 2023 for NCCs participants only and on a second date, 28th of July 2023, which was open to the public. EXCELLERAT P2 is planning to further demonstrate more codes developed by the UCs in 2024.

3.1.3 Continuous Integration, Continuous Deployment (CI/CD) Platform

Continuous Integration/Continuous Deployment (CI/CD) is an important feature of software development and deployment that extends to EuroHPC JU supercomputers. As a matter of fact, the use of CI/CD allows for a more agile and efficient software development process. It enables the regular and automatic integration of code changes, guaranteeing the speedy implementation of software upgrades and enhancements. This iterative technique assists developers in identifying and resolving difficulties early in the development cycle, resulting in more

dependable and high-quality software on EuroHPC JU supercomputers. Continuous testing and quality assurance activities are also facilitated by CI/CD. This aids in the early detection of problems, compatibility issues, and performance bottlenecks, allowing developers to resolve them as soon as possible.

As a result, the CoE codes that will be deployed on EuroHPC JU supercomputers are expected to be more robust and stable. Moreover, CoEs can conveniently deploy their codes on several EuroHPC systems, ideally with minimal or no code changes. A CI/CD infrastructure of this type also enables automatic testing and quality control of the code, which will assist to increase the maturity of the CoE programmes.

At the time of writing this deliverable, the CI/CD platform is still under discussion. CASTIEL 2 organised monthly meetings together with CoE representatives in order to shape the idea of a common platform. The current approach consists of local project repositories (or specific branches) mirrored or centralised to an intermediate Gitlab repository provided by CASTIEL 2. From there, Gitlab Runners installed on EuroHPC systems will take the code and deploy it, or alternatively take the pre-compiled executables/artefacts and use them for further configuration/compilation/deployment.

3.1.4 Other activities

HiDALGO2/ExaFOAM Collaboration with Complementary Grant: a joint workshop on OpenFOAM has been taken in September 4–5, 2023, at HLRS in Stuttgart together with HiDALGO2 and the exaFOAM project. OpenFOAM is an open source, widely adopted community code for computational fluid dynamics (CFD) in large-scale simulations. EXCELLERAT P2 contributed to the workshop by presenting in situ data access from simulations using the Vistle visualisation tool.

The CASTIEL 2 Information Sharing System (C2ISS): the aim of this portal is to build up a common marketplace to promote collaboration, knowledge exchange, and access to specialised support. During an internal CoE/CASTIEL 2 meeting in early October 2023, EXCELLERAT P2 presented its new portal concept services idea and future connection options to the C2ISS portal.

Contribution to CASTIEL 2 *D2.4 - Legacy software report*: in order for CASTIEL 2 to establish a corresponding list of "legacy" codes employed by the CoEs, as well as to devise a prioritised action plan on how codes can be utilised in a sustainable way in the future, EXCELLERAT P2 provided some inputs about: i) background and status of UCs codes; ii) planning for porting applications to the various JU systems; iii) anticipated or experienced difficulties; iv) suggestions for supporting activities.

Contribution to CASTIEL 2 *D5.8 – CI/CD Platform*: in order for CASTIEL 2 to define a common CI/CD platform for the EuroHPC systems, EXCELLERAT P2 provided inputs on: i) applications chosen for CI/CD testing: ii) technical requirements specific to CI/CD; iii) an outline of the planned roadmap for testing and deployment on EuroHPC systems. We also added experience reports on the applications currently deployed or planned to be deployed (via CI/CD) on EuroHPC systems, as well as any requirements and hurdles encountered.

3.2 Further collaboration with the ecosystem

3.2.1 Definition and Outlook

The collaboration ecosystem of EXCELLERAT P2, as a Centre of Excellence providing complete large scale to exascale simulation workflows for engineering applications, is built around the promotion of strategic partnerships and knowledge exchange between the various stakeholders as summarised in Figure 4. More details have been described in D7.5 *Collaboration Plan with definition of common objectives and activities including milestones* [16].

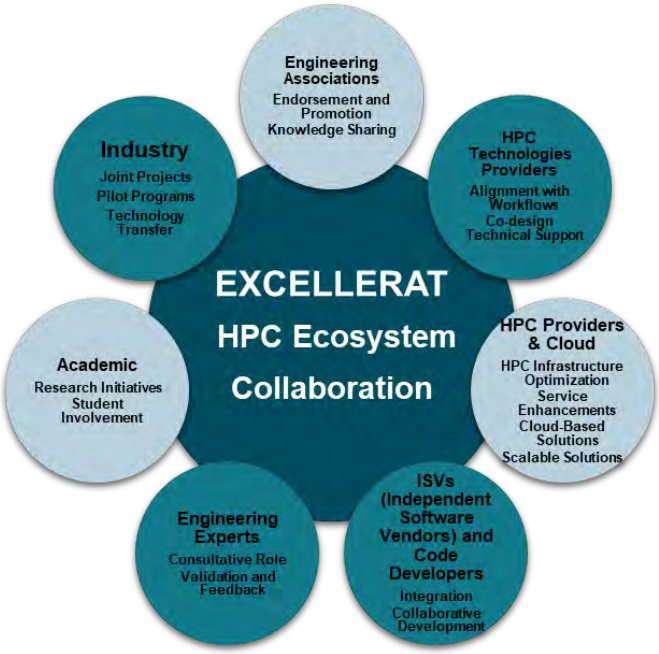

Figure 4: EXCELLERAT HPC Ecosystem Collaboration

This collaborative ecosystem promotes exchanging knowledge, expertise, and resources among stakeholders from various sectors. It leverages the strengths of each group to advance the development and application of exascale simulation workflows in engineering. Ultimately, this will drive innovation, improve efficiency, and solve complex real-world problems.

