

Grant Agreement N°: 101016673

Topic: ICT-40-2020



The European Cloud Computing Hub
to grow a sustainable and comprehensive ecosystem

D2.1: Strengthening Outreach of European Cloud Computing Efforts

Revision: v.1.1

Work package	WP 2
Task	Task 2.2
Due date	30/04/2021
Submission date	10/08/2021
Deliverable lead	Martel Innovate
Version	1.1

Abstract

This document defines the community building and communication strategy and describes the activities HUB4CLOUD pursues to guarantee broad visibility, promotion and up-take of the HUB4CLOUD driven activities, but also of CC projects and other relevant initiatives at European and international level.

Keywords: Communication, Community building, Dissemination, Forum, online promotion, social media, events

Document Revision History

Version	Date	Description of change	List of contributor(s)
V1.0	13.04.2021	First draft	Martel
V1.1	06.08.2021	Final version, after update and review	Martel

Disclaimer

The information, documentation and figures available in this deliverable, is written by the HUB4CLOUD (The European Cloud Computing Hub to grow a sustainable and comprehensive ecosystem) – project consortium under EC grant agreement 101016673 and does not necessarily reflect the views of the European Commission. The European Commission is not liable for any use that may be made of the information contained herein.

Copyright notice: © 2021 - 2022 HUB4CLOUD Consortium

Project co-funded by the European Commission under ICT-40-2020		
Nature of the deliverable:	R	
Dissemination Level		
PU	Public, fully open, e.g., web	√
CI	Classified, information as referred to in Commission Decision 2001/844/EC	
CO	Confidential to HUB4CLOUD project and Commission Services	

* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

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

OTHER: Software, technical diagram, etc

EXECUTIVE SUMMARY

This deliverable describes HUB4CLOUD's community building and communication strategy, and plan at the service of the whole European Cloud Computing (ECC) initiative so as to complement and extend the activities already planned and run by the H-CLOUD project. It details the HUB4CLOUD's outreach strategy and framework and outlines the envisaged dissemination and communication activities, as well as the impact measures.

It is aimed to be a guiding document for the projects' partners to align on main objectives and planned communication and dissemination activities, but also to define a common framework for coordination with other main parties such as the EC (in particular our Project Officer and other representatives at DG CONNECT) and other related H2020 projects within the overall Cloud Computing (CC) context.

HUB4CLOUD is assisting in expanding and empowering CC research, innovation capacity and deployments in Europe, by offering a tailored set of tools and services to collaborate in an open, inclusive, and dynamic environment. By connecting all relevant stakeholders, leveraging previous and ongoing European Commission (EC) funded projects, while liaising with relevant initiatives, HUB4CLOUD identifies assets created within the enlarged ECC ecosystem, analyses their value, assesses their impact and ensures that the various EC projects leverage each other's capabilities and resources, by establishing strong liaisons with all key players and organisations in the ECC community.

In this respect, the main objectives of the HUB4CLOUD's Community Building and Communication Strategy are to:

- Connect, stimulate and engage a critical mass of stakeholders involved in the ongoing CC ecosystem to make them aware of any relevant information and development, and encourage knowledge transfer, networking and collaborations.
- Promote CC projects' outcomes, best practices, success stories and maximise the collective outreach power of the ongoing projects, acting as an amplifier across the community for broader impact.
- Develop CC projects' outputs towards standardization and wider adoption, leading to sustainable longer-term impact.
- Increase visibility and promote CC initiatives and HUB4CLOUD as a community.

HUB4CLOUD **acts as a fully connected hub coordinating on strategic and operational aspects** with the ongoing H-CLOUD CSA, the ongoing SWForum.eu CSA, the European Commission (EC), prominent experts from industry and research, as well as ongoing EC projects contributing to and building upon cloud technologies, while aligning with prominent forces at policy, regulatory and societal level.

Knowledge and results generated by HUB4CLOUD will be shared with the identified target groups through dedicated tools and channels operated by WP2. All key outcomes will be made accessible and understandable by all target audiences.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
LIST OF FIGURES	6
LIST OF TABLES	7
ABBREVIATIONS	8
1 INTRODUCTION	9
1.1 Purpose of the document	9
1.2 Structure of the document	9
1.3 European Cloud Computing Community	10
1.4 Liaison with relevant European Cloud Computing Initiatives	10
1.5 Engagement of the HUB4CLOUD Advisory Board	11
1.6 Engagement of the HUB4CLOUD Strategic Coordination Board	12
2 COMMUNITY BUILDING AND COMMUNICATION STRATEGY	13
2.1 HUB4CLOUD Mission	13
2.2 Communication and Dissemination Objectives	13
2.3 Stakeholders	14
2.4 ECC Stakeholders	14
2.5 HUB4CLOUD's Positioning in the ECC Ecosystem	16
2.6 Stakeholder Engagement Plan	19
2.7 Phases of Action	19
2.7.1 Phase 1: Consolidating identity and position of ECC (M01-M06)	20
2.7.2 Phase 2: Amplified and coordinated outreach (M07-M12)	20
2.7.3 Phase 3: Long-lasting impact creation (M13-M18)	21
2.8 Sustainable outreach approach	21
3 CHANNELS AND ACTIVITIES	22
3.1 HUB4CLOUD Brand Identity	22
3.2 Brand Usage Guidelines	23
3.3 Continuation of dissemination channels	24
3.4 Communication Task Force	24
3.5 Online tools and channels	24
3.5.1 Website	24
3.5.2 HUB4CLOUD Social media channels	30
3.5.3 HUB4CLOUD / H-CLOUD e-Newsletter	32
3.5.4 e-Publications	34
3.5.5 Press Releases	34
3.5.6 Interviews and surveys	34
3.6 Offline tools	35

- 3.6.1 HUB4CLOUD Promotional materials.....35
- 3.6.2 Events.....35
- 3.7 Communication and community building recovery plan in times of COVID-1938
- 4 FORUM.....39**
- 4.1 Objectives and target39
- 4.2 Forum description39
- 4.3 Forum features.....39
- 4.4 Animation Plan:41
- 5 IMPACT ASSESSMENT.....43**
- 6 CONCLUSION47**

LIST OF FIGURES

Figure 1: Source: <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/37043.pdf> 15

Figure 2: HUB4CLOUD Positioning within the broader context..... 16

Figure 3: HUB4CLOUD high-level communication and dissemination timeline 19

Figure 4: HUB4CLOUD Logo 22

Figure 5: HUB4CLOUD Corporate colours 23

Figure 6: Responsive design H-CLOUD website 25

Figure 7: Horizon Cloud website pillar page..... 27

Figure 8: Website with menu items 28

Figure 9: Website most visited pages..... 29

Figure 10: Website activity during important events..... 29

Figure 11 : H-CLOUD LinkedIn page 30

Figure 12: H-CLOUD/HUB4CLOUD Twitter channel 32

Figure 13: Latest issue of the quarterly e-Newsletter 33

Figure 14: Landing page of the H-CLOUD Forum 40

Figure 15: Topics within the “Lounge” Category 41

LIST OF TABLES

Table 1: HUB4CLOUD Advisory Board members..... 11

Table 2: HUB4CLOUD target stakeholders and planned activities overview 17

Table 3: HUB4CLOUD relevant events..... 36

Table 5: HUB4CLOUD Communication KPIs 44

Table 6: HUB4CLOUD Communication Deliverables and Milestones 45

ABBREVIATIONS

CC	Cloud Computing
ECC	European Cloud Computing
EC	European Commission
H2020	Horizon 2020
GDPR	General Data Protection Regulation
WP	Work Package
KPI	Key Performance Indicator
R&D&I	Research & Development & Innovation

1 INTRODUCTION

1.1 Purpose of the document

This deliverable is prepared in the context of **WP2 “HUB4CLOUD Amplifier”** and aims to develop an overall community building and communication strategy for HUB4CLOUD for outreach and impact creation, considering the characteristics of the information that needs to be disseminated, the target audiences and groups and the impacts to achieve. The expected outcomes and impacts, assessment metrics and tools are defined. This strategy provides the framework within the different awareness-raising, and promotional and community building activities will be carried out during the course of the project.

In this context, WP2 focuses on identifying the relevant stakeholders that have to be contacted in order to reach the right supporters at the right time. It also involves preparation of the promotional materials and organising dissemination activities to create an open, secured, decentralised, user-oriented and highly engaged HUB4CLOUD community.

The purpose of this deliverable is therefore to outline an inclusive communication and community building plan for the realisation of the above stated goals and in particular to:

- Identify target audiences, including a broad range of stakeholders of the ECC community
- Present the strategy put in place for the dissemination and communication of knowledge and results
- Depict the methods, tools and promotional materials that will be used in the project’s dissemination and communication
- Provide a complete overview of the planned activities, as well as list potential opportunities to be exploited in the project
- Define the rules and procedures that will be applied to implement, monitor and evaluate all the communication and engagement activities.

This is a ‘living’ document, able to accommodate any required customisation. The dissemination planning will be constantly evaluated and revised during the project. Major updates will be included in the Engagement and Outreach Reports (M09, M18).

1.2 Structure of the document

The sections of the deliverable at hand are organised in the following manner.

After the introductory **Section 1** that presents the ECC ecosystem and the initiatives that feeds HUB4CLOUD with relevant CC activities in the ecosystem, **Section 2** depicts the Community building and communication strategy of HUB4CLOUD including the main objectives, the description of the target audiences and the strategic planning of the envisioned activities. **Section 3** presents the various types of dissemination channels and activities that will be used in order to support the project’s dissemination and communication activities. **Section 4** describes HUB4CLOUD’s community platform, the H-CLOUD Forum. **Section 5** depicts the impact assessment for the evaluation of the dissemination and communication activities. **Section 6** concludes the document.

1.3 European Cloud Computing Community

The ECC community comprises not only the service providers, developers and contributors of the CC technology and research, but also policy makers, businesses that use CC services and an extremely large number of users relying on cloud services like email and data sharing applications. All of this comes to a staggering number of approximately 154 million people across Europe.

The mandate of EC is to make Europe fit for digital age, aiming for at least 75% of EU companies to use cloud technologies and to make minimum 80% of the population having basic digital skills by 2030 [https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en]. Therefore, the ECC community is on a steady growth path in the coming years.

There are several cloud computing initiatives ongoing in Europe, all moving towards the same goal but via different paths and involving different verticals. Therefore, it is mandatory to have a hub of information. HUB4CLOUD is aiming towards filling this information gap in the ECC community. With specialised tools and channels, HUB4CLOUD will act as the hub for ECC community.

1.4 Liaison with relevant European Cloud Computing Initiatives

HUB4Cloud is related to various ECC initiatives that are on-going. The most relevant ones are:

FutureCloud Cluster of projects: this cluster was created in 2015 with the objective of “*providing a forum for discussion and collaboration for research and innovation initiatives that address next generation Cloud Computing challenges and issues, including diverse forms of distributed computing*”¹. The aim of this cluster, initially, was to bring funded projects together in order to find synergies, collaboration areas, and provide input for the European Commission’s research roadmaps. The cluster is still active.

GAIA-X: GAIA-X has several groups that can be of interest for HUB4CLOUD. The relevant groups are those related to the lower part of the X, namely certification and accreditation, continuous monitoring, self-description, federated catalogue and Minimum Viable GAIA-X (MVG). The initiative GAIA-X has national funded projects such as GXFS (GAIA-X Federated Services) funded by the German Ministry of Economics and Energy, with the aim of implementing the first version of the enablers of GAIA-X. France has a mirroring project aimed at the same but complementing the German view. In addition to that, GAIA-X has created the concept of the national hubs and as of April 2021, France, Germany, The Netherlands, Belgium, Italy, Finland and Slovenia are in the process of creating them.

