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D3.2 COMMUNITY BUILDING AND COMMUNICATION STRATEGY REPORT V1

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Abstract	This deliverable reports the activities during the first reporting period (T3.1, T3.2, T3.3 and T3.4), and provides and provides and updated plan for the rest of the project
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Keywords	IoT, Edge, Cloud, EUCloudEdgeIoT.eu, Computing Continuum
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* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

DATA: Data sets, microdata, etc

DMP: Data management plan

ETHICS: Deliverables related to ethics issues.

SECURITY: Deliverables related to security issues

OTHER: Software, technical diagram, algorithms, models, etc.





EXECUTIVE SUMMARY

Deliverable 3.2, "Community Building and Community Strategy Report v1," details the ecosystem-building accomplishments made during Open Continuum WP3 activities and lists the activities planned through the project's conclusion.

The report focuses on the initiatives made by WP3 to carry out its goals, which are to:

- Create a vibrant and disruptive framework that embraces and engages a large community of target groups and players in Europe and beyond.
- Run extensive dissemination and communication to help amplify the project and community efforts through a rich set of tools and actions for awareness creation and engagement of top-notch players.
- Organise events to promote the Computing Continuum community effort overall and embrace related initiatives by coordinating and fostering know-how exchange and networking.
- Engage key experts in the area of computing continuum to provide advice to the project and contribute to events.
- Raise awareness and strengthen collaboration between research and industry on topics for the Cloud-Edge-IoT community such as: interoperability, trustworthiness, architectures for data spaces, cognitive computing continuum.

WP3 collaborated with WP1, WP2, and WP4 on its work in order to pool their respective efforts.

It goes into detail about the plans that will be implemented after the project's current phase.

It is important to note that this deliverable only provides results until July 27, 2023. As a result, August has been excluded from this deliverable and will be included in the next iteration (deliverable 3.3).





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ABBREVIATIONS

EUCEI	EUCloudEdgeIoT
CEI	Cloud, Edge and IoT
ΙοΤ	Internet of Things
WP	Work Package
TF	Task Force
CSA	Coordination and Support Action
RIA	Research and Innovation Action





1 INTRODUCTION

1.1 ABOUT

1.1.1 European Cloud Computing Community

The European Commission, within its Digital Decade¹ policy programme, identified four cardinal points as objectives to reach within the year 2030 with the overarching goal of ensuring European digital sovereignty: (1) digital skills, (2) Secure and Sustainable Digital Infrastructures; (3) Business Digital Transformation; and (4) Digitalization of Public Services. The Digital Compass places an emphasis on systemic, challenging goals for 2030 that are both clear and measurable (such as the deployment of 10,000 climate neutral, highly secure edge nodes in the EU or the adoption of cloud computing by 75% of European businesses).

In Europe, there are numerous ongoing cloud computing initiatives that are all working toward the same objective but using different strategies and involving various industry sectors. As a result, having a hub of information is essential. In order to close this knowledge gap in the cloud, edge, and IoT communities, Open Continuum was created. Assisting computing continuum stakeholders in recognizing and resolving the conceptual, practical, and social issues that are raised by such targets is the aim of Open Continuum.

1.1.2 The European Cloud, Edge and IoT Continuum Joint Initiative with Unlock CEI

The Open Continuum and Unlock-CEI projects created the umbrella initiative known as the European Cloud, Edge and IoT Continuum Initiative (EUCloudEdgeIoT.eu or EUCEI) to coordinate and support the European Cloud, Edge and IoT continuum.

The objective of EUCloudEdgeIoT.eu is to understand the supply and demand value chains in Europe in order to fully realise the potential of these transformative technologies. In line with expectations, Open Continuum is promoting an open ecosystem for strategic autonomy and interoperability in Europe along the entire computing continuum on the supply side. On the demand side, Unlock-CEI is assisting in accelerating the deployment of the Cloud-Edge-IoT (CEI) computing continuum. The EUCEI initiative will restore European competitiveness by collaborating to build a seamless, secure, sovereign, and long-lasting internet infrastructure.

For the next generation of Cloud-Edge-IoT, EUCEI is bringing an inclusive vision that supports concrete recommendations and solutions for academics, business, and policymakers. The initiative aims to lead its stakeholders toward defining an integrated, open ecosystem based on open source, open standards, and the seamless and efficient blending of cloud, IoT, and edge through effective partnerships.



¹ European Commission. Europe's Digital Decade: digital targets for 2030. Available at https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en





FIGURE 1: EUCLOUDEDGEIOT COORDINATION AND SUPPORT ACTIONS

1.1.3 Dissemination and Communication Objectives, TF6 and Cooperation with Unlock-CEI CSA

The Open Continuum dissemination and communication activities are overarching throughout the whole duration of the project. They aim to ensure the development of an open ecosystem for European strategic autonomy and interoperability across the Cloud, Edge, and IoT domains, with a specific focus on the supply side of the computing continuum.



FIGURE 2: OPEN CONTINUUM'S APPROACH

Through the European Cloud Edge & IoT Continuum initiative, Open Continuum's main mission is to ensure the development of a vibrant and disruptive supply-side





community as an open, inclusive, sustainable, and dynamic ecosystem that will lead to an increased and durable impact within Horizon Europe. Through targeted activities coordinated across all Work Packages and led by WP3, Open Continuum will reach and engage different target groups, including industry, researchers (both corporate and academic), SMEs, innovators, and users' communities in Europe and possibly beyond.

This breaks down into the following objectives:

- Create a vibrant and disruptive framework engaging large target groups in Europe and beyond.
- Run extensive dissemination and communication to help amplify the project and community efforts through a rich set of tools and actions for awareness creation and engagement of top-notch players.
- Organise events to promote the computing continuum community efforts overall and embrace related initiatives by coordinating and fostering know-how exchange and networking.
- Engage key computing continuum experts to advise the project and contribute to events.
- Strengthen awareness and collaboration between research and industry on key Cloud-Edge-IoT community topics such as interoperability, trustworthiness, architectures for data spaces, and cognitive continuum computing.

Open Continuum collaborates with the Unlock CEI CSA towards these goals through the "Communications" Task Force. Each project tries to have equal efforts on all EUCEI channels and whenever possible communicates as one (EUCloudEdgeIoT.eu). Throughout this document, the responsibilities of each project will be described whenever possible.

More details on the dissemination and communication strategy for EUCEI can be read on D3.1" Community Building and Communication Strategy and Plan".

1.2 STRUCTURE OF DELIVERABLE

This deliverable aims to summarise the Open Continuum project's dissemination and communication activities up to M12 and, in light of the findings, update the strategy in accordance. In order to achieve this, it is structured as follows:

- Section 1 Introduction: Provides an overview of the EUCloudEdgeloT initiative and how Open Continuum collaborates with Unlock CEI to achieve its goals, primarily in Task Force 6 "Communication."
- Section 2 Laying the Groundwork: Describes the tools and channels that were put in place to begin communicating, promoting, and disseminating EUCloudEdgeIoT and Open Continuum outputs.





- Section 3 Activities and Performance: Based on the groundwork established, this section aims to describe the dissemination and communication activities undertaken thus far, as well as the outcomes.
- Section 4 Key Performance Indicators (KPIs) and Strategy Updates: This section presents the project's key performance indicators in terms of communication, dissemination, and liaison with EU initiatives so far. Based on the outcomes, it describes the changes that must be made to the strategy in order to achieve them.
- Section 5 Conclusions: This section describes the main conclusions, recommendations, and next steps.

It is **important** to note that this deliverable only provides results until July 27, 2023. As a result, August has been excluded from this deliverable and will be included in the next iteration (deliverable 3.3).





2 LAYING THE GROUNDWORK

2.1 BRANDING AND COMMUNICATION KIT

Open Continuum has its own branding, which is only used in official deliverables like this one. Hence, Open Continuum's communication is mainly internal and comprises the deliverable (in Word) and presentation (in PowerPoint) templates.

For "public appearances," Open Continuum employs the EUCEI umbrella branding along with the project's tagline. However, in the vast majority of cases, Open Continuum only communicates as EUCEI.

The EUCEI brand identity has already been described in 3.1, so it will not be discussed in this deliverable.

2.2 COMMUNITY BUILDING

2.2.1 Communication Task Force (TF6)

The EUCloudEdgeIoT Task Force 6 "Communications," managed by both Open Continuum and Unlock CEI, was formed to amplify and orchestrate the communication efforts of the European-funded cloud, edge, meta-OS, and IoT communities.

The monthly meetings are open to all cloud, edge, meta-OS, open-source, and IoT project coordinators and their communication teams. During the monthly Communication Task Force meetings, each participant has the opportunity to share news and events, as well as foster project collaboration.

Section 3.1 will go into greater detail about this Task Force.

2.2.2 Joint Repository

To facilitate information exchange with the RIAs involved in TF6, Open Continuum created a folder in Google Drive that is already used to exchange files by the Unlock CEI and Open Continuum projects. The new folder is called "Joint Repository," and it is shared with all TF6 contacts.

2.3 CHANNELS

Below we briefly list all the communication channels created for EUCEI, since deliverable 3.1 already described them in detail. Section 3 of this document contains an in-depth analysis of each one's performance.

2.3.1 Website





The EUCloudEdgeIoT.eu website provides global access to the initiatives' news, updates, events, main materials, and reports (that have been approved for public dissemination), as well as the ability for external parties to express their interest in the initiative. The URL (Uniform Resource Locator) of the website was www.eucloudedgeiot.eu, which focused on the project's name. The domain.eu was chosen because it is relevant at the European level and is a project funded by the European Union.

The population of the platform and its monitoring (through Google Analytics) is a joint work of Open Continuum and Unlock CEI consortiums. However, Open Continuum takes a leading role in its development.

2.3.2 Social Media

Various social networks were established as marketing tools to promote the initiative's activities and outputs on a regular basis, while also encouraging a broader discussion on topics related to cloud, edge, and IoT activities. As a result, the European Cloud, Edge, And IoT Continuum established an active presence on the most popular social media channels, including Twitter, LinkedIn, and YouTube, all of which are linked to the project's website.

The platform's populating and monitoring are the joint efforts of the Open Continuum and Unlock CEI consortiums. Open Continuum takes the lead in the daily engagement activities of sharing, retweeting, and engaging with other accounts.

Additionally, as coordinators and consortium members of the previous CSAs (H-CLOUD and NGIoT), Open Continuum made sure to connect with those communities on social media and tried to migrate them to EUCEI channels.

2.3.3 News Digest

The European Cloud, Edge, and IoT Continuum publishes a monthly news digest that includes regular updates on cloud, edge, meta-OS, and IoT research and innovation trends, project findings and results, and news from industrial partners, among other things. The newsletters also include information about upcoming tasks and events, as well as contact information for The European Cloud, Edge, and IoT Continuum and its associated initiatives. A news digest, as such, includes highlights (major outcomes, links, contacts, and dissemination activities), the most important news, announcements, and a schedule of major upcoming events. On the initiative's website, a registration function allowing interested visitors to subscribe to the newsletter is available.

The news digest's content populating and distribution are the joint efforts of the Open Continuum and Unlock CEI consortiums. However, Open Continuum takes the lead in template design, while Unlock CEI includes the content in the template.





2.3.4 Mailing Lists

Several mailing lists were created with the goal of supporting project communication activities.

2.3.5 Press Releases

Communication with and through media channels represents an important approach for increasing EUCloudEdgeIoT visibility. This tool, as stated in the previous deliverable of this WP, is used by Open Continuum and requires a preliminary agreement with the European Commission, so press releases are sent after an agreement with the Commission is reached.

2.3.6 Zenodo

The <u>EUCloudEdgeloT Community on Zenodo</u> houses all of the initiative's documents, publications, reports, and materials. This enables tracking of downloads and views of the materials shared. Furthermore, all TF6 RIAs are encouraged to share their own documents and publications there for a broader reach. Unlock CEI created this channel, which is currently being updated by both projects.





3 ACTIVITIES AND PERFORMANCE

3.1 BRANDING AND COMMUNICATION KIT

The EUCloudEdgeloT communication kit has had some additions in the last few months. Aside from the initial roll-up, bookmark, flyer, and poster, it now includes the following items.

Project Video

Publication date: July 19, 2023 Views: 48

The purpose of this video is to introduce the EUCEI initiative to the general public and explain why it is important in this day and age, as well as to provide context for the rise of the Computing Continuum through the convergence of Cloud, Edge, and IoT. The video contains excerpts from interviews conducted by Open Continuum with Dr Max Lemke, Albert Seubers, and Giovanni Rimassa (Open Continuum coordination team), and Golboo Pourabdollahian and Brendan Rowan (Unlock CEI).

Apart from conducting the interviews, Open Continuum also created the video, working from a script written by Unlock CEI. The video is available online <u>here</u>.

Project Brochure

Publication date: May 16, 2023 Views: 170 Downloads: 64

The goal of this brochure is to present the EUCEI initiative, as well as its landscape and activities, while also introducing the need for a Cloud, Edge, and IoT continuum. The piece describes the various calls and projects that it supports, as well as the various initiatives that it collaborates with. It also discusses the underlying use cases, the task forces, and the CSAs involved. Finally, it describes the work being done toward a common taxonomy. Open Continuum was primarily responsible for the content and design, while Unlock CEI assisted with the review and final details. The brochure is available for download here.