To understand stakeholders' activities, pains, and gains related to the EXCELLERAT Centre of Excellence, a survey was conducted with existing Interest Groups members in EXCELLERAT P2. Details are available in Annex 1: Survey Interest Groups Members EXCELLERAT P1. Further surveys with CASTIEL 2 and EuroCC 2 will be done and reported in the upcoming D7.3.

The results of these surveys will help to gain a better understanding of the expectations of these stakeholders and to be able to provide them with services, products, tools, contacts, and subjects for collaborative projects to meet their respective needs.

3.2.2 Main objectives and collaboration activities

The first objective in terms of collaboration is creating a strong network with projects and initiatives targeted to computational science research communities. During EXCELLERAT P1, a range of local, national, and European research and innovation activities were catalogued,

highlighting topics and activities relevant for EXCELLERAT [17]. The link between these activities and EXCELLERAT is important because collaboration with these players and initiatives can improve the performance of various industries, provide a competitive advantage through faster problem solving and cost reduction, enable complex engineering problems to be solved and foster technological innovation through the cross-pollination of ideas. The interlinked research and innovation activities were updated together with the consortium partners to reflect the developments performed in EXCELLERAT P2. This information will continuously be updated on a regular annual basis, together with the individual collaborations developed by the consortium partners, which were monitored and listed during EXCELLERAT P1 in order to:

- Have an individual collaboration overview and cover details such as projects undertaken, technological advancements, software developments, joint research activities, and any novel methodologies or tools created to develop especially the EXCELLERAT products and services portfolio.
- Disseminate and communicate among stakeholders from this HPC ecosystem through presentations, publications, and perhaps workshops or conferences to showcase the achievements and facilitate knowledge sharing.

During the Kick-off Meeting organised for EuroCC 2 and CASTIEL 2, a concept of speed dating with CoEs and NCCs, wishes, needs and synergies were discussed. In addition, CASTIEL 2 regularly offers a coffee break format for groups of representatives from NCCs and CoEs, which EXCELLERAT P2 regularly participates in. The results of these various discussions have enabled us to set up a number of workshop concepts to address the following topics:

Concepts for future technical workshops between CoEs:

- **Workshop concepts about pre- and post-processing** from simulation workflow between EXCELLERAT P2, HiDALGO2, ChEESE-2P, CEEC, Raise, and Max, allowing participants to gain insights into pre- and post-processing in simulation workflows while exploring collaboration opportunities in the field of data analytics, data management, machine learning, artificial intelligence, modelling, and visualisation.
- **Workshop concept about potential scalability improvement with MultiXscale and EXCELLERAT P2, other CoEs:** A workshop between these Centres of Excellence could focus on potential scalability and meshing improvements for pre and exascale-level simulations allowing participants to gain insights into this field, while exploring collaboration opportunities in these critical areas. This workshop should emphasise the importance of optimising simulations for high-performance computing.

Sustainability workshop concept for KERs owners from CoEs:

A workshop concept together with the Horizon Results Booster (HRB) [18] focuses on sustainability collaboration and is designed to inform other Centres of Excellence about the successful experience of EXCELLERAT with the Horizon Results Booster program, share insights from the collaboration with EXCELLERAT, and empower participants to make the most of HRB's services for their research and innovation initiatives. This kind of collaboration can foster the Innovation Management from each Centre of Excellence like an interactive and collaborative environment for knowledge sharing and networking, especially with the NCCs and their own stakeholders in the HPC Cloud ecosystem.

Workshop concept with NCCs about Data Management and Data Security:

A workshop focusing on data management, especially within the context of the EXCELLERAT Data Management service and the support of the project partner SSC, can be highly beneficial for SMEs looking to streamline their data handling processes in engineering applications and HPC. Data security is one of the critical aspects of this workshop allowing participants to gain insights into data management, security, and automation while exploring collaboration opportunities in these critical areas. It also emphasises the unique value provided by EXCELLERAT Data Management products and services and the importance of data security in engineering and HPC applications.

It is likely that several workshops with similar concepts could be organised during the project on topics such as the importance and benefits of having a co-design strategy, and the advantages of exploiting the data assets created during this project. In addition, following the results of the survey among Interest Group members, (see Annex 1: Survey Interest Groups Members EXCELLERAT P1), a workshop on the subject of visualisation can be planned.

Industry Academic Collaboration Concept (IAC Concept):

In the context of EXCELLERAT, collaboration between industry and academia can enhance the development of engineering simulation workflows and HPC solutions at the pre- and exascale levels by ensuring that the advancements made are not only cutting-edge scientifically but also applicable in real-world industrial scenarios. This collaboration serves as a bridge between theoretical advancements and their application in various industrial sectors, fostering innovation and progress. Therefore, a preliminary list of conferences and trade shows (see Annex 2: Industrial Exhibitions & Conferences related to EXCELLERAT Activities) focusing on the industrial sectors of mobility and energy has been drawn up in order to make contact with the organisers of these conferences and trade shows and to promote this concept, enabling a Centre of Excellence like EXCELLERAT to participate in these events with moderate investment, given that its budget does not currently allow it to participate in this type of event.

For the time being, a first trial has been carried out with the Automobile Testing show, and this concept proposal is being discussed with the organising CEO. Another possibility for participating in these events is to encourage the consortium's partners, through the local and national associations they are members of, to present the EXCELLERAT Centre of Excellence, its products and services during such events, and to use this opportunity to find potential users and collaborators.