European Alliance of industrial data, cloud and edge: At the time of writing this deliverable (April 2021), this alliance is composed of 27 Member states, who signed a memorandum of understanding (MoU) on October 15th 2020, to create a federated cloud in Europe. The goal is to expand this alliance with organizations, academia and individual experts to design an

¹ <https://eucloudclusters.wordpress.com/future-cloud/>

implementation plan to deploy the next generation cloud capacities for the public and private sector, including business aspects and investments needs.

Planetic: Planetic is the Spanish platform for ICT suppliers. Both ATOS and TECNALIA are part of Planetic and have created a task force for edge and cloud, in order to create awareness in Spain.

AMETIC: AMETIC is a Spanish ICT association, focused on different ICT-related aspects. AMETIC has a cloud commission where policy initiatives are discussed. These initiatives range from creating awareness on the benefits of cloud computing for the public and private sector, presenting position and opinion papers to different stakeholders (e.g., European Commission, Spanish Government, regional governments), and high-level technical documents.

ENISA: ENISA is the European Agency that is working on the definition of the EU cloud services certification scheme (EU CS) under the European Cybersecurity Act (EU CSA), which aims at creating a certification framework for Europe. The ENISA cloud services Ad-hoc working group (AHWG) has worked along with ENISA in the definition of the EU CS. For the EU CS to be widely adopted, awareness of the EU CS needs to be made.

European Open Science Cloud: The aim of the European Open Science Cloud is to federate existing research data infrastructures in Europe. It already has presented a catalogue and marketplace of services and applications that research communities and research infrastructures have put in place.

1.5 Engagement of the HUB4CLOUD Advisory Board

HUB4CLOUD has the honour to engage highly reputed individuals / representatives of public and private organisations across the European cloud and digital industry, to be part of its Advisory Board.

Their essential roles in the project include:

- Provide comments on project deliverables
- Provide strategic insights on Cloud initiatives and directions
- Participate in selected project GA meetings
- Be invited as speakers to selected project events

The current Advisory Board consists of the following individuals / organisations:

Table 1: HUB4CLOUD Advisory Board members

Name	Affiliation
Marco Di Girolamo	Hewlett Packard
Bob Jones	CERN
Alessandro Perilli	Redhat
Lutz Schubert	University of Ulm

Colin Upstill	NESSI
Andreas Weiss	eCO / GAIA-X
Klaas Wierenga	GÉANT

1.6 Engagement of the HUB4CLOUD Strategic Coordination Board

The HUB4CLOUD Strategic Coordination Board (SCB) is a body aimed to align on the strategic objectives across the ECC ecosystem, coordinating the contribution of various CC projects, identifying potential synergies, and collaboration opportunities. The SCB will foster convergence on common strategic and operational aspects to grow a smart cloud computing continuum to shape the EU's digital future.

The SCB embarks on the following activities:

- They meet regularly during the project to keep track of progress, align on priorities and synergise activities across the involved projects within the wider ECC ecosystem.
- Define the development of a “Position Paper” for the ECC strategic direction.
- Towards the end of the project, organise a dedicated meeting with the EC, presenting final ECC roadmap and policy recommendations.
- SCB is coordinated closely with the HUB4CLOUD Advisory Board to align on common activities and ensure close synergies.

The SCB involves the following members:

- Coordinators of the ICT-40 and ICT-15 RIA projects
- Representatives of three relevant CSA projects in CLOUD and software domains: HUB4CLOUD, H-CLOUD and SWForum
- Representatives of the EC (Project Officers of the 3 CSAs above, and potentially others to be further agreed)

2 COMMUNITY BUILDING AND COMMUNICATION STRATEGY

Efficient community building and communication actions during the HUB4CLOUD project ensure short and long-term success of the project. Therefore, promotion, dissemination, stakeholder engagement and impact creation activities are central to the whole HUB4CLOUD effort and will be closely coordinated among the various WPs to create a cohesive plan of action for the effective engagement of all target stakeholders in the cloud computing ecosystem.

As per the target of Europe's digital decade, aiming towards successful digital transformation by 2030, one out of the 4 cardinal points of transformation concerns the cloud computing research development and innovation, citing "three out of four companies should use cloud computing services by 2030" [https://ec.europa.eu/commission/presscorner/detail/en/IP_21_983]. This target coupled with the necessity raised by the COVID-19 pandemic, the cohesive and synergistic approach in R&D&I is the need of the hour.

The HUB4CLOUD communication and dissemination activities described in this deliverable, including the content developed, tools, actions and services, directly support the ambition of Digital Europe. All our activities are geared towards the creation of value out of the ECC offering and promoting collaboration and synergies between the CC stakeholders. That way, HUB4CLOUD is creating direct socio-economic impact in a multi-stakeholder and multi-disciplinary perspective.

The following sections describe HUB4CLOUD's mission, overall communication and dissemination objectives, key stakeholders, communication phases and communication channels that will guide and streamline HUB4CLOUD communication and community building activities.

2.1 HUB4CLOUD Mission

The main mission is to ensure the development of the **ECC ecosystem as an open, inclusive, sustainable and dynamic initiative driving the development and adoption of advanced cloud computing infrastructures and services essential to boost the EU data economy and support the new industrial strategy for Europe**, while advancing public services offering, engaging SMEs and promoting environmentally sustainable technologies and choices.

HUB4CLOUD will provide a collaborative framework, including content, tools and processes, to engage European researchers, developers, integrators and users to overcome fragmentation and ground a strong European cloud computing empowered economy as a core building block of the EU Digital Single Market, its industrial competitiveness, its data economy and its ambition to ensure a carbon-neutral digital society.

2.2 Communication and Dissemination Objectives

HUB4CLOUD's dissemination and communication activities are overarching throughout the whole duration of the project and aim to ensure the development of a vibrant and disruptive community as an open, inclusive, sustainable and dynamic forum that will lead to increased and durable impact within Horizon 2020 and beyond in Horizon Europe.

The main objectives of the HUB4CLOUD community building and communication strategy are to:

- Support the communication and dissemination activities of the European Cloud Computing initiative, while echoing efforts also of other key players in the ECC ecosystem.
 - Development of a well-organised and exhaustive cloud stakeholder's database.
 - Promotion of exchange programmes, prizes, challenges, open calls, success stories and any other asset (methodologies, tools, publications, etc.) produced

across the ECC ecosystem and made available via the H-CLOUD portal or other channels as deemed appropriate.

- Orchestration of common dissemination and communication activities, including preparation of material presenting the overall programme, common press releases, joint position/white papers, etc., organisation of events, best practices exchange, promotion of ECC technologies.
- **Encourage the participation of ECC stakeholders in the H-CLOUD Forum**, extending it further to include new players, liaising with existing networks and online communities.
- **Facilitate accessibility to ECC projects' outputs** to foster increased adoption of CC concepts and technologies in Europe, giving major impulse to the Digital Single Market objectives.
- To ensure the growth and sustainability of the ECC community by engaging stakeholders, facilitating participation for newcomers, fostering knowledge exchange, organising dedicated events, while promoting main achievements via targeted dissemination and outreach efforts.

HUB4CLOUD will operate in this sense by joining forces with other ongoing ECC projects, clusters and initiatives, particularly by complementing and extending community building and outreach activities already underway within the ongoing H-CLOUD CSA and the SWForum.eu CSA (under the lead of work package 2).

2.3 Stakeholders

To ensure broad visibility and promotion of CC initiatives and of HUB4CLOUD as a community, our communication efforts will target the following stakeholders:

2.4 ECC Stakeholders

The core target for HUB4CLOUD outreach and communication activities is the community of all the EU (or global entities established in Europe) stakeholders, that gathers CC technologies and solutions adopters/users (demand side), but also those who actively contribute to their advancement and deployment (supply side).

ECC community is large in Europe and the ECC market is set to grow from its current market value of more than \$25 billion to over \$75 billion by 2026, gaining remarkable traction over the 2020 to 2026 period [<https://pr.euractiv.com/pr/europe-cloud-computing-market-witness-steady-growth-12-during-2020-2026-208846>].

According to EUROSTAT report, the use of CC services in Enterprises in Europe in 2020 was 36%.

Use of cloud computing services in enterprises, 2020

	Use of cloud computing	E-mail	Storage of files	Office software	Hosting the enterprise's database(s)	Financial or accounting software applications	CRM software applications	Computing power for enterprise's own software
	% enterprises	% enterprises using the cloud						
EU-27	36	76	67	58	47	45	27	24
Belgium	53	78	75	64	64	52	43	37
Bulgaria	11	72	68	58	57	34	24	19
Czechia	29	79	66	63	41	38	26	32
Denmark	67	84	80	73	70	60	44	42
Germany	33	56	65	47	37	38	20	22
Estonia	56	75	60	65	32	72	20	27
Ireland	51	84	86	69	57	58	34	29
Greece	17	73	64	45	42	u	u	u
Spain	26	80	77	61	70	39	40	36
France	27	67	76	55	63	41	36	22
Croatia	39	87	70	57	54	47	18	25
Italy	59	96	55	63	36	48	17	12
Cyprus	35	86	69	72	38	40	32	21
Latvia	21	64	62	54	58	50	25	22
Lithuania	31	78	58	51	49	44	24	40
Luxembourg	29	75	69	66	67	38	39	31
Hungary	25	72	66	60	47	37	24	32
Malta	53	86	80	74	51	43	31	34
Netherlands	53	78	79	69	76	65	51	33
Austria	38	61	74	45	31	23	20	19
Poland	24	75	53	64	34	35	20	15
Portugal	29	83	70	58	47	40	32	36
Romania	16	47	34	30	31	30	0-n	56
Slovenia	39	65	60	62	37	39	20	26
Slovakia	26	85	61	64	42	47	26	28
Finland	75	85	79	78	57	59	42	24
Sweden	70	81	79	64	60	65	36	41
Norway	64	84	83	76	73	69	49	40
North Macedonia	14	58	60	49	43	31	18	26
Serbia	19	79	53	71	60	50	23	23
Turkey	14	80	70	62	48	70	30	38
Bosnia and Herzegovina	9	85	71	53	62	47	17	33

u - data unreliable, 0-n - value close to zero

Note: Iceland: 2020 data not available, Montenegro: 2020 unreliable

Source: Eurostat (online data code: isoc_cicce_use)



Figure 1: Source: <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/37043.pdf>

About **3,000,000 developers and primary professional users** (also called as the **primary audience**) are engaged in CC solutions for data, scientific research, in government and higher education sectors across borders potentially using or interested in science cloud solutions - EOSC, EUDAT, GEANT, NESSI, Open Research Cloud Alliance. [Eurostat, R&D Personnel 2016 https://ec.europa.eu/eurostat/statistics-explained/index.php/R_%26_D_personnel#Researchers]

Primary audience of the ECC stakeholders comprises of the following groups:

- CC Industry
- Standardization bodies / Open-source communities
- SMEs / Start-ups
- Policy makers

Enlarged audience of the ECC stakeholders comprises a much larger number:

- **Professional Users** A reasonable way to enlarge the core target is to consider all people and organisations that, while not actively advancing CC, will use it, affecting its adoption and in turn having their organisations impacted by CC. This group includes representatives from both private and public sector that use CC technology and derived services to their interest or position; people that use the CC services / products and are impacted directly; service or technology providers that use CC to develop new applications

in different verticals. This latter segment encompasses a good fraction of the about **6.1 million professional developers** in the EU.

- **Citizens as end users: 144 million people**, over one third of EU internet users use cloud services. In the EU, half of younger internet users aged 16 to 24 years took advantage of cloud services (Eurostat, Cloud computing - statistics on the use by enterprises https://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises).

