



D6.5 Dissemination Communication and Exploitation (D-C-E) Plans

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Table of Contents

1	Executive Summary	7
2	Introduction.....	8
2.1	Mapping AC ³ Outputs.....	8
2.2	Deliverable Overview and Report Structure	10
3	Dissemination Plans and Activities.....	11
3.1	Dissemination Strategy and Plans.....	11
3.2	Dissemination Methodology	11
3.3	Dissemination Action Plans	13
3.3.1	Identified relevant conferences for scientific publications.....	15
3.3.2	Identified relevant journals/magazines for scientific publications.....	16
3.4	Dissemination Actions Performed/Organised	17
3.4.1	Organised dissemination activities	17
4	Communication Plans and Activities	18
4.1	Communication Methodology	18
4.2	Communication Action Plans	20
4.3	Communication Activities	21
4.3.1	AC ³ LOGO.....	21
4.3.2	AC ³ Social Media.....	22
4.3.3	Press and TV/Radio Interviews.....	26
4.3.4	Newsletters	26
4.3.5	AC ³ rollup.....	27
	Standardisation Plans and Activities	29
4.4	Standardisation Scope.....	29
4.5	Standardisation Action Plans	30
4.5.1	Standardisation roadmap and organizations	30
5	Exploitation Plans and Activities	33
5.1	Exploitation Scope.....	33
5.2	Exploitation Methodology.....	34
5.3	Initial Individual Exploitation Action Plans.....	34
5.3.1	ISI/ATH.....	35
5.3.2	IQU.....	35
5.3.3	ION.....	35
5.3.4	ARS.....	36
5.3.5	UCM.....	36
5.3.6	SPA.....	36
5.3.7	IBM	37
5.3.8	FIN	37
5.3.9	EUR	37
5.3.10	CTX.....	38
5.3.11	UBI	38
5.3.12	UPR	38
5.4	Overall Exploitation Potential and Impact	39
5.4.1	Exploitation potential.....	39
5.4.2	Impact.....	39
6	Conclusions.....	41
7	References.....	42

List of Figures

Figure 1: AC ³ Logo	21
Figure 2: LinkedIn Visitors analytics	23
Figure 3: LinkedIn Visitors demographics	23
Figure 4: Twitter profile and followers.....	24
Figure 5: An important tweet establishing a major objective of the project	25
Figure 6: Twitting about the first plenary meeting	25
Figure 7: First issue of the AC ³ Newsletter.....	27
Figure 8: AC ³ rollup.....	28

List of Tables

Table 1: Adherence to AC ³ GA Deliverable & Tasks Descriptions	9
Table 2: Dissemination Plan – KPIs and Target stakeholders	13
Table 3: List of potential R&D conferences	15
Table 4: List of potential journals/magazines	16
Table 5: Dissemination activities performed	17
Table 6: Communication action items and communication channels.....	20
Table 7: Standardisation plans and identified SDOs	30
Table 8: List of partners exploitable assets	34

Glossary of terms and abbreviations used

Abbreviation / Term	Description
AC ³	Agile and Cognitive Cloud-edge Continuum management
CNCF	Cloud Native Computing Foundation
CSA	Coordination and Support Actions
D&C	Dissemination and communication
DSM	Digital Single Market
DoA	Description of Action
GA	Grant Agreement
GDPR	General Data Protection Regulation
OCM	Open Cluster Management
PoC	Point of Contact
RIA	Research and Innovation Actions
SDO	Standard Developing Organisation
WP	Work Package
HaDEA	European Health and Digital Executive Agency

1 Executive Summary

Deliverable D6.5 is a public document of the Agile and Cognitive Cloud-edge Continuum management (AC³) project, which is prepared and developed in line with the description of actions of Work Package 6 (WP6) - Dissemination, Communication, Standardisations, and Exploitation. Specifically, it addresses an essential portion of the Task 6.1 – Dissemination and communication activities, which is a continuous action whose first edition will be made available by the end of month 6 (M06). While the majority of the activities defined within Task 6.1 is designed to address the propagation and promotion of the dissemination and communication activities of the AC³ project, this deliverable being the first edition and to be published in the beginning of the project, will focus more on the plans, strategy and methodology that will be deployed to achieve these important set of activities while also capturing certain aspects of standardisation and exploitation plans as implied in the name of the deliverable.

This deliverable revolves around the comprehensive framework of WP6, which encompasses the crucial areas of Dissemination, Communication, Standardisation, and Exploitation plans. Each of these facets is thoroughly addressed, with detailed strategies and implementation plans that align with the specified key performance indicators (KPI) outlined in the grant agreement (GA).

Given the project's nascent stage, the deliverable primarily focuses on laying the groundwork for effective communication and dissemination activities. It provides a roadmap for utilizing various communication tools and activities to achieve the project's objectives. Notably, significant progress has already been made in initiating communication efforts, reaching early milestones that validate the project's commitment.

Looking ahead, the subsequent deliverables, specifically D6.6 – Dissemination Communication and Exploitation (D-C-E) Intermediate and D6.7 – Dissemination Communication and Exploitation (D-C-E) Final, will build upon this foundation. They will offer more comprehensive insights and updates on the ongoing communication and dissemination initiatives. Anticipated release dates for these deliverables are set at the conclusion of M18 and M36, respectively, aligning with the project's timeline and objectives.

In essence, this deliverable serves as a comprehensive guide, outlining the project's plans and strategies for effective dissemination, communication, standardisation, and exploitation. It establishes a solid framework for future milestones and outcomes, showcasing the project's commitment to transparent and impactful communication practices.

2 Introduction

The purpose of this section is to map AC³ project commitments, both within the formal Deliverable and Task description, against the project's respective projected work plans and their developmental actualisation roadmaps. The primary goal of the project's dissemination and communication activities is to effectively present and raise awareness and visibility of the project both within the consortium and among the general public. By implementing targeted communication strategies, the project aims to ensure that key stakeholders, including consortium members and the wider public, are well-informed about the project's objectives, progress, and achievements. Through well-defined dissemination strategies and communication channels, the project aims to reach both internal consortium members and external audiences. By providing clear and concise information about the project's objectives, progress, and achievements, the project seeks to foster a sense of collaboration, shared purpose, and engagement among consortium members.

The communication and dissemination activities highlight the progress of AC³ project, results achieved, AC³ innovations, and future plans. This activity is important to awaken the interest of the stakeholders, present latest results to the public, and show latest innovations to the academic community. As a result, the KPI within AC³ are continuously monitored and evaluated to ensure that the stated objectives and innovations presented in AC³ are achieved. The continuous communication and analysis of the stated KPIs would enhance early interventions in order to achieve the stated objectives and innovations. To this end, several communication channels have been highlighted by the AC³ Consortium for progress report, AC³ communication and promotions, and presentation of results. These channels included regular online meetings, face to face plenary sessions, written communications through emails, and AC³ code documentation.

This deliverable comprehensively presents and discusses the standardization and exploitation objectives and plan of the project. It outlines the specific standardization plans that the project aims to pursue, as well as the individual exploitation plans of the consortium partners involved. The standardization objectives are clearly articulated, emphasizing the project's intention to contribute to the development and adoption of industry standards in relevant domains. This may involve active participation in standardization bodies, engagement with stakeholders, and collaboration with other projects and initiatives. By aligning with established standards, the project aims to ensure interoperability, compatibility, and broader acceptance of its outcomes. In parallel, the exploitation plans of the consortium partners are highlighted, demonstrating their commitment to effectively utilize and capitalize on the project's results. Each partner's exploitation plan is tailored to their specific business models, technological assets, and strategic objectives. This comprehensive approach ensures that the project's outcomes are effectively incorporated into the partners' respective activities and contribute to their overall success.

Within the scope of AC³, this deliverable is one of the deliverables marked as public. As stated above, it covers the activities within the AC³ project from January 1, 2023 until June 30, 2023. In addition, relevant information from other tasks within WP6 such as in T6.2 (Exploitation, sustainability plans, and business models) and T6.3 (Exploitation, data, and IPR management) with certain overlapping actions were reported where necessary.

2.1 Mapping AC³ Outputs

Purpose of this section is to map AC³ project commitments, both within the formal Deliverable and Task description, against the project's respective outputs and work performed as show in Table 1.

Table 1: Adherence to AC³ GA Deliverable & Tasks Descriptions

AC ³ GA Component Title	AC ³ GA Component Outline	Respective Document Chapter(s)	Justification
DELIVERABLE			
D6.5 Dissemination Communication and Exploitation Plans			
TASKS			
<p>Task 6.1 Dissemination and communication activities</p>	<p>The project aims to effectively disseminate and communicate its goals, outputs, and achievements. It will utilize established D&C channels and actions as a starting point. Collaboration and information exchange will occur with other RIA projects in the same topic to leverage results, create synergies, and coordinate dissemination activities. The project will also contribute to consolidation efforts led by CSAs Open Continuum and UNLOCK-CEI. Public information on architectures and programming environments will be shared with CSAs upon request. Engagement in relevant meetings, workshops, and activities will ensure active participation and contribution. The cooperation with CSAs will be implemented through this task. Deliverables include D6.1, D6.5, D6.6 and D6.7 in M01, M06, M18 and M36.</p>	<p>3 - Dissemination Plans and Activities 4 - Communication Plans and Activities 5 - Standardisation Plans and Activities 6 - Exploitation Plans and Activities</p>	<p>This deliverable serves as a comprehensive guide outlining the essential steps and strategies necessary for the successful implementation and execution of the dissemination, communication, standardization, and exploitation plans. It presents a detailed and meticulously enumerated set of preliminary plans designed to effectively address the goals and objectives of Task 6.1 within WP6.</p> <p>By providing a detailed and carefully considered set of preliminary plans, this deliverable sets a solid foundation for the successful implementation of the dissemination, communication, standardization, and exploitation activities within Task 6.1. It serves as a guide for the consortium partners, enabling them to navigate the complexities of the activities and work towards achieving the set goals in an efficient and effective manner.</p>

2.2 Deliverable Overview and Report Structure

Communication activities within AC³ is aimed at effective diffusion of knowledge. This is necessary for an impactful and successful project. Besides the technical and scientific achievements expected within AC³ project, the communication activities are aimed at raising awareness and engagement of stakeholders - scientific community, industry, users, customers, and the public. To this end, AC³ will leverage an array of most suitable tools to enhance and widen our communication activities and horizon within the project. These include electronic and printed media, project portal, and social media platforms (Twitter, Facebook, and LinkedIn) to mention a few.