The second objective for collaboration is to support the key exploitable results' owners in developing collaborations with potential stakeholders like collaborators and/or earlier adopters. As a first step and in order to meet this goal, during this reporting period, the EXCELLERAT P1 KERs were reviewed with the consortium's technical partners by WP6 (see D6.6 *Final Report on Business Development and Sustainability Strategy* [19]). In partnership with Horizon Results Booster (HRB), EXCELLERAT P1 has supported strategic exploitation developed by its KER owners, enabling them in the medium and long-term to develop products and services that will be offered on the market in the future. To achieve this, it is important to focus on and establish a collaborative strategy to find collaborators and early adopters who will enable and help develop the technology readiness of products and services. These strategic exploitations of EXCELLRAT P1 will be regularly updated during the project. In addition, strategic exploitations of the new EXCELLERAT P2 KERs will be developed by the KER owners with the support of the WP6 and WP1 teams. More detailed information will be provided in the next WP6 deliverable D6.2 *Business Development and Planning*, which is due in M16.

One of the medium or long-term objectives will then be to use the Horizon Results Platform services to support KERs' owners more in finding collaborators and/or earlier adopters who will enable them to continue to develop the technology readiness level of their products and services so that they can be offered on the market.

The third major objective for collaboration is managing the activities with the Interest Groups of EXCELLERAT P2. Building a community of Interest Groups for EXCELLERAT will offer several critical benefits:

- **Knowledge Sharing and Collaboration:** A community of Interest Groups fosters collaboration and knowledge sharing among different stakeholders involved in EXCELLERAT. It allows for the exchange of ideas, best practices, tools, and innovations, ultimately leading to a richer pool of expertise that benefits all participants.
- **Networking Opportunities:** Such a community provides a platform for networking, enabling researchers, engineers, code and software developers, HPC providers, HPC Technologies Providers and industry experts to connect, potentially leading to new collaborations, joint ventures, or partnerships. It can be instrumental in broadening professional networks and discovering new opportunities for collaboration.
- **Resource Optimisation:** By bringing together diverse EXCELLERAT Stakeholders, a community of Interest Groups can help in resource optimisation. It allows for the pooling of resources, skills, and expertise, thereby maximizing the impact of the consortium's efforts.
- **Dissemination of Information:** A community of Interest Groups serves as a channel for disseminating information about the latest advancements, breakthroughs, and findings within the EXCELLERAT project. This dissemination could occur through workshops, webinars, publications, social media, podcasts, videos, flyers, newsletters, etc., and other forms of communication, ensuring that valuable insights reach a wider audience.
- **Feedback and Evaluation:** A community of Interest Groups can provide a valuable feedback loop. It enables stakeholders to offer input, suggestions, and critiques on the ongoing work within the consortium. This feedback loop is vital for continuous improvement, enabling the consortium to address issues, refine strategies, services, and product portfolios, and adapt to the evolving needs of the mobility and energy fields.
- **Influence and Advocacy:** A unified community can have a more substantial collective voice. This can be instrumental in advocating for the importance of the research and innovations being developed within the consortium, potentially attracting further support, funding, or industry adoption.
- **Promotion and Visibility:** A community of Interest Groups helps to promote the achievements and advancements made by EXCELLERAT. It enhances visibility within the scientific, engineering, software, code, HPC, and industry communities, showcasing the impact and relevance of the consortium's work.

In this reporting period, a short general survey was sent to all currently registered Interest Groups members from EXCELLERAT P1. This survey aimed to provide EXCELLERAT with structured feedback from its existing Interest Groups members, helping the project to understand their backgrounds, challenges, and expectations more comprehensively. This information can guide EXCELLERAT in tailoring its services and resources to better serve the needs of its diverse member base. The Interest Groups originally had 20 members, including 4 ISVs, Code developers, 2 representatives from industry, 6 academics, and 8 technology providers.

Following this survey, the conditions of certain members have changed: a company of STAI experts no longer exists and has been removed from the EXCELLERAT website [20], and 4 contacts are no longer active in their company or institution, so this survey was carried out with 15 remaining members. Of these 15 members, and despite a response time of more than two weeks with two gentle calls, only six members were able to answer the questions. The results and its first conclusions will be outlined in the following paragraphs. More details are available in Annex 1: Survey Interest Groups Members EXCELLERAT P1. The results of the questionnaire emphasise several key points about the existing members of the Interest Groups:

- **Industrial Sectors:** The majority of members hail from the automotive and aerospace industries. They share a common interest in the challenges faced by these sectors, particularly focusing on societal and environmental concerns like reducing energy consumption and CO_2 levels.
- **Specific Interests:** Members are particularly keen on networking, information exchange, and collaborating on pilot projects within the EXCELLERAT Centre of Excellence. This collaboration predominantly aims to bridge the gap between academia and industry.
- **Primary Objectives:** Their main goals revolve around the development of user-friendly tools that facilitate a reduction in simulation time and costs by utilising HPC. Additionally, they seek ways to better manage data and to enhance modelling and visualisation processes. These improvements are intended to optimise the final products for the market.

Given that only 40% of the existing Interest Groups members responded to this questionnaire, an analysis should be carried out to determine the reasons for this. In order to carry out this analysis, a list of questions for an individual interview with these members has been prepared. These questions are designed to gather valuable insights into the specific needs, challenges, and objectives of EXCELLERAT existing and potential members, whether they are industry companies, ISVs, academics, engineering experts, HPC providers, or HPC technology providers. By understanding their perspectives, EXCELLERAT can tailor its services, collaborations, and resources to better serve the interests of its members and foster a thriving community of collaborators and early adopters. Certain actions are planned for the next few months until the project end in order to consolidate the Interest Groups, as described in more detail in Annex 3: Activities Planned for Interest Groups.