Research Community Booklet

Publication date: July 06, 2023 Views: 208 Downloads: 142

This booklet aims to list all the calls and projects supported by the EUCEI initiative. Each project's main information (such as project duration, abstract, communication channels, and primary contact point), key exploitable results, and use cases are described.





Open Continuum created a template document and contacted all of the RIAs to collect this information. Open Continuum designed the final document. Open Continuum also ensures that this material is updated whenever a project joins the community or exits (in the latter case, the project is still listed, but its logo is greyed out). Unlock CEI supported in the reviewing process. This material is available for download <u>here</u>.

Meta-OS Booklet

Publication date: May 16, 2023 Views: 148 Downloads: 68

This document aims to describe in detail all of the MetaOs projects' use cases. Unlock CEI managed the content gathering and final document, while Open Continuum assisted with the review process. The piece is available to view <u>here</u>.



FIGURE 3: EUCEI COMMUNICATION KIT





3.2 COMMUNITY BUILDING

Although some TFs meetings had previously taken place with MetaOS projects only, the EUCEI task forces were officially kick-started in February 2023 with a Launch Meeting (detailed information is available in section 3.4).

These TFs are constantly changing as new projects are funded, old projects are phased out, and new initiatives emerge.

3.2.1 Joint Repository

Inside this folder, members can access other subfolders with information, including:

- A folder called "Sign-up for Task Forces" with a spreadsheet inside initially created by Unlock CEI and improved by Open Continuum where projects could apply for the different TFs available in EUCloudEdgeIoT.
- RIAs' Interviews folder is where Open Continuum includes all the edited interviews that were filmed during the Concertation and Consultation event (more about this in a further section).
- The "Events" folder gathers information regarding events EUCEI might attend together with the projects, as well as a calendar spreadsheet developed by Open Continuum for projects to add their events information for dissemination.
- A folder called "EUCEI Brandpack" reunites all the communication materials from EUCloudEdgeIoT, including the tagline that projects can use on their website, templates, logos, and so on.
- "Communication Channels" includes a spreadsheet developed by Open Continuum where participants can include their channels information so it is accessible to all and that all can follow all projects.

3.3 LIAISON WITH EU INITIATIVES

Open Continuum makes sure to liaison with several European initiatives in its activities and dissemination. Particularly in events, as it can be seen in sections 3.4 and 3.5, Open Continuum has engaged a lot with initiatives such as:

- European Alliance for Industrial Data, Edge and Cloud
- AIOTI: Alliance for IoT and Edge Computing Innovation
- GAIA-X: A Federated Secure Data Infrastructure
- HiPEAC: Bridging industry and academia in computing systems
- NESSI: Networked European Services and Software Initiative
- BDVA: Big Data Value Association

More about this activity is detailed in deliverables 1.1 "Towards a strategy for European digital autonomy through Open Source, Standards and Alliances" and 1.2. "A strategy for European digital autonomy through Open Source, Standards and Alliances".





3.4 EXPERT TASK FORCE SET-UP AND ENGAGEMENT

To set-up the task force INSIDE has made contacts to three types of players (industry, RTO's and running projects) with identified technology relations to the edge to cloud continuum. To address the industry domain, we tried to take advantage of our very wide community and network: we contacted more than 3000 industries (both large corporations and SMEs) but responses have been rather weak. RTO's are more positive and see opportunities for upcoming good research proposals. The best response is from running research.

Based on these responses INSIDE will recruit 5-10 experts, primarily from the running research projects during the early fall of 2023. In this recruitment proposals for talks, project liaison and other interactions of interest will be identified with the experts. Thus providing a good input for the next step within the OpenContinuum execution.

3.5 ORGANISATION OF EVENTS

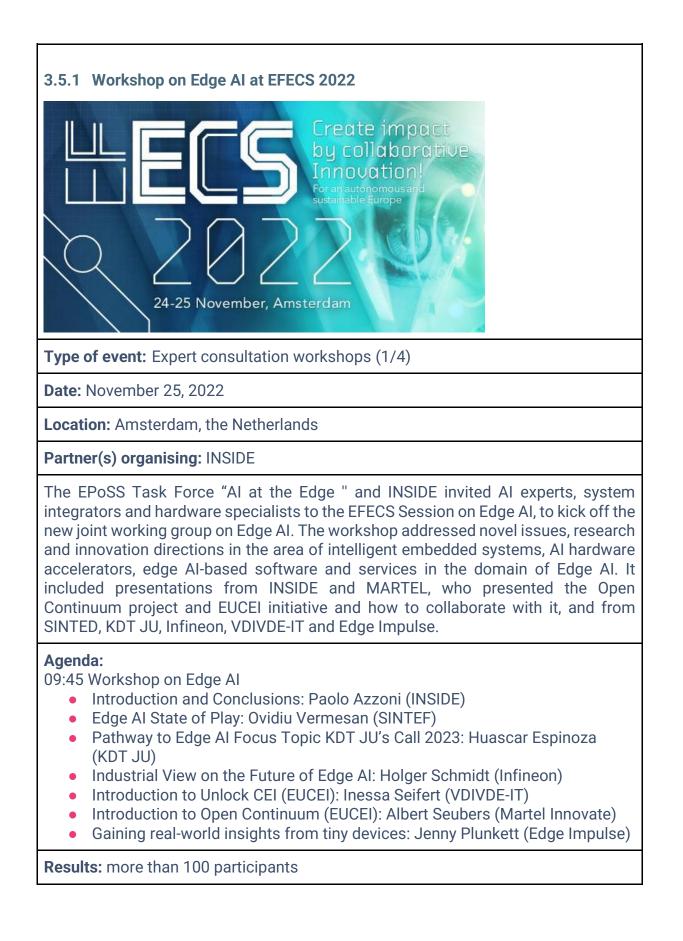
During this period, the Open Continuum organised (and co-organised) 10 events. In summary, the following type of events (as per the DoA) were organised:

- 5 out of 6 webinars with 458 attendees, that gives an average of 92 attendees per webinar (KPI: 25-30 participants per webinar)
- 1 out of 4 expert consultation workshops with more than 100 attendees (KPI: more than 30 attendees per workshop)
- 4 out of 4 training events with computing continuum experts on open-source standardisation had 95 attendees, giving an average of 24 attendees per training session (KPI: more than 25 attendees per training session)
- 1 concertation and consultation meeting (that replaced the first edition of the Open Continuum Summit) with 135 attendees.

Each organised event is described in chronological order (from oldest to most recent) below.











3.5.2 IoT and Edge at Eclipse: Making sense of the puzzle IoT and Edge at Eclipse: Making Sense of the Puzzle Frédéric Desbiens Online December 7th, 2022 Puered by ECLIPSE Type of event: Training events with computing continuum experts on open-source standardisation workshops (1/4)

Date: December 7, 2022

Location: Online

Partner(s) organising: ECLIPSE

Description: Frédéric Desbiens manages IoT and Edge Computing programs at the Eclipse Foundation, Europe's largest open-source organisation. His job is to help





the community innovate by bringing devices and software together. He is a strong supporter of open source. In the past, he worked as a product manager, solutions architect, and developer for companies as diverse as Pivotal, Cisco, and Oracle. Frédéric holds an MBA in electronic commerce, a BASc in Computer Science, and a BEd, all from Université Laval (Québec City, Canada).

As of November 2022, there were over 40 projects in the Eclipse IoT and Edge Native portfolio. Some of them are well-known; some of them are more obscure. Together, they probably are the most exhaustive toolkit of its kind in the industry. However, with that many projects, it is sometimes difficult to figure out which one to pick for a specific use case. The aim of this presentation is to describe the most active Eclipse IoT and Edge projects and position them in a typical IoT architecture.

Frédéric is the author of "Building Enterprise IoT Solutions using Eclipse IoT Technologies: An Open-Source Approach to Edge Computing," published in 2022 by Apress (ISBN: 978-1484288818).

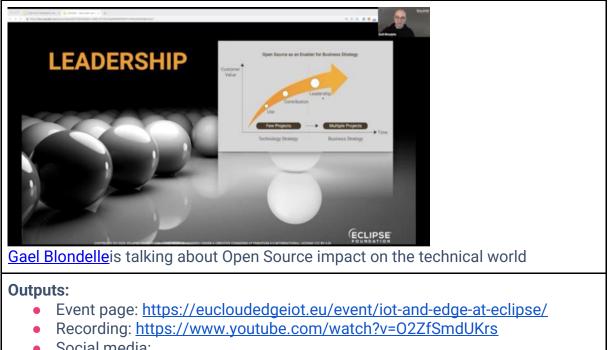
Agenda:

00:00:00 Introduction 00:01:01 Build on the momentum of open source 00:07:05 Breaking the silos 00:14:38 Eclipse IoT and Eclipse Edge Native: Deep Dive 01:09:34 aerOS project (https://aeros-project.eu/) 01:15:07 ICOS project (https://www.icos-project.eu/) 01:21:55 FLUIDOS project (https://www.fluidos.eu/) 01:29:53 NebulOuS project (https://www.nebulouscloud.eu/) 01:37:06 NEMO project (https://meta-os.eu/) 01:42:42 Nephele project (https://nephele-project.eu/) 01:49:06 Wrap-up

Results: The event was attended by 36 participants after 45 registrations were received. The first talk of the event focused on presenting the impact of the Open Source impacts on the technical world. It was followed by presentations showing the importance of 'Breaking the silos'. In fact, our idea is to increase the potential interoperability and portability of some of the developed components and, de facto, increase their sustainability. The final talk was dedicated to describe the most active Eclipse IoT and Edge projects and position them in a typical IoT architecture. Finally, the METAOS projects gave an overview of their work focusing on the technical aspects.







 Social media: <u>https://twitter.com/EU_CloudEdgeIoT/status/1600184332722634752</u>

3.5.3 Open Source Task Force Event in Toulouse



Type of event: Training events with computing continuum experts on open-source standardisation workshops (2/4)

Date: Jan 18, 2023

Location: Toulouse, France

Partner(s) organising: ECLIPSE

Description:

The European Cloud, Edge, and IoT Continuum's Open Source Task Force organised the first face-to-face meeting with the cluster of RIAs that had already begun, the





HORIZON-CL4-2021-DATA-01-05: Future European Platforms for the Edge: Meta Operating Systems (2021-2017).

The impact of the Task Force is to provide strategy and tools to promote the establishment of a European industrial Open ecosystem for continuum computing based on open source and open standards. With this in mind, the meeting's goal was to kick off a collaboration between various projects involved in the Edge to Cloud continuum Open Source and Meta OS context. With this in mind, the meeting's goal was to kick off a collaboration between various projects involved in the Edge to Cloud continuum Open Source and Meta OS context. The goal is to address the need for common open-source stacks for the meta operating systems defined in all six projects involved. Indeed, by attempting to define such a common stack, The Task Force increases the potential interoperability and portability of some of the developed components, thereby increasing their long-term viability.

The cluster includes six projects: aerOS, FLUIDOS, ICOS, NebulOus, NEMO, and NEPHELE.

Agenda:

09:00 Welcome, Round table- 10' 09:10 Introduction of the meeting- 20' 09:30 Cluster Project Architectures presentations- 60' 10:30 Coffee Break- 15' 10:45 Blank Platform Architectures Discussion- 30' 11:15 Complete the Platform Architectures Discussion- 75' 12:30 LUNCH 13:30 Presentation of the resulting architecture challenged by the other group 14:30 Identify some common stacks (brainstorming) Plan of next meeting Other open issues 16:00 Next steps and Wrap-up

Results: 12 people attended the meeting. The meeting was extremely beneficial, causing the six projects to closely examine the components and structures currently in use or under construction. The meeting was crucial for sharing knowledge and best practices, as well as providing new ideas to those who do not yet have a definition for some pieces. For our part, we created a knowledge base to begin on the META-OS.

Outputs: https://eucloudedgeiot.eu/open-source-task-force-meta-os-projects/





3.5.4 Open Research Webinars - Building the European Cloud, Edge & IoT Continuum



Type of event: Webinar (1/6)

Date: Jan 24, 2023

Location: Online

Partner(s) organising: ECLIPSE, MARTEL

Description:

This Webinar was organised within a series (jointly managed by the Eclipse Foundation and OW2) introducing software research projects that help shape the future of open source software and the IT industry to the communities of software practitioners and users that gravitate around Open Source Software. The presentation covered how EUCloudEdgeIoT.eu aims to realise a pathway for the understanding and development of the Cloud, Edge & IoT (CEI) Continuum by promoting cooperation between a wide range of research projects, developers and suppliers, business users and potential adopters of this new technological paradigm, by contributing to the coordination of a portfolio of projects in the CEI Computing Continuum funded under the Meta-Operating Systems for the Next Generation IoT and Edge Computing.

Agenda:

16:00 Welcome, Introduction - 10'
16:10 The EUCloudEdgeloT Initiative - 6'
16:16 The Open Ecosystem- 5'
16:21 The Task Forces - 3'
16:24 Focus on Software: The Open Source and Architecture Task Forces - 6'
16:31 Q&A and Wrap Up - 5'

Results: 27 people attended the webinar. The Webinar served as an entry point for the targeted open-source communities towards EC applied research funding, the concept of Computing Continuum, the current Cloud-Edge-IoT project landscape, and its relationship with Open Source and Open Standards. The EUCloudEdgeIoT Task Forces were also introduced, with a particular focus on the *TF2 - Open-Source*





Engagement and the *TF3* - *Architecture*, which are the closest to the software interests of the mostly technical targeted communities. Overall, the Webinar provided valuable information and communicated the strong belief that an integrated, open ecosystem built around open-source software is the key enabler for digital autonomy and European prosperity in the Cloud-Edge-IoT domain and, more widely, in the data economy while honouring and upholding European values.