The main objectives of this report are:

- To provide information about progresses in the communication of AC³'s outcomes.
- To provide an assessment of the effectiveness of the communication roadmap against the specified KPIs' quantitative metrics.
- To provide achievable plans and information concerning the dissemination of the result output of the project
- To provide appropriate assessment of the effectiveness of the outlined dissemination strategies against the specified KPIs
- To provide achievable plans and information concerning the standardisation activities that could be realized from the results of the project
- To provide achievable plans and information concerning the general exploitation activities that will be undertaken and accomplished by the individual project partners based on the results of the project

This document is structured into the following sections:

1. Executive Summary
2. Introduction – a general introduction to the main objectives of the deliverable including the task(s) of the project commitment that is addressed by it
3. Dissemination Plans and Activities – Review of the AC³ dissemination plans and activities, including where appropriate an evaluation based on the defined KPIs
4. Communication Plans and Activities – Review of the AC³ communication means, including where appropriate an evaluation based on the defined KPIs
5. Standardisation Plans and Activities – Review of the AC³ standardisation and clustering plans, including where necessary an evaluation based on the defined KPIs
6. Exploitation Plans and Activities – Review of the AC³ exploitation plans and activities, including where necessary an evaluation based on the defined KPIs
7. Conclusions

3 Dissemination Plans and Activities

This project places significant emphasis on maximizing the impact of the results obtained from all research and development activities. Special attention is given to concepts and solutions associated with the various tasks defined and executed within the project. To achieve this particular set objective, AC³ has developed a clear and well-structured dissemination strategy through the use of a broad range of multiple communication channels and tools. Moreover, to magnify and boost the impact and coverage of these planned and well-structured dissemination activities, AC³ aims to utilize a plethora of diverse communications and publication avenues to reach out to its well-defined and identified stakeholders.

3.1 Dissemination Strategy and Plans

To this end, AC³ will identify, create and participate in promotional and awareness programmes to bring about better visibility for the promotion of the image of the project and its research and development results. In this vein, the consortium members will provide useful project contents derived from the different work packages that is carried out within the scope of the project towards the promotion of the project in various information dissemination circles. Symbiotic relationships with other related HORIZON-CL4-2022-DATA-01-02 EU projects will be encouraged and fostered through the participation of the AC³ consortium members in different scientific information sharing seminars and clustering workshops for the sharing of essential project development information and knowledge that may impact the overall performance of the project. Important information dissemination avenues and outlets for the publication of technical information that is developed and realized within the scope of the project in the form of conferences, journals, technical workshops and seminar events will be identified and promoted within the consortium.

The project is planning to implement a robust and comprehensive dissemination strategy and plans. These plans are specifically designed to generate extensive publicity and visibility for the project and its developed concepts and solutions. To achieve this clear target, various significant dissemination action items and stakeholders have been identified, and specific goals have been set to accomplish them. A concise summary of these planned dissemination action items is outlined in the following subsections. The approach follows a phased methodology, dividing the project's dissemination action plans into phases as described in Section 3.2 below.

3.2 Dissemination Methodology

To broaden the visibility and impact of the project, the dissemination plan is divided into three main phases:

Phase A - AC³ awareness formation (M01-M06): The project consortium has meticulously designed the dissemination strategy by focusing on three key aspects:

i) *Defining explicit target groups:* The project consortium has identified and specified the precise target groups that the dissemination activities aim to reach. This ensures that the dissemination efforts are tailored to effectively engage and inform the intended audience.

ii) *Selecting appropriate tools:* The consortium has carefully selected the most suitable tools and channels for disseminating project information. This includes considering various mediums such as websites, social media platforms, publications, conferences, and workshops, among others, to effectively communicate the project's scopes and objectives.

iii) *Informing corresponding stakeholders*: The consortium recognizes the importance of informing and engaging relevant stakeholders. By actively involving and communicating with stakeholders, the project ensures that they are well-informed about the project's goals and objectives, enabling them to provide valuable insights and support.

By addressing these three elements, the project consortium ensures a well-structured and comprehensive dissemination strategy that is tailored to reach the intended target groups effectively.

Phase B - AC³ outreach to relative stakeholders (M07-M14): The project actively seeks to establish arrangements and foster commitment with the appropriate stakeholders, open-source communities, and standards organizations. This endeavor aims to build a solid foundation of interest and support for the project. By engaging with these stakeholders, the project aims to promote collaboration, gather valuable feedback, and encourage the adoption of open-source practices and industry standards. This proactive approach ensures that the project benefits from the expertise, resources, and collective efforts of relevant communities, leading to increased interest and broader impact.

Phase C – AC³ global outreach (M15-M36): The project places a strong emphasis on engaging the relevant stakeholders to encourage their consideration and adoption of the project's developed technologies and solutions. This engagement is pursued through several key approaches:

i) *Publications and deliverables*: The project disseminates its findings and outcomes through publications and deliverables, ensuring that stakeholders have access to detailed information and insights about the developed technologies and solutions.

ii) *Development and distribution of promotional materials*: The project creates promotional materials that effectively highlight the benefits and features of the developed technologies and solutions. These materials are widely distributed to raise awareness and generate interest among stakeholders.

iii) *Participation in selected events and industrial exhibitions*: The project actively participates in events and exhibitions relevant to its domain. This provides opportunities for stakeholders to interact with the project team, explore demonstrations, and gain firsthand exposure to the technologies and solutions.

iv) *Organization of dedicated webinars and events*: The project organizes webinars and dedicated events to showcase and discuss the developed technologies and solutions. These platforms facilitate direct engagement with stakeholders, allowing for in-depth presentations, Q&A sessions, and collaborative discussions.

v) *Liaisons with standardisation bodies and key players*: The project establishes connections and collaborations with standardisation bodies and prominent industry players. This facilitates the integration of the project's technologies and solutions into existing standards and ecosystems, increasing the likelihood of adoption by stakeholders.

Through these initiatives, the project actively promotes the consideration and adoption of its technologies and solutions, ensuring that stakeholders are well-informed and engaged in the project's developments.

3.3 Dissemination Action Plans

This section presents a detailed and specific information set regarding the dissemination action items, targeted stakeholders, projected KPI values and time plan for achieving the action plans as shown in Table 2.

Table 2: Dissemination Plan – KPIs and Target stakeholders

Dissemination Action: Scientific publications and conferences	
Target audience	Research communities, Academia, university students
Target values	>20 Journal papers, > 40 conference and workshop papers
Target venues	Scientific journals and conferences
Time plan	>M6
Dissemination Action: Targeted Industrial webinars to interested 3rd parties	
Target audience	SMEs, Apps developers, Technology Associations
Target values	>3 webinars
Target venues	Online and on premises
Time plan	M20, M30 and M36
Dissemination Action: Industrial Exhibitions	
Target audience	Cloud, Telecom, Computing and storage providers
Target values	>5 booths and demo
Target venues	IoTswc, MWC, SCEWC, etc.
Time plan	M6, M12, M18, M24, M30
Dissemination Action: Presentations at standards organisations, Gaia-X and Open-source communities	
Target audience	SMEs, Apps developers, Technology Associations
Target values	>10 contributions to the WGs and >3 open-source community conferences

Target venues	Gaia-X, Open Cluster management standardisation, MicroShift, LFEEdge, Kubelnit, Submariner, Working Groups, Kubecon, DevConf, OpenInfra summit, Red Hat summit
Time plan	>M12
Dissemination Action: Co-organisation of events with other projects and EC co-programmed activities	
Target audience	Research communities, Academia, university students
Target values	>3 workshops
Target venues	flagship international conferences
Time plan	M12, M24, M36
Dissemination Action: Presentation at associations, clusters and CSA	
Target audience	To draw strength and alignment with other EU projects (e.g., ICT-40-2020 SERRANO H2020 TERMINET), and expose and leverage innovative results where possible. The target audience are mostly, industrial and academic partners.
Target values	>3 presentations and demos
Time plan	M12, M24, M36
Dissemination Action: Exchange information and collaboration with the other RIA/CSAs projects of the topic HORIZON-CL4-2022-DATA-01-02	
	<p>AC³ will exchange information with the other RIA projects of the topic HORIZON-CL4-2022-DATA-01-02 in order to exploit results, synergies and maximize impacts and coordinate dissemination activities of the swarms project portfolio.</p> <p>The project will make available on request to the CSAs public information concerning the architectures and programming environments notably. In particular, the information concerning the impact as well as lessons learned from the other projects will be important.</p> <p>The project will participate in relevant meetings and workshops organised by the CSAs or other RIAs. It will also contribute to relevant activities (such as activity groups) of common interest groups organised by the CSAs. The cooperation with the CSAs will be done through the implementation of the task T6.1. of WP6.</p>

3.3.1 Identified relevant conferences for scientific publications.

This section presents a list of the identified relevant conferences with suitable potentials for the publication of the scientific results generated within the project. The consortium members are highly encouraged to submit the outcome of their research and development activities to any of the conferences listed in Table 3. The table provides a list of potential conferences including their respective submission and conference dates, to enable the consortium members to keep track of those important dates and possibly create clear potential publication plans around them. Participating in any of these conference activities will enable the consortium members to broaden our interaction and expand the impact of the project within a large scientific community.