4 Community Building

4.1 Reminder of priorities regarding stakeholder categories and events

Using the assessment provided by the EXCELLERAT P2 partners in January 2023, the stakeholder map updated during the first months of EXCELLERAT P2 shows the summary of the priority targets of EXCELLERAT P2 (see Figure 5 below):

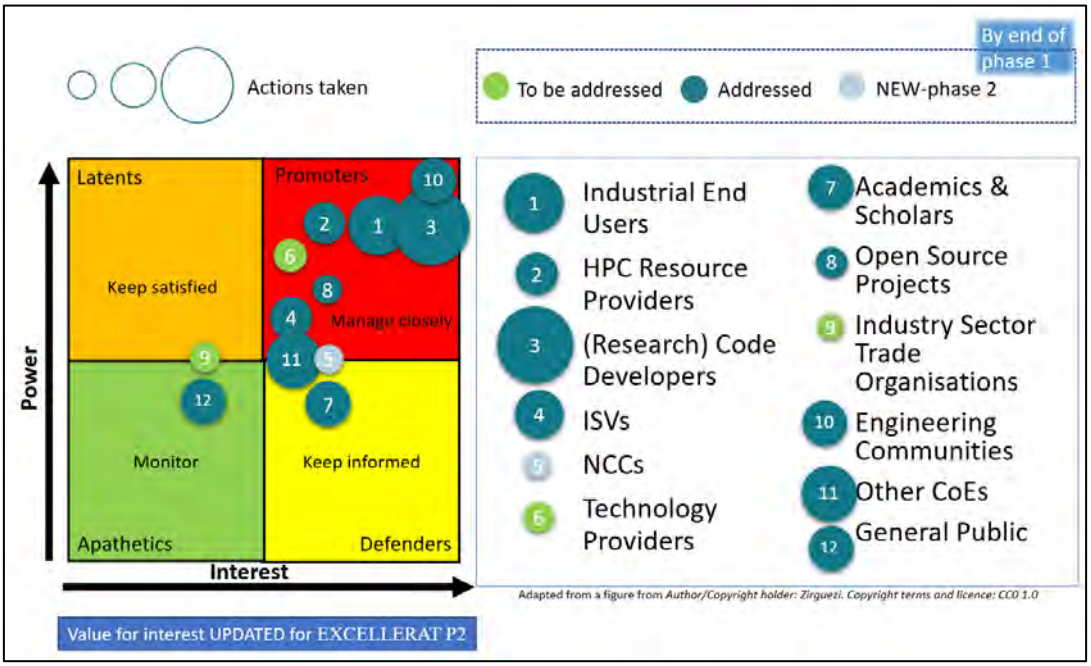

Figure 5: Updated map of the stakeholder categories of interest for EXCELLERAT P2

As a reminder of what was described in detail in deliverable D7.1, looking at the graph updated during the first months of EXCELLERAT-2, it appeared that the categories that are priority for EXCELLERAT P2 and that still need to be further addressed are (in decreasing order of priority):

- **Engineering communities**
- **External HPC Resources Providers**
- **Industrial End Users**
- Open-source projects
- ISVs (actual competition for the project, so to be kept for later on in the project)

In addition, the **National Competence Centres** (NCCs) are new players in the ecosystem and the EXCELLERAT P2 network will have to interact with them (along with the other **CoEs**, via the CASTIEL 2 project) and the category **Technology providers** must be met too, as there were no interactions with them in phase 1. Therefore, EXCELLERAT P2 will plan relevant actions towards these specific categories of stakeholders.

4.2 First outcomes and updated plans

Regarding the **External HPC Resource Providers**, EXCELLERAT P2 contacted the Très Grand Centre de Calcul (TGCC, French HPC provider), LUMI and the Jülich Supercomputing Center to establish an interaction with them during Spring 2023. The discussions with TGCC resulted in the agreement to follow-up at a later point in time for potential specific interactions between TGCC and EXCELLERAT P2. LUMI and the Jülich Supercomputing Center were contacted through various channels (emails from different people) including some direct discussions at ISC2023, but these first attempts to interact were not fruitful until early October 2023. LUMI was re-contacted at the end of one of their webinars for ETP4HPC. Interaction has taken place in November 2023 in order to find out how the interaction with EXCELLERAT P2 could be fruitful for both parties. Further attempts to foster common discussions with the Jülich Supercomputing Center will be done in early 2024 if some kind of interaction could still make sense.

For **Open-source projects**, EXCELLERAT P2 already had continuous interaction with dedicated groups and also participated in events with this community like the OpenFOAM workshop held in Stuttgart at HLRS in September 2023 (as described in section 3.1.4).

ISVs are actually competitors, so interactions will be limited, as part of the community building.

Technology providers: TERATEC will check in early 2024 if there could be some interaction with hardware providers like SiPearl (which is part of EXCELLERAT P2, so an internal webinar or workshop could be particularly interesting to foster interactions, linked to industry topics within EXCELLERAT P2), ATOS or Intel as for some of them the current societal context in France was particular uncertain during Spring-Summer 2023 (i.e., the ATOS company is being re-structured, and Intel is also having some social evolutions), hence contact people were not easily or much available until end of 2023.

Industrial end users: EXCELLERAT P2 also interacted with Kitware, a French company developing services around the open-source code Paraview: T7.4 organised a webinar on July 3rd 2023 for Kitware to present their services to the EXCELLERAT P2 partners and elaborate potential collaboration opportunities with them, for instance regarding the EXCELLERAT P2 Service Portal. This company was strongly interested in interacting with EXCELLERAT P2 and open for collaboration. As the process of integrating partners or interacting with external stakeholders is currently being defined by the PMT, the collaboration with Kitware was put on hold after the webinar. As soon as the process is clear, this action will be taken up again.

