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The European IoT Hub

Growing a sustainable and comprehensive ecosystem for Next Generation Internet of Things

D3.1: Community Engagement Report

Version 1

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Abstract

Deliverable D3.1 of EU-IoT relates to the work under development in WP3 – CATALYST, Task 3.1, focused on Community building and stakeholders management. This report outlines the EU-IoT strategy regarding activities of engagement with stakeholders and relevant communities, carried out during the initial project 18 months in this respect. Activities include identification of key stakeholders and communities, definition of target groups and expected outputs, most relevant activities carried out, regular community structures, and ongoing activities and engagements, among others. Finally, a set of conclusions is presented along with recommendations proposed for future development.

Keywords: IoT, Engagements, Stakeholders, Industry Associations, Collaborations, Activities

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Disclaimer

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Nature of the deliverable:	Report on best practices for IoT use cases Version 1	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 EU-IoT project and Commission Services	

TABLE OF CONTENTS

ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
CB	Coordination Board
CEI	Cloud-Edge-IoT
CTF	Communication Task Force
DID	Decentralised Identifier
CB	Coordination Board
CSA	Coordination and Support Action
CTF	Communication Task Force
DEI	Digitising European Industry
DEP	Digital Europe
DLTs	Distributed Ledger Technologies
EC	European Commission
EG	Expert Groups
HPC	High-performance computing
HEP	Horizon Europe
IA	Innovation Actions
IAAS	Infrastructure-as-a-service
IETF	Internet Engineering Task Force
IoT	Internet of Things
IRTF	Internet Research Task Force
JU	Joint Undertaking
LEO	Low-Earth Orbit
NFV	Network Functions Virtualisation
NGI	Next Generation Internet
NGIOT	Next Generation Internet of Things
RIA	Research and Innovation Actions
R&I	Research and Innovation
SDO	Standards Development Organization
SME	Small and Medium Enterprise
SNS	Smart Networks and Services
SoS	System of Systems
SRIA	Strategic Research and Innovation Agenda
VR	Virtual Reality

1 INTRODUCTION

1.1 Purpose

This deliverable relates to the Task 3.1 Community Engagement of the "WP3: EU-IoT Catalyst". The main goal of this task is to ensure the acceleration of the NGIoT initiative by engaging all target stakeholders in growing and strengthening a large-embracing ecosystem, while creating synergies among them. This will reinforce cooperation and ensure long-term evolution of the overall human centric IoT efforts. This breaks down into the following main objectives:

- To grow the NGIoT ecosystem and assist in partnership creation and stakeholders networking, via actions that facilitate and promote the direct engagement of relevant stakeholders, reaching out to new players and across different research and innovation communities.
- To ensure development and adoption of innovative human-centric IoT concepts and solutions, fostering effective technology transfer and know-how exchange, while mapping NGIoT efforts into open-source, pre-standardisation and standardisation activities.
- Planned outcomes: Consolidated NGIoT community, 2 major community events, workshops/sessions and booths at external events, IoT Next Club, established liaisons/partnerships with relevant initiatives, open-source, pre-normative and standardisation initiatives landscape.

D3.1 Community Engagement Report Version 1, provides an overview on the different community engagement activities with a reflection on the successful approaches and potential gaps to include recommendations for continuing activities in period 2 of the project.

1.2 The NGIoT Community in context

EU-IoT sits on the curve of progress of previous initiatives, each of them contributing to growing and consolidating the European community of IoT developers and drivers. Specifically, the creation of the concept of the '*NGIoT Initiative*' which refers to the portfolio of ICT56 projects provides a continuity which has been progressed from the IoT-European Platforms Initiative and from the IoT Large Scale Pilots, transforming into the next generation focus of today which aligns with cloud and 5G priorities and marking the grand technological shifts surrounding IoT and the integration of the respective communities.

One of the first actions of EU-IoT was to develop the concept of the *NGIoT Initiative* and develop the branding of the ICT56 projects as a cohort for three main purposes. The first was to generate a cohort identity among the RIAs to develop an internal community of actors within the projects, provide a visible central reference point of the different communities, and finally anchor the portfolio on the evolution from the EPI Initiative through the Large-Scale Pilots to the NGIoT (CSA), providing continuity and consistency in a crowded space for attention on the route to the Cloud-Edge-IoT (CEI) focuses.

The previous project titled NGIoT (CSA), formally closed in October 2021. This project acted as a link between the community between the completion of the IoT Large Scale Pilots and the current set of ICT56 projects under the coordination of EU-IoT. This NGIoT (CSA) project, which presented in February of this year their principal output as the IoT Roadmap, has been leading with the key community members a series of events and activities for the previous three years has provided the roadmap to support the guidance of the European Commission in the definition of the Horizon Europe work programmes.

Alongside EU-IoT is the CSA Open DEI, which is coordinating Digitising European Industry platform and pilots projects, facilitating a cross-sector data sharing platform for digital transformation. OPEN DEI engages a portfolio of Artificial Intelligence (AI) projects from manufacturing, agriculture, energy and healthcare, and intersects with the principal European communities related to RD&I across cloud, data and AI.

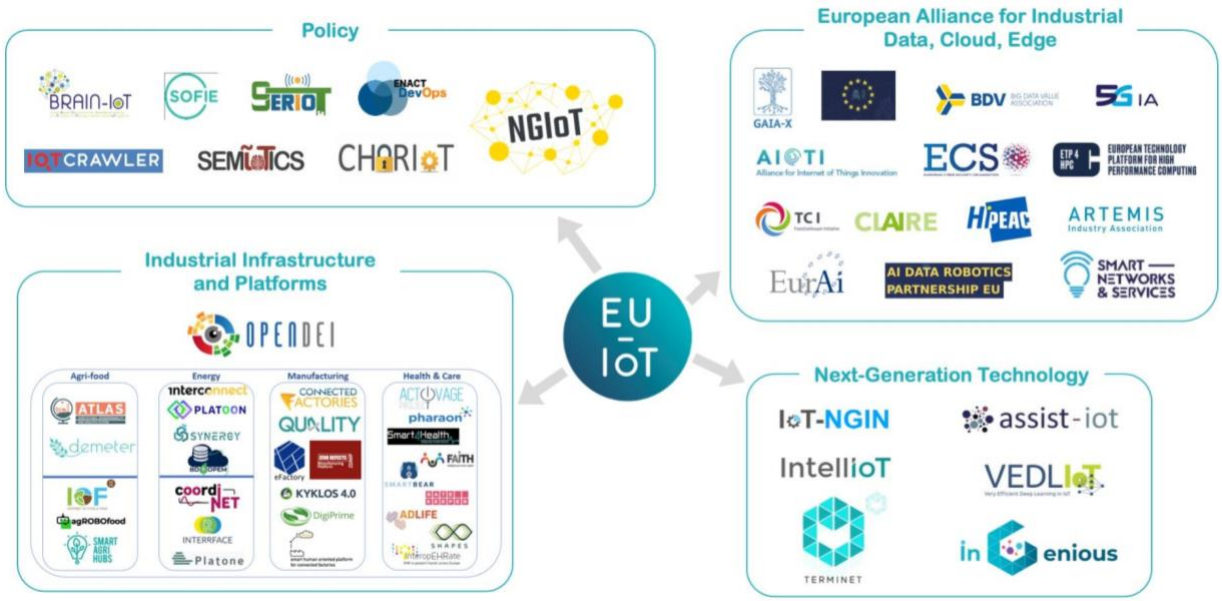

Figure 1. The community context of the NGIoT Initiative

1.3 Related outputs

The definition and exploration of the various communities related to the NGIoT have been described in detail and addressed in:

- D2.2 Towards a Vibrant European IoT Ecosystem
- D2.3 Experts consultation and dialogues report Version 1

It will also be addressed in part in the following deliverables to be published alongside this:

- D3.4 IoT Open-source Ecosystem Catalogue
- D3.6 Mapping of Knowledge Areas to Standardisation
- D5.3 Dissemination and Communication Report Version 1

1.4 Overview of the community

The European NGIoT community brings together a broad spectrum of industry associations, SDOs and other initiatives which demonstrate the evolution of the NGIoT from IoT to bring into the space new members and collaborations that were previously in parallel, a full overview has been provided in D2.2 previously.[1] With the evolution of the definition of IoT towards the CEI continuum, we can observe much more convergence between the data, AI and IoT domains with a relevance for key enabling technologies such as 5G, DLTs and FPGAs, GPUs etc.