Table 3: List of potential R&D conferences

Conference acronym	Conference name
ACM/IEEE ICCPS	ACM/IEEE International Conference on Cyber-Physical Systems
ACM ICIT	ACM International Conference on Information Technology
BigDaCI	International Conference on Big Data Analytics, Data Mining and Computational Intelligence
CNSM	International Conference on Network and Service Management
CPSIoT	International Conference on Cyber Physical Systems and IoT
EAI ICECI	EAI International Conference on Edge Computing and IoT
ICBDAKD	International Conference on Big Data Analytics and Knowledge Discovery
ICBDB	International Conference on Big Data and Blockchain
ICIOT	International Conference on Internet of Things
IEEE CloudCom	IEEE Internal Conference on Cloud Computing Technology and Science
IEEE CloudNet	IEEE Internal Conference on Cloud Networking
IEEE CNS	IEEE Conference on Communications and Network Security
IEEE Globecom	IEEE Global Communications Conference
IEEE ICC	IEEE International Conference on Communications
IEEE ICDM	IEEE International Conference on Data Mining
IEEE Infocom	IEEE International Conference on Computer Communications

IEEE NetSoft	IEEE International Conference on Network Softwarization
IEEE NFV-SDN	IEEE Conference on Network Function Virtualization and Software Defined Networks
IEEE SECON	IEEE Internal Conference on Sensing, Communication and Networking
IEEE WCNC	IEEE Wireless Communications and Networking Conference
IEEE/WIC/ACM WI-IAT	International Conference on Web Intelligence and Intelligent Agent Technology
MLDM	International Conference on Machine Learning and Data Mining

3.3.2 Identified relevant journals/magazines for scientific publications

This section, like section 3.3.1 above, also presents a list of identified high impact journals and magazines publishing venues with high potential within the research and scientific community. Publication of research and development results that are generated within the project will provide a non-interactive opportunity for the consortium members to showcase the outcomes of their research activities in any of these identified high impact publication outlets. Thus, every consortium member is highly encouraged to leverage any of the journal/magazine publication venues listed in Table 4 to publish their research results.

Table 4: List of potential journals/magazines

Journal/Magazine name
IEEE Transactions on Industrial Informatics
IEEE Transactions on Cloud Computing
IEEE Journal on Selected Areas in Communications
Elsevier's Future Generation Computing Systems
International Journal of Big Data Intelligence
IEEE Communications Surveys & Tutorials
IEEE Communications Magazine
IEEE Networks Magazine
IEEE Transaction Wireless Communication
IEEE Transactions on Cognitive Communications and Networking

IEEE Transactions on Green Communications and Networking
IEEE Transactions on Machine Learning in Communications and Networking
IEEE Transactions on Network Science and Engineering
IEEE Transactions on Network and Service Management
IEEE Wireless Communications Magazine
IEEE Communications Standard Magazine

3.4 Dissemination Actions Performed/Organised

This section discusses the different dissemination activities that the consortium members have participated in or are being organised in order to promote the AC³ project. Basically, it provides the details of the various dissemination actions such as clustering workshops that any of the consortium members have either solely organized or co-organized with similar sister project(s) with the main goal of promoting the outreach of the project and its potential impact. The summary of any such workshop will be provided in subsection 3.4.1.

3.4.1 Organised dissemination activities

Table 5 shows three important dissemination activities, two of which have been already performed but the last one has not yet been performed but already organised and scheduled to take place in October 2023 with clear participation plans. The first dissemination activity was the participation of one of the AC³ consortium partners at MWC congress event in Barcelona, Feb. 2023. During the event, leaflets describing the concepts and objectives of AC³ project were distributed to the participants to further promote the project. The second dissemination activity wherein important concepts and ideas about the AC³ project was thoroughly discussed and promoted was the clustering event which that took place in Paris in May 2023.

Table 5: Dissemination activities performed

#item	Partners	Dissemination activity	Date	Location
1	IQU	Booth in Mobile World Congress (MWC) with leaflets	Feb. 27 -Mar. 2, 2023	Barcelona, Spain
2	ATH/ISI	Concertation and Consultation on Computing Continuum: From Cloud to Edge to IoT	May 10-11, 2023	Paris, France
3	ARS	NexusForum2023	Oct. 5-6, 2023	Tangla Hotel (Brussels)

4 Communication Plans and Activities

The communication roadmap outlined in WP6 establishes the primary objectives and provides a strategic overview of the communication activities within the AC³ project. It serves as a guiding document for the project's communication efforts.

Additionally, the project commitment document defines a clear strategy for the Consortium. This strategy includes defining responsibilities, establishing schedules, selecting appropriate tools, and determining communication channels to be used throughout the project's lifecycle. The commitment document ensures that the Consortium members are aligned and committed to effective communication practices and facilitates efficient coordination among them.

By combining the communication roadmap and the project commitment document, the project establishes a comprehensive framework that outlines the objectives, strategies, responsibilities, schedules, tools, and communication channels necessary for successful communication within the Consortium and with external stakeholders.

To this end, AC³ communication plan is aimed at:

- i) communicating and disseminating the activities of the project with the stakeholders – academic and research community, industries, enterprises, consortium institutions, and public,
- ii) increasing the visibility of AC³ project,
- iii) facilitating networking and collaboration with potential partners,
- iv) providing an avenue for future collaboration,
- v) most importantly, improving the communication and flow of information within the AC³ consortium.

Given the early stage of the project, the consortium has primarily concentrated its communication and dissemination activities on the theoretical aspects and characteristics of the project. This entails laying the groundwork by explaining the project's concepts, goals, and potential impact.

Furthermore, the consortium has dedicated efforts to establish communication tools that facilitate effective interaction with interested organizations, projects, communities, and individuals. These tools enable the consortium to share information, gather feedback, and engage in meaningful discussions with relevant stakeholders.

By focusing on both theoretical aspects and establishing communication channels, the consortium sets the stage for future dissemination activities and paves the way for fruitful collaborations and knowledge exchange as the project progresses.

4.1 Communication Methodology

In order to facilitate the communication plans of the project, we have adopted a phased approach which is quite similar to that of the dissemination roadmap highlighted above in the previous section. Below, we present the adopted communication strategy which is planned to be executed in phases.

To broaden the visibility and impact of the project, the communication plan is divided into three main phases as highlighted below:

Phase A – AC³ awareness formation (M01-M06): The communication strategy has been meticulously designed to encompass the entire duration of the project. The consortium has outlined a detailed plan for communication activities that will be carried out throughout the project's lifecycle. The key communication tools and activities include:

- i) *Project website*: A project website is developed to serve as a central hub for disseminating project information, updates, and resources. The website will provide a comprehensive overview of the project, its objectives, deliverables, and key findings.
- ii) *Project social network channels*: Social media channels are established and maintained (such as Facebook, Twitter, LinkedIn, etc.) by the consortium to engage with a wider audience and share project-related updates, news, and achievements. These channels will facilitate interactive communication and foster community engagement.
- iii) *Event calendar*: A project-specific event calendar is created to highlight important milestones, workshops, conferences, and other relevant events related to the project. This calendar will serve as a reference for stakeholders to stay informed about upcoming activities and opportunities to engage with the project.
- iv) *Factsheet*: A concise factsheet is developed, summarizing the project's key objectives, activities, and outcomes. This document will serve as a handy reference for stakeholders, providing a quick overview of the project's highlights.
- v) *Newsletter*: A regular newsletter is established by the consortium to share project updates, achievements, and notable developments. This newsletter will be distributed to subscribers and stakeholders, ensuring they are well-informed about the project's progress and results.

By implementing these communication tools and activities, the consortium aims to effectively communicate project information, maintain active engagement with stakeholders, and create a strong online presence for the project.

Phase B – AC³ outreach to relative stakeholders (M07-M14): The project aims to establish effective arrangements and strong commitment with the relevant stakeholders, open-source communities, and standards organizations to create a solid foundation of interest for the project. In pursuit of this goal, the initial AC3 results will be disseminated through various channels, including:

- i) *Website*: A dedicated project website will serve as a central platform for sharing and showcasing the initial AC3 results to a wide range of audience.
- ii) *Consortium members' websites*: Each member of the consortium will leverage their own websites to disseminate the initial AC3 results, ensuring targeted outreach to their respective audiences.
- iii) *Social media*: Active utilization of social media platforms will enable the project to reach a broader audience, share significant findings, and engage with stakeholders through interactive discussions.
- iv) *Presentations at events*: The project team will actively participate in relevant events and conferences, delivering presentations to effectively showcase and communicate the initial AC3 results to industry professionals and stakeholders.
- v) *Newsletter*: A periodic newsletter will be circulated to stakeholders, providing comprehensive updates on the project's progress, including the dissemination of the initial AC3 results.