HUB4CLOUD plans to reach ~70% of the primary audience through a broad set of activities ranging from the establishment of liaisons, events, newsletters, H-CLOUD online community, media coverage, conferences' attendance and presentations, especially leveraging connections and channels of the four ICT-40 RIAs, of H-CLOUD, of the EC, etc. HUB4CLOUD also strives to **reach 20% of the enlarged audience**, with a focus on European SMEs/Start-ups and professional end users through dedicated training activities.

2.5 HUB4CLOUD's Positioning in the ECC Ecosystem

HUB4CLOUD ensures close coordination and networking among key players such as the various ECC projects (e.g., ICT-15, ICT-40) and their partner organisations, the EC, as well as other relevant research, innovation and policy-driven initiatives. HUB4CLOUD is positioned as the ideal connector, acting as the hub, of a network-of-networks, and delineates the combination of two major types of mechanisms to structuring the interaction with the ICT-15 and ICT-40 RIAs and the rest of the ECC community, as well as relevant 5G PPP, IoT and NGI projects. The following Figure 2 shows the positioning of HUB4CLOUD across the various ECC projects and initiatives

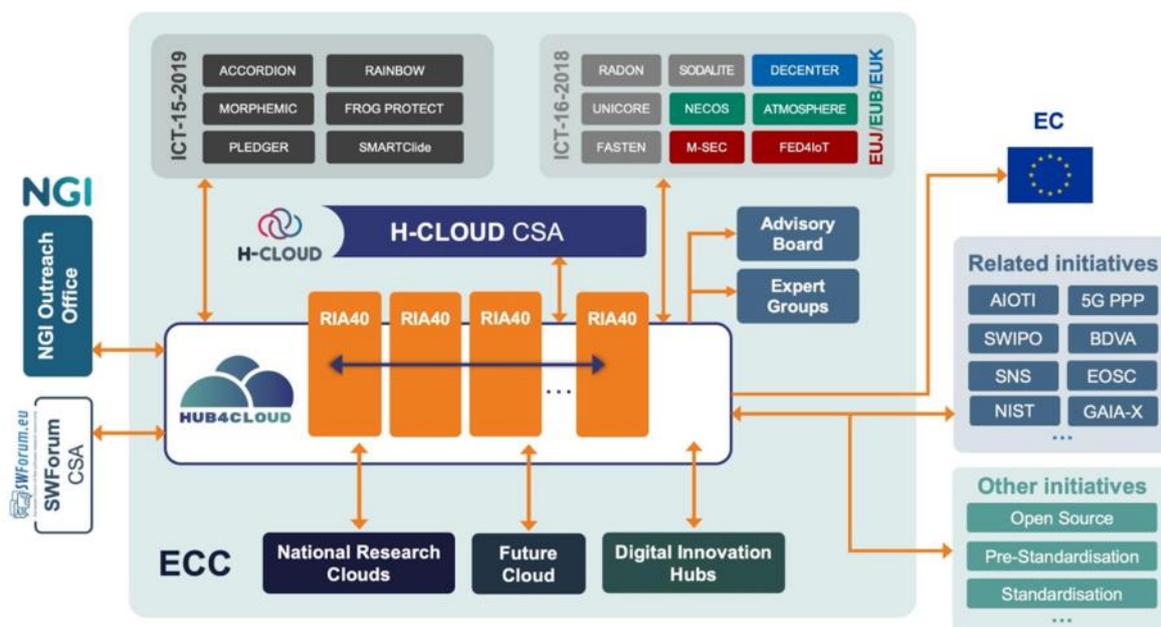


Figure 2: HUB4CLOUD Positioning within the broader context

The following Table 2 lists the main categories of stakeholders we plan to engage with, as well as dissemination actions to be directed towards them. A detailed description of the methods of outreach can be found in section 3.

Table 2: HUB4CLOUD target stakeholders and planned activities overview

Group	Description	Dissemination Message	Dissemination Strategy
CC funded projects, including ICT 40 RIAs	Initiatives and organisations involved in these past and ongoing initiatives	Foster collaboration, create networking opportunities, offer visibility, increase impact, support exploitation of achievements, enhance the reputation of the whole ECC ecosystem and of each project	<ul style="list-style-type: none"> - Engage in community events, - Promote achievements (H-CLOUD Forum /social media), - Voice the experts (e.g., videos, interviews, case studies), - Facilitate knowledge transfer (e.g., publication repository, participation in working groups), - Amplify outreach, promote awards, exchange programmes, etc.
CC industrial and academic researchers	Researchers from industry and academia	Benefit and leverage upon the research results, studies, publications, and networking, share achievements within CC community to facilitate know-how and technology transfer	<ul style="list-style-type: none"> - Invitation to participate in community / expert workshops, - Engage with community during selected scientific events to give them a voice, - Amplify knowledge transfer (e.g., publication repository, participation in working groups), - Publish best practice, success stories, - Map and monitor standardisation efforts.
CC users	Developers in the CC landscape; technology providers	Benefit and leverage upon the training results, toolset, publications, open calls, exchange programmes and networking	<ul style="list-style-type: none"> - Invite to attend the training organised by HUB4CLOUD, - Invite to participate in community events, - Engage with community during selected industry events, - Amplify knowledge transfer, - Promo and presentation materials, webinars, etc.
CC SMEs & Start-ups	Public and private organisations and Start-ups/SMEs, innovators	Benefit from CC-on-Demand platform technologies and resources to minimise time-to-market for their applications and services	<ul style="list-style-type: none"> - Promote the outputs of the CC projects (newsletters, social media, news, blogs, reports) and their possible uptake - B2B

		– increased market visibility and liaisons	<ul style="list-style-type: none"> - Engage with innovators at dedicated events, e.g., SLUSH, - Voice SME/Start-up representatives (e.g., videos, interviews, case studies) championing CC technologies, - Document success stories (case studies / best practices).
Policy makers and public authorities	Actors committed to support the development of the full economic potential of Europe	Make informed strategic decisions and plan targeted activities, investments and calls on CC for the good of our economies and societies	<ul style="list-style-type: none"> - Promote the outputs of the CC projects in various forms, - Amplify knowledge transfer (e.g., H-CLOUD Forum; participation to working groups and policy debates), - Summarise developments, promote roadmaps (white strategy paper, scoping paper, policy recommendations), - Participation in dedicated policy events (e.g., EGI Conference, ICRI, ICT Proposers Day, etc.).
CC end users industries	Non-ICT professionals who could benefit of CC applications and tools at use	How non-ICT experts employed in different verticals and with different functions can properly master CC concepts and solutions in their everyday life/work	<ul style="list-style-type: none"> - Infographic and storytelling materials to make better accessible the materials and knowledge to non-specialists, - CC education for non-ICT experts' training programme, - Guidelines for evolution of training and teaching CC.
Standardization bodies / open source communities	Standardisation organisations, working groups, research groups	Support technology transfer, liaising with researchers, private sector, policy makers, share / promote standards and relevant strategies and success stories	<ul style="list-style-type: none"> - Invite participation in community events, - Engage with community during selected relevant events, - Amplify / promote knowledge transfer from ECC projects towards standardisation bodies and open-source communities.

2.6 Stakeholder Engagement Plan

HUB4CLOUD leads a set of activities aimed at ensuring strong cohesion of the overall ECC ecosystem by engaging all relevant stakeholders and key players, while contributing to establish and maintain liaisons with several relevant initiatives. HUB4CLOUD creates close synergies with the H-CLOUD CSA (as well as with SWForum.eu as relevant), by coordinating efforts across the various cloud RIAs, and by building upon common communication channels and services, HUB4CLOUD disseminates the ECC projects' work and achievements and promotes scientific, regulatory, technological as well as policy-related initiatives. The engagement plan reaches out and engages a large community of CC providers and users through dedicated online and offline communication actions, events, as well as animation and management of the H-CLOUD Forum (especially after the end of H-CLOUD), details of which is elaborated in section 3.

2.7 Phases of Action

HUB4CLOUD will follow a phased approach to defining, planning, organising and exploiting a rich set of activities and instruments in the most effective way towards building a strong and vibrant CC community in the EU that will make a difference in the future development of the field and ECC scene at large. Accordingly, the project will follow a 3-stage approach to outreach and impact creation, as follows in Figure 3:



Figure 3: HUB4CLOUD high-level communication and dissemination timeline

2.7.1 Phase 1: Consolidating identity and position of ECC (M01-M06)

During this current phase, we have designed the community building and communication strategy, including target groups, planned activities and a selection of dedicated communication tools and community building activities. Moreover, we have started defining the liaisons and interaction mechanisms with the rest of the domain entities and players, including relevant research and innovation projects. The plan is to agree with the H-CLOUD project on the use of the same common communication channels, to avoid fragmentation of efforts and resources, this is facilitated by Martel Innovate, which already runs the H-CLOUD communication channels at the service of the overall ECC community.

Outcomes/measures: Submission of this document Deliverable 2.1. Recently at the H-CLOUD annual review, recommendations on the website were given. HUB4CLOUD is collaborating with H-CLOUD in building a portal that will be the most important CC portal of the ECC community and stakeholders. We have started working on the H-CLOUD community platform Forum with ideas for better and frequent stakeholder engagement. New RIAs have been onboarded on the communication task force and major promo campaigns, online and offline, have been initiated, including animation of social media channels. A calendar of events has been set up in collaboration with H-CLOUD targeted events. An introduction flyer and a programme presentation slide deck are in process of making. Communication Task Force, Advisory board and Strategic Coordination Board mailing lists and repositories are in place.

2.7.2 Phase 2: Amplified and coordinated outreach (M07-M12)

Phase 2 of the HUB4CLOUD community building and communication strategy will actively reach out the main target stakeholders to generate interest in HUB4CLOUD activities and outcomes and ensure promoting the relevance of next generation CC as a core element of various EC Strategies (Data Strategy, Industrial Strategy, Green Deal, etc.) in the transition to Horizon Europe. Under the lead of WP2, the various ECC stakeholders and relevant initiatives will also be mobilised fostering knowledge sharing and common outreach efforts (e.g., events, consultations, best practices publications) and input will be gathered from all HUB4CLOUD WPs/Tasks as relevant to push out relevant news and create dedicated storytelling. In this phase participation in events will be fostered and joint efforts with H-CLOUD and ECC projects for organisation of events. In this phase, HUB4CLOUD will collaborate with H-CLOUD and organise the 2nd Horizon Cloud Summit.

Outcomes/measures: Publication of best practices/success stories (curated contents/storytelling), workshops with AB and EG, webinars, video interviews from ECC representatives and CC experts to raise awareness, animation of social media channels, a number of news items pushed out via the website and media, newsletters, webinars and participation in selected events to facilitate networking, outreach and community building, contribution to organise 2021 edition of Horizon Cloud Summit. Based on innovative business model patterns to be produced as inspiration for entrepreneurs, specific activities targeted at SMEs/Start-ups will be organised (webinars, news, presentations).

2.7.3 Phase 3: Long-lasting impact creation (M13-M18)

Phase 3 of the HUB4CLOUD community building and communication strategy will actively engage target stakeholders on a broad scale in Europe and beyond, ensuring the establishment of an inclusive and sustainable collaborative framework for supporting the ECC efforts, as well as into open source and standardisation activities. The main idea is to ensure strategic and extensive dissemination and communication in combination with targeted community building actions and projects success stories.

Outcomes/measures: Promotional material in various forms (presentations, interviews, videos, flyers, etc.), publications, established liaisons with relevant research and innovation projects, news/newsletters, social media presence, dedicated webinars, participation in events, training workshops in coordination with H2020, organisation of the Horizon Cloud Summit 2022.