For the NGIoT Initiative there are two principal associations which remain a focus, AIOTI, where many of the existing NGIoT participants (across the RIAs) already play a significant and active role and BDVA/DAIRO. Added to this are the principal Standard Development Organisations (SDOs) related to the actions to include, e.g. ETSI, RISC-V, ECSO, etc. and the broader community of SMEs and Industry actors.

[1] D2.2 Towards a vibrant EU-IoT ecosystem. Calisti, M., Kolovou L., Rowan, B., Pomohaci, R., Suarez, T., Sofia, R., Soldatos, J., Pressner, M. (2021). Available at: https://www.ngiot.eu/deliverables/#1613463848216-6fe09816-8132

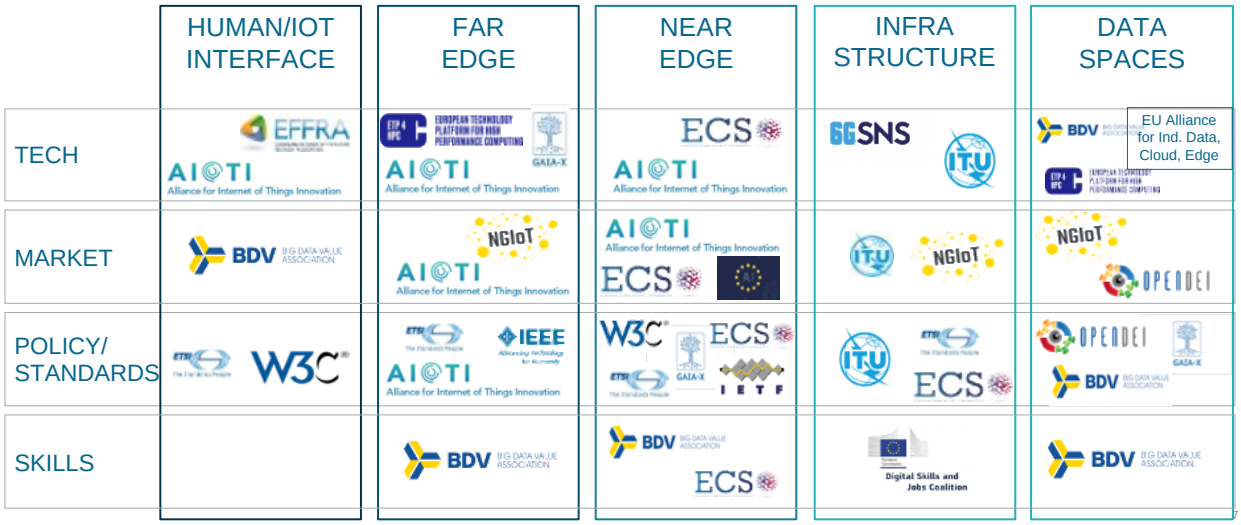

Figure 2. Mapping of key communities of interest within the NGIoT/EU-IoT framework, details on target working groups and activities are provided as a table in Annex 1 of this document

For the classification of the key actors, the area of action of each and the purpose of its activities will be taken into consideration, and the same association may form part of several groups by having different working groups. The principal actors within the NGIoT ecosystem are listed and classified in Annex 1.

2 COMMUNITY ENGAGEMENT

2.1 Target Groups

In order to carry out stakeholder ecosystem building actions, it is essential to define the different target groups to be addressed within each of the stakeholder community, considering that the interests vary from one to another and the outputs that each stakeholder group wishes to obtain from these activities will be different.

For the identification of the stakeholders, 3 roles have been differentiated in the first place:

- Tech developers: Those groups whose activity is focused on technological development both for their own use and for third parties, thus becoming suppliers for them.
- Tech adopters: These are groups that, without developing technology, make use of it to develop their activities or improve their processes.
- Tech enablers: These actors play a supportive role for both tech developers and tech adopters, facilitating these activities through regulation, advice or mediation between supply and demand.

Considering these roles, several target groups have been identified, which in turn are divided into different subgroups. It should be noted that a subgroup can be in more than one group at a time and that, within the same group, several roles can be developed.

Table 1. Target groups and their relevance for NGIoT

GROUP	SUBGROUP	ROLE	NGIOT RELEVANCE
Researchers	Universities	Tech developers	• Carrying out joint research work • Greater facility to commercialise research results • Direct contact with tech adopters to learn about market realities
	RTOs		
	R&D units		
	DIHs		
Industry	Corporates	Tech developers Tech adopters Tech enablers	• Proximity and direct contact with tech developers • Increased knowledge of technology trends and applications in specific sectors • Access to tech enablers, skills and training services and technological talent • Priority access to information on funding opportunities • Sharing of technological knowledge with peers • Increasing their network of potential partners, suppliers and customers • Fostering synergies and business opportunities
	SMEs		
	Startups		
	Clusters/DIHs		
Policy	Regional / National	Tech enablers	

	European		• Direct contact with ecosystem actors to be aware of the real needs and opportunities and to be able to take appropriate actions • Ease of awareness-raising and dissemination of new policies • Alignment with other regional strategies and policies, as well as at European level
Training and education	Certification bodies	Tech enablers	• Increased knowledge of real training needs and existing skills gaps to be able to offer more tailored training • Possibility of providing better preparation for students to enter the labour market.
	Training providers		
	Universities		
ICT-56 partners (RIAs)	N/A	Tech developers	• Expert support in some of the most relevant activities within the projects (e.g. management of open calls) • Expansion of their network of actors potentially involved in their use cases • Facilitation of communication and dissemination of the progress and results of the projects

2.2 Summary of engagements

2.2.1 Forms of engagement

Through the activities carried out, the aim is to actively involve and engage the communities of interest. This engagement is classified precisely by the degree of involvement of these actors, and can be direct, collaborative, participatory and indirect.

Figure 3. Representation of the key communities and forms of engagement

Below provides a summary of the key formats for achieving engagement compared to the target communities, groups and mode of engagement.

Workshops

These events foster the collaboration of the actors involved in the ecosystem and the sharing of knowledge in pursuit of a common goal or the co-creation of relevant solutions or strategies.

- Type: Direct, Collaborative
- Key communities: ICT-56 partners, IoT Next Club, BDVA/DAIRO, AIOTI, OPEN DEI
- Target groups: Researchers, Industry, Policy

Webinars

Aimed at sharing relevant information about a specific topic, with the attendance of potential stakeholders and interested parties. Communication is much more unidirectional than in the case of workshops, and they do not seek to obtain relevant outputs, but simply to share information.

- Type: Participatory
- Key communities: ECSO, ITU, EFFRA, QUANTUM FLAGSHIP, BDVA/DAIRO, HTP4HPC
- Target groups: Industry, Policy

Round tables

A hybrid between a workshop and a webinar, that brings together experts in specific fields to share knowledge and discuss their views on the topic, usually counting with a moderator that animates the discussion and asks different questions to experts.

- Type: Participatory
- Key communities: All
- Target groups: Researchers, Industry, Policy, Training and Education

Participation in events

Refers to the participation of EU-IoT in events organised by third parties around a topic of interest, with the aim of increasing visibility in the ecosystem, networking, or sharing knowledge and progress achieved.