Particular attention will be given to engaging end-users, especially those situated at the far edge of the network, who have the potential to contribute by sharing their devices. This targeted outreach to end-users ensures their active involvement and valuable input in the project. By employing these dissemination channels and focusing

on engaging end-users, the project aims to foster interest, collaboration, and knowledge exchange among stakeholders, thereby establishing a strong groundwork for the project's success.

Phase C – AC³ global outreach (M15-M36): The project is dedicated to engaging the relevant stakeholders and encouraging their consideration and adoption of the developed AC3 technologies and solutions. The primary objective is to foster active involvement and promote the utilization of these innovations. By engaging stakeholders through the strategies mentioned in phases A and B above, the project aims to create a collaborative environment that encourages stakeholders to consider and adopt the developed AC3 technologies and solutions. Through effective communication, collaboration, and capacity building, the project seeks to facilitate the successful integration and utilization of the innovations of the project in various domains.

4.2 Communication Action Plans

A precise communication action plan and strategy is summarized in Table 6 below, which will be followed to execute the communication action items of the project.

Table 6: Communication action items and communication channels

Channels	Key indicative communication activities and means
Online presence	A project website is created by month M01 and maintained by ATH serving to: i) promote the project's public image and serve as a main online access point for the different target groups; ii) serve as an information source, highlighting project objectives, activities, outcomes and relevant updates; iii) serve as a repository of information.
Social media	Use several online social media sites, such as Twitter, LinkedIn, Facebook, and YouTube, as a two-way access between the project partners and the technical and public audience. The consortium will regularly publish announcements and initiate discussions from month M06. The content will be updated in a regular basis and the obtained feedback will help to influence the project's directions.
Press and TV/Radio Interviews	Publish >6 press releases (>2 per year) in order to show major achievements and the potential of AC ³ and the benefit of Cloud Edge Continuum to pave the road for performant applications impacting society and will attempt to reach the general audience via TV/radio interviews.
Promotional materials	Prepare >3 technical brochures providing information about technical and scientific achievements and >3 non-technical brochures-factsheets describing the potential project applications and services in a more accessible manner. A number of project flyers, posters and roll-up banners will also be created for display in conferences and in exhibition booths. The brochures will be also distributed to local universities, schools, city councils, etc.
Video clips	Produce 3 video clips which will cover the project's general ideas, presentations, and talks, while 2 of them will include non-technical information about the project, targeting non-expert public. In addition, at least 1 a video presentation will follow each of the 3 use-case demonstrations and produced by the involved partners. All videos will be publicly available and followed by an activated option to receive feedback from the audience.

<p>Newsletters</p>	<p>These will be distributed to different mailing lists, to foster inter-communication with other relevant research actions, projects, and technical communities. The newsletters, available at the project’s website, will provide information regarding the project activities, achievements, and results, targeting cross-fertilisation. The first newsletter issue will be released in month M6 and new issues every 6 months.</p>
<p>Public engagement</p>	<p>A set of activities to interact with the public (e.g., non-scientists, secondary schools, etc.) and inform them about the effect of the project’s results in their everyday life and to create awareness on the differences about facts regarding the societal benefits for the edge. This set of activities include the organisation of >5 public events at schools/universities; >5 Open days at schools and events organized by public authorities with >100 visitors/event.</p>

4.3 Communication Activities

This section describes the ongoing communication actions and activities in terms of the designed and deployed items and different communication channels being used to promote the project and create a broader visibility and outreach for it as summarized in Table 6 above. Each of those highlighted communication channels and the actioned to be carried out and those that have been already attained are discussed in the following subsections.

4.3.1 AC³ LOGO

Figure 1 below shows the AC³ logo. The final logo is reflecting the visual identity of the project.



Figure 1: AC³ Logo

4.3.2 AC³ Social Media

Several social media platforms such as Twitter, Facebook, LinkedIn, and YouTube have been created to foster the communication activities within the AC³ project. These social media platforms have been created for a better project communication and also to increase the experiences and knowledge exchanges among professionals and stakeholders. Twitter is certainly one of the social media platforms for quick updates. It is essentially appropriate for conveying short messages to followers. It has wider reach and it is good for announcing events such as face-to-face plenary meetings and the latest innovations. YouTube is a great way to share AC³'s videos to a larger audience and will be more intensively used in the second part of the project, when the theoretical activities will leave room to implementation and demonstrations. Consolidated experience with social media has demonstrated that messages need to be customized to the social used and to the different audience (for example, Twitter users tend to more “dynamic” than those of other social media). For this reason, recycling of messages among different socials has been avoided. The primary Point of Contact (PoC) for the management of the AC³ social media platforms is FINGLETEK, who primarily takes care of managing and providing up-to-date information on the social media accounts of AC³, including providing updates on project events and responding to posts or questions with the help of the whole consortium partners, to find out and invite other important stakeholders who are potentially interested in the project outcomes and to suggest any other important sources of information.

4.3.2.1 LinkedIn

The AC³'s LinkedIn profile is named AC³ Project and available at URL:

<https://www.linkedin.com/company/agile-and-cognitive-cloud-edge-continuum>

As of the time of writing this deliverable, the AC³ LinkedIn account has 48 page views and 22 Unique visitors across various professional demographics as show in **Figure 2** and **Figure 3**. Considering the fact that the AC³ project is still at an early developmental stage, i.e., in the first M1 – M6, the focus is to first establish most importantly the official LinkedIn channel for the project. Then the next phase which will be starting in M7 would be to leverage the established LinkedIn account to connect to professionals, academic, and scientific communities and populate it with essential project information and results. Thus, so far, Twitter has been more intensively used for announcing project related events. Connections on LinkedIn are expected to increase in the next phase of the communication strategy of the project, as more interesting results will emerge during the implementation phases. During the next phase of our communication strategy, more developmental information will be already available for reporting and sharing with the identified stakeholders of the AC³ project, and more efforts will be dedicated to enhancing the engagement of LinkedIn users and generating discussions and sharing of knowledge.

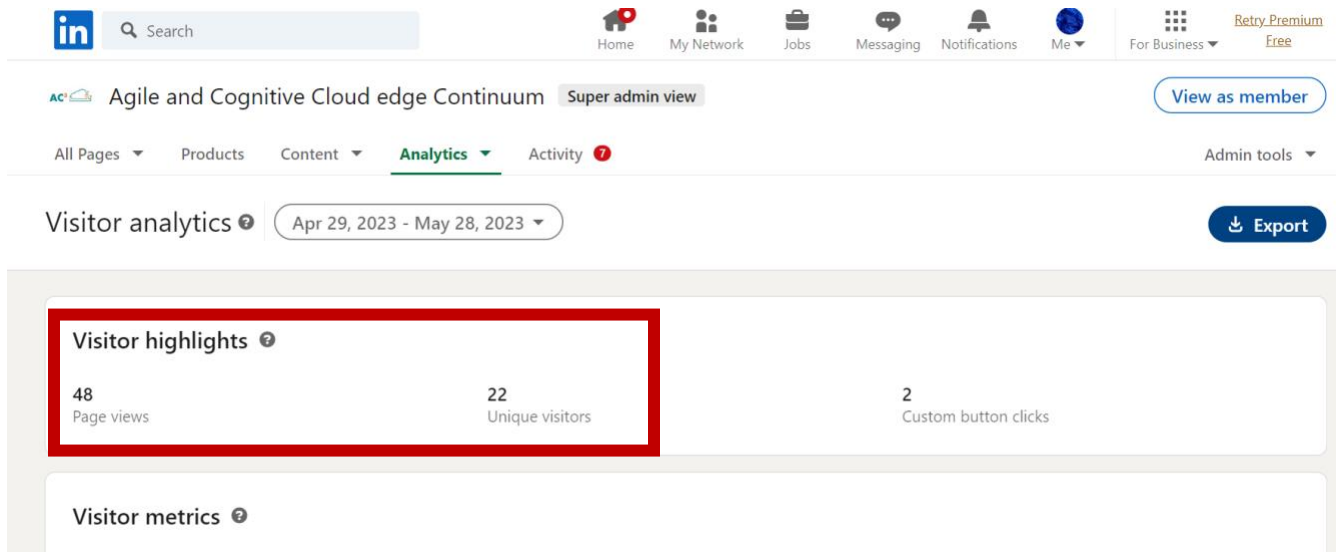


Figure 2: LinkedIn Visitors analytics

Visitor demographics



Figure 3: LinkedIn Visitors demographics

4.3.2.2 Twitter

The AC³'s Twitter account username is @ACCC3_AC3 with a corresponding URL: https://twitter.com/ACCC3_AC3. As shown in **Figure 4** below, Twitter is considered as an essential social media tool that is used to inform the followers and other interested stakeholders with updated information about the AC³ project's progresses, activities, events, and innovations. Additionally, the Twitter account of AC³ also allows AC³ to follow other related projects and initiatives. Presently, as of the time of this report writing, AC³ Twitter account has 15 followers, 10 Tweets, and also following other pertinent innovative projects, open source communities, magazines, journals, and highly innovative companies.