Then, Airbus for instance could be targeted with the support of the CERFACS or HLRS/SICOS/DLR to launch interactions. However, guidelines about what is possible for external stakeholders through the services portal (i.e. regarding service offers from external stakeholders on the portal) were pending before moving forward with interactions with industry end users, as they need to understand what could be the added value for them to interact with EXCELLERAT P2.

Internal interactions, among the EXCELLERAT P2 partners: Following the survey led by CERFACS for WP2 about the TRLs among the EXCELLERAT P2 partners during summer 2023, the T7.4 team analysed their results and after discussion with CERFACS, decided to co-organise with CERFACS a brainstorming session among CERFASC, RTWH, HLRS, BSC to discuss the notion of TRL and what it implies for the EXCELLERAT P2 partners, particularly

to plan to interact with industry stakeholders. This meeting took place on October 16th 2023. Potentially there could be some follow-up actions with other EXCELLERAT P2 partners or with external stakeholders to study more in-depth this important topic.

It can be noted that **engineering communities** were already reached during phase 1 with a lack of success. Additionally, the competition is strong in this case, as there are already many well-known usual providers. Therefore, this target is postponed to a later stage of the project.

An overview of past and planned events can be found in Table 10 below. Other events might be scheduled later on to support the community building activities.

Time	Event name/URL	Type of event	Status
February 2023	Kick-off Meeting EuroCC 2/CASTIEL 2	Participation/Representation	Past
March 2023	EuroHPC Summit 2023	Conference Poster	Past
March 2023	AIAA 2023 IEEE Aerospace Conference	Conference Participation	Past
April 2023	CoE/NCC Kick-off Workshop	Participation/Representation	Past
April 2023	Numerical methods for Large Eddy Simulation 2023	Training Event	Past
May 2023	ISC High Performance 2023	Booth Participation (EuroHPC JU)	Past
May 2023	ISC High Performance 2023	Booth Presentation (EuroHPC JU)	Past
May 2023	ParCFD2023, Presentation: "COMPRESSIBLE TURBULENT FLOWS AT THE EXASCALE: Streams-2 Design and Evaluation"	Online Conference Presentation	Past
June 2023	From Machine Learning to Deep Learning: A concise introduction	Training Event	Past
June 2023	Data analytics for engineering data using machine learning	Training Event	Past
June 2023	14. InnovationForum Smarte Technologien & Systeme	Conference Presentation	Past
June 2023	Platform for Advanced Scientific Computing (PASC) Conference	Conference Participation	Past
July 2023	Kitware webinar	External industry stakeholder webinar	Past
August 2023	Europar 2023	Conference Presentation	Past
September 2023	OpenFOAM Workshop with ExaFOAM and HiDALGO 2	Collaboration Workshop	Past
September 2023	HPCSIM Frontiers of High-Performance Computing in Modeling and Simulation	Conference Presentation	Past

September 2023	SOR 23, International Symposium on Operations Research (Slovenia)	Conference Presentation	Past
September 2023	SOR 23, International Symposium on Operations Research (Slovenia)	Booth	Past
October 2023	Digital Innovation	Conference Presentation	Past
October 2023	Scientific Visualization with COVISE and Vistle	Training Event	Past
October 2023	MikroSystemTechnik Kongress	Conference Presentation	Past
October 2023	TRL internal discussion	Internal technical brainstorming discussion	Past
November 2023	Day of the Slovenian Supercomputer Network	Conference Presentation	Past
November 2023	Workshop Uncertainty Quantification (HiDALGO2, CIRCE; SEAVEA)	Collaboration Workshop	Past
November 2023	Numerical methods for Large Eddy Simulation using AVBP	Training Event	Past
November 2023	Webinar "OpenFoam, the open source CFD alternative?"	Workshop Participation	Past
January 2024	eFlows4HPC Workshop	Collaboration Workshop	Planned
March 2024	EuroHPC Summit 2024	Workshop Participation	Planned
May 2024	ISC High Performance 2024	Booth Participation (CASTIEL 2)	Planned

Table 10: Past and planned EXCELLERAT P2 events

5 Conclusion

This deliverable provides a comprehensive overview of the communication and dissemination activities undertaking in M1-12 of EXCELLERAT P2. By targeting specific stakeholders, utilising suitable channels and formats, and continuously monitoring performance, the strategy set in D7.1 is being implemented effectively in order to engage with the stakeholders and achieve the objectives of each target audience. Several new communication materials have been developed in line with the brand identity of EXCELLERAT to ensure consistency throughout the project, maintaining recognisability and enhancing communication efforts. The website has been updated to be in line with the project progress. EXCELLERAT P2's social media channels have been maintained with engaging campaigns, such as the code introduction and trivia quiz, with impressive engagement rates. Several blog articles, newsletter issues, and podcast episodes have been produced and released in this reporting period. The KPI status is on track overall. The first scientific publication was released and numerous events with contribution (and partly major involvement/organisation efforts) on behalf of EXCELLERAT P2 have taken place. Video content is being planned for and the EXCELLERAT P1 explanatory video was updated to be in line with the changes in the current project phase.

Section 3 provided an overview of the collaboration activities already implemented together with CASTIEL 2. The system coverage to the EuroHPC supercomputers shows already a good degree of development. As a matter of fact, six codes are already in a Productive/Work in Progress status, covering six systems' both CPU and GPU partitions. Other activities like Code of the Month and CI/CD platform integration will be further expanded in 2024.

The EXCELLERAT P2 ecosystem offers multiple opportunities to develop collaborations with different stakeholders, including computational science research communities, industry-academic collaboration, and managing Interest Groups. The latter serves as a platform for knowledge sharing, networking, and optimising resources. Recent surveys indicate strong interest in bridging academia-industry gaps and improving simulation efficiency. Looking forward, EXCELLERAT is committed to developing its Interest Groups structure, emphasising clear objectives, defined terms and conditions, and a collaborative platform. Continuous efforts will be made to adapt strategies based on stakeholder feedback, ensuring responsiveness to evolving community needs.