3.5.5 Horizon Europe Info Day & Pitch Session HORIZON EUROPE INFO DAY & PITCH SESSION Work Programme 2023-2024 on World leading data and computing technologies 30 January 2023 [, 14:00 - 17:00 CET Supported by Supporte





computing technologies" and offered participants a unique opportunity to pitch concrete ideas in front of leading research organisations and cutting-edge innovators from across industry.

The half-day virtual event introduced three calls under Destination 3:

- HORIZON-CL4-2023-DATA-01-07: Collaboration with NSF on fundamental research on new concepts for distributed computing and swarm intelligence (CSA) (All information about the call here)
- HORIZON -CL4-2023-DATA-01-04: Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (RIA) (All information about the call here)
- HORIZON -CL4-2023-DATA-01-06: Coordination and Support of Cognitive Computing Continuum research and policy (CSA) (All information about the call here)

Additionally, the event provided participants with a unique opportunity to pitch concrete ideas and advertise one's expertise in front of leading research organisations and cutting-edge innovators. The Info Day allowed participants to be inspired by new ideas, to extend their scientific and cooperative network and/or establish new partnerships.

Giovanni Rimassa was the moderator of the event.

Results:

The event was attended by 240 participants after 329 registrations were received. During the event, the European Commission presented and explained the calls, while HADEA and IDEAL-IST made presentations about the proposal preparation. It was followed by presentations of research agendas from HiPEAC, BDVA, European Alliance for Industrial Data, Edge and Cloud, Gaia-X and NESSI. In the end, OpenNebula Systems and Oredate pitched their ideas.

Agenda:

14:00 – 14:15: Welcome and introduction

14:15 – 14:45: Presentation of the upcoming calls by the European Commission

- HORIZON-CL4-2023-DATA-01-07: Collaboration with NSF on fundamental research on new concepts for distributed computing and swarm intelligence (CSA) – Jan Komarek, Policy Officer European Commission.
- HORIZON -CL4-2023-DATA-01-04: Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (RIA) – Maria Tsakali, Policy Officer European Commission.
- HORIZON -CL4-2023-DATA-01-06: Coordination and Support of Cognitive Computing Continuum research and policy (CSA) – Maria Tsakali, Policy Officer European Commission.
- 14:45 14:55: Q&A

14:55 – 15:10: European Health and Digital Executive Agency HADEA – the Lump sum funding in Horizon Europe, Anna Tsakaleli

15:10 – 15:25: IDEAL-IST – Proposal preparation support, Edina Nemeth

- 15:25 16:10: Research Agendas
 - The Big Data Value Association BDVA, Ana Garcia, BDVA Secretary General.





- European Alliance for Industrial Data, Edge and Cloud, Dr Ignacio M. Llorente, Chair of the Cloud/Edge Working Group & CEO of OpenNebula Systems.
- Gaia-X, Francesco Bonfiglio, CEO.
- NESSI the European Technology Platform dedicated to Software, Services and Data Andreas Metzger, Steering Committee Vice Chair.
- 16:10 16:30: Pitch session
- 16:30 17:00: Closing of the event



Giovanni Rimassa (Martel/Open Continuum) moderating the session

Outputs:

- Event page: <u>https://eucloudedgeiot.eu/event/horizon-europe-info-day/</u>
- Post event article with slides made available: <u>https://eucloudedgeiot.eu/horizon-europe-info-day-recording-and-presentations/</u>
- Recording: <u>https://youtu.be/Sh8XC1Hkw20</u>





Date: February 8, 2023

Location: Online





Partner(s) organising: Open Continuum (co-organised with Unlock CEI, led by TF6)

Description/Goal: The goal of this meeting was to officially launch the EUCloudEdgeIoT Task Forces by presenting them to the targeted RIAs. All coordinators and communication representatives of projects working in OpenSource, Cloud, MetaOS, Swarm, IoT, Edge were invited to attend. Each Task Force leader presented their TF goal, team, future activities and how to join following a powerpoint template developed by Open Continuum.

Agenda:

09:30 Welcome and Introduction

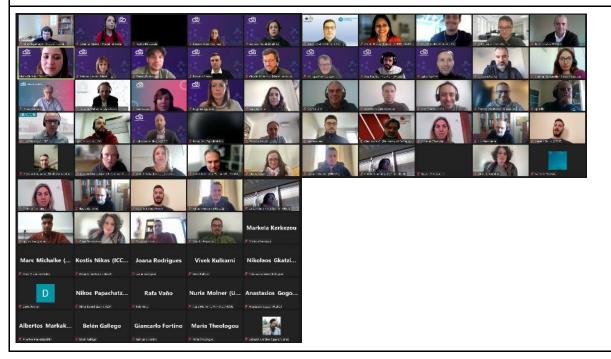
- The EUCloudEdgeIoT.eu Initiative
- Who is here today
- 09:40 Presentation of Cooperation Mechanisms
 - TF1 "Strategic Liaisons"
 - TF2 "Open Source Engagement"
 - TF3 "Architecture"
 - TF5 "Market and Sectors"
 - TF6 "Communications"
 - TF4 "Ecosystem Engagement"

10:10 Join the community

10:15 Q&A

10:30 Conclusion

Results: 86 participants had a chance to meet virtually to kick start joint activities and define the next steps in a 1-hour meeting. The 30+ projects from OpenSource, Cloud, MetaOS, Swarm, IoT, Edge and more that attended will work on Strategic Liaisons, Open Source Engagement, Architecture, Market and Sectors, Communications and Ecosystem Engagement together.







Screenshots showcasing the attendees

Outputs:

- Recording: <u>https://www.youtube.com/watch?v=F7i45DNkteE</u>
- News page: <u>https://eucloudedgeiot.eu/official-lauch-of-the-eu-cei-</u>
- <u>community/</u>

3.5.7 Common Taxonomy for EU MetaOS: First Workshop



Type of event: Webinar (4/6)

Date: April 3, 2023

Location: Online

Partner(s) organising: ATOS/Eviden

Description/Goal:

The aim of this workshop was to gather all EU MetaOS projects to work collaboratively on the development of a common standardised taxonomy for the continuum.

Agenda:

11:00 - 11:15 Welcome and introduction

11:15 - 11:20 Split into two virtual rooms

11:15 - 11:20 Appointment of a spokesperson per room

11:20 - 12:30 Discussion in each room on a common first draft of the proposed taxonomy and collection of feedback

12:30 - 12:55 Gathering in the main room and presentation of proposals and conclusions in each breakout room. Wrap-up.

12:55 - 13:00 Farewell and closing.

Results:

The first workshop of the series, namely Common Taxonomy for EU MetaOS: EUCloudEdgeIoT workshop, brought together MetaOS cluster representatives, and an ECSEL one, to discuss a common terminology as well as the minimum expected





functionalities for each of the Continuum layers. The list of participant projects is as follows:

- aerOS Autonomous, scalablE, tRustworthy, intelligent European meta Operating System for the IoT edge-cloud continuum
- FLUIDOS Flexible, scaLable and secUre decentralizeD Operation
- ICOS Towards a functional continuum operating system
- NebulOus A meta operating system for brokering hyper-distributed applications on Cloud computing continuums
- NEMO Next Generation Meta Operating System
- NEPHELE A lightweight software stack and synergetic meta-orchestration framework for the next generation compute continuum

• TRANSACT – Towards safe and secure distributed cyber-physical systems More than 30 people participated in this initial discussion, including project coordinators and technical managers, aiming to find a common understanding on

the definition of the Continuum from a compute pipeline perspective.

Results collected from this interaction are under consolidation for refining the initial proposal of the Continuum architecture building blocks and terms to be added to the taxonomy.



Outputs:

- Event page: <u>https://eucloudedgeiot.eu/event/common-taxonomy-for-eu-</u> metaos-eucloudedgeiot-workshop/
- News page: <u>https://eucloudedgeiot.eu/workshop-architecture-task-force/</u>





3.5.8 Concertation and Consultation on Computing Continuum

Concertation and Consultation on Computing Continuum: From Cloud to Edge to loT 10-11 May 2023 The Claridge - Brussels, Belgium

Type of event: Co-organisation of Event with European Commission (substitute to Open Continuum Summit)

Date: May 10-11, 2023

Location: Brussels, Belgium

Partner(s) organising: MARTEL

Description:

The "Concertation and Consultation on Computing Continuum: From Cloud to Edge to IoT" was a two-day physical event organised within the context of the European, Cloud, Edge and IoT Continuum initiative by the Open Continuum consortium in close collaboration with the UNLOCK-CEI and SW Forum projects and guided by the European Commission DG CNECT E.2 and E.4 Units.

The **first day** of the event was concertation oriented. The invited Horizon Europe RIAs which started in 2023 had the opportunity to pitch their projects and introduce the plans for the future, while the more mature Horizon 2020 projects and the Horizon Europe projects started in 2022 discussed their assets, and shared lessons learned and success stories. It was an important opportunity for the H2020 projects to further exploit and handover their results to the new RIAs, who were able to have a greater picture of the work they can build upon. CSAs such as EU-IoT, SW Forum and HUB4CLOUD also demonstrated the accomplishments of the projects they have supported. There were plenty of opportunities for networking including a cocktail dinner, and, in addition, the EUCloudEdgeIoT Cooperation Mechanisms (task forces) were discussed.

The **second day** shifted to a consultation, with the goal to bring forward thinking for the next Horizon Europe Work Programme (2025-2027). Through a Call for Expressions of Interest with new trends, vision and tracks for research, the best short papers were selected to present at the event. The call was open to any interested party, from academic researchers to industrial players, funded EC projects, policy makers and SMEs. Research roadmaps were also presented by initiatives such as SW Forum, HiPEAC, NESSI, AIOTI, European Alliance for Industrial Data, Edge and Cloud, INSIDE, and FIWARE Foundation.





For the organisation and promotion of the event several activities were carried out, such as:

Prior to Event

- Development of the Table of Requirements: A document shared with the project officers where we presented in detail:
 - The scope of the event
 - The main objectives
 - The structure of the days
 - Value proposition for attending
 - Stakeholders targeted
 - Agenda (detailed with explanations)
 - The agreed outputs
 - Invitation list
 - Registration forms
 - Venue options with location, photos, map of the site, etc.)
 - Timeline of activities and responsibilities
- Regular meetings with venue manager and technician to agree on details of the event, including the preparation of an event plan, layout, catering, furniture, parking and guide.
- Participants management, which entailed:
 - Creation, distribution and monitoring of different invitations and registration forms for the RIAs, for the initiatives, the CSAs and the EC, and for the EoIs presenters.
 - Creation, distribution and monitoring of dietary and mobility restrictions form.
 - Creation of sign-in sheets for attendees to sign at the registration desk.
 - Creation of a Delegates sheet with information from the participants to be shared with the attendees (that included Participant Name, Affiliation, Type of organisation, Role, and whether they attended Day 1, Day 2 and Social Dinner)
 - Development of accommodation suggestions' guide
- Organisation of the sessions and rehearsals with speakers, which entailed:
- Organisation of reporting team and shared reporting document with guidelines.
- Preparation of guidelines for the pitch session and success stories, including a dedicated meeting with the RIAs for questions and answers.
- Preparation of guidelines for the Call of Expressions of Interest and further promotion. Additionally, it involved the analysis of all the EoIs and its categorisation.
- Design and printing of materials (although most were made available online for sustainability concerns, through the Delegates' Pack webpage).
 - Participant badges
 - Reserved seat signs
 - EUCEI and event roll-ups
- Design of a template for presentations.