In this report, we present some statistics and analytics data gathered from Twitter Analytics in terms of Tweet impressions, profile visits, and mentions (**Figure 5**). The engagement is examined from May - June, 2023. As illustrated in **Figure 4**, **Figure 5** and **Figure 6**, the followers' Tweets and impressions during the considered period show that the project is beginning to gain popularity and engagements with the respective stakeholders and there is still room for growth. This is primarily due to the initial phase of Twitter activities and the project's recent inception, which indicates a promising opportunity for further development and increased engagement.

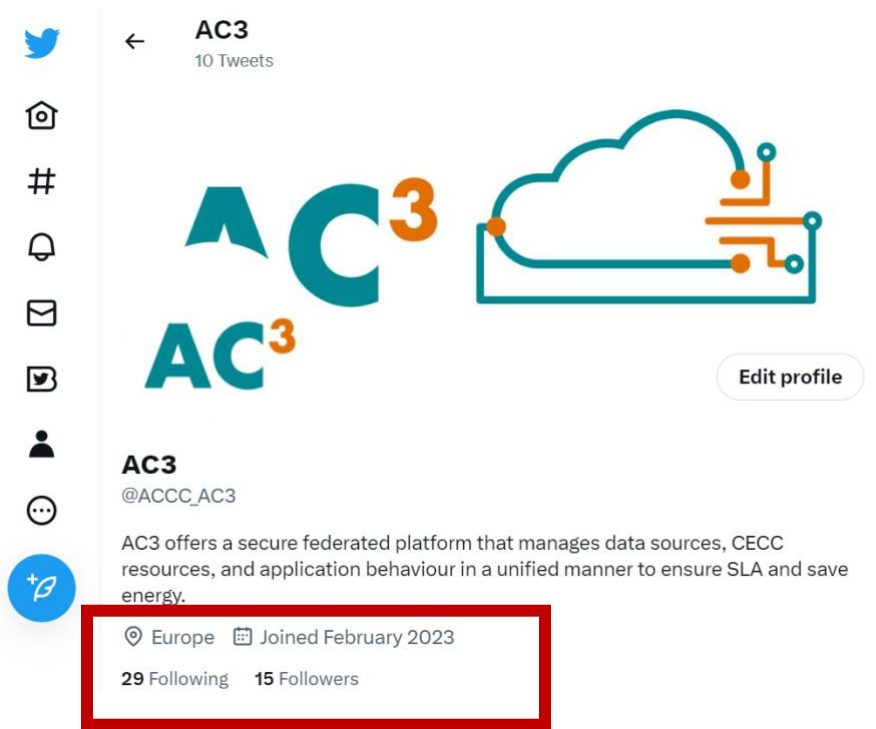


Figure 4: Twitter profile and followers



Figure 5: An important tweet establishing a major objective of the project

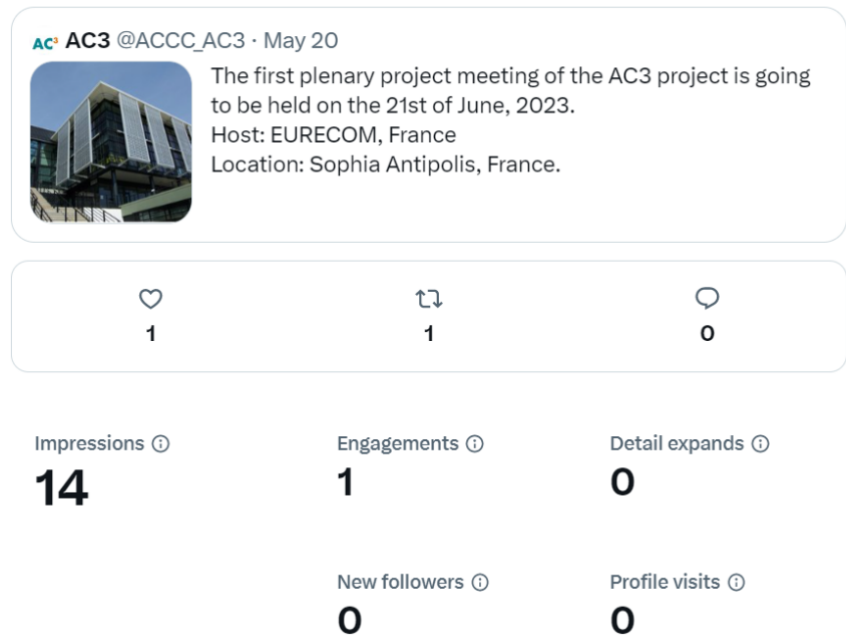


Figure 6: Tweeting about the first plenary meeting

4.3.2.3 YouTube

The AC³'s YouTube channel is named AC³ Project which is available at the URL:

<https://www.youtube.com/channel/UCb1S6w0VniUfZo1xKH9DIlw>

As of the time of writing this project, the AC³ YouTube channel has no video. The reason is that the YouTube has been dedicated for uploading video of AC³ events and results demonstration. The first AC³ event has been slated for (M6), therefore, YouTube analytics is not possible at the time of writing this report. In addition, the first sets of results demonstrations are expected after M6, thus, since the first part of the AC³ project has been mainly focused on the architectural aspects. Hence, the first sets of videos are expected to be uploaded during M6. Remarkably, better chances in promoting implementation and demonstration videos will arise during the second part of AC³. Nevertheless, the slated events for M6 and expected first sets of results or progress demonstrations are expected after M6. More videos are in the pipeline to be uploaded in the coming months.

4.3.3 Press and TV/Radio Interviews

The goal of the project is to publish as least six press releases throughout the project's duration, with a minimum of two releases per year, highlighting significant accomplishments and demonstrating the potentials and advantages of the Cloud Edge Continuum. Additionally, efforts will be made to engage the general audience through TV/radio interviews and other available online platforms, aiming to raise awareness about impactful applications of the project's results that will have a positive effect on the society.

To this end, the project is pleased to report a press statement titled: **“Innovando en el continuo cloud-edge” (Innovating on the cloud-edge continuum)** that was released online (both on LinkedIn and Twitter) on June 15, 2023. This communication activity was carried out by ARSYS on behalf of the project to discuss the goals and ambitions of the project and their activities in the Spanish language, thereby, furthering the reach and exposure of the project to a wider audience.

4.3.4 Newsletters

The initial newsletter will be published in month M6, followed by subsequent issues released every 6 months. Throughout the entire project duration of 3 years, a total of 6 newsletters will be produced and released. However, it is important to note that the 6-month release interval is approximate and serves as a general guideline. The actual timing may be adjusted periodically based on planned participation in events, demonstration activities, plenary meetings, and other relevant factors. This flexibility ensures that the newsletter releases align with project milestones and significant developments.

4.3.4.1 Newsletter – Issue 1

The first issue of the project's Newsletter shown in Figure 7 was released in June, 2023. The released Newsletter gives a brief and succinct overview of the project by introducing its essential concepts, objectives and the consortium partners. The project's use cases and their respective objectives are also quite clearly visible as well as some of the latest events that members of the consortium have participated in [1].



Newsletter Issue 1 | June 2023

We are excited to announce the first newsletter issue of the AC3 HEU Project! The scope of our newsletter is to keep you updated with the latest activities of the project.

Through our newsletter you will be introduced to our project's latest advancements and you can follow up on the latest news and events of the AC3 project.

To always stay up to date and discover more about us, you can visit our website or follow us on Twitter and LinkedIn

Figure 7: First issue of the AC³ Newsletter

4.3.5 AC³ rollup

The AC³ rollup is a piece of the project artefact that summarizes the entire concepts and objectives of the entire project at a glance. As presented in Figure 8, the AC³ rollup clearly shows the seven key objectives and ambitions of the AC³ project. It also shows the three essential use cases through which the project's ambitions will be demonstrated. The consortium members shown on the rollup will help actualize the project's objectives and ambitions.

AC³

Seamlessly handling application life-cycles and underpinning IT and networking resources.

On top of a federated infrastructure that includes Cloud, Edge, far edge, and data sources from multiple stakeholders.

Objectives & Ambition

- 1 A novel architecture for Cloud Edge Continuum including the far edge
- 2 A new enablers for microservice-based applications deployment in CECC
- 3 New federation model as well as trust and security enablers to accelerate resource sharing in CECC
- 4 Integrate data management as a PaaS in CECCM
- 5 Zero-touch management and configuration of application LCM
- 6 Green-oriented zero-touch configuration and management of the CECC infrastructure
- 7 Towards end-to-end CECC network programmability

Use Cases

UC1	UC2	UC3
IoT and Data	Smart Monitoring System using UAV	Deciphering the universe

Consortium

Funded by the European Union

www.ac3-project.eu

This project has received funding from the European Union's Horizon Europe Research and Innovation program under grant agreement No 101093129.

Figure 8: AC³ rollup

Standardisation Plans and Activities

This section focuses on providing details about the various standardisation activities that are in the pipeline towards the advancement of the research and developments that are being carried out within the scope of the AC³ project. It presents a comprehensive list of activities that different consortium members of the project plan to participate in to promote the ideas and concepts of the project and engage external stakeholders in finding points of alignments with their respective ongoing projects and standardisation activities as they relate to the vision and objectives of AC³. Moreover, an important aim of this section is to also highlight the plan of the project to participate in different relevant open source projects. Basically, AC³ is composed of consortium members with relevant expertise in technological and scientific research and development activities having different level of participation and in different working group of various standards developing organizations (SDOs) within the standardisation community. AC³ will leverage the participation of its consortium members in this different working groups of the various SDOs to propagate and standardise various technological development items that will be derived from the results of the different sub-categories and objectives of the AC³ project.