During the first half year of EXCELLERAT P2, to strategically orient (or re-orient) the priority in terms of community building efforts, surveys were conducted among the project partners at the Kick-Off Meeting in January 2023. Afterwards, the results of these surveys (see details in D7.1) were used to understand the priority of the stakeholder categories or to identify the new categories; and to plan the first relevant actions towards the prioritised stakeholders. After month 6, EXCELLERAT P2 actively initiated and organised the first interactions with several stakeholders through various channels and means, including e.g. a webinar and a brainstorming session. Several events took place and many more are planned for the next months and years in order to reach the prioritised stakeholder categories. During the next months of the project, the community building strategy will continuously be adapted to the responsiveness of stakeholders, the needs of the EXCELLERAT P2 partners, the potential interest from various stakeholders, always with the goal of keeping and nourishing meaningful interactions with relevant partners or entities while expanding the CoE EXCELLERAT's network.

6 References

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Annex 1: Survey Interest Groups Members EXCELLERAT P1

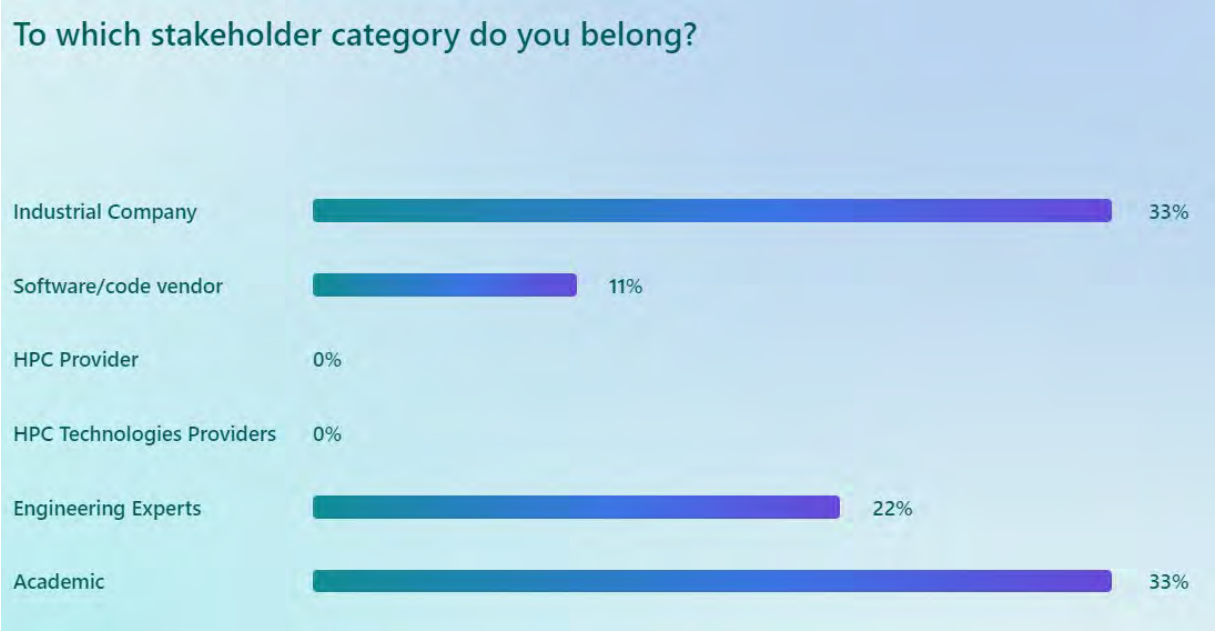

Figure 6: Stakeholders Category

Although the technology providers group is the largest, none of these companies responded, this is due to the fact that most of the changes in contacts mentioned above took place in this group.

Figure 7: Industrial Sector

The fact that the majority is active in the automotive, energy and aerospace sectors is an advantage for EXCELLERAT P2 consortium given that the subjects of the use cases are focused on mobility and energy challenges. The latter should be interested in these active members.

Figure 8: Role of Interest Groups member

The fact that 50% of the contacts of this Interest Group are Executive Managers can help EXCELLERAT to develop its collaboration development strategy with these members given that these managers will be able to directly indicate their vision in relation to EXCELLERAT and have them executed according to the services and products offered by EXCELLERAT responding to these visions.

Figure 9: Motivation for collaborating with EXCELLERAT

Given that resources are limited this information allows us to prioritise certain actions for the further project runtime such as networking and dissemination.

Figure 10: Level of experience with pre- or exascale simulation workflow

More than 80% have limited or more experience with regard to EXCELLERAT's main activity regarding simulation workflow at pre and exascale level which could facilitate in the medium term the development of collaboration and/or the involvement of early adopters.

Figure 11: Challenges for Simulation Workflow applications

This information confirms that a workshop on data management is necessary. Therefore, it is planned for May 2024. But also, topics like visualisation, HPC resources, reducing the cost and time of simulations seem important topics to address. The second period will be reserved for planning the next actions, which will inform the members of Interest Groups on these subjects.