• Organisation of a slide deck of more than 80 presentations. Including
animated introductory banners for each session and speaker.
 Slido presentations for interactivity during the event with questions from the
audience to the speakers, and from the speakers to the audience.
 Development of map for the RIAs banners/roll-ups.
• Development of a webpage for the Delegates Pack:
https://eucloudedgeiot.eu/delegate-pack/ The page gives access to:
 Research Community Booklet Mate On Booklet
 MetaOs Booklet EUCEI Brochure
 EUCEI Brochure Agenda
 Delegates' List
 Research Roadmaps
 Expressions of Interest
 EUIoT Reports
• Development of plan to carry out more than 40 interviews to the RIAs during
the event.
 Development of checklist and roadmap of the event.
• Creation and distribution of satisfaction surveys to attendees, after the event.
 Registration & Welcome coffee 09:30 - 09:40 Welcome and Introduction to the event Auditorium, Dr Monique Calisti (Event Moderator, CEO - Martel Innovate) 09:40 - 09:45 Introduction to EUCloudEdgeIoT Auditorium, (Albert Seubers - Open Continuum/Martel Innovate 09:45 - 10:15 Opening Speech by the European Commission Auditorium, (European Commission: Pearse O'Donohue - Director of Future networks; Manuel Mateo Goyet - Deputy Head of Unit of Cloud and Software; Max Lemke - Head of Unit of Internet of Things) 10:15-11:00 Pitch Session - Part 1 Auditorium Cognitive Cloud: AC3; ACES; CloudSkin; CODECO; COGNIFOG; DECICE; EDGELESS; MLSysOps; SovereignEdge.Cognit
 Open Source for Cloud Services: AERO; OpenCUBE; RISER; Vitamin-V (3 min each) 11:00 – 11:15
11:00 – 11:15 Coffee Break
11:15 – 11:45
Pitch Session – Part 2 Auditorium



 Swarm Computing: INCODE, OASEES; OpenSwarm; SMARTEDGE; TaRDIS • Potential of drones as multi-purpose vehicle – risks and added values: SPADE • Technologies and solutions for compliance, privacy preservation, green and responsible data operations: TEADAL; TRUSTEE (3 min each) 11:45 - 12:15 EUCEI Cooperation Mechanisms | Auditorium (Task Forces Leaders) • TF1 Strategic Liaisons (5min) • TF2 Open Source Engagement (5min) • TF3 Architecture (5min) • TF4 Ecosystem Engagement (5min) • TF5 Market and Sectors (5min) • TF6 Communications (5min) 12:15 - 12:45 Q&A Session (with Rolf Riemenschneider – European Commission's Head of Sector IoT) Auditorium 12:45-14:45 RIAs "Tour" and networking lunch | Auditorium and Mezzanine, Guided tour through RIAs banners 14:45 - 15:15 Q&A Session | Auditorium 15:15-15:45 Pitch Session – Part 3 | Auditorium MetaOS: aerOS; FLUIDOS; ICOS; NEBULOUS; NEMO; NEPHELE (3 min each) 15:45-17:00 Success Stories and Lessons Learned | Auditorium (For Horizon Europe projects) ICT40: PHYSICS; DATACLOUD; CHARITY; SERRANO; Ai-SPRINT ICT50: COSMOS; ELEGANT; FOCETA; PIACERE; VeriDevOps; XANDAR ICT56: ASSIST-IoT; INGENIOUS; IOT-NGIN; TERMINET; INTELLIOT; VEDLIOT (4 min each) 17:00 - 17:15 Coffee Break 17:15-18:45 The Way Forward | Auditorium Hub4Cloud panel "Resource orchestration and adaptation in the continuum": Moderated by Giovanni Rimassa (HUB4CLOUD Coordinator – CIO Martel Innovate) Manos Varvarigos – Project Coordinator – SERRANO Fulvio Risso – Technical Coordinator – FluiDOS • Rute C. Sofia – Project Coordinator – CODECO SWForum panel "Software models, tools and processes for the continuum" : Moderated by Juncal Alonso (SWForum Coordinator - Project Manager, TECNALIA) and Joh Favaro (SW Forum D&C Manager, TRUST-IT) • Saddek Bensalem (Project Coordinator)- FOCETA • Matija Cankar (Technical Coordinator)- PIACERE



 Ramon Canal (Project Coordinator) – VITAMIN – V EU-IoT Panel "Federated Architectures for Distributed Intelligence" : Moderated by Tanya Suárez, CEO, BluSpecs Carlos Palau, UPV, Coordinator AerOS, Coordinator ASSIST IoT Panagiotis Sarigiannidis, UOWM, Coordinator TERMINET Akis Kourtis, Demokritas, Coordinator OASEES 19:30 Social Dinner Networking Space, Ticket entry
DAY 2 11 May 2023: Consultation
08:20
Opening Doors 08:30 – 09:00
Registration & Welcome coffee Entry and Networking Space
09:00 - 09:10
Welcome and Introduction Dr Monique Calisti (Event Moderator, Martel Innovate) 09:10 – 09:25
Opening Speech by the European Commission Auditorium, (Max Lemke –
European Commission's Head of Unit of Internet of Things)
09:25 – 11:05
Consultation on the Research Agenda 2025-2027 Part 1 Auditorium 09:25 - AlOps: Software tools for supporting Al across the Continuum (60 min)
 Martel Innovate GMBH (Presenter: Massimo Neri)
GG Flagship, University of Oulu, Finland (Presenter: Lauri Lovén)
 University of Pisa (Presenter: Patrizio Dazzi)
 Fraunhofer Cluster of Excellence Cognitive Internet Technologies CCIT (Presenter: Michael Fritz)
 University of Western Macedonia (Prof. Panagiotis Sarigiannidis)
IBM Research Europe (Presenter: Ambrish Rawat)
TECNALIA (Presenter: Jesus Santamaria)
Exaion (TBC) Delitecnice di Milane (Presenter: Denile Ardagne)
 Politecnico di Milano (Presenter: Danilo Ardagna) Trialog (Presenter: Dr. Amelie Gyrard)
Q&A session (20 min)
10:25 - Computing Continuum infrastructure/European Cloud servers (40 min)
Bielefeld University (Presenter: Jens Hagemeyer)
 INRIA (Presenter: Isabelle Chrisment) UPV-SRIPAS (Presenter: Prof. Carlos E. Palau – UPV)
 UPV-SRIPAS (Presenter: Prof. Carlos E. Palau – UPV) Barcelona Supercomputing Center & Universitat Politècnica de Catalunya
(Presenter: Josep Lluís Berral)
Karlsruhe Institute of Technology (Presenter: Jürgen Becker)
Semidynamics (Presenter: Roger Espasa)
Q&A session (20 min) 11:05 – 11:20
Coffee Break
11:20 - 13:20
Consultation on the Research Agenda 2025-2027 Part 2 Auditorium





11:20 - Next Generation MetaOS and distributed IoT-edge objects (60 min) • Eviden (Presenter: Lara López) • University of Patras and π -NET (Presenter: Prof. Alexios Birbas) • Airbus (TBC) • Tarides (Presenter: Miklos Tomka) VTT Technical Research Centre of Finland Ltd (Presenter: Karoliina) Salminen) AIOTI (TBC) • University of Oslo (Presenter: Geir Horn) • Nokia (Presenter: Thibaud Biatek) • Siemens AG – T CED (Presenter: Jochen Nickles) Q&A session (20 min) 12:20 - Cybersecurity, privacy, interoperability, Open Source and Software Engineering for the Computing Continuum (50 min) • CETIC (TBC) • XLAB d.o.o. (Matija Cankar) Institute of Communication and Computer Systems – ICCS (Presenters: Panagiotis Kokkinos, Emmanouel Varvarigos) • Technopolis (TBC) • INRIA (Presenter: Thomas Wattevene) • Abilian SAS H2020 Physics & Harokopio University of Athens (Presenter: George Kousiouris) • TRUST-IT Services (Presenter: Claudio de Majo) • Eclipse Foundation (Presenter: Gaël Blondelle) • FORTH Foundation Q&A session (20 min) 13:20 - 14:30 Networking Lunch | Auditorium and Mezzanine 14:30 - 16:00 Research Roadmaps • Ignacio M. Llorente – European Alliance for Industrial Data, Edge and Cloud Juncal Alonso – SW FORUM Ovidiu Vermesan – AIOTI SRIA Andreas Metzger – NESSI Koen De Bosschere – HiPEAC Clara Pezuela – FIWARE Foundation Paolo Azzoni – INSIDE (8 min each) Q&A session (30 min) 16:00-17:00 European Commission Wrap-up and key messages (European Commission: Manuel Mateo Goyet - Deputy head of unit of Cloud and Software; Rolf Riemenschneider – Head of Sector IoT) 17:00 Closing of the Event



Results: This two-day meeting was deemed a success for a variety of reasons, we highlight some below.

100% attendance and engagement

First and foremost, all targeted initiatives, projects, and other participants attended and presented at the event. By bringing a roll-up, all RIAs took part in the RIAs tour. There were also plenty of opportunities for networking.

Consensus for the 2025-2027 research agenda

Second, several stakeholders sent their expression of interest and presented at the event, which enabled the European Commission to gather ideas and reach a consensus on the directions and visions for research agenda 2025-2027 in Cloud, Edge, and IoT, for which Open Continuum created the executive summary. The consortium is now actively disseminating these documents.

Deemed a success by the attendees

Finally, according to the 14-person survey, attendees greatly appreciated the event, giving it an average score of 4.8 out of 5.

Below are some photos and moments from the event:

During the opening speech, Pearse O'Donohue, EC's Director of Future Networks, underlined the importance of collaboration and having digitisation as a key priority for "building a leading European society with advanced technologies" with data spaces as an essential enabler. In addition, Manuel Mateo Goyet, EC's Deputy Head of the Unit of Cloud and Software, highlighted the importance of measuring for the data continuum, adding that the "European Commission's Edge observatory plays a crucial role in monitoring the performance and reliability of edge computing". Finally, Max Lemke, EC's Head of Unit of Internet of Things, delivered an insightful keynote on the importance of "chips act, data strategy, AI [Artificial Intelligence] at the edge, and decentralised swarm intelligence for the cloud, edge and IoT continuum". He also emphasised the importance of economic and market factors, with metaOS, open platforms, standardisation, and interoperability being "critical factors for success".







The first day of the event was concertation-oriented, featuring numerous presentations and networking opportunities. Horizon Europe RIAs that started in 2023 pitched their projects and introduced future plans, while more mature projects shared their success stories and lessons learned. These presentations facilitated knowledge exchange and set the stage for future collaborations. Moreover, all invited projects prepared and exhibited roll-up posters for conversation and engagement during breaks, and a tour of all projects was organised.



Additionally, the cooperation mechanisms of EUCloudEdgeIoT.eu (called "Task Forces") were also presented and were joined by Rolf Riemenschneider, EC's Head





of Sector IoT, for a Questions and Answers Session.



On the second day, the focus shifted to consultation, with a goal to guide the thinking for the next Horizon Europe Work Programme (2025-2027). Short papers were selected through a Call for Expressions of Interest, showcasing research and innovation trends across academic researchers, industrial players, policy makers, and SMEs.



The day concluded with discussions on future R&I priorities and plans, contributing to strategic R&I roadmaps, with the presence of Inside Industry Association (represented by Paolo Azzoni, Secretary General), HipEAC (represented by Koen de Bosschere, Coordinator), SWForum (represented by Juncal Alonso, Coordinator), AIOTI (represented by Dr. Ovidiu Vermesan, Chairman of WG Research and Innovation), European Alliance for Industrial Data, Edge and Cloud (represented by Dr. Ignacio M. Llorente, Chairman at Edge/Cloud WG and CEO of OpenNebula Systems), FIWARE Foundation (represented by Clara Pezuela, VicePresident Funded Programs) and NESSI (represented by Prof. Dr. Andreas Metzger,Steering committee vice chair). Their conclusions, roadmaps and slides can be downloaded below.







The event was a valuable opportunity for participants to learn from EU-funded initiatives, showcase their work, establish contacts within the European Cloud, Edge and IoT community, and learn about industry best practices. Attendees contributed to shaping agendas and decisions on future investments, increasing the competitiveness of the European industry in the Cloud, Edge, and IoT domains.

In the concluding session, European Commission representatives presented European Vision and Research Directions in the Cloud-Edge-IoT domain for 2025-2027.



The Concertation and Consultation on Computing Continuum event has undoubtedly advanced the conversation on the future of Cloud, Edge, and IoT computing. It is clear that as the boundaries between these domains blur, an open and inclusive society leveraging these technologies is within reach.

Below are described some of the outputs from the event.

• A "Future Outlook" page was created on the EUCEI website which showcases European Vision and Research Directions in the Cloud-Edge-IoT domain for 2025-2027 and gathers all the information from the event. It

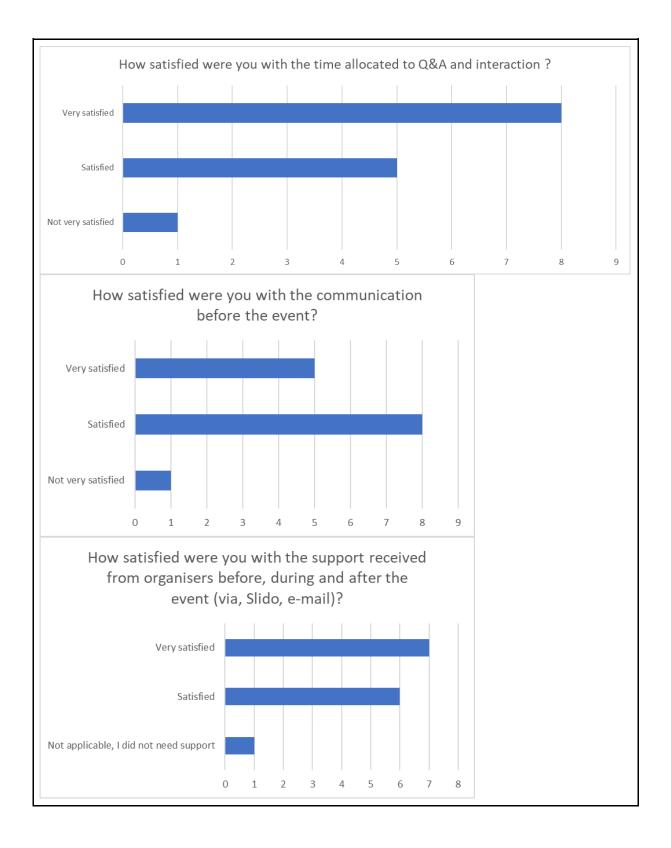




inclu	des:
inclue 0 0	The European vision and research directions in the Cloud-Edge-IoT domain for 2025-2027 (Executive Summary): Document that delivers the European Vision and Research Directions in the Cloud-Edge-IoT domain for 2025-2027, addressing geopolitical issues and the main outcomes of the Concertation and Consultation meeting. The European vision and research directions in the Cloud-Edge-IoT domain for 2025-2027 (Distillation of the Consultation Meeting in Brussels on May 11, 2023): Extended version of the executive summary that incorporates presentations from the Consultation meeting on 11 May 2023. Driving Innovation in the Cloud-Edge-IoT Continuum (A summary of the Concertation Meeting in Brussels on May 10, 2023): Document that gives a short overview of the Concertation meeting on 10 May 2023.
	available during the event (presentations).
0	<u>Event page</u> of "Concertation and Consultation on Computing Continuum: From Cloud to Edge to IoT" with the concept, agenda and
	speakers
0	Expressions of interest submitted for the "Concertation and Consultation on Computing Continuum: From Cloud to Edge to IoT"
	survey that was distributed among the participants collected some lusions:
	:://ec.europa.eu/eusurvey/runner/EUCEI_EC_Event_May2023
H	ow useful was this meeting for your work?
10	
8	
6	
4	
2	
0	Useful Very useful