A number of important standardisation initiatives have already been identified by our consortium partners and a comprehensive standardisation roadmap has been drawn up to contribute the research outcome of AC³ in. These standardisation initiatives and SDOs as well as the potential contribution directions are highlighted in Table 7 in the subsequent subsection.

4.4 Standardisation Scope

This subsection presents a concise overview of the identified initiatives wherein the AC³ consortium has partners with very active participation and germane contributions. The consortium partners have already developed and presented relevant areas within the scope of their ongoing participation in the working activities of these SDOs' initiatives in which project outputs and derivatives can be tailored for potential standardisation contribution. These concise potential standardisation contribution plans are presented in subsection 5.2 below. However, the identified standardisation initiatives are:

Gaia-X: Gaia-X [2] is a European association that aims to promote digital sovereignty for individuals and organizations. Its overarching goal is to create a reliable ecosystem that enables the secure and trusted sharing, collation, and availability of data. By creating this environment, Gaia-X seeks to empower individuals and organizations, ensuring they have control over their data and fostering a sense of digital independence.

MicroShift: MicroShift [3] is an open-source research project that focuses on optimizing OpenShift Kubernetes for small form factor and edge computing. Unlike cloud computing, edge devices deployed in the field present unique operational, environmental, and business challenges. The project aims to address these specific challenges and explore ways to enhance the performance and functionality of OpenShift Kubernetes in edge computing scenarios.

Open Cluster Management (OCM): OCM [4] is a community-driven project within the Cloud Native Computing Foundation (CNCF) [5]. Its primary objective is to address multi-cluster and multi-cloud scenarios for Kubernetes applications. The project is dedicated to enabling end-to-end visibility and control across all Kubernetes clusters in your environment. By leveraging Open Cluster Management, users gain enhanced management capabilities, allowing them to effectively monitor and control their Kubernetes clusters regardless of the cloud providers involved. The project's focus on multi-cluster and multi-cloud scenarios ensures seamless integration and efficient management of Kubernetes applications in diverse and distributed environments.

Submariner: Submariner [6] is a tool within the CNCF specifically designed to connect overlay networks across various Kubernetes clusters. Although it is primarily tested with Kubernetes clusters that have enabled Flannel, Calico, Canal, Weave, or OpenShiftSDN as their CNI (Container Network Interface), Submariner is designed to be

compatible with most CNI cluster network providers. It achieves this compatibility by leveraging readily available components to establish encrypted tunnels between each Kubernetes cluster. By utilizing these encrypted tunnels, Submariner facilitates seamless connectivity and communication between clusters, regardless of the specific CNI solution being used.

4.5 Standardisation Action Plans

This subsection presents a succinct set of specific standardisation action plans that is proposed for contribution to the relevant ongoing activities of the identified open source initiatives. Precisely, Table 7 highlights various points of potential standardisation contribution directions.

Table 7: Standardisation plans and identified SDOs

Standards Organisations and Initiatives	Potential direct contributions
Gaia-X	AC ³ can initially use Gaia-X definitions and standards and work that is being carried out in relation to infrastructure resource federation as a baseline. At a later stage, AC ³ can provide more advanced tools for managing this federation, contributing to the enhancement of the Gaia-X ecosystem. AC ³ will also be able to support Gaia-X and the Data Space Business Alliance) with its data management as PaaS, proposing a standard way to manage data.
MicroShift	The potential contributions with this project are new use cases for edge deployments and low-footprint scenarios. In the context of AC ³ , MicroShift will provide support for the Edge and Far Edge where offloading tasks might need to be executed, or the data inputs and processing capabilities for the CECCM.
Open Cluster Management	The potential contributions with this project are improved interfaces to manage resources across multiple clusters and clouds. In the context of AC ³ , OCM will be highly impacted in terms of the novel support and features that will be developed for the smart allocation of resources given a certain set of AI algorithms that can be integrated.
Submariner	The potential contributions to this open source project are the testing of different and new networking topologies to support this project. In the context of AC ³ , Submariner will provide the initial interconnectivity layer between multiple Kubernetes clusters, with the potential inclusion of newer and different networking drivers.

4.5.1 Standardisation roadmap and organizations

In this section, we discuss the different activities that our industrial consortium partners have been engaged in and are planning to carry out standardisation activities with respect to the standardisation initiatives that are highlighted in Table 7 above to promote the results of the project. Basically, details of the standardisation roadmap of the AC³ project industrial consortium partners are discussed in this subsection to shed more light into the specific aspects of the initiatives presented in Table 7 above, where standardisation contributions will be made available and how the generated standardisation contributions from AC³ will be utilized for standardisation activities.

4.5.1.1 *Gaia-X*

AC³ can use Gaia-X definitions and standards in relation to infrastructure resource federation as a baseline. At a later stage, AC³ can provide more advanced tools for managing this federation, contributing to the enhancement of the Gaia-X ecosystem. AC³ will also be able to support Gaia-X (and the Data Space Business Alliance) with its data management as PaaS, proposing a standard way to manage data.

Gaia-X is currently generating considerable momentum in business and industry. A significant number of users and providers are already linked through the emerging ecosystem.

Many federated cloud services (e.g., AI, distributed collaborations) are based on geographically distributed workloads, with the public Internet serving as the linkage layer. For some use cases from business and industry, sufficiently powerful technical networking can be ensured via the currently available Internet infrastructure. However, as a complex data ecosystem scales, more and more innovative use cases are coming to the fore, placing critical demands not only on the cloud services, but especially on the underlying networking. While current cloud service providers offer sophisticated tools for collaborative online work (especially in the area of document editing) and communication (chat, messaging, video), they require the transfer of the relevant data to their own cloud platforms in order to do so. They are also proprietary and not available as stand-alone software, so that the demands for control and urgently needed innovation capability, i.e., digital sovereignty, formulated by the public sector and also becoming increasingly important in the private sector, cannot be met. To overcome this situation, both the European and national data strategies postulate goals for cross-sector, collaborative data use and call for the state to play a pioneering role. However, the appropriate instruments for implementation have been lacking up to now.

An important member of the AC³ consortium has been working in close coordination with the Gaia-X partners, creating a counterweight that will enable the described provider and cascade-overlapping service provision for business-critical applications and also for smaller and less financially strong providers. On the one hand, the process optimisations and efficiency gains achieved in this way create an additional innovation boost for cloud providers in Europe outside the already dominant players. A broad provider ecosystem thus benefits from the comprehensive market potential and additional revenues through secured end-to-end service offerings. The economic prospects for success can thus be assessed as very positive overall. In addition, efficiency gains generated in the cloud and network market can help to reduce further resource and energy consumption and thus offer a further tool for ecologically sustainable development.

4.5.1.2 *MicroShift*

MicroShift is an open-source project optimizing OpenShift and Kubernetes for the device edge. It provides k8s/openshift like interface for managing workload on a small form factor edge devices.

MicroShift is an experimental project which was developed by the Red Hat Emerging Technologies group and as a result of its initial success is productized now and becomes part of the Red Hat portfolio. As a new project, it is focused on the most common use cases for edge devices. AC³ is going to test MicroShift with more advanced and challenging use cases and we expect to find some issues or lacking functionality in Microshift to fulfill AC³ requirements.

As a result, we expect that AC³ will contribute to MicroShift some improvements for supporting the more advanced use cases in AC³ project.

Red Hat, as the leader of the MicroShift community will take these modifications and add them to the upstream project as well as to the downstream version of MicroShift.

4.5.1.3 *Open Cluster Management*

Open Cluster Management is a community-driven project focused on the management multi cluster and multi cloud scenarios for Kubernetes clusters. When we look at the cloud-edge continuum we usually see multiple clusters since we tend not to deploy clusters in different levels. Moreover, we tend to deploy a cluster on each edge (even on a single node), for technical reasons. As a result, cloud-edge continuum deployment is multi cluster by nature and its management is challenging.

The OCM is used as the entry point to the cluster for configuration both manual (via a UI) and automated (via APIs). As such AC³ will need to extend the management APIs to support AC³ specific features. These extensions are part of the k8s/OCM methodology and will be part of the AC³ project but not part of the OCM project.

On the other hand, any additional functionality required by AC³ to the core OCM functionality will be promoted by Red Hat as an OCM community leader to the upstream version (and from there to the downstream version) of Microshift.

4.5.1.4 *Submariner*

AC³ is going to use submariner as the central L3 network connectivity platform between clusters and particularly between edge devices and the cloud. We expect to put submariner in some uncommon configurations and as a result require some fixes and enhancements to this project. Red Hat will help in taking these enhancements and adding them to the upstream project.