- Type: Participatory, Indirect
- Key communities: All
- Target groups: All

Drafting of white papers

EU-IoT collaborates with different actors in the elaboration of white papers that can contribute value in the definition of the European IoT roadmap.

- Type: Collaborative
- Key communities: AIOTI, OPEN DEI, NGIoT, GAIA-X
- Target groups: Researchers, Industry, Policy, Training and Education

Hackathon

Events aimed at involving different actors of the ecosystem to foster collaboration and the co-creation of solutions to pre-defined challenges.

- Type: Collaborative, Participatory
- Key communities: NGIOT, GAIA-X, EFFRA
- Target groups: Researchers, Industry, Training and Education

Collaborations

Development of joint activities (papers, workshops, etc.) which address cross-project or relevant themes such as business models, skills, adoption barriers, etc. which have both NGIoT and partner branding.

- Type: Collaborative
- Key communities: AIOTI, BDVA, EFFRA, EPoSS, CSAs (OPEN DEI, NGIoT, HCloud, Opencommons/StandICT)
- Target groups: All

Direct contributions

Written contributions to ongoing papers or activities within the specific working groups of targeted communities on behalf of the NGIoT Initiative.

- Type: Collaborative
- Key communities: AIOTI, BDVA/DAIRO, EPoSS, GAIA-X, EFFRA
- Target groups: All

Table 2. Summary of the events organised by EU-IoT. For further information, please refer to Annex 2: Key events.

TYPE OF EVENT	NUMBER
Conference	5
e-Workshop	3
Workshop	6
Talk	2
Webinar	4
Other	5

2.2.2 Examples of principal activities

Over the last 18 months, EU-IoT has carried out a series of activities aimed at different stakeholders and target groups which, in turn, are classified according to the type of activity, which can be direct, indirect, collaborative or participatory, depending on the degree of EU-IoT's involvement in them.

Table 3. Main activities carried out within community engagement

TYPE	TARGET	COMMUNITY(S)	ACTION	DESCRIPTION
Direct	ICT-56 partners	ICT-56 partners	Cross-project OC task force	Creation of a group of representatives from all RIAs and celebration of a monthly meeting to share information, experiences and advice on the management and

				execution of their respective open calls.
Direct	ICT-56 partners Industry	ICT-56 partners	IoT Week 2021 workshop on open calls	Holding a workshop session within IoT Week dedicated to ICT-56 RIAs representatives presenting their respective open calls to potential participants and working together with them to co-create possible solutions for their use cases.
Direct	ICT-56 partners	ICT-56 partners	IoT Week 2022 - Advancing at the Edge of Convergence	This session will feature the IoT projects and demonstrate use cases of IoT in the domains of Energy, Manufacturing, Agriculture, Automotive and Small Ports. The session will also feature the results and upcoming opportunities of the projects' open calls.
Collaborative	Industry Training and education	EC, AIOTI, DSJC, BDVA/DAIRO	Skills and training workshops	Organisation of events in workshop format to promote digital skills in the social and business context. Some of these workshops have been delivered directly by EU-IoT and others in collaboration with experts and training providers.
Collaborative	Industry ICT-56 partners	BDVA/DAIRO	EBDVF	EU-IoT sponsored a session that addressed the shifting importance of the edge and brought together some relevant industry representatives in a panel discussion. ICT-56 partners were also involved, and the two projects whose open calls were active at the time (Assist-IoT and IoT NGIN) had the opportunity to present their respective funding opportunities to potential participants.

Collaborative	Industry ICT-56 partners	ICT-56 partners, AIOTI, EFFRA, EPoSS, BDVA/DAIRO, GAIA-X	EU-IoT Community Event Series	Delivery of a series of community events that will engage in co-organisation with key industrial associations and technology developers to address and provide a common vista on the future market potential of the NGIoT and the direction towards the far and near edge.
Collaborative	Industry Policy	AIOTI, BDVA/DAIRO, GAIA-X	IoT Week 2022: A growing vibrant European IoT ecosystem	This first session will include a discussion on future direction of NGIoT involving the European Commission and also an Industry panel that will discuss about preparing the ground for adoption of Next Generation IoT.
Collaborative	Industry Policy	OntoCommons, ADRA, SNS, BDVA/DAIRO, CLAIRE, EURAI, StandICT, IAOA	Ontological interoperability, standardisation recommendations discussion	Virtual event co-organised with OntoCommons scheduled for May, that will focus on Ontological interoperability and standardisation recommendations. This collaboration will follow with the writing of a white paper focused on ontologies role in SDOs and gaps.
Collaborative	Industry	OPEN DEI	Business model innovation session	A session on business model innovation is planned to be co-organised with OPEN DEI in May, which will be followed by a joint session at IoT Week 2022.
Collaborative	Industry Policy	EC	Next-Generation IoT and Edge Computing Strategy Forum	Event organised in collaboration with the EC, that aimed at gathering top technology experts, as well as corporate-strategy level representatives to exchange views on priorities, challenges and opportunities, for the next-generation IoT

				and (far) edge computing.
Collaborative	Industry Policy	EC, HCloud, Hub4Cloud, SWForum	Digital Autonomy in the Computing Continuum	Co-organisation of a workshop addressing new cloud/edge technologies with enhanced performance enabled by and supporting AI, which increase European autonomy in data processing required to support future hyper-distributed applications.
Collaborative	Industry Policy Researchers	AIOTI	Presentation of the NGIoT Roadmap	In February, the project´s final recommendations were presented in a virtual event co-organised with AIOTI. The event was attended by representatives from the project, as well as from the European Commission and industry, who shared their views on the present and future of IoT in Europe and its role in different key domains.
Participatory	Industry Policy	All	Conferences and panel discussions	Organisation of thematic events in collaboration with other ecosystem actors aimed at exchanging views on priorities, challenges and opportunities, and establish a commonly shared strategic European vision for the next-generation IoT.
Participatory	Industry ICT-56 partners Policy	All	Expert Group Sessions	The Expert Group brings together leading members of the European and International IoT community to provide inputs on specific aspects of relevance to the NGIoT community, focusing initially on a set of topics of interest defined by the EU-IoT consortium together with

				the ICT-56 coordinators and the European Commission. These one-day events provide the forum to debate, discuss and define key topics and challenges identified within the NGIoT technologies, and also include parallel workshops.
Participatory	Industry Training and education Policy Researchers	IEEE, EFPF, CONASENSE	EU-IoT Hackathon	It is a collaborative event that will take place in Munich, co- located to the IEEE co-sponsored symposium CONASENSE2022. The aim of the EU-IoT Hackathon is to disseminate new business ideas, experiments and prototypes as first step to best support next generation sustainable IoT solutions.
Participatory	Industry Policy	OASC	IoT and Edge computing in the Green-Digital Transformation: Presentation of the NGIoT roadmap for Europe	Organisation of workshops and sessions on solutions, concerns and visions that cities have come across on their digital transformation journey.
Participatory	Industry Researchers	EC, HCloud, Hub4Cloud	Horizon Europe Information and Virtual Brokerage Session	Half-day virtual event organised by the EC in collaboration with NGIoT, HCloud, and Hub4Cloud, where stakeholders from industry, academia, and innovators were invited to participate and get relevant information on three Horizon Europe calls. The event offered a unique international networking experience to forge the winning partnerships, and also, participants had the

				opportunity to pitch new concepts and applications, proposal ideas, and expertise.
Participatory	Industry Researchers Policy	EC, HCloud, Hub4Cloud, SWForum	Digital Autonomy in the Computing Continuum	The 1-day virtual workshop aimed at gathering researchers, innovators, industrial stakeholders both from the supply and the demand side, SMEs/Start-ups, policy makers, standardisation experts, regulators, as well as relevant initiatives and projects, to exchange views on specific R&I topics, challenges, and opportunities and converge on priorities to guide future investments under Horizon Europe, Destination 3, area "From Cloud to Edge to IoT for European Data".