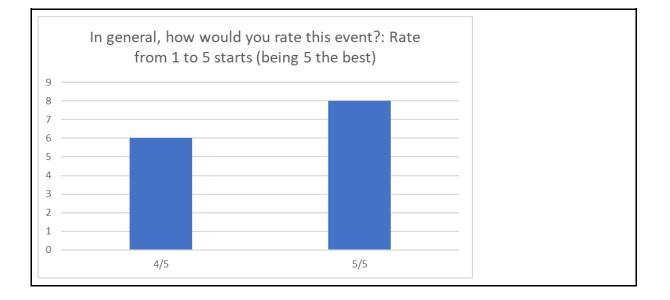














Type of event: Training events with computing continuum experts on open-source standardisation workshops (3/4)

Date: June 8, 2023

Location: Online

Partner(s) organising: ECLIPSE

Description: Arpit Joshipura (General Manager of Networking, IoT, and Edge at the Linux Foundation) hosted the event. As data gravity shifts away from the centralised cloud and toward a distribution from edge to cloud—and as edge computing becomes a more ubiquitous natural extension of cloud computing—organisations of all sizes benefit from open edge computing, which results in lower latency, lower bandwidth costs, and enhanced security and privacy. With this in mind, attendees could learn how open source organisations (such as the Linux Foundation's LF Edge) are working together to drive integration across industries, broader open source organisations, and standards and specifications bodies to unify edge compute





across markets such as Enterprise Edge, IOT Edge, Telecom Edge, and Cloud Edge. Arpit gave a brief introduction to the Linux Foundation (LF) during his presentation, noting that the LF hosts some of the world's most mission-critical software.

Agenda:

- Open Unification of Edge Compute
- Q&A

Results: The event had 21 participants and the speaker presented the LF Edge "subfoundation" and his vision of the Edge market. Arpit then defined certain terms, as well as what should and shouldn't be considered an Edge application. He presented the main LF Edge projects:

- Impact projects: Akraino, EdgeXFoundry and Fledge
- Growth projects: Edge Virtualization Engine (EVE), Open Horizon and the State of the Edge research project.
- Large-scale projects: Alvarium, Baetyl, eKuiper and FIDO Device Onboard.

The presentation was followed by a short Q&A session moderated by Rosaria Rossini from the Eclipse Foundation.

The speaker on the left and the moderator on the right



Arpit Joshipura eneral Manager of Networking, IoT & Edge of

Outputs: Video Published on the euCEIc website <u>https://eucloudedgeiot.eu/now-available-recording-of-the-open-unification-of-edge-compute-webinar/</u>





3.5.10 The Hitchhiker's Guide to Eclipse IoT (OS webinar)

Type of event: Training events with computing continuum experts on open-source standardisation workshops (4/4)

Date: Jul 4, 2023

Location: Online

Partner(s) organising: ECLIPSE

Description: With over 50 projects, the Eclipse IoT toolkit is the industry's most extensive collection of IoT and Edge Computing open source building blocks. In this presentation, Frédéric Desbiens will provide you with an overview of the ecosystem and introduce you to some of its most popular projects. From protocol implementations to Cloud IoT platforms, Eclipse IoT has something for everyone. The presentation briefly discussed the RISC-V open source processor cores from OpenHW Group.

The speaker, Frédéric Desbiens, manages IoT and Edge Computing programs at the Eclipse Foundation, Europe's largest open-source organisation.

Agenda:

- The Hitchhiker's Guide to Eclipse IoT
- Q&A

Results: 26 people attended the meeting. The webinar presented an overview of the "Eclipse IoT toolkit" that is the industry's most extensive collection of IoT and Edge Computing open source building blocks. During his presentation, Frédéric gave a brief introduction to the Eclipse Foundation and an overview of the main topics in the foundation. He then presented the Eclipse IoT Working group and the most interesting projects hosted in it and covering iot, protocols and edge.





An overview of the ecosystem has been provided and some of its most popular projects have been introduced. From protocol implementations to Cloud IoT platforms, Eclipse IoT has something for everyone. In particular the following topics have been presented in detail: IoT architecture in IoT and Edge Eclipse Community and Working Group IoT tools in Eclipse, starting from the architecture, Frédéric navigated through the different layers: • Protocol Layer: exploring the Gateway and Device stack supported by IoT gateway (Kura) and IoT Cloud (Kapua). • Digital Twin and Connectivity stack with Ditto, HONO and hawkBit projects. Sparkplug: open specifications for enabling interoperability in MQTT based solutions. And EDGE NATIVE: an open source edge platform. The presentation was followed by a short Q&A session moderated by Rosaria Rossini from the Eclipse Foundation. The speaker during the presentation The Eclipse Foundation - By the Numbers 418 357 1890 \$20+ Projects Members Committers billion 450M+ 19 +18 Industry Collaborations Lines of Code Years in Operation iot Outputs: Video and news available on the website https://eucloudedgeiot.eu/the-

hitchhikers-guide-to-eclipse-iot-webinar-recording-is-available/



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Type of event: Webinar (5/6)

Date: July 21, 2023

Location: Online

Partner(s) organising: ATOS/Eviden

Description: This event brought together representatives from EU projects to collaborate on the development of a common, standardised taxonomy, with a focus on discussing the building blocks for the Architecture.

Agenda:

11:00 - 11:15 Welcome and introduction

11:15 - 11:20 Split into two virtual rooms

11:15 - 11:20 Appointment of a spokesperson per room

11:20 - 12:30 Discussion in each room on a common first draft of the proposed taxonomy and collection of feedback

12:30 - 12:55 Gathering in the main room and presentation of proposals and conclusions in each breakout room. Wrap-up.

12:55 - 13:00 Farewell and closing.

Results: The second workshop of the series, namely Common taxonomy for the EuCloudEdgeIoT Continuum: EUCloudEdgeIoT 2nd workshop, brought together representatives of 29 European projects to discuss a common terminology as well as the main expected building blocks for an agreed Architecture.

The list of participant projects is as follows: 6GSMART; AC3; ACES; aerOS; AIDOaRt; ASSIST-IoT; CODECO; Cognifog; Cognit; SovereignEdge; Edgeless; Extract; FLUIDOS; ICOS; IoT-NGIN; MLSysOps; MLSysOps; NebulOuS; NEMO; Nephele; OpenContinuum; PHYSICS; PIACERE; RISER; SERRANO; SmartEdge; Teadal; TERMINET; TRANSACT; Unlock CEI.

More than 70 people participated in this discussion, including project coordinators and technical managers, aiming to find a common understanding on the definition of the Continuum from a compute pipeline perspective and the essential building blocks for the Architecture.

Results collected from this interaction are under consolidation for refining the initial proposal of the Continuum architecture building blocks and terms to be added to the taxonomy.







3.6 PARTICIPATION AT EVENTS

During the first year of the project, the Open Continuum consortium was very active in promoting the project, the initiative and the task forces at relevant conferences. Below are described 11 conferences that the partners participated in either with a speaking slot, a booth, through networking, etc.

Each participation is described in chronological order (from oldest to most recent) below.







Location: Online

Partner(s) attending: Albert Seubers (MARTEL)

Description: The first UNLOCK CEI webinar was the occasion to present the project's objectives and goals and its interaction with the broader policy context and the other initiatives funded under the same topics.

The event gave attendees the opportunity to meet the people behind the project, interact with them during a poll session and a panel discussion, and understand why and how to get involved.

Open Continuum participated in the panel session "Panel Discussion "Understanding Cloud-Edge-IoT: challenges and opportunities" and presented the project.

Agenda:

15:00 – Introduction | Golboo Pourabdollahian, Consulting Manager, European Government Consulting, IDC

15:10 – Why investigating the Cloud-Edge-IoT domain? | John Gole, Research Director, European IoT Practice, IDC

15:25 – Get involved: value and benefits | Marlene Eisenträger, Consultant, VDI/VDE IT

15:40 – Panel Discussion "Understanding Cloud-Edge-IoT: challenges and opportunities" | Moderator: Maria Giuffrida, Senior Researcher, Trust-IT

- Kay Bierzynski, Senior Project Manager, Infineon and EPoSS
- Brendan Rowan, Managing Consultant for Tech, Policy and Skills, Bluspecs
- Natalie Samovich, WG Energy Chair, AIOTI
- Albert Seubers, Director, Martel BV
- Rainer Sträter, SVP Cloud Services and Global Platform Hosting, IONOS
- 16:20 Q&A

16:30 - Conclusion



Intervention of Albert Seubers, Open Continuum's coordinator, at panel discussion

- Recording: <u>https://www.youtube.com/watch?v=biukrqkl7_Q</u>
- Event page: <u>https://eucloudedgeiot.eu/event/event-1st-unloc-cei-webinar/</u>
- Social media: <u>https://twitter.com/EU_CloudEdgeloT/status/1571869399090626573</u>





https://twitter.com/EU_CloudEdgeloT/status/1570361467391856641

3.6.2 ECLIPSE CON 2022



Type of participation: Roll up and flyers

Date: October 24-27, 2022

Location: Ludwisburg, Germany

Partner(s) attending: Eclipse Foundation Europe

Description: Dissemination material and roll-up presentation have been delivered during the event to promote the EUCEI initiative.



Social media: https://twitter.com/EU_CloudEdgeIoT/status/1584914765754900482





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Type of event: Speakers in Panel Discussion, Speaker, Joint Booth

Date: November 22, 2022

Location: Prague, Czech Republic

Partner(s) attending: Giovanni Rimassa, Albert Seubers, Monique Calisti (MARTEL)

Description: Open Continuum participated in the BDVA Forum 2022 with a panel discussion titled "Building the European, Cloud, Edge, and IoT Continuum for Business and Research." MARTEL partners participated in the panel, including Monique Calisti, Giovanni Rimassa, and Albert Seubers, who discussed the EUCEI initiative. Golboo Pourabdollahian from Unlock CEI and Rita Santiago from the TEADAL project also joined them. In addition, at the IDC4 stand, the partners networked and promoted the initiative.









3.6.4 AIOTI Webinar "IoT, Cloud, Edge Computing Continuum From Research to Deployment



Alliance for IoT and Edge Computing Innovation

AIOTI webinar IoT, Cloud, Edge Computing Continuum From Research to Deployment

30 November, 3:30pm CET

Type of participation: Speaker

Date: November 30, 2022

Location: Online

Partner(s) attending: Giovanni Rimassa (Martel), Gael Blondelle(Eclipse)

Description: As Europe invests in the development of IoT, Cloud, Edge solutions, industry is struggling to adapt to the speed of technological change and the paradigm change towards more intelligence at the edge, that these technologies





can bring. This webinar presented and discussed some topics that could help understand how this transformation can be achieved from research, policy and standardisation point of view and what resources and collaboration are needed. EUCloudEdgeIoT.eu participated with the following talks:

- Market Evolution of Edge Computing by Golboo Pourabdollahian, IDC (UnlockCEI);
- The strength of an open ecosystem for the Edge by Giovanni Rimassa, MARTEL Innovate (OpenContinuum);
- Build on the momentum of Open Source by Gaël Blondelle (ECLIPSE, OpenContinuum)
- Event page: <u>https://eucloudedgeiot.eu/event/webinar-cei-computing-continuum-from-research-to-deployment/</u>
- Social media:
- https://twitter.com/EU_CloudEdgeloT/status/1592078898082480128

3.6.5 IoT, Cloud, Edge Computing Continuum: From Research to Deployment

Webinar: IoT, Cloud, Edge Computing Continuum From Research to Deployment

Type of participation: Speakers

Date: January 24, 2023

Location: Online

Partner(s) attending: Giovanni Rimassa (Martel) and Gael Blondelle(ECLIPSE)

Description: As Europe invests in the development of IoT, Cloud, Edge solutions, industry is struggling to adapt to the speed of technological change and the paradigm change towards more intelligence at the edge, that these technologies can bring.