5 Exploitation Plans and Activities

The exploitation plans and activities of the project will be conducted and measured based on three main complementary strategies. These strategies as detailed in the WP6 of the project, majorly revolve around both individual and joint pathways and will be measured based on their collective impacts during and after the lifecycle of the project. The exploitation strategies are:

1. **Joint exploitation plans:** This strategy will be implemented to engage technology and asset providers who possess intellectual properties (IP). It will also involve considering service providers and other strategic partners who will play crucial and influential roles in the selected strategy and business model. The aim is to collaborate with IP owners, technology providers, and key partners to leverage their expertise, resources, and contributions in order to execute the strategy effectively and achieve the desired business goals.
2. **Partners individual plans:** This strategy will be tailored and implemented for individual partners, taking into consideration the specifics of their research and development strategies, as well as their unique business models and technological assets. The goal is to align the project's objectives with each partner's specific capabilities and resources. By leveraging their owned technological assets, the project aims to maximize the utilization and exploitation of those assets within the project's framework. This approach ensures a customized and collaborative approach, allowing each partner to contribute their expertise and proprietary technologies in a way that aligns with their individual strategies and enhances the overall success of the project.
3. **Use case exploitation plans:** This strategy encompasses a well-defined plan that showcases the benefits end-users will gain from leveraging the project's end results, considering factors such as market readiness and maturity. Marketing campaigns and interactive workshops will be employed to effectively promote the adoption and utilization of the project's use cases. These initiatives aim to encourage enhanced end-user engagement and interaction with the project's outcomes, ultimately driving better exploitation and utilization. By actively involving end-users and facilitating their understanding and hands-on experience with the project's results, the strategy seeks to improve the overall exploitation and maximize the impact of the project.

5.1 Exploitation Scope

In addition to the outlined exploitation strategy and activities in the previous section, we will also expand our exploitation coverage to consider other essential segment of the society, especially those in charge of policy making and standard definitions in the areas of Cloud edge, IoT, Data management, Cybersecurity and other important emerging technological trends. This overarching consideration of the exploitation scope is taken in order to advance the sustainability roadmap of the AC³ project. To this end, the exploitation scope is extended to also encapsulate the roles of the following important bodies:

- i) **National and regional administrations:** The exploitation scope is designed to also consider IT policy and decision-making bodies both within national and regional administrations, especially in the areas of cyber security, safety and privacy, and other similar initiatives.

- ii) **Standards Developing Organisations:** The influence of standards developing organisations in the exploitation strategy of the AC³ project is also factored in in the scope and definition of our exploitation plan.
- iii) **International Organisations:** The position of international organisations such as the European Commission, that is a major stakeholder in providing important regulatory frameworks and guidelines on essential topics bordering around Cyber security strategy, GDPR, Digital Single Market (DSM), etc. is also taken into cognizance.

5.2 Exploitation Methodology

To kickstart the exploitation strategy and plans of the project, a number of crucial exploitable assets from different consortium partners were identified and summarized in Table 8 below.

Table 8: List of partners exploitable assets

Exploitable Asset	Partners	IPR level	Commercialisation beneficiaries
Spark Works Edge IoT Platform	SPA	License agreement	SPA
MicroShift	RHT	Open Interface	RHT
Submariner	RHT	Open Interface	RHT
OKD	RHT	Open Interface	RHT
Intent-based resource allocation module	IBM	SaaS	IBM
Edge and Cloud continuum for IoT-based Applications	IQU	License agreement	IQU
IaaS and PaaS services	ARS	License agreement	ARS
ADC, API Gateway, WAF/WAAP	CTX	Software License	CTX

In the same light, initial individual exploitation plans by each of the consortium partners are also introduced and detailed in the following subsection.

5.3 Initial Individual Exploitation Action Plans

In this section, the individual exploitation action plans of each of the consortium partners are outlined and discussed.

5.3.1 ISI/ATH

The outcome of the scientific achievements will be published in top tier journals and conferences. In particular ISI/ATH 's research team targets the IEEE ICC, IEEE GLOBECOM, IEEE INFOCOM, IEEE WCNC and IEEE CAMAD conferences and the IEEE Transaction on Networking, IEEE Network Magazine and IEEE Transaction on Network Management. In addition, at least one tutorial in an international conference is targeted. Moreover, the ISI team will deliver lectures to local universities to disseminate the results to different Engineering schools in Greece. New research lines on cloud continuum will be established to further strengthen ISI/ATH's role in the national and international ecosystem. Moreover, ISI/ATH will offer new topics for PhD students to be hosted in its labs. ISI/ATH will promote the achievements of AC³ to the market through strong collaboration of the Institute with SMEs and industrial partners. Within the project, ISI/ATH will make contacts with key stakeholders (in Greece and other EU and Associated countries, with SMEs delivering services related to cloud continuum, machine learning, virtualization and will take the opportunity to link (a) the activities and achievements of AC³ and (b) the exploitable foreground of ISI/ATH. Furthermore, part of the ISI business plan is to participate in a number of new spin-off commercial companies capable of exploiting its research when new market needs, and solutions are identified. ISI/ATH targets on accomplishing Technology Transfer, encouragement of entrepreneurship and innovation. ISI/ATH will set up discussions with the Corallia cluster, a Unit of ATHENA R.C. with which ISI has strong connections and could potentially lead to a commercialization of the ISI outcomes. Moreover, ISI will promote the project results to the Patras Innovation Quest Initiative.

5.3.2 IQU

Artificial intelligence-based solutions for distributed and decentralized orchestration will be embedded in the company's evaluation tools for enhancing the existing product portfolio and testing platforms for 6G networks. Therefore, IQU will strengthen its capability to test different applications and will sell the existing solutions as a service to different vertical providers. The required resources required for the development that will take place after the end of the project will come from its resources.

Furthermore, the innovative technological advancements for the Test, Planning, and Definition Engine will be embedded in IQU's evaluation tools for enhancing their existing product portfolio and testing platforms for 5G wireless networks. IQU will strengthen its capability to test different applications and will sell the existing solutions as a service to media service providers. The knowledge gained from the integration of the SDP solution will enhance their NFV orchestration solution, offering significant advantages compared to their competitors. As a software house, the development of security NetApps will strengthen its position in the market as it can be leveraged by 3rd party 5G-enabled applications, increasing its market share and revenue.

5.3.3 ION

IONOS is positioning itself as a leading European cloud infrastructure provider through its product IONOS Cloud, already Gaia-X compatible services(<https://cloud.ionos.de/gaia-x>). The expected results of this project include software and IT architecture solutions that can be transformed into products and services. The project will accelerate and simplify competition for the provision of applications within the European cloud ecosystem to the benefit of both users and providers. Broad impact, visibility and transfer of benefits will be achieved through concrete anchoring in work packages (e.g. close cooperation and extensive upstream processes for Gaia-X).

IONOS will exploit the architecture to enhance its own cloud infrastructure, improving the overall performance of its own DCs, in the provisioning of IaaS and PaaS, while decreasing its own energy consumption and its carbon

emissions, towards increasing its customer base and increasing its profit share. As an active partner in the multi-partner Gaia-X, ION will also push the proposed architecture and innovative solutions in the adopted solution set of Gaia-X.

IONOS Cloud is the European cloud alternative, the leading European provider of cloud infrastructure, cloud services and hosting services with more than eight million customer contracts. The product portfolio includes the Cloud Compute Engine, an IaaS compute engine with its own code stack for virtualisation, Managed Kubernetes for container applications, a private cloud powered by VMware and S3 Object Storage. With this offering, 1&1 provides medium and large enterprises, regulated industries, the digital economy and the public sector with all the services they need to succeed in and with the cloud. 1&1 is convinced that digitalisation can only develop its full power if companies retain control over their data. Therefore, 1&1 feels obliged to guarantee its customers sovereignty over their data and applications. As a German company, 1&1 offers a 100% DSGVO-compliant solution - and thus maximum protection against access based on the US CLOUD Act.

5.3.4 ARS

Arsys has identified two key integration objectives for its IaaS and PaaS offering. Firstly, they aim to seamlessly integrate their infrastructure and platform services with the CECC resource manager. This integration will enable their existing customers to access and utilize the CECC environment, leveraging the benefits of edge computing for their applications and workloads.

Secondly, Arsys plans to extend their customer base by incorporating additional customers from other members of the infrastructure resource federation. By joining forces with other federation members, they can expand their service offerings and cater to a broader range of customers. This collaborative approach allows for the pooling of resources and expertise, leading to enhanced capabilities and a more comprehensive service portfolio.

To ensure optimal performance and quality of service, the project partner will leverage advanced monitoring techniques. By continuously monitoring the performance and benchmarking the services within the federation, they can identify areas for improvement and make informed decisions to optimize their offerings. Additionally, the partner aims to leverage predictive capabilities to anticipate future service requirements and proactively enhance the quality of service they provide.

5.3.5 UCM

UCM plans for dissemination activities include the following channels. We will engage in writing articles that highlight the project's practical applications for the astronomy field. These articles will be targeted for publication in reputable journals such as *Astrophysical Journal (ApJ)*, *Astronomy and Astrophysics (A&A)* and *Monthly Notices of the Royal Astronomical Society (MNRAS)* to reach a wide audience of researchers. Furthermore, we will seek opportunities to present our Use Case at relevant conferences and academic events. Through these dissemination activities, we aim to raise awareness about the AC³ project, communicate the significance of our research and its practical applications.

5.3.6 SPA

SPA plans to use the projects' results to enhance its current solutions portfolio in the domain of data analytics and edge computing enabled solutions. This includes amongst others the following: enhance Sparks IoT Platform

by introducing more sophisticated Intelligence layers with regards to data analysis; leverage a modular infrastructure built on a layered stack of smart network connectivity, application and service management with benefits of a cloud-edge continuum that eliminates silos and facilitates holistic end-to-end digitalization; extended interoperability and federation with additional platforms and cloud service providers. Additionally, SPA will be able to attract more clients and stakeholders to use the offered solutions through the dissemination activities performed during the course of the project. Our exploitation plan will focus on understanding the market needs and industrial requirements for the development of the Cloud-Edge-IoT Continuum and the applications that stem from the 3 use cases of the project.