2.3 Targeted high-level activities

Across the target communities there are a specific number of activities that have driven the presence of the NGIoT Initiative as organised or co-organised by the EU-IoT consortium:

2.3.1 IoT Week 2021

(Direct / ICT-56 partners, Industry, Researchers, Training and education)

EU-IoT has become a regular active participant in IoT Week, having organised 3 sessions during the last 2021 edition, held in online format from 30 August to 3 September, and being also responsible for running another 3 sessions in the current edition to be held in Dublin in June 2022.

The activities carried out by EU-IoT during the IoT Week 2021 sessions included:

Training Session on Machine Learning at the Edge and the Far Edge:

Training session delivered by EU-IoT with participation from IoT-NGIN and VEDLIOT (ICT 56) with 102 participants.

EU-IoT Hackathon kick-off session:

Focused on challenges for smart decentralised IoT Edge applications, it aims at looking for new ideas, experiments and prototypes as first steps towards realizing future IoT Edge Computing deployments. This event aimed to present the challenges to be addressed by the participants in the EU-IoT Hackathon to be held from 27-29 June 2022 in Munich (Germany) co-located with CONASENSE2022. The kick-off session was attended by 72 people.

Join the Next Generation IoT; Upcoming Open Calls:

This workshop, which was the official kick-off of the open calls, was divided into two sessions. In the first session, RIA representatives had the opportunity to individually present their open calls, including the most relevant information. Once the objectives of the projects were known, during the second session, technical representatives of the RIAs were divided into different breakout rooms and worked on the co-creation of solutions for a concrete use case with target groups interested in submitting their proposals afterwards. The most relevant outputs for the ICT-56 RIAs were:

- Feedback from target groups on their use case
- Engagement with potential participants in open calls
- Deeper knowledge on available solutions and tech providers in the ecosystem
- Ideas and recommendations for open call and use case improvement

The 100 participants on the session had the opportunity to interact directly with other peers and also RIAs representatives, get a better idea on the projects´ needs to prepare a better proposal for open calls, and show their solutions and knowledge to relevant stakeholders within the ecosystem. In addition, an EU-IoT representative was present in each breakout room acting as moderator and listener, and a list of technical and other recommendations based on the information gathered during the workshop was sent after the event.

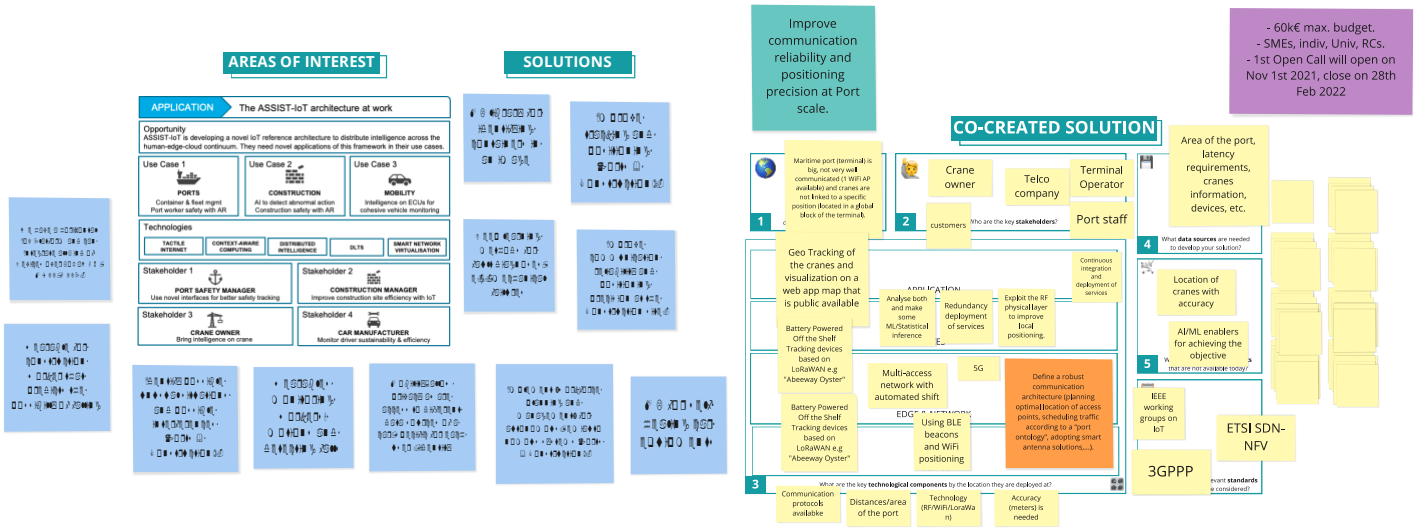

Figure 4. Snapshot of the tool used for co-creation of concepts for the open calls of Assist-IoT

Building an ecosystem for IoT and Edge Computing towards a European Strategy Forum:

In April, the European Commission, supported by EU-IoT, organised the Next-Generation IoT and Edge Computing Strategy Forum. The event gathered top technology experts from across several digital and vertical domains, as well as corporate-strategy level representatives to exchange views on priorities, challenges and opportunities, and establish a commonly shared strategic European vision for the next-generation IoT and (far) edge computing. This session held at IoT Week 2021 explored achievements so far in building an ecosystem for IoT and Edge Computing, showcases funding opportunities and took a look ahead towards a future European Strategy Forum.

IoT Business Model Innovation at The Edge by EU-IoT/NGIoT:

A panel session delivered by EU-IoT and NGIoT that aimed at exploring the next wave of business

models enabled by IoT and the combination of it with edge computing. 4 experts explored results from the H2020 Large Scale Pilot projects, one of the largest investments by the EC in this field and provided mature examples from research and industry in Europe and beyond.

These activities aimed to involve both relevant stakeholders and, mainly, the project's target groups in an active way, thus stimulating their interest and contributing to generate a more dynamic and valuable European IoT ecosystem. Also, a large number of the organisations that participated in the activities are members of the IoT Next Club, demonstrating the value of this asset to the community and the ecosystem's ability to provide feedback among the members it is made up by. This year's edition will once again seek to energise the European IoT ecosystem and attract the most relevant stakeholders and interest groups through discussions, panels, round tables or the demonstration of use cases of IoT in the domains of Energy, Manufacturing, Agriculture, Automotive and Small Ports. The session will also feature the results and upcoming opportunities of the projects' open calls.

2.3.2 European Big Data Value Forum 2021 (Collaborative / ICT-56 partners, Industry, Policy)

Edge Computing - the convergence point in the human-cloud continuum framework:

EU-IoT sponsored a session in the European Big Data Value Forum 2021, named

The main goal of this session was to address the shifting importance of the edge with regards to the value to be generated by a greater level of processing and coordination closer to the user or environment. Specific objectives included:

- Promoting the activities of the NGIoT initiative
- Animating the discussion around the reason for all the bets on the edge
- Identifying which challenges or opportunities remain for adoption
- Addressing the shift required in approach from tech developers

The session brought together some of the most relevant agents and experts in the ecosystem, such as Christian Winkler (Siemens) and Federico Facca (H-Cloud), seeking to achieve a valuable interaction that would contribute to the sharing of information and the generation of new ideas. In addition, RIAs were involved by reserving a slot so that the two whose open calls were active at the time (Assist-IoT and IoT NGIN) had the opportunity to present their respective funding opportunities to potential participants.