This webinar presented and discussed some topics that could help understand how this transformation can be achieved from a research, policy and standardisation point of view and what resources and collaboration are needed. Open Continuum participated with two talks:





- The strength of an open ecosystem for the Edge by Giovanni Rimassa, MARTEL Innovate (OpenContinuum);
- Build on the momentum of Open Source by Gaël Blondelle (ECLIPSE, OpenContinuum)

Agenda:

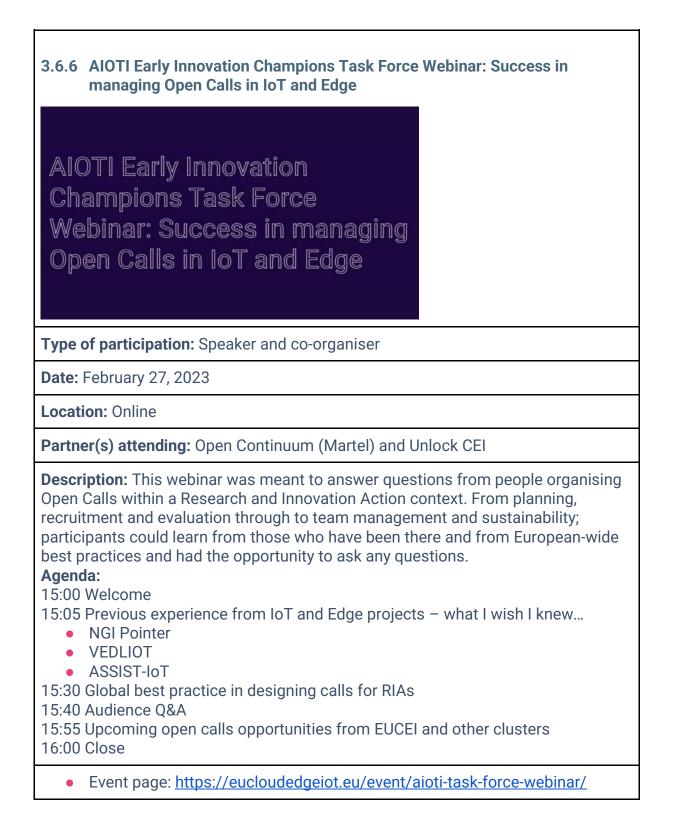
- 15.30 Opening and Welcome Damir Filipovic, AIOTI Secretary General
- 15.30 Presentation of the EU policy and research perspective (10 min) Rolf Riemenschneider, Head of Sector, IoT Unit, DG Connect, European Commission
- 15.40 Market Evolution of Edge Computing (10 min) Golboo Pourabdollahian, IDC, UnlockCEI 15.50 Topologies and Value Chain for Edge Computing (10 min) Léo Saint-Martin, DECISION
- 16.00 Key Use cases for a Meta-OS for the Edge (72 min)
 - Presentation and discussion of key use cases, supported under the MetaOS Cluster Introduction: Jan Komarek, European Commission (10 min)
 - Key use cases for Edge Computing (8 projects, 4 min each)
 - Panel Discussion (20 min), moderated by Giovanni Rimassa
 Panellists: 4 Projects, Ovidiu Vermesan
 - Edge Computing: Path towards demonstration and piloting Ovidiu Vermesan, SINTEF, Chair of AIOTI WG Research and Partnerships (10 min)
- 17:12 Break (3 min)
- 17.15 Build on the momentum of Open Source (10 min) Gaël Blondelle, ECLIPSE, OpenContinuum
- 17.25 Questions and open discussions (15 min)
- 17.40 Wrap up and end of Webinar Damir Filipovic, AIOTI Secretary General

Organiser event page: <u>https://aioti.eu/events/webinar-iot-cloud-edge-computing-continuum-from-research-to-deployment/</u>

EUCEI event page: <u>https://eucloudedgeiot.eu/event/webinar-cei-computing-continuum-from-research-to-deployment/</u>



















11:35 – 12:00 Future Outlook/Strategic Direction SRIA gaps, policy impacts | Tanya Suarez,BluSpecs Ecosystem and community | Dr Monique Calisti, Martel Innovate 12:00 – 12:30 Future of the European Cloud-Edge-IoT Rolf Riemenschneider, IoT Unit, European Commission Maria Tsakali, Cloud Unit, European Commission

Event page: <u>https://eucloudedgeiot.eu/event/eu-iot-final-event/</u>





Type of participation: Flyers at HiPEAC booth

Date: June 5-9, 2023

Location: Barcelona, Spain

Partner(s) attending: NA

Description: As part of liaison efforts with other initiatives, TF6 got the support from HiPEAC, who was attending this event with a booth, to bring the EUCEI communication materials (mainly brochures) and promote it in the event.



Social media: https://twitter.com/EU_CloudEdgeIoT/status/1666343857770971138





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3.6.11 ETSI IoT Conference 2023



Type of participation: Speaker

Date: July 5, 2023

Location: Sophia Antipolis, France

Partner(s) attending: Antonio Kung (Trialog)

Description: On July 4-6, 2023, EUCloudEdgeIoT was discussed at the ETSI IoT Conference (ETSI IoT Week 2023). In particular, Antonio Kung, Co-Chair of AIOTI WG Standardization, and also partner from Open Continuum, presented the work developed so far towards the computing continuum reference architecture. The activities towards this goal from EUCloudEdgeIoT.eu's Task Force 3 "Architecture" were presented as well as the MetaOS projects it works with.



• Slides:

https://docbox.etsi.org/Workshop/2023/07_ETSIIoTCONFERENCE/S08_ME C/AIOTI_ACTIVITIES_TRIALOG_KUNG.pdf

- Event page: https://www.etsi.org/events/2208-etsi-iot-conference-2023
- EUCEI news: https://eucloudedgeiot.eu/architecture-task-force-and-metaosprojects-presented-at-etsi-iot-week-2023/

For the next period, the Open Consortium colleague is already looking into participating at EBDVF 2023 (25-27 October 2023 - Valencia, Spain) and Eclipse SAAM on Cloud-to-Edge Continuum 2023 (17 October 2023 - Ludwigsburg, Germany).





3.7 CHANNELS

This section provides information about the activities and performance of the communication channels established for the EUCloudEdgeIoT initiative.

3.7.1 Website

Content

The initial content for the EUCEI website was developed through a collaborative process led primarily by Unlock CEI. Following that, both projects were responsible for website populating, updates, and monitoring, though Open Continuum took a bit of leadership in technical developments due to its experience, as detailed below.

In terms of new website content, Open Continuum has created the following pages:

- <u>The CSAs</u>: This page describes the projects that are the driving force behind EUCloudEdgeIoT. Both projects contributed to the content.
- <u>Research and Innovation projects</u>: This page lists all the projects that are part of the EUCEI community. Open Continuum gathered the data, and both projects are adding new projects that join EUCEI.
- Task Forces: Each task force has its own page that describes its topics, key objectives, leadership, and how to join. Both projects created content.
- Policies and Initiatives: This page lists policies and initiatives influencing current and future research in Europe. Both projects created content.
- Horizon Europe Calls: A page that lists all current and upcoming Horizon Europe calls, as well as related events (such as info days).
- Future Outlook page: This page contains all content related to the European vision and research directions in Cloud-Edge-IoT, as well as the Concertation and Consultation event. Open Continuum created the content and is in charge of this page.
- <u>Expressions of Interest</u>: This page contains a list of all the expressions of interest received for the Consultation meeting. Open Continuum created the original content. This page is managed by Open Continuum.

In addition, the following pages have received new content:

- Reports: Open Continuum has so far added three deliverables with the tag "pending approval" until it is officially approved by the EC.
- Communication Materials: Three new materials (EUCEI Brochure, Research Community Booklet, and Meta-OS Booklet) were added.
- News: 17 from Open Continuum (Total:41)
- Events: 38 from Open Continuum (Total: 61)
- News digest: Eight news digest have been added to this page so far.

All download materials are first uploaded to the Zenodo channel and then linked to the EUCEI website. This allows us to track views and downloads more effectively.





Revamp

Following feedback from project officers and community members, Open Continuum has greatly contributed to several new developments and improvements to the website. Open Continuum always ensures Unlock CEI approval, as per the joint leadership communication policy. Even though Open Continuum makes minor tweaks to the website here and there, three major website "revamp" phases occurred in 2023.

The first phase, which took place around February, included the following:

- Homepage redesign: A banner was added to the top of the homepage to highlight specific aspects of the initiative. Both projects could easily change it in the website's back office. A section displaying the logos of the members, as well as the task forces, was also included. Finally, there is a section highlighting the most recent EUCEI events and news.
- Condensing the information: The previous version of the website had several front pages in the menu that contained little information on a variety of topics related to the initiative. That data was condensed and placed on a single page titled "About."
- Creation of the CSAs page: Page that describes the projects behind EUCEI.
- In case users did not know to go to the project resources (deliverables, communication materials, publications, and so on) through the Zenodo icon, a page called "Resources" was created on the menu that redirected to Zenodo.
- The task forces page listed all of the available TFs.

In a second phase, around May, Open Continuum realised that the initiative requires constant updates and new pages to be added to the website, and that this should be made easier. Unlock CEI (who owns the website's server) implemented a WordPress builder (called Elementor) with the help of Open Continuum. With that installed, the following improvements in user experience occurred:

- Larger width
- Correct responsiveness
- Same colour fonts according to branding
- Visual improvements on each page, especially the homepage.
- Addition of some small motion effects
- Improvement of UX in some points. For example, all pdf resources are now available on the homepage.
- New "News page" with date filter
- New "Events" page with filters
- Recreation of all the events in order for the new template to work correctly (this part was done by Unlock CEI mainly)
- Separate pages for each task force
- New "News Digest" page

The third and most recent phase occurred in July. Following a meeting with EC representative Maria Tsakali, the following interventions were made:

 Menu: Remove second and third level menu access pages and make them first level; for example, "Task Forces" was removed from the "Community" page and is now a single menu item. Certain page titles have been improved to make





them clearer, for example, "Cooperation Mechanisms" has been changed to "Task Forces," and the "Resources" tab has been changed to "Outputs."

- Homepage: Development of highlight sections to facilitate access to the following pages:
 - Future Outlook
 - Research and Innovation Projects
 - Policy and Initiatives
 - Outputs
 - Get funded
- Creation of new pages:
 - Policy and Initiatives
 - Future Outlook
 - Expressions of Interest
- Changes to previously created pages:
 - Reports and Communication Materials are now two separate pages under the "Outputs" tab. This page may be expanded to include other types of initiative outputs.
 - Horizon Europe calls can now include associated events such as Info Days.

3.7.2 Performance

Since June of 2022, the EUCloudEdgeIoT website has reached more than 1,8k unique visitors, as can be seen on the image below. The project's end goal is 5k views, so we will focus our efforts on increasing the number of visitors to the website (as outlined in section 5 of this deliverable). Visitation peaks in May, during the period of the Concertation and Consultation event.

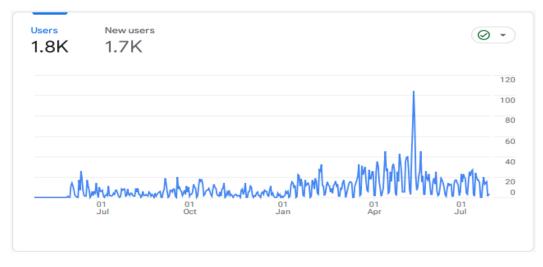


FIGURE 4: EUCEI WEBSITE USERS

Additionally, users have accessed the EUCEI website at least 7.5k times during this period for an average engagement time of at least 3.41 minutes, which shows that the content on the website is interesting for the visitors. In total, the website pages have been visited 19.6k times by visitors of 71 countries (figures below), demonstrating the wide reach of the initiative. It is also important to note that the most viewed pages on





the website are the event page of the concertation and consultation event (which was actually an invitation only event), the task forces page, and the events page.