2.8 Sustainable outreach approach

The HUB4CLOUD Community Building and Communication Strategy considers the sustainability principles for the organization of events and the production of communication materials. For this purpose, we will:

Organize virtual meetings and workshops instead of face-to-face events

Avoid using material resources where possible (avoiding printing flyers when unnecessary and promote the online download, producing promotional materials using recycled materials and avoiding single-use products, for example)

Encourage the reduction of emissions through sustainable mobility practices (e.g., recommending bicycle use, public transport at HUB4CLOUD events and rewarding these actions)

Work with suppliers (printers, caterers, etc.) that use sustainable products and materials

Try to measure the carbon footprint and compensation of emissions of partners' traveling to dissemination events.

3 CHANNELS AND ACTIVITIES

In this section, HUB4CLOUD's communication and dissemination channels and activities will be elaborated.

3.1 HUB4CLOUD Brand Identity

As an EC co-funded Coordination and Support Action project, a clear project brand identity needs to be implemented in order to have an impact with the dissemination of respective work and achievements.

The recognition and perception of a brand is highly influenced by its visual presentation. A project's visual identity is the overall look of its communications. Effective visual brand identity is achieved by the consistent use of visual elements to create distinction, such as specific fonts, colours, and graphic elements.

The visual identity and sets of guidelines have been finalised since the early stage of the project in order to secure a strong and unique brand. It will be incorporated in all promotional and dissemination materials produced during the project and will be used by all project partners in their communication activities.

The HUB4CLOUD logo (see Figure 4) is built with a graphic element on top and the name at the bottom. The illustration is an abstraction of Clouds and the colouring and the shape itself creates a feeling of congregation, overlap, synergy and collaboration. The font is contemporary, sans-serif with a nice contrast between rounded and straight shapes.



Figure 4: HUB4CLOUD Logo

A main palette of 3 colours inspired by innovation, creativity and technology together with the complementary grey scale colours, as shown below in Figure 5.

Palette of corporate colors

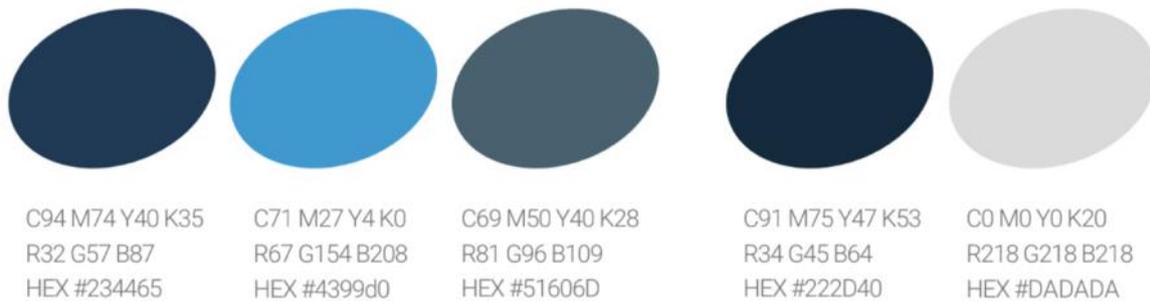


Figure 5: HUB4CLOUD Corporate colours

The guidelines of the identity are composed of visual elements such as the **fonts, colour palette and templates for documents and presentations**. All dissemination materials refer to the project name, the project's website and Horizon 2020 with associated graphic elements in line with the European Commission's guidelines.

A **PowerPoint presentation template** was created to be used by the partners to create their presentations for all external and internal events, meetings, etc., based on a common look and feel. The annex gives an impression of the template.

3.2 Brand Usage Guidelines

Rather than creating a separate brand, a new web site and alternative communication channels, the idea is to join forces with H-CLOUD and other ECC projects. To avoid fragmentation of efforts and resources, HUB4CLOUD agrees with H-CLOUD on the use of the same communication channels. This is facilitated by MARTEL that already runs the H-CLOUD communication channels at the service of the overall ECC community. In this respect, HUB4CLOUD will pull forces to:

- Coordinate efforts with dissemination and communication activities planned and run by H-CLOUD and other ECC projects, such as organisation of events, publications, promotion of best practice and success stories, etc.
- Provide curated content - in the form of news, interviews, blogs, white papers, publications, graphics, videos, tweets, etc. that will be distributed and made available via the H-CLOUD portal and channels. Martel hosts and runs the h-cloud.eu portal, as well as the H-CLOUD social media channels, and will ensure smooth and effective interaction between all parties involved.

HUB4CLOUD's distinct brand will be used in:

- Designing and producing promotional material such as brochures, slides, posters/roll-ups, and videos, to be used and distributed in accordance with the HUB4CLOUD activities and ECC programme needs.
- Actively disseminating through publications of reports, papers, as well as presentations and notes given at conferences, workshops and relevant events by ongoing ECC projects, including relevant insights and documents produced by HUB4CLOUD.

3.3 Continuation of dissemination channels

HUB4CLOUD is using the same channels of communication and dissemination that have been established by H-CLOUD. The idea is to avoid fragmentation and promote cohesion. Following channels have been agreed to be continued for both CSAs:

- H-CLOUD portal - <https://www.h-cloud.eu/>
- H-CLOUD community platform Forum - <https://community.h-cloud.eu/>
- LinkedIn Group: <https://www.linkedin.com/groups/8852793/>
- Twitter handle: https://twitter.com/HCLOUD_Project
- H-CLOUD quarterly newsletter
- Communication Task Force

3.4 Communication Task Force

HUB4CLOUD continues the activity of H-CLOUD by engaging and building upon its Communication Task Force. The communication task force comprises of the ongoing ECC projects (RIAs and IAs) from project calls namely: **ICT 6 (H2020-ICT-2016-1)**, **ICT 10 (H2020-ICT-2016-1)**, **EUK-01-2018 (H2020-EUK-2018)**, **EUB-01-2017 (H2020-EUB-2017)**, **EUJ-01-2018 (H2020-EUJ-2018)**, **ICT-16-2018 (H2020-ICT-2018-2)**, **ICT-15-2019 (H2020-ICT-2019)**, **ICT-40-2020 (H2020-ICT-2018-20)**.

The task force is one of the most important tools that HUB4CLOUD is using to coordinate the activities of the ongoing ECC projects. The representatives of the joining RIAs are communication and dissemination officers of these projects. The task force meets once a month and activities of all projects are shared. News about project results, milestones, upcoming events, papers, publications etc are shared between the participants. This information is then echoed via H-CLOUD/HUB4CLOUD dissemination channels, namely, website, Twitter, LinkedIn and H-CLOUD community platform FORUM.

HUB4CLOUD collaborates with H-CLOUD in onboarding new RIAs into the task force, sharing news about the upcoming events and activities in the ECC community.

3.5 Online tools and channels

3.5.1 Website

The HUB4CLOUD project web portal (see Figure 6) is a fully functional web portal that contains comprehensive information on the various CC RIAs involved with the two CSAs (H-CLOUD & HUB4CLOUD). The website went over a complete makeover in the last 2 months and new format was launched after the recommendation received from the H-CLOUD (HUB4CLOUD's sister project) project review. The EC envisioned the H-CLOUD/HUB4CLOUD web portal to be the cloud computing portal in Europe. The requirement suggested that the website be a one-stop-location for all ECC related information, for business as well as research related searches. The content of the website is agreed by both CSA's target topics and stakeholders and have been agreed by both consortia.

It has easy access and a friendly interface to retrieve information and any public material generated within the project, as well as materials gathered via the various work packages

activities about ongoing projects and relevant initiatives. The HUB4CLOUD web portal is the entrance point for all the ongoing ECC community players / stakeholders (existing and newcomers) to the activities, services, material and information that HUB4CLOUD is planning to create, collect and share.

There are 2 menu locations, on the left are the different CC topics and initiatives. On the right are information and content from the CSAs, the RIAs, communities, events and general information.

The dissemination material produced within the project and for the interaction with social networks will use the website as a reference, in order to have a consistent communication and an easy-to-recognise image/brand. To support multimodal access, it adopts responsive design principles aimed at providing an optimal viewing experience (see Figure 6).

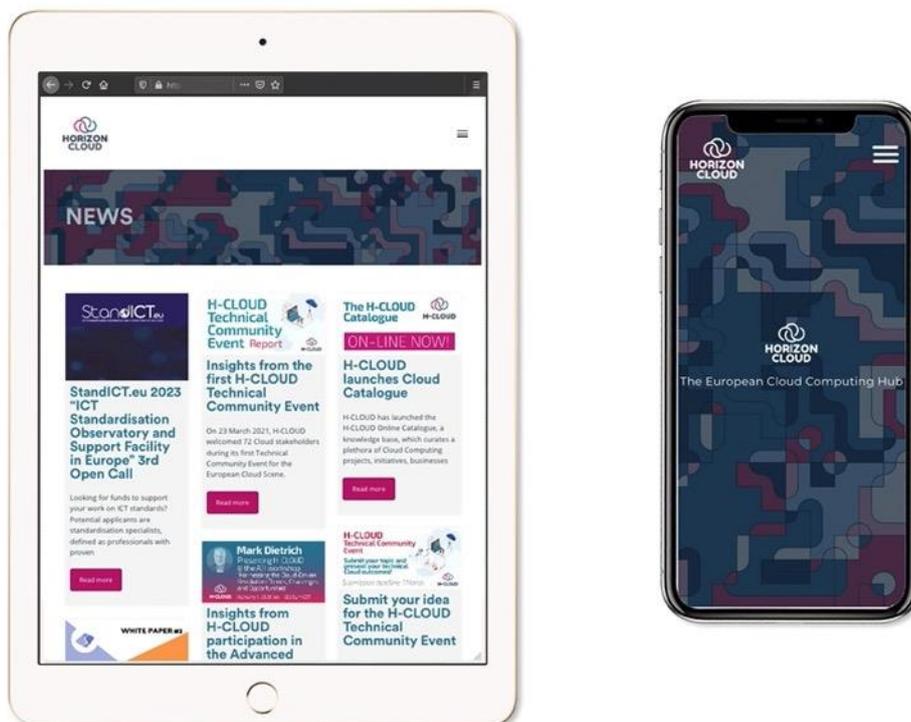


Figure 6: Responsive design H-CLOUD website

Evolution of H-CLOUD website: From “Project” to “Program”

With the commencement of HUB4CLOUD project, the website has evolved from the “project” site to “program” site. The larger context is creating this ECC community, a hub for all ECC information, supported by the EC. Therefore, the evolution of the project into the “Horizon Cloud” program is more appropriate and justified for the smooth interaction of both CSAs, H-CLOUD and HUB4CLOUD. The Horizon Cloud program is clearly depicted on the website as an amalgamation of H-CLOUD and HUB4CLOUD brands. The website is clearly depicted as the “European Cloud Computing Hub” and has evolved into a clear and clean communication interface that is easily navigable, containing all relevant project related public information.

The website now prominently promotes the project’s main outcomes (i.e., the online catalogue, landscape analysis, forum) and clearly communicates the benefits provided by the project.

Moreover, it gives an immediate overview of the project's priority areas (i.e., green cloud, cloud edge, cloud federation), actors of the European Cloud Computing Community, relevant policy frameworks, as well as relevant Cloud news, events, and funding opportunities. The pillar page design of the website (i.e., long format landing page) allows for better Search Engine Optimisation (SEO) so that the portal is better identified by search engines as one of the main websites on Cloud Computing in Europe.