SPA will follow the project exploitation activities and will pursue exploit-specific strategies with the project participants to: 1) try to establish license based agreement with other partners when a component developed from another partner is enhancing components or the whole Sparks IoT platform, 2) license Spark Works IoT Edge Agent development for acceleration purposes to other partners within the consortium, and 3) try to participate in joint ventures with the partners that will share the same mentality and will want to exploit in the market the developments of the project.

5.3.7 IBM

IBM made recent acquisitions in order to strengthen its hybrid cloud strategy. Among them is Turbonomic, which is dedicated to resource management, particularly, in the context of CEC. The development that will take place in AC³, particularly in the WP4 specifically the AI for Resource Management will strengthen Turbonomic capabilities and contribute to expanding its customer base. Turbonomic will therefore be endowed with auto-scaling capabilities that satisfy both Service Level Objective and Service Level Agreement through predictive approaches that will allow improved management of workloads via adequate provisioning of computing resources.

5.3.8 FIN

The project's outcomes will result in a comprehensive and holistic solution that can be seamlessly integrated into the orchestration and management of our cloud-native solutions. This solution will be deployed on a cloud edge-continuum platform, which incorporates AI, ML, and context-awareness techniques and algorithms.

Furthermore, we aim to leverage the development outputs from the project, particularly those derived from Use Case 2, for which we hold principal responsibility. Our focus is on creating an intelligent surveillance system that will be deployed as modular micro-services. These micro-services will run on a combination of distributed cloud, edge, and far edge computing platforms.

By integrating our cloud-native solutions with the project's outcomes, we can harness the power of advanced technologies such as AI, ML, and context-awareness to optimize surveillance capabilities. This approach enables intelligent decision-making, real-time analytics, and enhanced situational awareness in the surveillance domain.

5.3.9 EUR

In addition to the project's focus on enhancing know-how in explainable AI (XAI), edge computing, and far edge computing, EUR intends to leverage the project topics to train new PhD and Master students. This initiative will

provide an opportunity for students to gain valuable expertise and contribute to the advancements in these domains.

Furthermore, EUR will actively disseminate the project results in international conferences and journals. By sharing the outcomes and insights gained from the project, EUR aims to contribute to the broader academic and research community, fostering collaboration and knowledge exchange.

Moreover, EUR plans to utilize Use Case 2 to enhance their edge platform, which currently operates on OpenShift and Kubernetes. By integrating the project's developments and findings, EUR seeks to optimize their edge platform's capabilities, ensuring it is at the forefront of technological advancements and can effectively support the requirements of edge computing scenarios.

5.3.10 CTX

The NetScaler Business Unit (BU) of Cloud Software Group (CSG) will exploit the lessons learnt from integrating parts of the Application Delivery & Security product suite (ADC, WAF/WAAP and ADM Service) with the CECC framework and use cases of AC³, to expand their applicability to the AI-enabled computing continuum and improve their alignment with the future network services architecture.

Specific ways these exploitation goals will be supported, as part of AC³:

- Hybrid-/multi-cloud and cloud-native networking capabilities of NetScaler ADC Citrix ADM Service: We plan to adapt and evolve these product capabilities to support the Service Mesh aspects of the micro-service architecture and dynamic traffic management objectives and relevant innovation areas of AC³. The Analytics and ML-based insights will also be extended to support the project objectives of monitoring, automation, etc.
- Web application security and API protection capabilities of the above product line: We plan to deploy and adapt the ML-based WAF/WAAP to implement the application & API Security-aaS layer of the CECC micro-service architecture proposed by AC³.

5.3.11 UBI

As a leading SME in the creation of innovative software solutions, UBITECH seeks to further enhance its current service management and orchestration framework and promote this as a future-proof solution for the onboarding, deployment, and runtime management of innovative applications. Through the AC³ project, UBI plans to strengthen its expertise in the field of context-based application management solutions contributing to the enhancement of its application orchestration product MAESTRO with new AI-based features for increased cognition and the management of resources over multiple federated access environments. UBITECH plans to exploit the project findings to its collaborating system integrators and/or directly to vertical sectors in the form of services and consultancy.

5.3.12 UPR

The University of Piraeus (UPR) has planned various channels for its dissemination activities. One approach involves writing articles that highlight the practical applications of the project in the field of cloud computing. These articles will be specifically tailored for reputable journals, including IEEE Transactions on Cloud Computing, International Journal of Cloud Computing and Services Science, and Journal of Cloud Computing: Advances, Systems and Applications (JoCCASA). The aim is to effectively reach a broad audience of researchers who are interested in cloud computing and related subjects.

Additionally, UPR intends to capitalize on opportunities to present the project's technologies at relevant conferences and academic events. This platform will allow for the showcasing and explanation of the innovations introduced by the project. By engaging in these dissemination activities, UPR seeks to raise awareness about the AC³ project, effectively communicate the significance of its research, and highlight its practical applications.

Moreover, UPR, in collaboration with the Technical Chamber of Greece, with which it has strong ties, plans to disseminate the results of the AC³ project to technology-oriented organizations in both the public and private sectors. This dissemination will occur through various means such as seminars, workshops, and similar events. This approach ensures that the findings and outcomes of the project reach a wider audience beyond the academic and research communities, extending the impact of the research to practical implementations and potential collaborations with industry stakeholders.

5.4 Overall Exploitation Potential and Impact

The AC³ project possesses significant potential for exploitation and offers a wide-ranging impact on various stakeholders. This section outlines the overall exploitation potential and the anticipated effects of the project as a whole.

5.4.1 Exploitation potential

The project's exploitation potential stems from its unique focus on leveraging cognitive capabilities, cloud computing, and edge computing in a seamless continuum. By integrating these technologies, the project unlocks new possibilities for enhanced computing power, real-time data processing, and intelligent decision-making at the edge. This opens up numerous avenues for exploitation, including:

- a) **Improved Efficiency and Performance:** The project's cognitive capabilities enable optimized resource allocation, intelligent workload distribution, and dynamic adaptation, leading to enhanced overall efficiency and performance of edge computing systems. This potential for improved productivity can be harnessed by industries such as manufacturing, logistics, healthcare, and smart cities.
- b) **Enhanced User Experience:** Through the project's intelligent decision-making capabilities at the edge, end-users can benefit from personalized and context-aware services. This includes seamless interactions, reduced latency, improved responsiveness, and tailored experiences across various applications and domains.
- c) **Scalable and Resilient Edge Infrastructure:** The project's advancements in cognitive cloud edge computing contribute to the development of scalable and resilient edge infrastructure. This creates opportunities for service providers to offer robust and reliable edge computing solutions to their customers, supporting diverse use cases and applications.

5.4.2 Impact

The impact of the AC³ project is multi-faceted, influencing various stakeholders in different domains. The anticipated impacts include:

- a) **Technological Advancements:** The project drives advancements in the fields of artificial intelligence, edge computing, cloud computing, and cognitive computing. It pushes the boundaries of what is possible in terms of processing power, data analysis, and decision-making capabilities at the edge.

b) **Industry Transformation:** The project's outcomes have the potential to transform industries by enabling innovative applications and services that rely on real-time data analysis and intelligent decision-making at the edge. This can lead to improved operational efficiency, cost reduction, and the creation of new business opportunities.

c) **Societal Benefits:** The project's impact extends to society, as it fosters the development of intelligent and context-aware systems that improve the quality of life for individuals. Applications in healthcare, transportation, public safety, environmental monitoring, etc., can lead to better healthcare outcomes, safer transportation, and sustainable resource management.

d) **Economic Growth:** The project's exploitation potential contributes to economic growth by enabling the development of new products, services, and business models. It fosters innovation, entrepreneurship, and job creation in the fields of cognitive computing, edge computing, and related industries.

Finally, the project holds significant exploitation potential and offers a wide-ranging impact on stakeholders. Through advancements in technology, industry transformation, societal benefits, and economic growth, the project is poised to revolutionize the way we leverage computing resources at the edge, unlocking new possibilities and driving innovation in various sectors.

6 Conclusions

This deliverable mostly covers activities and plans for the implementation of Task 6.1 – which essentially and primarily addresses the Dissemination and Communication plans of the project but also provides opportunity to discuss the project’s Standardisation and Exploitation plans. Indeed, this deliverable is a three-part one with the first (D6.5), second (D6.6) and third (D6.7) editions intended to be released in M06, M18 and M36. Clear actionable plans and strategies that will be used to actualize them in alignment with the KPIs enlisted in the DoA are also presented and discussed.

As the project is very much still at a nascent stage, most of the information presented concerning the Dissemination, Standardisation and Exploitation activities are mainly plans that will be deployed to enable an optimal execution of the activities, except the Communication activities, which have already begun with a measurable presence on the social media and creation of the official website of the project and other important related communication materials.

In line with the description of actions (DoA) in the GA, measurable steps were made with regards to presenting and discussing actionable plans towards achieving the different sub-categories of Task 6.1 and other similar aspects of the WP. Most importantly, actions concerning Communication activities have already commenced with highlighted early measurable milestones. More information will be available in the subsequent deliverables (D6.6 and D6.7) with respect to the Dissemination, Standardisation and Exploitation activities by M18 and M36 respectively.

7 References

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