New Challenges Ahead: AI and Society

EU-IoT was a contributor to the session organised in collaboration with BDVA which addressed the relevance of the NGIoT Initiative towards the adoption of responsible AI within the context of the AI Act with speakers from UCD, TNO and InTouchAI.eu

2.3.3 High-level ecosystem events with European Commission

Edge computing and IoT Strategy Summit - April 2021 (Participatory / Industry, Policy)

EU-IoT was part of the high-level Fireside Chat hosted by the European Commission aimed at sharing a view on a strategic European vision for (Far) Edge Computing in the Next Generation Internet of Things.

The event gathered top technology experts from across several ICT domains, as well as high-level corporate representatives that exchanged views on priorities, challenges and opportunities. It represented a great opportunity to meet and exchange views with an exclusive group of high-

level actors in the fields of data, cloud, electronic components and systems, mobile communications as well as stakeholders from relevant verticals and associations

From Cloud to Edge to IoT for European Data – Brokerage Event July 2021 (Participatory / Industry, Policy, Researchers)

More than 250 stakeholders from industry, academia and innovators participated in the “From Cloud to Edge to IoT for European Data” event on 7 July 2021, organised by EU-IoT with the support of the European Commission (EC). The attendees had the opportunity to learn about the section “From Cloud-Edge-IoT for European Data” of the Horizon Europe Programme and the chance to network to forge winning partnerships.

The event counted with the participation of renowned experts, such as Rolf Riemenschneider (Head of Sector IoT, European Commission), Haydn Thompson (Founder and managing director of the THHINK Group) and Monique Calisti (Coordinator EU-IoT).

Information and Virtual Brokerage Session - Horizon Europe Cloud-Edge IoT Call 2022 (Participatory / Industry, Researchers)

The open and free half-day virtual event, organised by the European Commission in collaboration with H-CLOUD, HUB4CLOUD, and EU-IoT introduced the three Horizon Europe calls “Cognitive Cloud: AI-enabled computing continuum from Cloud to Edge (RIA)”, “Open source for cloud-based services (RIA)“, and “Programming tools for decentralised intelligence and swarms (RIA)”.

The event offered a unique international networking experience to forge the winning partnerships with academics, researchers, industrial stakeholders, and SMEs, and participants had the unique opportunity to pitch new concepts and applications, proposal ideas, and expertise in front of leading research organisations and cutting-edge innovators from across industry.

2.4 Key collaborations with CSAs and other bodies

2.4.1 CSA collaboration

NGIOT

EU-IoT collaborated closely with NGIoT in co-organisation and participation in events around various topics of interest addressed to a shared target audience. Now that the CSA is completed, EU-IoT is continuing on with the community through the launch of its thematic community events and carries forth the identity and continuity.

H-Cloud

The collaboration between EU-IoT and H-Cloud was focused on co-organising events to address a common target audience. Both through the EBDVF 2021 and the Information and Virtual Brokerage Session on the Horizon Europe 2022 Call on “WORLD LEADING DATA AND COMPUTING TECHNOLOGIES” and “Digital and emerging technologies for competitiveness and fit for the green deal”, held on February 2022, EU-IoT and H-Cloud have established a collaboration framework aimed at engaging tech developer stakeholders offering them a unique international networking experience to forge the winning partnerships and pitch new concepts and applications, proposal ideas, and expertise in front of leading research organisations and cutting-edge innovators from across industry. This is to be continued with the HUB4CLOUD CSA which takes up the mantle.

OPENDEI

EU-IoT is collaborating directly with OPENDEI in the key areas of business model innovation and

impact assessment. The business modelling is a bridging activity to that in WP4 of EU-IoT and the standardisation of approaches for defining business models through the AIOTI Manufacturing activities on the Business Impact of IoT in Manufacturing Industries. The collaboration will take form of an online workshop to be delivered on the 18th May followed up by an in-person during IoT Week 2022.

Through the participation in the OPEN DEI TF 4 Digital Transformation and Business Impact, EU-IoT is sharing the impact assessment framework developed in WP5 and the approach to the platforms and pilots.

2.4.2 Standardisation bodies

EU-IoT maintains an active collaboration framework with various standardisation bodies, which translates, in most cases, into the co-organisation of events or the writing of joint reports and white papers.

These organisations include IEEE, FIWARE, ITU, ETSI, IETF, ISU, ENISA, or ECSO among others. Notable collaborative events include:

- The Need for IoT Security Standards & Certification. Global IoT Day Roundtable (April 2022) – ECSO, ENISA, ETSI…
- Workshop on IoT and Edge Computing Research and Standardisation Convergence (September 2021) – ETSI, ISO, ITU, FIWARE…
- Organisation of 2 Open-source and Standardization Aspects events with the NGIoT RIAs with representatives from AIOTI and DAIRO for sourcing collaborations in the reports focused on “IoT and Edge computing integration into data spaces” (AIOTI) and “Data sharing/data spaces and interoperability” (BDVA/DAIRO) and sharing mapping and links with EU-IoT and standardisation activities within the RIAs.

For full definition of targeted standardisation bodies and activities, please refer to D3.3 and D3.5.

2.5 Regular community structures

2.5.1 Open Calls Coordination

EU-IoT is providing continuous support to the RIAs in the whole process of their open calls within the framework of the NGIoT initiative. Through various activities, the consortium is supporting RIAs in this process as follows:

- Dissemination and communication of relevant information about the open calls through various channels
- Support in the recruitment of participating organisations
- Support in the recruitment of evaluators through the creation of a common pool
- Facilitating the sharing of information and standard resources between RIAs for improving the open calls materials and quality of information and communication with potential applicants
- Contact with experts who share previous experience in managing open calls
- Sharing of documents and information related to previous open calls to facilitate their definition and management

Among the most relevant activities carried out, are the provision of a slot for RIAs at IoT Week 2021 and IoT Week 2022 to present their open calls and use cases, as well as the monthly regular meetings held every month since October 2021.

- EDBVF: In the session sponsored by EU-IoT, the two RIAs whose open calls were active at the time (Assist-IoT and IoT NGIN) had the opportunity to present their respective funding opportunities to potential participants.
- Assist-IoT Webinar: Organisation of a webinar in collaboration with Assist-IoT where its coordinator had the chance to present the open call to potential candidates coming from the IoT Next Club
- NGIoT Open Calls: Key learnings and approaches from the IoT Large Scale Pilots and Next Generation Internet: The goal of this session was to support the process of open calls of the ICT-56 RIAs, sharing lessons learned from previous open calls in H2020 IoT projects, addressing the specific needs of the ICT-56 RIAs in open call management. For this purpose, 3 experts with experience in coordinating open calls were involved: Gemma Guilera (Synchronicity), Mirko Presser (NGI Pointer) and Harald Sundmaeker (Smart AgriHubs & IOF2020), who shared their experiences and gave advice on key aspects of the open calls management.

2.5.2 NGIoT Community event series: Marking the evolution from cloud to edge

These community events will address key issues related to Next Generation Internet of Things and will bring into discussion the changes in models and approaches precipitated by the move to the edge, identify potential barriers to transition, understand which contexts and applications can drive greatest value out of the evolution, identify key players in specific market domains and engage European actors within specific domains and provide visibility to the NGIoT Initiative.

The events are co-organised with key industrial associations and technology developers to address and provide a common vista on the future market potential of the NGIoT and the direction towards the far and near edge within critical sectors in Europe such as Energy, Manufacturing, Automotive, Agriculture, or Logistics and Supply Chain. They aim to be lively and active discussions which welcome conflicting viewpoints in the form of a debate without a set of drawn-out presentations, and with direct audience participation.

Each event will have a presentation of how the application is currently addressed followed by how it will be through a push of intelligence and infrastructure towards the edge. After the presentation, a debate will be stimulated amongst the panellists which will discuss perceived benefits, risks, and feasibility for integration. These events will focus on the business parameters that may occur within the transition from cloud to edge, bringing together leading experts and different stakeholders who will share their views and outline the barriers and opportunities of this transition.