To navigate the pillar page (see below Figure 7), a sticky bar has been integrated on the left-hand side that helps visitors to browse the following topics of the landing page:

- **Green Computing:** Gives an overview of H-CLOUD outcomes related to Green Computing.
- **Cloud Edge:** Gives an overview of H-CLOUD outcomes related to Edge Computing.
- **Cloud Federation:** Gives an overview of H-CLOUD outcomes related to Cloud Federation.
- **Join the Community:** Gives an overview of the benefits of the H-CLOUD Forum.
- **Cloud Actors:** Gives an overview of the European Cloud Computing Community (e.g., H-CLOUD Online Catalogue, CSAs, RIAs, European Cloud Clusters, European Alliance for Industrial Data, Edge and Cloud, Cloud Associations, etc.)
- **Cloud Challenges:** Highlights challenges identified in the H-CLOUD landscape analysis.
- **Cloud Frameworks:** Gives an overview of relevant Cloud Policy Frameworks
- **Good Cloud Practices:** Gives an overview of good practices identified by H-CLOUD.
- **News:** Includes relevant news items and funding opportunities.
- **Events:** Gives an overview of upcoming events.

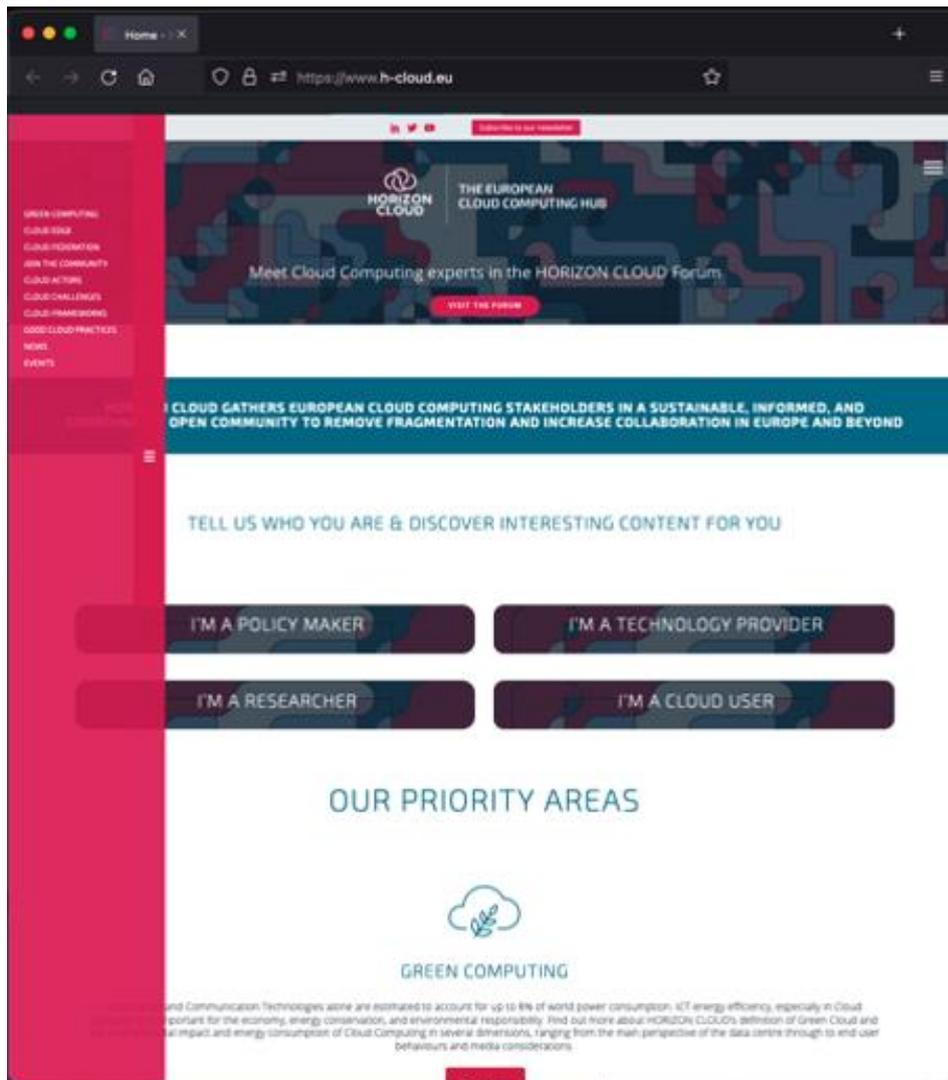


Figure 7: Horizon Cloud website pillar page

In addition, a user-based navigation has been integrated at the top of the pages, which points the project's main stakeholders directly to content that might suit their interest.

Finally, the website still has a structure-based navigation on the right-hand side (comparable to the usual menu bars present in websites), which is structured into the following sections:

- **About:** This page contains the vision and mission of the Horizon Cloud initiative. It explains the message of “Horizon Cloud: The European Cloud Computing Hub” with a schematic representation of the ECC stakeholders.
- **Projects:** This page contains the information on two project pillars of the Horizon Cloud program:
 - **CSAs:** This page contains the information about H-CLOUD and HUB4CLOUD projects, the 2 CSAs under the Horizon Cloud program.
 - **RIAs:** This page includes an overview of all CC projects at the centre of the Cloud Computing research community in Europe. One of Horizon Cloud initiative's main goals is to create visibility for and connect all CC stakeholders active in Europe. To this end, we have already reached out to all European funded CC projects, informing them about H-CLOUD's and HUB4CLOUD's aims and objectives and inviting them to share information on their project with us. Using this information,

we curate our website a dedicated page listing all European funded Cloud projects, see Figure 7.

- **Get funded:** This page provides an overview of relevant funding opportunities.
- **Community:** This page contains information about the HUB4CLOUD communities and community activities. Following sections can be accessed via this menu item:
 - **Online Catalogue** is a depiction of all CC projects and initiatives sorted according to various categories. The projects can be filtered according to topics, geographical scope, keywords, deployment model, industry, technology, operating model etc.
 - **Liaised projects and Cloud Initiatives** are pages that depict the other CC initiatives in Europe where H-CLOUD and HUB4CLOUD are collaborating with.
 - **Cloud Associations** are the relevant initiatives where the 2 CSAs are liaising with.
 - **Horizon Cloud Forum** page is where the Forum platform can be accessed. More details on the Forum platform is mentioned in section 4.
- **What's New?:** This section includes **News, Press releases, and Newsletter.**
- **Events:** This page includes information on past events as well as forthcoming events, organised by the project or where project partners will have a relevant participation (e.g., keynote speech).
- **Resources:** This page currently contains all H-CLOUD publications, deliverables, presentations and promotional materials. Here will also be published the documents, deliverables, presentations and promotional materials of HUB4CLOUD project, as and when ready.
- **Contact:** This page allows visitors to directly contact the project through a dedicated form and includes links to social media channels.

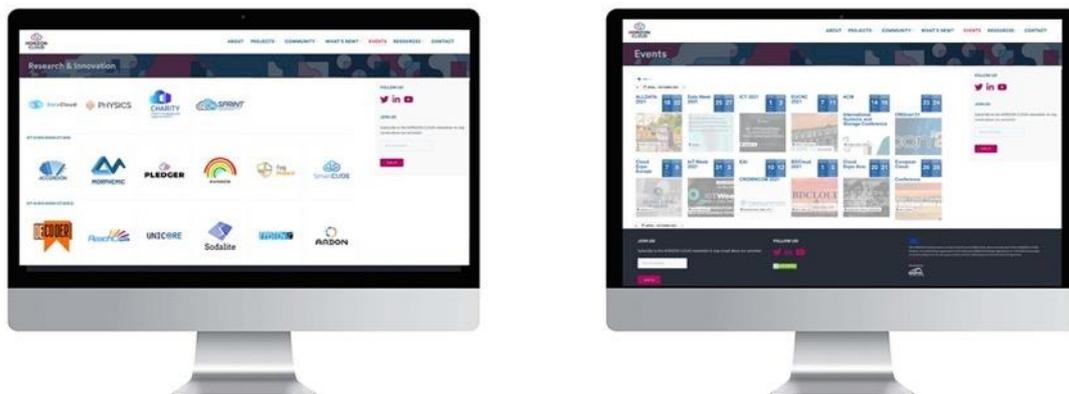


Figure 8: Website with menu items

Messages sent via the contact form are forwarded to info@h-cloud.eu, which is forwarded to the concerned project partners, who receive the message and respond to it. It should be noted that all information and e-mails collected are protected under GDPR. Contacts will only be made to those who have submitted their inquiries and newsletters will only be sent out to those who have explicitly requested to receive them. Any person who has subscribed will be allowed to remove their e-mail upon request.

As one of the main dissemination channels and dynamic tools, the website will undergo a major streamlining, and it will be continuously updated throughout the lifetime of the project.

The data shown in the Figure 9 below is from **February 2020 (until 03.08.2021)**. The website has a **total of 2,946 visits and 11,627 page views**. The increased generated web traffic shows a clear interest in the project's topics.

Page	Page Views	Unique Page Views	Avg. Time on Page
	11,627 % of Total: 100.00% (11,627)	9,404 % of Total: 100.00% (9,404)	00:01:22 Avg for View: 00:01:22 (0.00%)
1. /	2,323 (19.98%)	1,867 (19.85%)	00:01:16
2. /projects/	1,152 (9.91%)	781 (8.30%)	00:01:02
3. /about/	994 (8.55%)	765 (8.13%)	00:01:39
4. /event/1st-horizon-cloud-summit-2020/	652 (5.61%)	570 (6.06%)	00:03:08
5. /events/	590 (5.07%)	479 (5.09%)	00:00:48
6. /forum/	501 (4.31%)	411 (4.37%)	00:01:08
7. /news/	415 (3.57%)	303 (3.22%)	00:00:45
8. /about/consortium/	306 (2.63%)	278 (2.96%)	00:01:29
9. /projects/research-innovation/	306 (2.63%)	180 (1.91%)	00:01:11
10. /deliverables/	291 (2.50%)	248 (2.64%)	00:01:55
11. /subscription/	260 (2.24%)	171 (1.82%)	00:01:22
12. /event/h-cloud-technical-community-event/?instance_id=58	171 (1.47%)	127 (1.35%)	00:03:29
13. /contact/	158 (1.36%)	138 (1.47%)	00:00:59
14. /event/h-cloud-technical-community-event/	150 (1.29%)	118 (1.25%)	00:03:31
15. /event/1st-horizon-cloud-summit-2020/?instance_id=25	140 (1.20%)	123 (1.31%)	00:02:20
16. /projects/coordination-support/	139 (1.20%)	105 (1.12%)	00:00:22
17. /event/h-cloud-workshop/	130 (1.12%)	105 (1.12%)	00:02:19
18. /thanks-for-subscribe/	106 (0.91%)	101 (1.07%)	00:01:36
19. /about/advisory-board/	105 (0.90%)	96 (1.02%)	00:01:15
20. /news/h-cloud-publishes-a-green-paper-on-cloud-computing-in-europe/	102 (0.88%)	101 (1.07%)	00:01:01
21. /event/h-cloud-workshop/?instance_id=9	85 (0.73%)	76 (0.81%)	00:03:10
22. /videos/	84 (0.72%)	70 (0.74%)	00:05:40
23. /ict_40-projects/hub4cloud/	79 (0.68%)	67 (0.71%)	00:01:32
24. /publications/	76 (0.65%)	68 (0.72%)	00:01:40
25. /cloud-initiatives/	66 (0.57%)	54 (0.57%)	00:01:11

Figure 9: Website most visited pages

In the Figure 10 below, it is interesting to see the peaks, clearly during the time of H-CLOUD Summit (November 2020), and quick peaks when the newsletters were sent.