Session default channel group 👻 🕇	Users	↓ <u>Sessions</u>	Engaged sessions	Average engagement time per session	Engaged sessions per user	Events per session	Engagement rate	Event count All events 👻
	1,772 100% of total	7,771 100% of total	4,619 100% of total	0m 50s Avg 0%	2.61 Avg 0%	7.36 Avg 0%	59.44% Avg 0%	57,184 100% of total
1 Direct	1,013	2,588	1,480	0m 53s	1.46	7.28	57.19%	18,847
2 Organic Search	487	2,468	1,505	0m 50s	3.09	7.80	60.98%	19,259
3 Referral	350	1,634	963	0m 50s	2.75	7.30	58.94%	11,934
4 Organic Social	201	958	630	0m 42s	3.13	6.57	65.76%	6,297
5 Unassigned	32	45	0	1m 26s	0.00	17.07	0%	768
6 Organic Video	2	7	4	1m 17s	2.00	11.29	57.14%	79

FIGURE 5:EUCEI WEBSITE VISITORS' CHANNELS

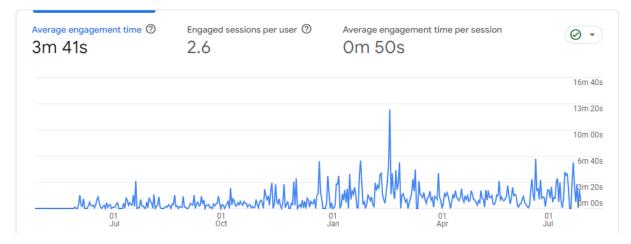


FIGURE 6.EUCEI WEBSITE AVERAGE ENGAGEMENT TIME

Pa	Page path and screen class 👻 🕂	↓ Views	Users	Views per user	Average engagement time	Event count All events 👻
		19,686	1,538	12.80	4m 05s	55,222
		100% of total	100% of total	Avg 0%	Avg 0%	100% of total
1 /		4,940	919	5.38	1m 37s	14,894
2 cc	concertation-and-consultation-on- omputing-continuum-from-cloud- o-edge-to-iot/	1,368	289	4.73	2m 34s	4,196
3 /c	cooperation-mechanisms/	955	179	5.34	1m 55s	2,489
4 /f	future-events/	804	128	6.28	1m 15s	1,905
5	european-research-and-innovation- rojects/	729	130	5.61	2m 13s	1,989
б /с	call-for-expression-of-interest/	578	189	3.06	1m 19s	1,713
7 /la	landing-page/	563	5	112.60	23m 50s	1,114
8 /a	about-2/	548	161	3.40	1m 08s	1,414
9 /n	news/	439	85	5.16	0m 48s	999
10 /t	the-csas/	341	86	3.97	0m 42s	933

FIGURE 7: EUCEI WEBSITE PAGE VIEWS



	Country 👻 🕂	↓ Users	New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time	Event count All events 👻	Conversions All events 👻
		1,772 100% of total	1,725 100% of total	4,619 100% of total	59.44% Avg 0%	2.61 Avg 0%	3m 40s Avg 0%	57,184 100% of total	83.00 100% of total
1	Italy	269	254	1,027	56.83%	3.82	4m 08s	10,386	20.00
2	Spain	215	197	579	60.12%	2.69	3m 29s	5,218	9.00
з	Germany	209	193	305	55.05%	1.46	2m 02s	3,038	7.00
4	Greece	168	159	575	56.43%	3.42	6m 13s	8,548	9.00
5	Belgium	126	89	195	61.9%	1.55	2m 16s	2,309	3.00
6	France	117	109	524	69.04%	4.48	5m 24s	5,975	7.00
7	Netherlands	106	98	375	70.49%	3.54	9m 33s	11,786	10.00
8	United States	96	89	37	30.58%	0.39	0m 30s	503	0.00
9	Portugal	61	50	149	64.22%	2.44	2m 48s	1,520	2.00
10	Switzerland	53	42	143	55.86%	2.70	3m 48s	1,565	0.00

FIGURE 8: TOP COUNTRIES FROM WEBSITE VISITORS

3.7.3 Social Media

Content

Open Continuum is constantly updating EUCEI's social media channels (Twitter, LinkedIn, and YouTube). Aside from project-related posts (to promote Open Continuum events and outputs), this project makes an effort to interact with other social media channels on a daily basis, liking, sharing, and retweeting content that is interesting and relevant to our target audience and followers. This is primarily done on Twitter. This strategy, which began primarily in January 2023, has proven to be effective, as the channels have seen the greatest growth in terms of followers and engagement since that time. The high level of interest in the Concertation and Consultation meeting certainly helped.

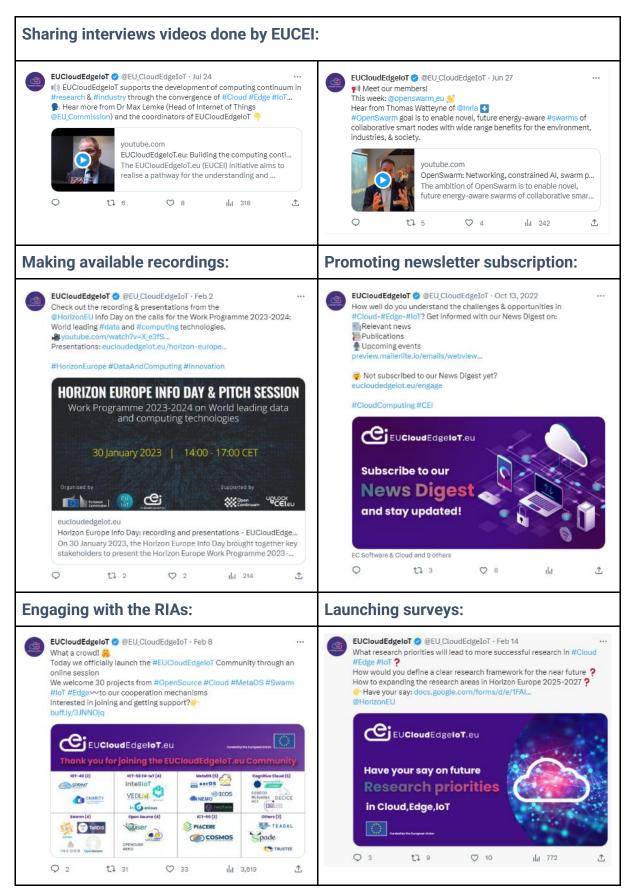
Additionally, as stated before, Open Continuum engages with the previous CSAs (NGIoT and HUB4CLOUD) social media channels in order to connect with their audience and migrate them to EUCEI.

Below are some examples of posts that Open Continuum makes.



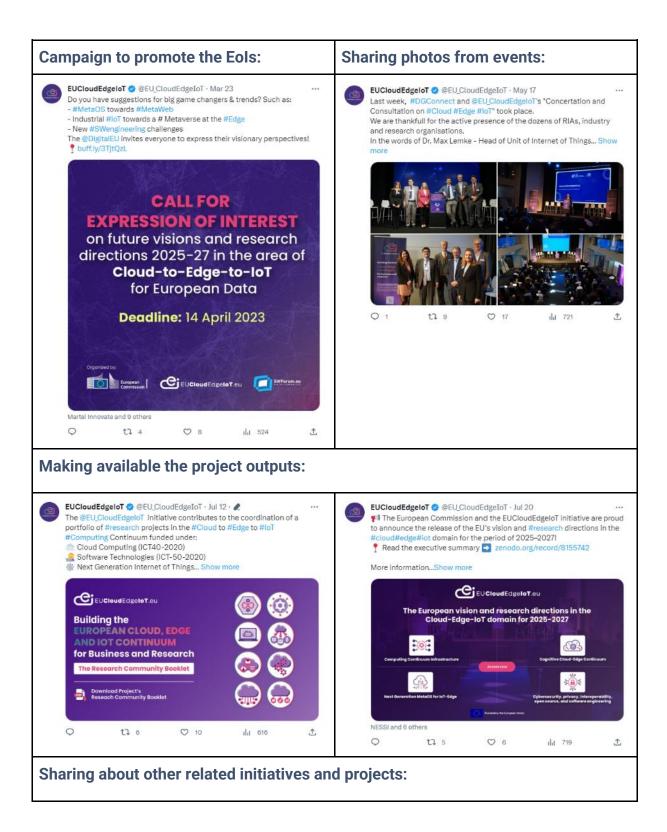


TABLE 1: SOCIAL MEDIA POSTS



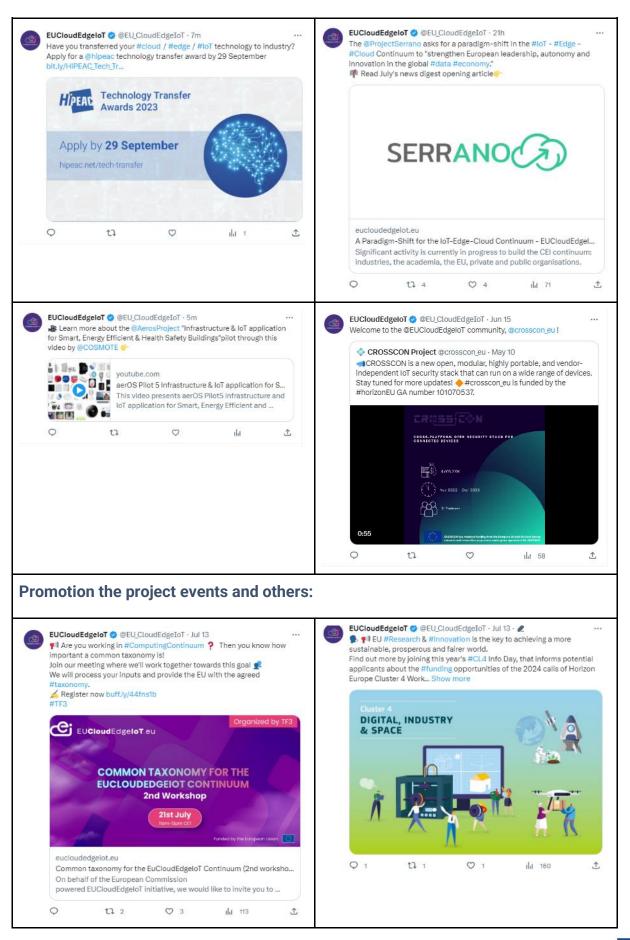






Open Continuum | D3.2 Community Building and Community Strategy Report v1 (V0.1)









Updates

Since the creation of the social media channels, the following updates have been done by Open Continuum:

- Improvement of the cover images of all the channels
- Creation of newsletter subscription on LinkedIn
- Creation of highlights section on the Twitter channel
- Enhancement of the YouTube page through the addition of links to the website and social media, rearranging the entry page, and the creation of playlists.

Performance

Each channel's performance is detailed below. It should be noted that these are only organic results (no paid campaigns have been conducted across all channels).

Twitter

417 followers; 727 posts

EUCloudEdgeIoT's social media channels have been performing admirably. The KPI for Twitter followers (500) has nearly been met, and it is expected to more than double by the end of the project.

LinkedIn

467 followers; 130 posts

Similarly, LinkedIn is performing extremely well, and the intuitively established KPI (100 followers) has been greatly exceeded, with the current number expected to at least double.

YouTube

16 videos; 13 Subscribers; 620 views

The YouTube channel, according to deliverable 3.1, is primarily used as a video repository rather than a social media channel. However, Open Continuum has posted 12 videos on their site, with a total of 314 views. More information about these videos can be found in the following section.

3.7.4 Videos

It was originally planned to release four videos per year, each with 80 views. To compensate for not reaching that number of views so far (which we expect to reach by the end of the project), Open Continuum has been producing more videos in order to build momentum.

The EUCEI initiative used the Concertation and Consultation meeting to film more than 50 interviews with the RIAs in attendance. Open Continuum is in charge of editing the videos, which are released on a weekly basis. So far, six videos have been released. They can be found on YouTube in a playlist called "Our Research and Innovation Community Members."

• <u>OpenSwarm: Networking, constrained AI, swarm programming</u> | 37 views





- <u>TaRDIS: Trustworthy And Resilient Decentralised Intelligence For Edge Systems</u> | 26 views
- <u>CHARITY: Cloud for Holography and Augmented RealITY</u> | 16 views
- <u>PHYSICS: Optimized Hybrid Space-Time in FaaS</u> | 7 views
- <u>TEADAL: Trustworthy, Energy-Aware federated DAta Lakes along the computing</u> <u>continuum</u> | 6 views
- OASEES: Open autonomous programmable cloud apps & smart sensorts | 31 views

During the meeting, Open Continuum also filmed an interview with Dr. Max Lemke (Head of Unit Internet of Things, European Commission). Following an initial script developed by Unlock CEI, Open Continuum created a video to present the project using interviews filmed during EBDVF2022 with Open Continuum and Unlock CEI representatives. The video is now available on the YouTube channel as the page's introduction video:

• <u>EUCloudEdgeIoT.eu</u>: <u>Building the computing continuum for business and</u> research | 60 views

Open Continuum also recorded some video footage during the two-day meeting and edited it into a highlights video:

 <u>Concertation and Consultation on Computing Continuum:From Cloud to Edge</u> to IoT | 10-11 May 2023 | 48 views

Furthermore, whenever possible, Open Continuum has made recordings from the project's events available:

- The Hitchhiker's Guide to Eclipse IoT Webinar Recording | 29 views
- <u>"Open Unification of Edge Compute" Webinar Recording</u> | 37 views
- Horizon Europe Info Day & Pitch Session Recording 17 views

These videos were then shared on Twitter and LinkedIn to broaden their reach and received positive feedback from viewers.

3.7.5 News Digest

The newsletter's structure has evolved over the months, and it now consists of the following elements:

- Main Article: An introductory opinion piece written by a community member. So far, the HiPEAC, Open Continuum, Unlock CEI, and SERRANO project coordinators have written these articles.
- EUCEI News: This section summarizes the most important news from the initiative.
- Community News: This section features updates from EUCEI projects and initiatives.
- EUCEI Events: This section features upcoming EUCEI and community events.
- Other Events: This section contains events from the community as well as others that are relevant.





- Horizon Europe Open Calls: This section contains a listing of all upcoming Horizon Europe Open Calls.
- More information: This section contains links to the project brochure, RIAs, and MetaOS booklets.
- Footer: Project-related information.

With an initial proposal to post quarterly news digests, Open Continuum and Unlock CEI have made an effort to post monthly news digests as it is a good tool for communicating about the initiative and the projects. During this time, Open Continuum and Unlock CEI have worked together to create eight newsletters. They are all available on the <u>EUCEI website</u>.

The newsletter's content is compiled with the help of TF6 members, using information gathered during TF6 meetings and forms designed to collect news and events.

As it can be seen below, the number of newsletter subscribers is now 193. Despite the increase in subscribers over the months, the news digest click-to-open rates (CTOR) have been very good (around 30%).