Table 4. Planned programme for EU-IoT Community Event Series

DOMAIN	APPLICATION	CO-ORGANISER	RIA
Energy	EV Charging	AIOTI	IoT-NGIN
Manufacturing	Total factory control	EFFRA	INTELLIOT
Automotive	Driver management	EPoSS	ASSIST
Agriculture	Autonomous tractors	DAIRO (SG9)	TERMINET
Logistics/Supply Chain	Container tracking	GAIA-X	INGENIOUS
TBC			VEDLIOT

2.5.3 EU IoT Hackathon

The EU-IoT Hackathon focuses on “sustainable next generation IoT applications”. The Hackathon has been planned as an event of EU-IoT targeting researchers, academia, and novel SMEs in Europe. It provides developers with the opportunity to develop solutions that address IoT skills training, IoT sustainable business models, IoT novel technical solutions in the context of 6 challenge domains: IoT interfaces, far Edge, near Edge, infrastructure, and also: a specific

challenge domain of the European Factory Platform (EFPF), with focus on manufacturing. It will take place between 27th-29th June 2022, in Munich (Germany). The hackathon is co-located with the international symposium CONASENSE2022.

The aim of the EU-IoT Hackathon is to disseminate new business ideas, experiments and prototypes as first step to best support next generation sustainable IoT solutions.

The teams shall have the opportunity to develop their ideas within an international flagship environment being mentored by several international experts from the Next Generation IoT (NGIoT) community and being in contact with NGIoT community flagship events. The Hackathon shall be developed in Munich, Germany, and have a hybrid pole in Brazil, supported by the University UNIVESP. The Hackathon considers the following projects:

- **Technical projects:** where the focus is on the development of a technical solution to address the challenge. The outcome shall be provided in the form of open-source code to be uploaded to the EU-IoT Hackathon git repository.
- **Training skills projects:** where the focus is on the development of a training tool to be available online which addresses the specific proposed challenge. Outcome can be: a Web-based training tool; a Tutorial (e.g., PowerPoint, video), etc.
- **Prototype Business/Design ideas:** where the focus is on the development of a business framework for an IoT solution.

Six specific challenge domains, built with the support of the different ICT-56 RIAs and also with the support of the H2020 EFPF project, are addressed in the Hackathon:

- **Challenge Domains IoT Interfaces: Augmented Reality Interfaces based on the Smart Mirror concept.** Smart mirrors are a common tool in environments such as home automation, or even retail. The starting point for this challenge is the use of a smart mirror as an IoT hub to the real world. The aim is to integrate new features (feedback to the user) that can improve efficiency and provide a better quality of experience for the user in different environments, e.g., at home, at retail stores (example01 , example02) , in the car (example03) , on the go.
- **Far Edge: Sustainable IoT via TinyML.** Tiny machine learning (TinyML) relates with the application of ML on constrained devices with low power, to perform data analytics without necessarily being connected to the Cloud. TinyML projects focusing on this challenge are expected to address IoT solutions on the far Edge that could improve detection of collective health abnormal situations, for instance, persons without a mask on a room; abnormal temperature levels in a school; abnormal environmental situations, e.g., a potential fire; analysis of plants health, etc. The application domains are varied: agriculture, industry, buildings, healthcare, etc.
- **Near Edge:** Sustainable MEC applications. The aim of this track is to think and develop a project focused on how to best develop Edge-based sustainable services that rely on the ETSI MEC framework.
- **Infrastructure:** Simulating Time-sensitive and Deterministic networking IoT applications. The focus of this track is to propose a service that can best demonstrate the support of real-time applications across deterministic heterogeneous environments. Specifically, you will be working with the fortiss ns-3 deterministic wireless/wired framework, and have the possibility to develop a concrete use-case.
- **Data Spaces:** Sustainable, user-centric smart mobility. The focus of this challenge is to, based on the analysis of mobility data, come up with ideas and apps that may assist a better functioning of a smart region. This may relate, for instance, on the development of a solution that can provide real-time information about points of interest in a city. It may also relate with a platform, such as a dashboard, that, via data fusion and analytics, can benefit a smart city services. Relevant to address are solutions that can improve

sustainability and a green lifestyle.

- **European Factory Platform – IoT Services for Mahfacturing.** The focus of this challenge is on the development of concrete solutions based on the EFPF services and Data Spine.
    - Sub-challenge EFPF1: Semantic matchmaking for the support of environmental monitoring of the shop-floor. You will be using the open-source EFPF TSMatch gateway to improve the existing apps, or to improve the interconnection between TSMatch and the EFPF Data spine.
    - Sub-challenge EFPF2: Evaluate the EFPF SDK in developing digital smart manufacturing applications. You will be using the EFPF SDK studio to create applications.
    - Sub-challenge EFPF3: Evaluate the usability of the Data Spine for the creation of composite applications. You will be testing the EFPF Data Spine and its usability, proposing specific improvements.
    - Sub-challenge EFPF4: Analyse industrial data coming from EFPF partners and provide insights based on the EFPF analytics tools. You will be working with open-source Machine Learning Libraries and propose applications for the visualization and analysis of industrial data.

2.5.4 IoT Next Club

The IoT Next Club aims to be the reference platform for the European IoT ecosystem. It is currently made up of around 240 SMEs, startups and universities, which through their active participation in the club's activities seek to:

- Network with other members
- Get useful and relevant information within IoT
- Stimulate and foster business relationships and opportunities
- Embrace branding opportunities
- Stay tuned about new funding opportunities

The IoT Next Club has been and will continue to be involved in the different activities carried out within the framework of action, such as:

- Inviting members to attend events around concrete funding opportunities
- Inviting members to participate actively and also as attendees in thematic events (e.g. NGIoT Community Event Series).
- Including members to attend the most relevant events organised within the ecosystem (e.g. IoT Week)
- Organisation of internal events (exclusively for members) with different objectives: generation of synergies, search for funding, networking, business opportunities, etc.

The IoT Next Club is an important asset for the European IoT ecosystem, which seeks to foster relationships between the most relevant actors in the IoT ecosystem to generate added value for all to benefit from.

2.7 Ongoing engagements

2.7.1 Community Event 1: EV Charging at the Edge

This will be the first event in the series that will be carried out over the next months. This series of events will address the value and adoption barriers of moving from 100% cloud-based operations to an edge model. This first one, organised in collaboration with AIOTI, will be held on the 29th April, and will address the application of smart vehicle charging, treating vehicles as devices.

The event will bring together several experts in the field who will try to answer questions such as: With the direction away from a cloud-centric model becoming a reality, what implications does this have for the businesses involved? Where does the real value exist and is it enough to invest in a federated and novel edge?

The event agenda is provided as an annex to this document.

2.7.2 IoT Week 2022

As with IoT Week 2021, EU-IoT will also be actively involved in the 2022 edition, seeking to engage the most relevant actors and stakeholders in its ecosystem to deliver sessions of optimal value. EU-IoT will participate in IoT Week 2022 as follows:

A growing vibrant European IoT ecosystem (21st June 2022)

- The future of IoT - The NGIOT viewpoint
  - Presentation
  - EC discussion on future direction of NGIoT
- Roundtable: Preparing the ground for adoption of Next Generation IoT
  - Industry Panel
  - Implementation and Adoption
  - Discussion

Next Generation IoT: Research Recommendations towards Standardisation and Open-source

These two sessions will bring together European experts that are addressing research recommendations towards standardisation and towards the role of open-source in NGIoT. The session is based on a panel format where different panellists shall provide their vision towards challenges to handle in the context of Next Generation IoT, including massive deployments of 6G IoT. After a first round of quick presentations, the panellists shall interact with the audience, to provide their perspective on standardisation challenges, and gaps.