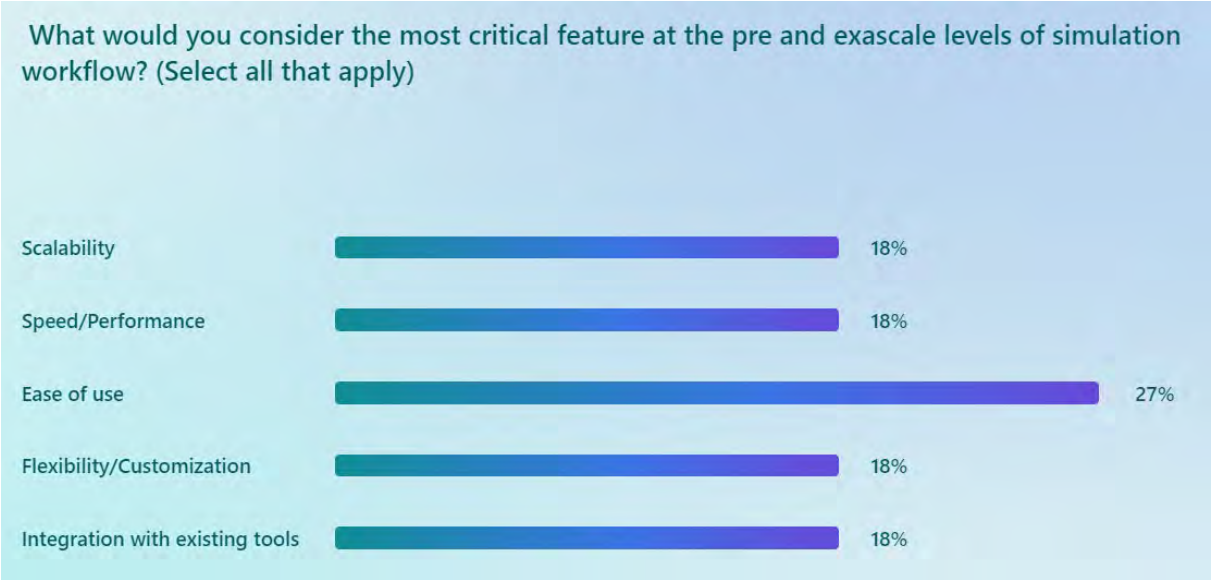

Figure 12: Critical Feature at the pre- and exascale Simulation Workflow

The main result is “Ease of Use”, which confirms the main objective of EXCELLERAT to develop tools that help carry out simulation workflows for engineering applications. The development of these tools will be directly linked to their level of technology readiness, which must be maximised in order to be able to offer them on the market. Of course, the other subjects must also be taken into consideration and be discussed with the technical management to define the next actions.

Figure 13: Success Criteria for Simulation Workflow

This subject accuracy of results must be taken into consideration and must be discussed with technical project management to define the main parameters which have an influence on the accuracy of results and plan the necessary actions in order to achieve this main objective.

Figure 14: Dissemination and communication channels

Given that the current members of the Interest Group have expressed a priority need for networking and information exchange, these results allow us to better target the different channels and to choose those that are more often used such as scientific journals, seminars, conferences, online forums, and communities.

Figure 15: Compliance Requirements and Industrial Standards

This information seems reasonably good to know that for the moment no or less industrial standards or compliance requirements can have an impact on simulation projects at pre and

exascale levels and can promote the development of EXCELLERAT services and products in order to be offered more quickly on the market.

Figure 16: Collaborative Opportunities

This result confirms the planning and development of the IAC Industry Academic Collaboration activity, several organisers of exhibitions and conferences seem interested in the development of this concept. Pilot projects and collaborative projects should be considered in the coming periods. To do this, the operating conditions must be defined.

Annex 2: Industrial Exhibitions & Conferences related to EXCELLERAT Activities

Event	Description	Industrial sector	Date	Place	Type	Interaction	Homepage
Automotive Testing Expo	Leading event for the technologies and services in ADAS and autonomous vehicle testing, electric and hybrid powertrain testing, battery and range testing, EMI and NVH test and analysis and the full spectrum of test and validation technologies for full-vehicle, component and systems development	Mobility	04-06.06.2024	Stuttgart, Germany	Conference/ Exhibition	yearly	https://www.testing-expo.com/europe/en/
ILA Berlin Air Show	This biennial event is held in Berlin, Germany, and is one of the largest aerospace exhibitions in Europe. It attracts a broad range of exhibitors from the aerospace and aviation industry, including aircraft manufacturers, suppliers, and service providers.	Mobility	05-09.06.2024	Berlin, Germany	Conference/ Exhibition	every 2 years	https://www.ila-berlin.de/de
Paris Air Show	This biennial event is one of the oldest and largest air shows in the world, and is held at Le Bourget Airport in Paris, France. It attracts a wide range of exhibitors from the aerospace and aviation industry, including major aircraft manufacturers, airlines, and equipment suppliers.	Mobility	2025	Le Bourget, France	Conference/ Exhibition	every 2 years	https://parislebourget.bciaerospace.com/en/
WindEurope Conference & Exhibition	This is a major exhibition for the wind energy industry in Europe. It attracts professionals from across the wind energy value chain, including manufacturers, project developers, and policymakers	Energy	20-22.03.2024	Bilbao, Spain	Conference/ Exhibition	yearly	https://windeurope.org/annual2024/
Future of Fuel Cell Designs, E-Fuels & Hydrogen Propulsion	Fuel cell design, hydrogen propulsion, and e-fuels are essential components of the clean energy transition, offering solutions to combat climate change, reduce pollution, improve energy security, and promote sustainable development. Embracing these technologies is crucial to creating a greener, more sustainable, and resilient future.	Energy	08-09.10.2024	Stuttgart, Germany	Conference/ Exhibition	yearly	https://www.messe-stuttgart.de/hy-fcell/en/
Hydrogen World Expo	At the Hydrogen Technology Expo & Conference, take a closer look into the way that Hydrogen is changing the automotive, aviation, shipping, logistics, rail, and commercial vehicles industry.	Energy	23-24.10.2024	Hamburg, Germany	Conference/ Exhibition	Bi-annual	https://www.hydrogen-worldexpo.com/
World Nuclear Exhibition - WNE	The WNE is a biennial event that takes place in Paris, France. It is one of the largest exhibitions in the nuclear industry, with over 700 exhibitors and more than 20,000 visitors from around the world.	Energy	2025	Paris, France	Conference/ Exhibition	Bi-annual	