<u>EUCloudEdgeIoT.eu -</u> <u>News digest 01</u>	13 October 202	2	Title: Welcome to the European Cloud, Edge and IoT Continuum News Digest		
Recipients	Opened	Clicke		CTOR	
70	55.71%	35.7		64.1%	
<u>EUCloudEdgeloT.eu -</u> <u>News digest 02</u>	21 November 20	22	Title: Meet the European Cloud, Edge and IoT Continuum at EBDVF 2022 (Prague, CZ) - Rea our News		
Recipients	Opened	Click		CTOR	
85	58.82%	20%		34%	
<u>EUCloudEdgeloT.eu -</u> <u>News digest 03</u>	21 December 2022		ready for o events in th	ate and get ur upcoming ne Cloud, Edge mains in 2023	
Recipients	Opened		ked	CTOR	
99	52.53%		3%	25%	





<u>EUCloudEdgeloT.eu -</u> <u>News digest 04</u>	20 January 20	Edge & lo	New year, new Cloud, Edge & IoT events! Check where you need to		
Recipients	Opened	Clicke		CTOR	
101	44.55%	11.88		26.67%	
<u>EUCloudEdgeloT.eu -</u> <u>News digest 05</u>	23 March 202	23 March 2023 Cloud, Edge and Io Continuum?		lge and IoT	
Recipients	Opened	Clicke		CTOR	
130	48.46%	14.62		30.16%	
<u>EUCloudEdgeIoT.eu -</u> <u>News digest 06</u>	28 April 202	3	Title: The potential of Cloud- Edge-IoT market: Where is the opportunity for European players?		
Recipients	Opened	Clickee		CTOR	
140	50.71%	12.86		25.35%	
<u>EUCloudEdgeloT.eu -</u> <u>News digest 07</u>	Title:Enabling techr28 June 2023for the computecontinuum: WIEurope's priorition			ompute m: What should	
Recipients	Opened	Clicke		CTOR	
187	47.06%	14.97		31.82%	

Newsletter Subscribers						
Total active subscribers	193					
New (Last year)	193					
Unsubscribed (Last year)	10					

3.7.6 Mailing Lists





Since the beginning of the project, new mailing lists have been created, such as one for each Task Force. They are made up of the contacts of the Task Force members, making targeted communication easier. Furthermore, a "community" mailing list was created, which includes all contacts from EUCEI projects, as well as a "coordinators" one, which as the name suggests, includes contacts from the projects' coordinators.

Finally, a "info" email was established and made available on the project website in order to receive contact messages from external contacts. It is also the primary point of contact for external contacts who want to join a specific task force, which TF6 must direct to the appropriate TF leader.

Open Continuum took the lead in developing a spreadsheet that collects all of the members' contact information (name, role, project, and position) and monitors their participation in each mailing list and TF, as well as the project start and end dates, for better community management. There are currently over 220 contacts on the document. The mailing lists and spreadsheet updates are the joint efforts of the Open Continuum and Unlock CEI consortiums.

Below we list the number of members included in each mailing list:

- **Community:** 218 members
- **Coordinators:** 55 members
- TF1: 26 members TF2: 39 members
- **TF3:** 49 members
- **TF4:** 36 members
- TF5: 33 members
- **TF6:** 111 members

3.7.7 Joint Repository

In order to make it even easier for EUCEI and for the project representatives to send information for dissemination, Open Continuum has created a set of forms and guidelines for this which are easily accessible through the joint repository:

- Form to send news: <u>https://forms.gle/5AMFrRhmcc9rFJ7n8</u>
- Form to send events: <u>https://forms.gle/5ASiSgExi36B8K7v6</u>
- Form to send open calls: <u>https://forms.gle/zejUetGyNs657anu5</u>
- Form to send publications: Upload directly to the EUCEI community on Zenodo <u>https://zenodo.org/communities/eucloudedgeiot</u> or <u>https://forms.gle/1KSAR33i8sQ9NPJF9</u>
- Form to have news article featured on the EUCEI Newsletter: <u>https://forms.gle/CUD9QoAdKafKrTkUA</u>

3.7.8 Press Releases

A press release introducing and presenting the EUCEI initiative, its players, and goals was published on the <u>website</u> on December 15, 2021 as a collaborative effort between Open Continuum, Unlock CEI, and the projects' officers. The press release can be read in this <u>link</u>.





3.7.9 Zenodo

As off the release of this deliverable, the EUCloudEdgeloT Zenodo channel counts with a total of 25 uploads, where the great majority has been included by Open Continuum and Unlock CEI, although other projects are encouraged to post there as well (after a monitoring done by either of the two responsible CSAs). We highlight the results so far of the following uploads (as they are the ones that mainly concern Open Continuum):

- <u>The research community booklet</u> | Posted on May 16, 2023 223 views and 155 downloads
- <u>The European vision and research directions in the Cloud-Edge-IoT domain for</u> <u>2025-2027 (Distillation of the Concertation Meeting in Brussels on May 11,</u> <u>2023)</u> | Posted on July 17, 2023 - 97 views, 74 downloads
- <u>The European vision and research directions in the Cloud-Edge-IoT domain for</u> <u>2025-2027 (Executive Summary)</u> | Posted on July 17, 2023 - 130 views, 86 downloads
- Driving Innovation in the Cloud-Edge-IoT Continuum (A summary of the Concertation Meeting in Brussels on May 10, 2023) | Posted on July 17, 2023 -38 views, 27 downloads
- Project brochure | Posted on May 16, 2023 173 views, 66 downloads

4 OTHER ACTIVITIES

This section is meant to list some activities that do not fit in the other categories mentioned above.

RIAs Survey

Partner performing activity: MARTEL

Description of the activity and results: During December 2022 and February 2023, Open Continuum created a survey to collect information from the RIAs involved in EUCloudEdgeloT at that time. This data would serve as the foundation for the 2025-2027 research directions, for which the Concertation and Consultation event performed significantly better. The survey was completed by 19 projects, and the results were presented at a meeting with project officers.

Proof of activity:

https://docs.google.com/forms/d/e/1FAIpQLSd97ICWZ9ec89ADZZKgQ7lcokAqEjl 5kKNXSkrRn5IZ_LCEFg/formResponse





5 KPIS AND UPDATES TO THE STRATEGY

In the table below, the expected KPIs to be achieved by the end of the project (Column "Target") are compared to the results achieved thus far in the first year of the project (Column "Results Y1"). Furthermore, the final column elaborates on the reasoning behind the achieved result and describes strategy updates to be implemented in the second and final year of Open Continuum.

Measure	Indicators	Source and methodology	Target	Results Y1	Comments/Strategy for Y2
Flyers	N. of flyers	Distribution via participation to and organisation of	> 4	2	One flyer and one brochure have been produced to present the project. Printed materials were not used as the primary means of project promotion because other modes of communication have been shown to work better (such as promotion on the website, news digest, and social media).
Posters / roll-ups	N. of posters/ roll-ups (by project end)	dedicated events. Electronic distribution via website	> 4	4	Two versions of the EUCEI roll-up were created to present the project. A second roll-up and poster were also created for the Concertation and Consultation event. Even if the KPI has already been met, we intend to produce one more roll-up if we hold another conference.
Open Continuum Portal	Unique visitors to the website (yearly avg)	Newsletters, Deliverables, webinars, News, Publications, Videos, etc.	> 5000	1.8k	We anticipated at least 2.5k visitors to the website at this point. Since January, we have made a concerted effort to post more on social media with links to the website. In the coming period, we will try paid social media campaigns to drive traffic to the website.
Social Networks	Twitter followers	Keeping Open Continuum profiles on such networks active via regular posting and monitoring	>1000	417	According to the KPI, the outcome is satisfactory for this stage. We will continue to post and engage on social media on a daily basis.

TABLE 2: KPIS AND UPDATES TO THE STRATEGY



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	LinkedIn followers (new followers/ year)	Keeping Open Continuum profiles on such networks active via regular posting and monitoring	> 200	467	So far, the outcome has exceeded expectations set at the proposal stage. We can conclude that the strategy used for this channel was successful, and we will continue to use it.
e-Newsletter (published guarterly)	subscribers (by end of the	Recording of subscribers to the electronic newsletter	> 500 subscribers, 8 newsletters		The number of newsletters expected to be sent during EUCEI's lifetime has already been met. However, we lag behind in terms of subscriber count. However, as the initiative grows in popularity, we anticipate an increase in the number of subscribers.
Videos	Videos published on the YouTube channel and number of views	Introduction, informative and educational videos to support awareness creation and stakeholders' engagement	8 videos, 80 views per video	11 videos, 310 views total	Despite the fact that videos have been posted not only on YouTube but also promoted through the newsletter and social media, the number of views per video has not yet been reached. We will run paid campaigns on YouTube to see if it increases the number of views. However, Open Continuum has already produced more videos than expected and is on track to outperform the KPI by 50 videos.
Summit (one	Average number of participants	Attendance proof, presented material, photos, animation of social media channels, events' reports	> 200	127	The first Open Continuum summit was replaced by the project's Concertation and Consultation meeting. Because the event was by invitation only, there was a limited number of people who could attend, so the number of attendees was unimportant. More importantly, Open Continuum was able to ensure that all projects and initiatives had a representative attend the event and give a presentation. Furthermore, Open Continuum created the European vision for cloud-edge-IoT research documents for 2025-2027. For the second year, we will meet with the project officer to discuss how we should proceed. Open Continuum is willing to organise a final conference to showcase the final results achieved by EUCEI so far, while introducing the new CSAs that will take over.

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Participation in events and	External events attended to present the project, support the community and increase outreach	Attendance proof, presented material, photos, animation of social media channels, events' reports	> 15 events by the end of the project	11	The Open Continuum consortium has made significant efforts to disseminate the initiative through participation in events, primarily through talks. We will continue with these efforts in the project's second year, primarily to promote the executive summary on the European vision for cloud-edge-IoT research for 2025-2027.
Webinars	Average number of participants	Attendance proof, video-streaming, presented material, animation of social media channels	> 6 webinars ~ 25-30 attendees	W1: 27 atts W2: 240 atts W3: 86 atts W4: 32 atts W5: 73 atts 458 total atts	The webinars and the workshops were important to lay the groundwork on some relevant topics of EUCloudEdgeloT, such as initiating the discussions on the common taxonomy, promoting the project and launching the TFs. Open Continuum will organise at least one more webinar in the second year of the project to promote the initiative's results.
Expert consultation workshops	Number of workshops engaging experts in WP1 activities	Presentations, informative and promotional material, reports	4 with > 30 attendees	E1: More than 100 atts	The workshop involving EPoSS and INSIDE working groups on edge computing and AI, system integrators and hardware specialists took place at EFECS the largest event in the KDT ecosystem, allowing to kick off the new joint working group on edge computing and AI. The workshop addressed novel issues, research and innovation directions in the area of intelligent embedded systems, AI hardware accelerators, edge AI-based software and services in the domain of Edge AI, opening the discussion on the future directions of edge computing and AI that will impact on the edge-to-cloud continuum and future EU programs.
Training events with computing continuum experts on open- source standardisation workshops	Number of trainings	Attendance proof, video-streaming, presented material, animation of social media channels	4 trainings > 25 attendees	T1: 48 att. T2: 10 att. T3: 47 att. T4: 51 att. 156 total atts	The webinars organized by EF gave the 42 projects in the cluster an overview of the most active and mature open source projects on Cloud to Edge Continuum within these 2 major foundations, the Eclipse and the Linux Foundations. In addition, in December 2022 and January 2023, Open Continuum has provided support to the Enershare project in reviewing a generic open source development plan for European projects (D11.3 deliverable of Enershare). Open Continuum will consider reusing, adapting and presenting this development plan in future open source standardisation workshops.





6 CONCLUSIONS

The first half of the Open Continuum project was primarily defined by the launch and subsequent development of the EUCloudEdgeloT initiative and its task forces. This entailed, in the first stage, laying the groundwork for its dissemination and communication, which included developing a strategy, developing a brand, launching communication channels, organising launch events, and much more.

WP3 "Open Continuum MOBILIZE" is inextricably linked with the EUCEI's Task Force 6 -Communications, which meant that in addition to collaborating with all project partners, WP3 also needed to collaborate with the other CSA Unlock CEI (and their partners) who are also part of this task force and the EUCloudEdgeIoT initiative. This in and of itself entailed some difficulties and modifications to the original plan. However, the collaboration has been going swimmingly, as evidenced by the results presented in this deliverable. Furthermore, Open Continuum (and EUCloudEdgeIoT) works closely with the project officers of both CSAs and has been quick to adapt its initial activities to better meet the goals of the European Commission.

The activities that Open Continuum leads have had a significant impact and performance. This is the case with the initiative's branding, website redesign, and the organisation of the Concertation and Consultation event and its outputs.

As detailed in this deliverable, all partners contributed significantly to dissemination and communication efforts during the first year and first half of this project. When the project's results to date are compared to the expected results included as key performance indicators, it appears that Open Continuum is on the right track. The strategy will therefore only suffer slight adjustments to make sure the project goals are achieved.

For the second and final period of the project, WP3 and TF6 expect to continue supporting partners in their activities, with a greater emphasis on promoting the initiative's results, liaising and supporting the related RIAs, and remaining flexible to the initiative's needs.