Advancing at the Edge of Convergence: Future Trends, Challenges and Standards with the Next Generation Internet of Things - NGIoT (23 June 2022)

This session will feature the IoT projects and demonstrate use cases of IoT in the domains of Energy, Manufacturing, Agriculture, Automotive and Small Ports. The session will also feature the results and upcoming opportunities of the projects' open calls.

Platform Business Models as a Key for Digital Transformation

Collaborative workshop delivered in collaboration with OPEN DEI on the business model

innovation through data platforms within a value chain approach. Will build on the previous virtual workshop to be delivered in May 2022.

2.7.3 EU-IoT and OntoCommons Workshop – Ontological interoperability, standardisation recommendations discussion

This online meeting to be held on 17th May 2022 is jointly organised by EU-IoT and OntoCommons. EU-IoT is working together with different standards developments organisations and supporting different ICT-56 RIAs to derive research recommendations and a fine-grained mapping of knowledge areas to standardisations with focus on IoT and Edge computing across different vertical domains. OntoCommons is collaborating with existing European and international initiatives which focus on the standardisation of documentation based on ontologies. The project aims to establish synergies with all relevant bodies and initiatives to ensure that it represents the interests of their stakeholder groups and that it carries over their key recommendations, roadmaps and requirements as part of the OntoCommons activities.

The meeting theme concerns semantic interoperability and specifically, the role of ontologies in providing interoperability. Semantic interoperability is one of the key pillars of open and flexible IoT systems. Ontologies are a key component of semantic interoperability, as they provide the foundation and capability for machines to interpret, infer knowledge from different data sets. Ontologies are, however, often vendor or protocol-based, and therefore, building universal ontologies or addressing mechanisms that can support an adequate interconnection across different ontologies is time-consuming and error-prone.

To assist in overcoming the mentioned challenges, this online workshop shall be dedicated to the discussion on the current status of ontological interoperability, provided by different key stakeholders and also provide a panel discussion for recommendations that can facilitate a better deployment of ontological interoperability across different vertical domains.

2.7.4 BDVA – TF9 Skills – Dataweek & IoT Week 2022

EU-IoT is launching a collaboration with the skills taskforce within BDVA/DAIRO to deliver a set of workshops to map out the skills demands (and complement the surveys underway) in the areas of AI and Robotics at Dataweek and IoT Week respectively. Engagement will include the involvement of the NGIoT RIAs who will share their next-gen use cases and skills challenges. Pending approval from event organisers of proposed sessions.

3 CONCLUSIONS

3.1 Continuity and community presence

EU-IoT has successfully managed to position itself and the NGIoT Initiative within the principal communities of interest through a smooth transition of branding and communication assets and the close collaboration between the two projects. The NGIoT Initiative has forged a strong identity, which has generated recognition as the reference RD&I activity within the IoT and AI communities leading to a generated momentum that is showing results and opening opportunities for engagement. While the NGIoT and EU-IoT CSA operated in parallel, EU-IoT was sensitive to the series of community workshops being delivered by NGIoT CSA and provided a supporting role, the prominence of EU-IoT activities is apparent in the previous 6 months and builds on this body of evidence, pushing advanced topics with practical outcomes.

The productive and collaborative relationship with the ICT 56 RIA projects has been a significant driver in the delivery of community engagement, through the provision of content, use cases, technology descriptions and general activities. This relationship has been symbiotic with EU-IoT successfully providing visibility and accessibility to the RIAs activities and making connections with relevant actors and communities where appropriate such as with SDOs, industry players and SMEs or researchers for the participation in their open calls.

The opportunity now exists for EU-IoT to consolidate its presence and drive for further collaborations with the target communities and SDOs. This is to be supported by the coming online proper of new partnerships and alliances such as the European Alliance for Industrial Data Cloud and Edge, Key Digital Technologies JU (KDT-JU) and the AI, Data and Robotics Association. Added to this is the launch of the first group of DATA projects from the recent Horizon Europe round of calls and the lead-in to the upcoming next set of large-scale pilots.

3.2 Types of activities and formats

The level of activities has primarily through direct or collaborative approaches with the specific communities, however, it is observed that there is a concentration surrounding specific events such as IoT Week and EBDVF which provides direct access and contact with the target communities within AIOTI, BDVA/DAIRO and others. This has shown to be successful and leading to a high average number of attendees to sessions and workshops within the target groups for the NGIoT.

The approach which has formed in this first period, through tailored collaborations with other ecosystem developers (e.g. CSAs or Industry Associations), is delivering on the combined benefits and enabling the NGIoT Initiative projects to span different forums. Through these collaborations, shared communities benefit from efficient and effective engagement with a natural combination driven by the use case or topic, particularly relevant at the current disruptive stage of convergence in the field.

The past few years of activities has been exclusively online. This has provided benefits through growing the reach of participants, enabling participation through use of online tools and workshops, and supporting the dissemination with a strong body of content provided with recordings of sessions easily provided online. That said, the proliferation of virtual events has led to challenges and competition for space among these particularly interconnected audiences. The initial perceived benefits are quickly dissipating, with low levels of active participation in spite of attendance and poor opportunities for networking. Online works particularly well for round tables, webinars with a dissemination focus, i.e. indirect engagements, and remote workshops (only when the participants are familiar and structure tools are used in parallel sessions) with a reduced risk of external costs but with limited benefits on personnel resources. In-person events (first set to be held in IoT Week 2022), provide stronger networking opportunities and the capacity to host longer workshops, in one session with deeper inputs from participants.

Each of the EU-IoT consortium members is extremely active, and as will be shown in the D5.3, is leading to a high-level of participatory actions where the actions of the project and the overall initiative have been well presented and represented within key forums across all areas from data spaces through to the human interfaces.

3.3 Engaged communities

EU-IoT has been successful in linking the NGIoT Initiative with the principal networks of AIOTI and BDVA/DAIRO within specific working groups establishing direct collaborations through co-organisation of events, workshops and contributions. There has, to date, not been the same level of engagement with the more embedded systems communities within the KDT JU (formerly ECSEL JU) and the connectivity with the 6G-IA SNS (formerly 5GIA). While GAIA-X is a community of interest for the NGIoT Initiative, and with the consortium forming members of the network, the opportunities for engagement still remain unclear as activities in the network mature and develop at national level and the EU-IoT consortium remains attentive and proactive. Similarly, while the Quantum Flagship is of interest in principle, the immediate links are often secondary to the more immediate priorities of enabling federated architectures and applications.

The launch of the NGIoT Community Events Series provides a strong mechanism for engaging with all main industry associations across the community while reaching directly to industry and providing the connection between the technologies and use cases being developed within the RIAs and commercial applications. The specific nature and the driving theme enables a hook into the activities of the target communities and provides specific value to the Industry target groups.

SMEs have been effectively engaged through the coordination of the RIAs Open Calls, providing mobilisation of the IoT Next Club members and the collective growth of the network around the NGIoT Initiative whereby each of the RIAs acts as a gateway and multiplier with a central hub akin to the NGI, IoT LSPs or similar broader R&I programmes that will continue on to mature participation in the next round of calls and projects.

The Community Engagement activities of EU-IoT have principally addressed researchers and industry more in the tech developer and tech enabler role than in a tech adopter and there has to date been a low engagement with education and training stakeholders who will benefit from skills actions within the project.