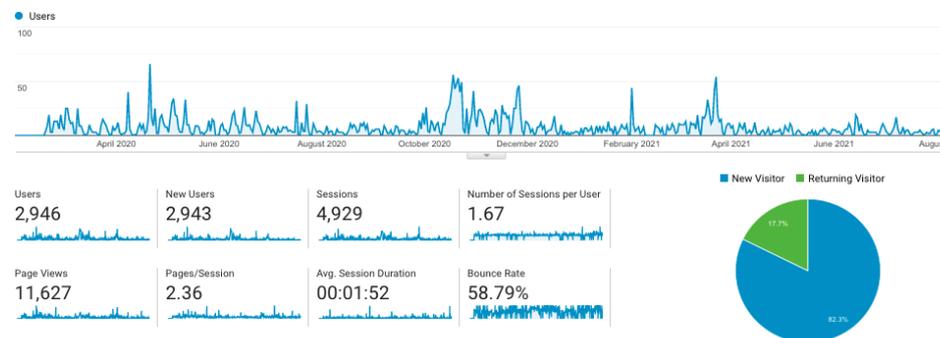


Figure 10: Website activity during important events

3.5.2 HUB4CLOUD Social media channels

HUB4CLOUD is continuing the online communication, dissemination and promotional activities via the same social media channels as H-CLOUD's. These communication tools are established in order to promote activities and outputs of the project on a regular basis, while also encouraging a wider discussion on the topics related to CC activities.

Below we present a brief overview of the social media channels used.

LinkedIn

The H-CLOUD LinkedIn Group (<https://www.linkedin.com/groups/8852793/>) allows reaching a professional audience with more elaborated news and/or specific event highlights. Group members may publish the news directly in the H-CLOUD LinkedIn group, which aims to attract Cloud professionals and industry players and invites group members to publish their own updates and open interesting subjects, relevant for the whole community. It is also a push-pull medium as LinkedIn automatically delivers the group's news to the members email accounts upon posting. The **LinkedIn group today counts (August 2021) 114 members**. We engage all the ECC projects in the dialogue on this platform, while promoting the H-CLOUD and HUB4CLOUD initiatives across LinkedIn relevant groups, with a direct link to this group, to further increase this social media audience and diversify the group's user base, engaging more vertical representatives/managers.

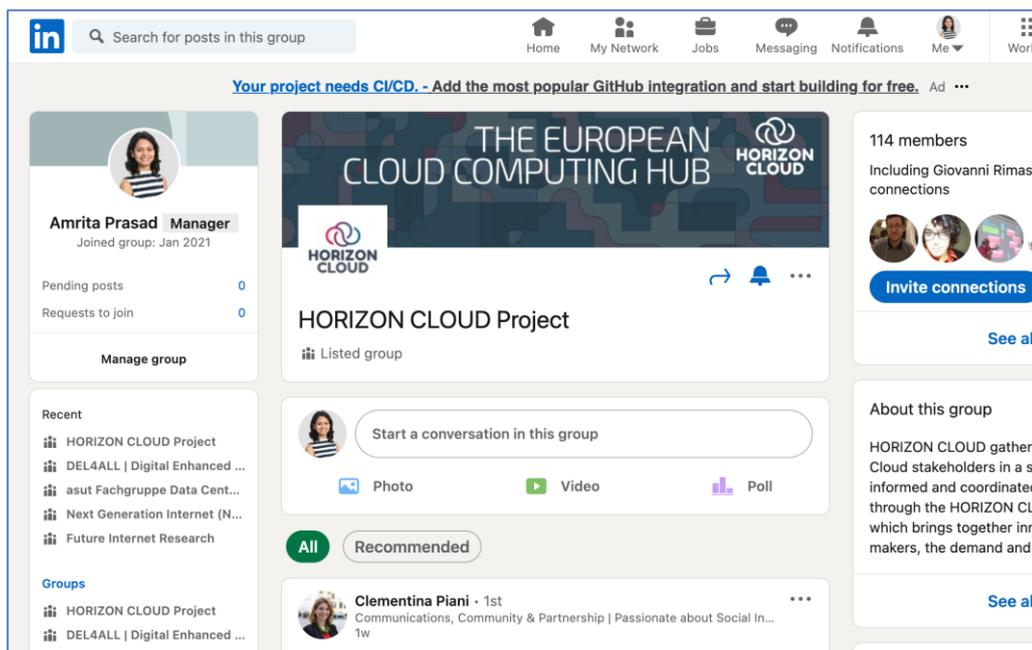


Figure 11 : H-CLOUD LinkedIn page

Twitter

HUB4CLOUD is continuing its twitter social media activity via the H-CLOUD's Twitter account (*@H-CLOUD_Project*).

As a Horizon 2020 project, this handle follows the official Twitter account of the Horizon 2020 programme *@EU_H2020* thus becoming a part of the community of H2020 projects on social media. Following the guidelines received from the EC[3] we intend to use a hashtag *#ResearchImpactEU* and tag *@EU_H2020* whenever announcing important news which clearly show the real impact of our research. Moreover, relevant hashtags, such as: *#CloudComputing*, *#CloudServices*, *#cloud*, *#DigitalEU*, *#DigitalSingleMarket*, *#EOSC*, *#greencloud*, *#H2020*, *#horizoneurope* are included in the posts to widen the visibility of the project's communication. Other hashtags and accounts that are frequently used according to the content of the posts, are: *@5GPPP* *@NGIoT4eu* *@AIOTI_EU* *#EUfunding* *@digitaleu* *@NGI4eu* together with hashtags relevant to the project partners' organisations and representatives, hashtags of initiatives and events related to the project and the content, accounts of important participants of these events, accounts of the Project Officer of the EC, and more.

The H-CLOUD and HUB4CLOUD social media managers have made sure that the project's account follows the channels of all the current European Cloud projects to ensure timely retweet. Moreover, we have created a project Twitter list to maintain a constant overview of the latest projects' communication. The projects have been invited to follow the handle *@H-CLOUD_project* to reinforce the community's communication.

The Twitter account is used for promoting and disseminating the development of H-CLOUD and HUB4CLOUD, including news, events, outcomes, etc. Moreover, re-tweets are made of relevant and interesting content from disparate sources.

Figure 12 gives an overview of the H-CLOUD Twitter channel. At the time of writing this deliverable, this handle has **521 followers**, has posted 1233 tweets and retweets several more. It follows **221 relevant accounts**.



Figure 12: H-CLOUD/HUB4CLOUD Twitter channel

3.5.3 HUB4CLOUD / H-CLOUD e-Newsletter

An e-newsletter is produced by both CSAs on a quarterly basis, which provides regular updates on trends of CC research and innovation practices, project findings and results, news from industrial partners, among others. The newsletters also contain information regarding the upcoming tasks and events to inform the audience on how they can get in touch with the project and the connected initiatives. As such, a typical e-newsletter of the project contains highlights (major outcomes, links, contacts, and dissemination activities), the most important news, announcements and a schedule of the major upcoming events. Project partners provide information for the e-newsletter and ensure that the content is accurate. All e-newsletter issues are uploaded on the project website. A mailing list is in place, based on subscription, giving the possibility to share the e-newsletter via mass mailing as well as to inform interested users about project news, achievements and planning of events. A registration functionality allowing the interested visitors to subscribe to the newsletter is already available on the web portal.

The **first issue of the newsletter was published on 12 May 2020 and sent to an audience of 131 subscribers. Currently there are 229 newsletter subscribers.** Following is the statistics of each of the published e-newsletters and the Figure 13 showing the appearance of the last newsletter.

- **Newsletter4:** Sent to 214 recipients. 38.1% Open / 8.6% Click (80 open / 18 Click)
- **Newsletter3:** Sent to 206 recipients. 41.6% Open / 11.9% Click (84 open / 24 Click)
- **Newsletter2:** Sent to 157 recipients. 42.8% Open / 11.2% Click (65 open / 17 Click)
- **Newsletter1:** Sent to 131 recipients. 48.5% Open / 21.5% Click (63 open / 28 Click)

Below, Figure 13, is the image of the last published newsletter.

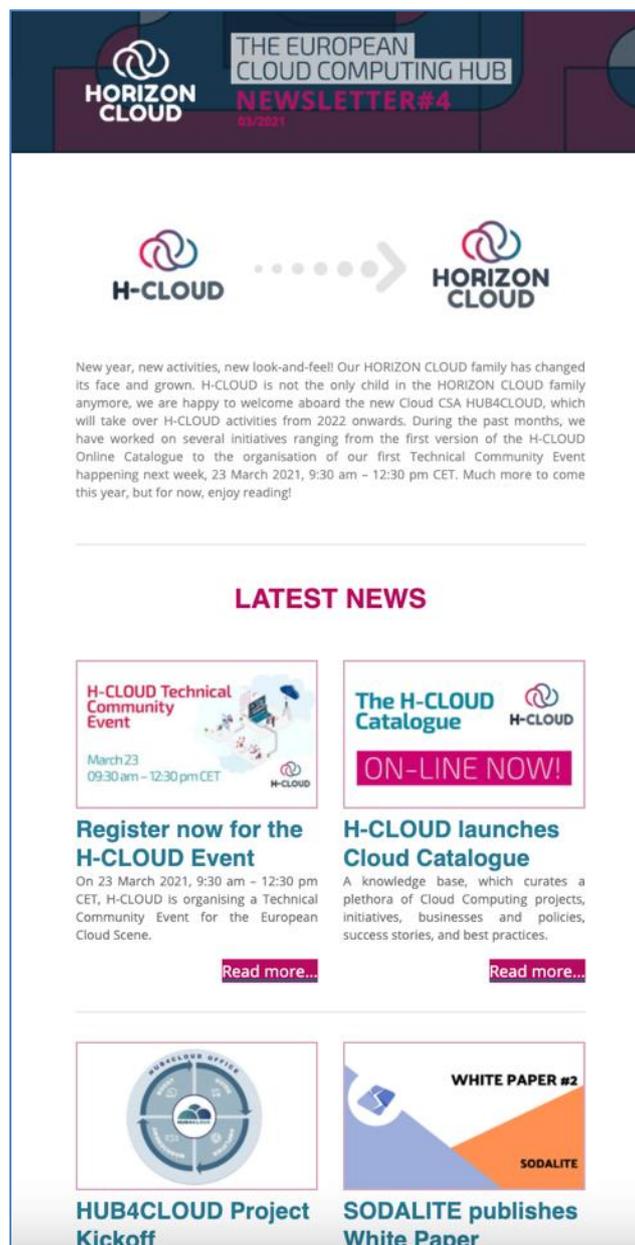


Figure 13: Latest issue of the quarterly e-Newsletter

3.5.4 e-Publications

Significant project developments, news and announcements, white papers, but also articles introducing HUB4CLOUD will be published on third-party portals, including professional and specialised platforms, Cordis, relevant thematic blogs and collaboration platforms, partners' web portals, as well as through several freely accessible tools.

- A preliminary list of the freely accessible portals includes:
- Cordis projects & results: <http://cordis.europa.eu/projects/homeen.html>
- ELTIS: <http://www.eltis.org/>
- Horizon Magazine <http://horizon-magazine.eu/>
- Research*eu results magazine <http://cordis.europa.eu/research-eu/homeen.html>
- Headlines on the Commission's Research & Innovation website www.ec.europa.eu/research/infocentre/allheadlinesen.cfm
- CORDIS Wire <http://cordis.europa.eu/wire/>

Beyond these, other documents produced by the project will be properly presented through the web portal.

3.5.5 Press Releases

Press releases will be developed on a regular basis (approximately every six months) and coincide with key project achievements (e.g., organisation of a large event, implementation of key activities within the project, etc.).

Press releases will be published in national and European media, thus contributing to the wider dissemination of the project. All partners will be responsible for engaging with their local media outlets to ensure a wider reach of the press release. All press releases will be published on the project's website.

3.5.6 Interviews and surveys

To gauge the views, relevant information, market and business analyses and collect suggestions from the ECC community, HUB4CLOUD will conduct online surveys and interview key individuals among relevant CC stakeholders. The first online survey is planned for April 2021, which aims to identify the ongoing ECC project's business, innovation and community impact. The survey has already been sent to the ongoing RIAs and data collection is expected to take place in May 2021.