Electronica	is a biennial trade fair and exhibition for the electronics industry that takes place in Munich, Germany. The exhibition showcases the latest technological innovations and trends in electronic components, systems, applications, and solutions, and brings together a diverse group of industry professionals, including manufacturers, suppliers, distributors, engineers, designers, researchers, and technology enthusiasts	Manufacturing	12-15.11.2024	München, Germany	Conference/ Exhibition	Bi-annual	https://electronica.de/de/entdecken/messethemen/
NAFEMS DACH	NAFEM focuses on the practical application of numerical engineering simulation techniques such the Finite Element Method for Structural Analysis, Computational Fluid Dynamics, and Multibody Simulation. In addition to end users from all industry sectors, our stakeholders include technology providers, researchers, and academics	Simulation	10-12.06.2024	Bamberg, Germany	Conference/ Exhibition	yearly	https://www.nafems.org/events/nafems/2024/nafems-dach-regionalkonferenz-2024/

Annex 3: Activities Planned for Interest Groups

Activity Plan Number	Milestone title	Description	Action	Due Date (in months)
AP1	Formation and Definition of Objectives	Establish clear objectives for the community per stakeholder, defining the purpose, target audience, and expected outcomes	Objectives have been defined and are in internal review process.	M16
AP2	Develop a mission statement and guidelines	for the community's function and contribution to EXCELLERAT's goals	A current presentation of the Centre of Excellence EXCELLERAT is ongoing, in order to present it to the existing and potential Interest Groups members.	M16
AP3	Define onboarding terms and conditions	to set a clear framework for potential Interest Groups members	Action 1: Different templates have been prepared for preliminary registration, survey, and interview questions for final registration. Action 2: General Terms and Conditions have been partially completed together with the Executive Committee Management, these will be ready before M30 and reported in D7.3	M16
AP4	Define policy and collaboration agreement contract	to secure all data sharing inside the Interest Groups community, especially against non-European potential Interest Groups members	A first draft of the Collaboration agreement is in internal review and will be reported in D7.3.	M16
AP5	Outreach and Recruitment	Identify and invite key stakeholders from EXCELLERAT who potential early adopters or collaborators are	A list of potential Interest Groups members (collaborators and early adaptors) will be launched in the second period until M30 and reported in D7.3.	M30
AP6	Develop an outreach strategy using various channels (e.g., emails, social media, flyers, targeted events)	to attract participants interested in collaboration and early adoption of EXCELLERAT's innovations	An e-flyer has been developed and is in internal review process. This one will be presented and reported in D7.3	M16
AP7	Community Platform Establishment	Set up a dedicated platform (online forums, collaboration tools, or a digital workspace) for community interaction, information sharing, and collaboration. Consider using platforms that facilitate discussions, document sharing, and project management	The strategy should be discussed with WP5 Task 5.1 until M30.	M30
AP8	Regular Engagement Activities	Organise regular events, such as webinars, workshops, or forums, to discuss EXCELLERAT's progress, new developments, and opportunities for collaboration. Encourage active participation and	according to the results of surveys, interviews a list of potential workshops, and training courses will be proposed to the existing and potential Interest Groups members until M30.	

		feedback from community members.		
AP9	Information Dissemination and Knowledge Sharing	Implement a strategy for disseminating information, including research findings, publications, and breakthroughs within the consortium. Ensure this information is accessible to the community of Interest Groups for early adoption or collaborative purposes	This dissemination strategy was already implemented during EXCELLERAT P1 and should be reviewed with WP7 according to the need analysis from the existing and potential Interest Groups members.	M30
AP10	Project Showcases and Pilot Programs	Host project showcases where early-stage developments or pilot programs are presented to the community for feedback and potential collaboration opportunities.	This should be discussed with the Technical Project Management to establish a program e.g., Use Cases Workshop until M30, which will then be updated until the end of the project runtime.	M30
AP11	Establishment of Collaborative Projects	Facilitate the formation of collaborative projects or working groups within the community, encouraging interdisciplinary and cross-sector collaboration. Support these projects with resources and guidance	This should be considered with the Technical Project Management and WP6 Task 6.3, Task 6.4, and Task 6.5 during the elaboration and support of the exploitation strategies and individual exploitation plan from the technical consortium partners throughout the project.	M30
AP12	Feedback Collection and Analysis	Regularly gather feedback from the community regarding their experiences, needs, and suggestions for improvement. Analyse this feedback to adapt strategies and improve community engagement	This analysis will be done regularly during the project through surveys, interviews, training, workshops feedback, etc., and will be reported in different deliverables from WP5, WP6 and WP7.	M48
AP13	Evaluation of Impact and Success Metrics	Define key performance indicators (KPIs) and metrics to evaluate the community's impact, such as the number of collaborations initiated, successful partnerships formed, or innovations adopted by industry partners.	Those KPIs will be defined by M30 and will be reported in the D7.3.	M16
AP14	Long-Term Sustainability Plan	Develop a sustainability plan outlining how the community will be maintained, funded, and sustained beyond the initial stages, ensuring its continued relevance and effectiveness	This action will be completed by WP6 through the sustainability plan of the Centre of Excellence. The target will be to convince the existing and potential Interest Group members to be an official member from the EXCELLERAT community.	M48
AP15	Recognition and Rewards	Recognise active contributors and successful collaborative initiatives within the community. Acknowledge and reward outstanding participation or achievements to encourage continued engagement	A strategy will be discussed internally.	M48