A second online survey is planned for June 2021 and will aim to gather information regarding how accelerators, incubators, technology transfer offices, investors and other business-related agents deal with the commercialisation of cloud computing business propositions. This survey will collect data regarding the types of projects that are developed, how IP is protected, and how these projects are taken to the market. This information will then be used in order to reach conclusions and establish patterns regarding the business models and strategies that best apply in different scenarios. The results are expected by the end of June. These results will be analysed and, together with other sources, will constitute the grounds for a report on acceleration of cloud-computing business opportunities.

3.6 Offline tools

3.6.1 HUB4CLOUD Promotional materials

During the course of the project, HUB4CLOUD will create promotional materials like Flyers, Posters and Rollups. These will be uploaded on the website and in case if physical events take place, these promotional materials will be printed for relevant events.

Roll-ups will be created, matching the look and feel of the website and the overall project design concept to meet the needs of the project.

Posters of a smaller size (A0) will be produced. HUB4CLOUD will also consider producing event focused posters of smaller size, if considered necessary, where the content of the poster will be replaced to fit the needs (theme) of the event.

Both the roll-up and the posters will be prepared in English (local languages to be considered if appropriate or necessary) to raise awareness of the stakeholders and a variety of relevant audiences about the project with succinct textual and graphical information.

Printable versions of the posters will also be created and provided to partners to be printed and used at the events they participate in.

The design will be easily adjustable to the requirements individual partners have, in case an additional or a more specific version is required.

The project logo, the EU flag & acknowledgement along with the HUB4CLOUD website and the social media links will be clearly displayed on all promotional materials.

3.6.2 Events

HUB4CLOUD joins forces and coordinates with the H-CLOUD CSA and other ongoing ECC projects for organising various types of events, both online and offline, with different focus (scientific, technology, policy, standardisation, etc.) dedicated to engaging experts in road-mapping activities, creating awareness and promoting uptake and deployment of CC technologies and solutions. Co-location with other major venues/events will be considered to optimise resources, increase participation, and foster stronger liaisons. Besides organisation of the 2021 and 2022 Horizon Cloud Summit editions (the 2021 edition in collaboration with H-CLOUD), several online meetings/webinars (15), workshops (5) will be organised throughout the project. Whether online or offline some of these events will be directed in terms of focus, objectives, agenda, invitations by different Tasks in the project and their format will be structured to ensure effective outcomes to be generated.

The following sections give an overview of the events the HUB4CLOUD consortium intends to organize and attend. Given the current COVID-19 containment measures, however, we expect that many of these events will be cancelled or turned into digital events.

H-CLOUD Summit

The H-CLOUD Summit serves as the flagship annual meeting of the European Cloud Community, hosting thematic workshops and sessions, working group and interest group meetings, and sessions where stakeholders, initiatives and projects will showcase their research and innovation

results. Summit attendees have the chance to present the best practices of CC related initiatives and discuss topics about and beyond the state-of-the-art of ECC. In addition, the event has a forward-looking theme, debating the outlook of future opportunities and policies in the area of ECC.

The first **H-CLOUD Summit** took place in November 2020 and counted 340 registered participants from 37 countries, 59 speakers and 23 sessions. The next Summit is anticipated for October 2021. HUB4CLOUD will join forces with H-CLOUD (and SWForum as relevant) especially with respect to the organisation of the H-CLOUD Summit 2021 edition and will take over the organisation of the 2022 one by coordinating efforts with other ECC projects. The H-CLOUD Summit will provide the opportunity to present and showcase H-CLOUD's & HUB4CLOUD's main results and will attract newcomers to form a living community coordinating research and innovation efforts at the pan-European level.

The following global conference concept for the H-CLOUD Summit 2021 has already been defined:

- Opening Speech by DG CONNECT representative
- Keynote Session by selected experts in CC fields, as well as collaborating initiatives
- Presentations / workshops from H-CLOUD / HUB4CLOUD consortium members on current challenges for CC
- Workshops organised by SMEs, start-ups, and EC cloud projects to demonstrate their last CC technologies and innovations
- Panel discussion with CC experts and consortium members reflecting on recent H-CLOUD / HUB4CLOUD project achievements and the future of CC in Europe
- Panel Discussion with EC representatives on future of CC and policy making
- Networking sessions to facilitate collaboration and knowledge-sharing between European cloud actors.

Participation in external events

Participation in external events is also planned (fostering keynotes, presentations and/or dedicated sessions) to help promote the community efforts (both at scientific and policy level), and create awareness about the ECC ecosystem, attract new players and communities to join it, foster knowledge transfer and impact of the selected ECC results across the European landscape. Presentation and materials to be used during events will also serve to feed into dissemination and communication activities online. The major events anticipated so far include scientific, as well as policy-driven ones, see the Table 3 below.

Table 3: HUB4CLOUD relevant events

EVENTS	
S&T research focused	Business
<ul style="list-style-type: none"> • IEEE CLOUD International Conference on Cloud Computing • CLOSER Series in Cloud Computing and Services Science 	<ul style="list-style-type: none"> • Google Cloud Next • AWS re:Invent • Microsoft Ignite • Gartner Infrastructure & Operations Management Summit

<ul style="list-style-type: none"> • IoTBDS Internet of things Big Data and Security • COMPLEXIS Complexity, Future Information Systems and Risk • IEEE/ACM International Symposium in Cluster, Cloud, and Grid Computing • IBIMA Cloud Computing Conference • EOSC Stakeholder Forum • EGI Conference 	<ul style="list-style-type: none"> • Cloud Expo Europe • Research's Hosting & Cloud Transformation Summit • EASME events as relevant • European Innovation Summit
Policy-focused events	Open-Source communities
<ul style="list-style-type: none"> • e-IRG Meetings • STOA Panel Meetings • DSM Policy Project meetings • Annual editions of the Digital Assembly 	<ul style="list-style-type: none"> • KubeCon and CloudnativeCon • Open Infrastructure Summit series • DockerCon • Cloud Foundry • FIWARE Summit • OW2 Annual Conference • Red Hat Summit

The consortium has also identified a number of events highly relevant to HUB4CLOUD that will be the target for organising workshop sessions, presenting in, or participating in (see Table 4):

Table 4: Relevant events considered for a wide dissemination

Title of the event	Type	Date	Location
ALLDATA 2021	To attend - key event	18 - 22 April 2021	Porto, Portugal
Data Week 2021	To attend - key event	25 - 27 May 2021	Online
ICT 2021	To attend - key event	1 - 3 June 2021	London, UK
EUCNC 2021	To attend - key event	7 - 11 June 2021	Porto, Portugal
ACM International Systems and Storage Conference	To attend - key event	14 - 16 June 2021	Hybrid (Haifa, Israel)
OW2con'21	To attend - key event	23 - 24 June 2021	
Cloud Expo Europe	To attend - key event	7 - 8 July 2021	London, UK
IoT Week 2021	To attend - key event	31 Aug - 3 Sept 2021	Dublin, Ireland
EAI CROWNCOM 2021	To attend - key event	10 - 12 Sept 2021	Shijiazhuang, Hebei, PRC
BDCloud 2021	To attend - key event	1 - 3 Oct 2021	New York, USA
Cloud Expo Asia	To attend - key event	20 - 21 Oct 2021	Marina Bay Sands, Singapore

European Cloud Conference	To attend - key event	26 - 28 Oct 2021	Nice, France
---------------------------	-----------------------	------------------	--------------

3.7 Communication and community building recovery plan in times of COVID-19

The current COVID-19 outbreak brings about opportunities and challenges for the community building and communication activities of HUB4CLOUD. For HUB4CLOUD, the crisis has two-fold significance: on the one hand, CC technologies are currently in high demand due to the COVID-19 confinement measures, which contributes to a much greater amount of relevant information to curate and disseminate within a short period of time. This means the demands for and attention to our project are expected to increase.

On the other hand, HUB4CLOUD has rapidly taken up the challenges responding with the following approaches:

- To inject new expert impulses related to COVID-19 and CC into our HUB4CLOUD community and to raise awareness for the project itself, we will regularly address the topic in blogs and news items on the website and social media.
- To ensure that project outcomes will not be significantly affected by event cancellations due to COVID-19, we will carefully rethink our events. Face-to-face partners meetings and events might be organised as virtual events. The HUB4CLOUD consortium closely monitors the current COVID-19 situation, trying to anticipate early on the next steps that need to be taken.

4 FORUM

4.1 Objectives and target

The H-CLOUD FORUM aims to connect cloud stakeholders, increase awareness and collaboration across different stakeholder groups, provide cross-fertilization opportunities and stimulate the adoption of research and innovation outputs to ensure technological sovereignty and global competitiveness of Europe. The ambition of the FORUM is to remove fragmentation and increase collaboration within Europe and beyond, while aligning on a common vision for the future of CC in Europe. It is open to all stakeholder groups including Cloud technology innovators, application developers and open standards contributors, Cloud providers, user communities, policy makers, public authorities and standards groups. The official launch of the FORUM was in September 2020.

4.2 Forum description

The FORUM since its initial release has been reviewed by the H-CLOUD consortium and is constantly being monitored for applying changes if needed. New members have since then been progressively invited to join. During the first set of H-CLOUD webinars conducted in April 2020, the FORUM was used to distribute the draft of the H-CLOUD Green Paper amongst the webinar participants. The FORUM was also used for call for participation during the H-CLOUD Summit in 2020. In 2021, FORUM has been repeatedly used for topic selection/voting for the Community events, news items, newsletters and for publishing project results from the RIAs.

4.3 Forum features

The Forum is mostly a **communication and file sharing tool** where knowledge is shared for the sake of the ECC community. As can be seen in Figure 14, the landing page of the forum contains a user-friendly interface with the most recent **call to action** at the top and an overview of the main **discussion categories** in the middle of the page. The different categories allow forum users to structure the conversations online. The FORUM contains the following categories:

- **Uncategorized:** Here users find information on how to use the forum and they can share information here that does not fit under the other categories.
- **Community:** Here users can start discussions on different topics and engage with the community. Currently, users can discuss the most recent draft of the Green Paper here.
- **Lounge:** This is a more informal area, where forum members can introduce themselves, interact with each other and foster collaborations.
- **Site feedback:** The 2 consortia (H-CLOUD & HUB4CLOUD) aims to continuously tailor the platform to the needs of CC projects and initiatives; hence this category gives forum members the opportunity to provide feedback on the forum.

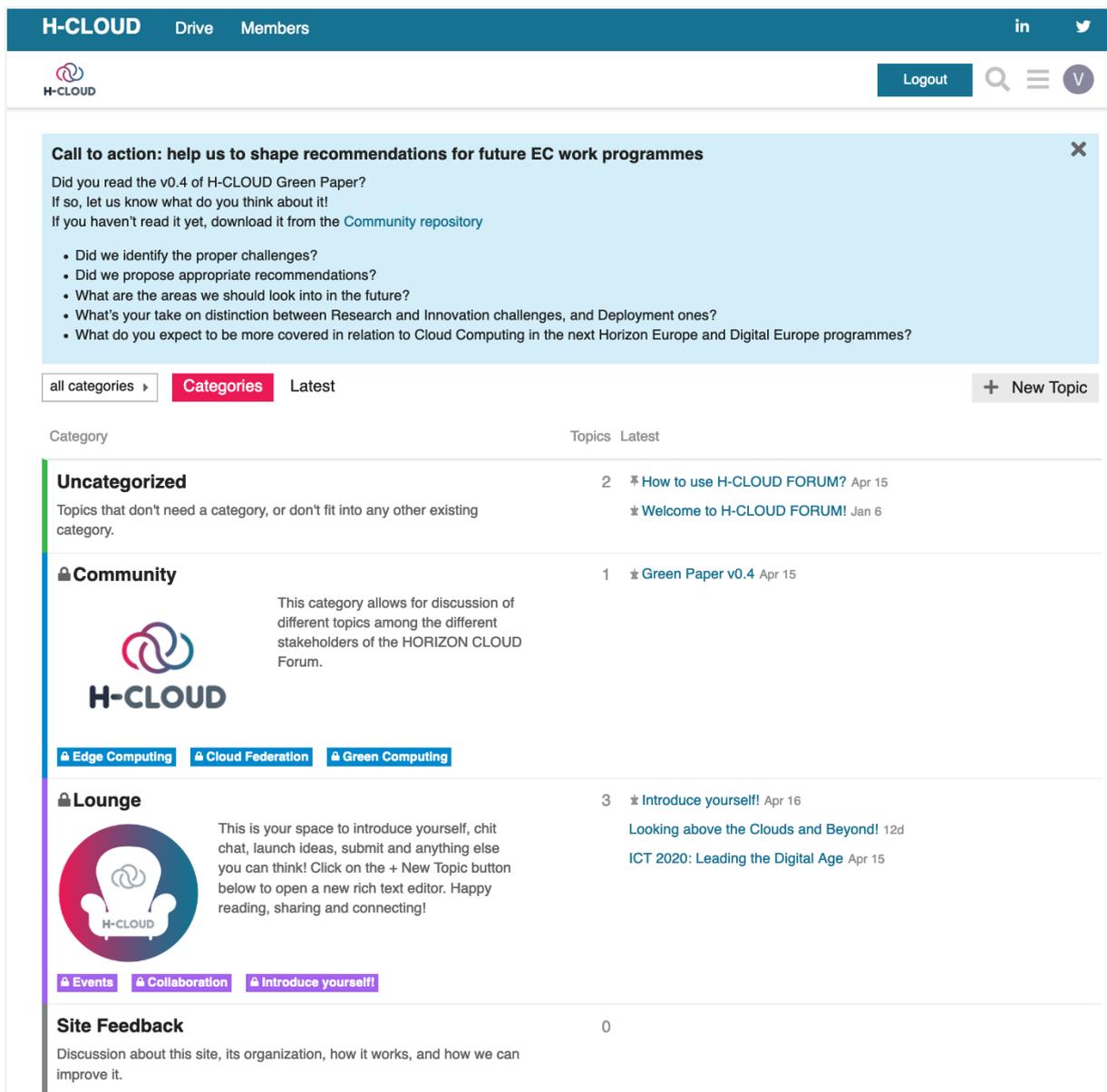


Figure 14: Landing page of the H-CLOUD Forum

Under each category, forum users can start creating specific **discussion topics**. As can be seen in Figure 15, these topics allow for a more structured conversation within a certain forum category.

The screenshot displays the H-CLOUD forum interface. At the top, there is a navigation bar with 'H-CLOUD', 'Drive', and 'Members' on the left, and social media icons for LinkedIn and Twitter on the right. Below the navigation bar, there is a 'Logout' button and a search icon. The main content area features a 'Call to action' banner for a survey on future EC work programmes. Below this, there is a section titled 'This is your space to introduce yourself, chit chat, launch ideas, submit and anything else you can think!' with a '+ New Topic' button. The 'Lounge' category is selected, showing three topic cards: 'Events', 'Collaboration', and 'Introduce yourself!'. At the bottom, there are columns for 'Topic', 'Replies', 'Views', and 'Activity'.

Figure 15: Topics within the “Lounge” Category

In addition to the categories and discussion topics, the FORUM contains the following features:

- **Community directory:** A directory to access all members of the community is available.
- **One-to-one chat:** Text conversations can be started in private by community members.
- **One-to-many chat:** Private groups / spaces can be created to communicate about a topic of interest.
- **Drive:** The forum offers direct access to H-CLOUD file sharing platform

4.4 Animation Plan:

HUB4CLOUD will facilitate dialogue and exchange of information and documents among participants to working groups and interest groups.

Expert (working and/or interest) groups around specific topics of high relevance to the road-mapping activities will be organised which will feed technical and business content on the FORUM. Management and moderation of dedicated discussions via the FORUM is planned around existing or upcoming relevant themes and organisation of webinars (at least 6), some upon invitation only for selected experts, some open to the big audience.

Information will be exchanged, knowledge transfer among communities will be facilitated, and as appropriate, representatives of such initiatives will be invited to webinars, expert groups discussions, and/or events. In this respect, HUB4CLOUD representatives will also act as

ambassadors to help consolidate the ECC initiative, while promoting the overall work done at the service of the broader CC community in Europe.

There is a plan to provide a dedicated area on the forum where RIAs can upload deliverables and project results. Once that area is allocated, we will make campaigns to encourage sharing within the communication task force.

5 IMPACT ASSESSMENT

By implementing the HUB4CLOUD Community Building and Communication Strategy we expect to communicate relevant outcomes to each of the target groups, as well as to attract their interest and generate engagement that will influence the overall impact of the project. The complete set of communication and dissemination activities will be closely monitored and evaluated by the WP4 lead in order to keep track of all ongoing activities. The deliverable “Outreach and Engagement Report” will document all the related conducted activities in two versions: D2.3 (M09 & M18).

The evaluation of the Communication Strategy concerns both qualitative and quantitative indicators. Once measurable objectives are defined, we will then evaluate to what degree the project has achieved the objectives set. Process evaluation will involve examining the progress of the strategy’s implementation and will refer to an outreach activity that is quantifiable through the attendance of persons present from the audiences, quantity of material distributed, number of events participated in, the development and dissemination of messages and materials, media presence and traffic created in social media.

There are various key issues associated with measuring and controlling the outreach and impact creation strategy and plan. Achievement is often more difficult to measure and compare, and thus needs to be carefully quantified and measured according to the specific type of action involved. The objectives chosen must be realistic, clearly defined, relevant, and coherent; the means of measurement must be objective, clearly defined and quantified, and the measurement process must not involve significant levels of cost relative to the objectives themselves. The evaluation needs to be continuous or incremental as much as possible, particularly for non-repetitive actions. Finally, the measurement of different actions must allow some degree of comparison with other actions and/or alternatives.

The proposed **analysis framework** will aim to measure various quantitative figures, as well as the impact of promotional efforts on the attitude of the receivers of the communications messages. This will be feasible through the combination of a set of measurement procedures, which will provide a clear view of the promotional activity outcomes in terms of behavioural trends.

In full accordance with the HUB4CLOUD needs, we take on a **five-step measurement cycle model**, spanning from objective identification to data driven optimisation:

- We identify our core objectives (e.g., raise awareness, increase engagement – i.e., acquire more contacts, acquire more participants to our events).
- We set goals for our promotional tactics. We concentrate on how to accomplish our objectives (e.g., inform visitors through the content of our website, intensify events promotion, etc.).
- We identify our Key Performance Indicators (KPIs) – the metrics that play a crucial role to the success of the aforementioned utilized tactics and set the expected achievable qualitative and quantitative targets.
- We measure the progress and impact of the conducted activities based on these metrics on a regular basis. Such metrics will allow us to have a constant view of the amount and the effectiveness of the dissemination activities conducted.
- We adjust and optimise the communication strategy towards achieving the expected outcomes and maximising visibility.

The tools, products and activities outlined in this strategy will be monitored, measured, evaluated and realigned on an ongoing basis.

Table 5 below presents the Key Performance Indicators (KPIs) and the achievable targets set for

each type of the communication activities. Table 6 below presents the Communication Deliverables and Milestones.

Note: Among the various social media platforms, Twitter, LinkedIn and YouTube are the most essential social media tools for HUB4CLOUD because this is where the audience of the project is mainly active.

Table 5: HUB4CLOUD Communication KPIs

Measure	Indicator	Target (M30)	Current (M04)	Source & Methodology
Flyers Posters/roll-ups	N. of flyers N. of posters/roll-ups (By the end of the project)	≥ 4 ≥ 4	in progress	Distribution via participation to and organisation of dedicated events. Electronic distribution via the project website
H-CLOUD Portal	N. of unique visitors to the website (average per year)	≥ 2500	10,280	News, Publications, Videos, Newsletters, Deliverables, webinars, etc.
H-CLOUD Forum online community	N. of new registered members in the Forum (Average per year)	300 (year 1) ≥ 450 (year 2) ≥ 600 (year 3)	72	Promotion via all online and offline channels, presentations, newsletters, webinars, periodic promo campaigns
Social Networks	- N. of followers Twitter -N. of members on LinkedIn Group -N. of video views on YouTube channel (Average per year)	≥ 700 ≥ 200 ≥ 200	Twitter - 259 Followers LinkedIn - 97 members YouTube - 21 videos	Keeping H-CLOUD profiles on such networks active via regular posting and monitoring
e-Newsletter (Published every 3 months)	N. of subscribers (By the end of the project)	≥ 700	229 subscribers	Recording of subscribers to the electronic newsletter
Videos	N. of videos published on the H-CLOUD YouTube channel	≥15	21 videos	Introduction, informative and interviews' videos to support awareness creation and

				stakeholders' engagement
Participation in events	Number of external events partners attended	≥12	3 webinars	Attendance proof, presented material, photos, animation of social media channels, events' reports
Events organisation	Number of workshops engaging invited experts on topics relevant to WP1 and WP3	3 workshops 20-30 people per workshop	In progress	Presentations, informative and promotional material, reports, photos, videos
Webinars (at least 15 by the end of the project)	Average number of participants	~ 25-30 participants per webinar	In progress	Attendance proof, video-streaming, presented material, animation of social media channels

Table 6: HUB4CLOUD Communication Deliverables and Milestones

Number	Name	Lead	Type	Diss. Level	Due	Status
D2.1	Strengthening outreach of European Cloud Computing efforts	Martel	Report	PU	M04	Completed
D2.2	H-CLOUD Forum demographics and evolution	Atos	Report	PU	M09, M18	
D2.3	Outreach and Engagement Report	Martel	Report	PU	M09, M18	
MS2	Community building and communication strategy	Martel	Report	PU	M04	Completed

MS5	H-CLOUD FORUM 2022	All	Other	Other	M18	
-----	--------------------	-----	-------	-------	-----	--

6 CONCLUSION

This deliverable presents the HUB4CLOUD Community Building and Communication Strategy providing guidelines and a consistent framework for all planned activities to disseminate and sustain the concepts, achievements, as well as knowledge results developed within the project.

Dissemination, communication and engagement activities are essential to the achievement of the HUB4CLOUD mission and objectives, having possibly an impact on CC policy making as well as planned research and innovations priorities and investments. It will be a coordinated and cooperative effort throughout the project's lifetime and integrated within all its work packages. The present plan illustrates in clear terms the rationale behind the strategy and clarifies all dimensions and tools necessary to communicate the core messages of the project in a very effective and comprehensive way.

Various activities will be realized throughout the project's lifetime in order to help HUB4CLOUD achieve its purpose. Promotion of the project online and via participation in events (possibly online), organisation of webinars, writing of news, producing high-quality promotional material as well as collaboration with other projects and relevant initiatives are essential planned activities.

The current report will act as a handbook for every project partner in order to perform their dissemination activities, as it lists all stakeholders, communication channels, dissemination activities and corresponding key performance indicators. It also addresses the European Commission that will be an essential partner in the realisation of this plan.

In order to measure the achieved progress and impacts of the proposed strategy and plan, a monitoring and evaluation framework has been defined and a number of indicators have been recognised and reported. Knowing that some activities might be impacted by the COVID-19 crisis even further, close coordination with the EC will be pursued so as any corrective measure might agilely be put in place.