4 RECOMMENDATIONS

4.1 Target groups

- In addition to the current target groups of tech developers and tech enablers, EU-IoT should seek to engage potential tech adopters within the activities of the NGIoT Initiative as the RIAs mature their technologies and shift emphasis towards exploitation.
- Within the DIGITAL programme a set of relevant CSAs related to the European Alliance for Data, Edge and Cloud, Advanced Digital Skills, and Digital Innovation Hubs which present a strong opportunity to reach tech adopters.
- The next evolution of the Joint Undertakings and SNS should be included within the activities with direct collaborations to demonstrate the relevance of the NGIoT within these key enabling technologies, providing the consolidated and market-focused viewpoint to the development of these technologies.
- As the open calls within the RIAs evolve, the focus should shift from pragmatic supports to also include opportunities for the demonstration of the solutions of participating SMEs and researchers to elevate their participation and provide a connection to the NGIoT identity.
- EU-IoT should proactively support the launch of the upcoming supply and demand CSAs in the context of the CEI Data to bring into the NGIoT community and support continuity where relevant.

4.2 Approaches to engagement

- EU-IoT should continue to develop the community engagements based on the successful approach so far of seeking partnerships/collaborations with actors with shared or complementary communities which will ensure that there is not a saturation of the audience especially around peak periods pre- and post-summer and towards end of October and November.
- The active participation in conferences and activities organised by target communities (e.g. Dataweek, IoT Week, EBDVF, etc.) is a strong approach and should continue for reaching close partnership within these communities, providing value on the NGIoT and enabling bridges to be made for
- Online activities remain as a strong tool for reaching broad communities including those not based in Europe, however, care should be taken to not over deliver on online events so that value is not diluted and become pedestrian.
- A return to in-person events should be welcomed and encouraged for forming partnerships and relationships across communities, although an outcome-effort assessment should define which are physical, considering external resources required and expected inflation in travel costs. It should be reiterated that an online event may not require fewer and in-fact can demand more resources.
- The organisation of community engagement should take a topic-first approach; themes related to the challenges for NGIoT adoption or roadmap should be developed first and the associated community and community partner defined around this, e.g. skills for federated learning.
- Each community engagement (whether online or offline) should produce a tangible output that can be shared, disseminated after the event; this can be a short report, a guide or a short video. The generation of the content should be the joint responsibility with the co-organisers to ensure that each activity is well defined.
- A series approach will lead to the development of a library of materials which can be

combined to produce positions on the NGIoT and can be explored as a key resource alongside the white papers already being produced by the EU-IoT consortium.

ANNEX 1 – LIST OF RELEVANT WORKING GROUPS FOR NGIOT

TECH	
Name	**Working group(s)**
AIOTI	• Distributed Ledger Technologies Forum • Testbeds • WG01 Research and Partnerships
BDVA/DAIRO	• TF6 – Technical • TF10 – European Data Sharing spaces
EFFRA	• Made in Europe/FoF PPP
ITU	• SG13 Future networks
ETC4HPC	• Energy Efficiency WG
ETP4HPC	• Industrial Users WG
ECSO	• WG6: SRIA and Cyber Security Technologies
European alliance for Industrial Data, Edge and Cloud	• Alliance in initial phase
European AI Alliance	N/A
MARKET	
AIOTI	• WG02 Innovation Ecosystems • WP06 – Agriculture • WP08 – Urban Society • WP09 – Mobility • WP10 – Digital for Green • WP11 – Manufacturing • WP12 – Energy • WP13 – Buildings • WP Health • IG Logistics & Supply chain
ITU	• SG15 transport and access
BDVA/DAIRO	• TF3 Ecosystem • TF7 – Applications • TF8 – Business
ECSO	• WG2: Market Deployment, Investments, and International Collaboration • WG3: Sectoral Demand and Users Committee • WG4: support to SMEs, coordination with countries and regions
OPEN DEI	• TF2 Data - Powered Business Ecosystem Bulding • TF4 - Digital Transformation & Business Impact
SKILLS	
BDVA/DAIRO	• TF9 – Skills
ECSO	• WG5: Education, Training, Awareness, Cyber Ranges
DSJC	N/A
STANDARDS[2]	
AIOTI	• WG03 IoT Standarisation
ITU	• SG17 Security

[2] For full definition of standarisation bodies, please refer to D3.3, D3.5

W3C	N/A
ETSI	N/A
ECSO	• WG1: Standardisation, Certification and Supply Chain Management
IETF	N/A
IEEE	• Communications • Information technology • Power and energy • Transportation technology
GAIA-X	• Agriculture WG • Energy WG • Energy WG • Finance WG • Geoinformation WG • Health WG • Industry 4.0 / SME WG • Mobility WG • Smart Living WG • Public Sector WG
OPEN DEI	• TF1 Data Sharing Spaces
POLICY	
AIOTI	• WG04 – Policy and strategies
BDVA/DAIRO	• TF1 – Programme • TF2 – KPI Monitoring • TF5 – Policy and societal
ITU	• SG3 – Economic and Policy Issues
OPEN DEI	N/A

ANNEX 2- SUMMARY OF ENGAGEMENT ACTIVITIES

Event Name	Board ENGAGED (EG, CB, RIAs, IG)	Type	Organised by other EU projects	Organised in collaboration with other project(s)	Name of project(s) / Cluster(s) / Initiative(s)
Decentralization of Services and Edge computing		Other	no	yes	Gaia-X Networking and Interconnection WG
IoT Day Roundtable Discussion on IoT Security Innovative Technologies & Research Trends		Conference	yes	yes	IoTAC, SecureIoT, SerIoT H2020 projects
IARIA ICNS2021: EdgeIntelli: Intelligence on the Edge Track		Other	no	no	
AIoT and Edge Machine Learning	RIAs (partially)	e-Workshop	no	yes	ICT-56 Projects
Wireless Industrial IoT: the next generation of industrial networking		Other	no	no	IARIA ICNS2021/InfoSyS2021
WF-IoT 2021 Forum	CB	Conference	yes	yes	AIOTI
7-in-1-symposium		Talk	no	yes	CONASENSE
NGIOT OPEN CALLS, IOT WEEK 2021	EG, CB, RIAs, IG	Workshop	yes	yes	NGIoT, AIOTI, etc.
EU-IoT Hackathon Kick-off Session @ IoT Week		Workshop	no	no	
Global IoT Summit	-	Conference	no	no	
IoT week 2022		Conference			
Workshop open source and standardisation 2	RIAs	Workshop	no	yes	BDVA
Applied Sciences special Issue: State-of-Art of Network Architectures and Protocols for Industrial IoT		Other	no	no	
CONASENSE2021		Workshop	no	yes	CONASENSE
Webinar: introduction to IIoT		Webinar	no	yes	Mittlestand 4.0 (Germany)
NDN community event 2021		Talk	no	yes	NDN
EBDVF 2021 Conference	RIAs, EG	Conference			BDVA

IEEE Access Special Issue on "Internet of Space: Communication Systems for Future Space-based Internet Services"	RIAs, EG, CB	Other	no	no	
Webinar: data exchange in IIoT		Webinar	no	yes	Mittlestand4.0 (Germany)
Webinar: real-time communication for modern Industrial environments		webinar	no	yes	Mittlestand4.0 (Germany)
Distributed Ledger Technologies for IoT Decentralization	RIAs (partially)	e-Workshop			
ASSIST IoT Open Call webinar	RIAS	Webinar	no	no	
Webinar: IIoT Edge-based services		Webinar	no	yes	Mittlestand4.0 (Germany)
Global IoT summit 2022		Conference			
IoT Week Safer & more connected: IoT Security & Data Protection session		Workshop	yes	yes	ERASTHOTHENES

ANNEX 3 – UPCOMING EVENT AGENDAS

NGIoT Community Event Series – EV Charging – A case for the edge?

Time	Item
09:30	**Welcome** ○ Tanya Suárez CEO BluSpecs, Board Member AIOTI ○ Dolores Odoñez CEO Anysolution, Co-Chair AIOTI Energy
09:45	**Application break down** *Balancing the grid with EV charging – modelling consumers and demand* ○ Francesco Bellesini EV use case lead - IoT NGIN Energy Living Lab, Emotion
10:05	**Coffee Break**
10:15	**Is the edge worth it?** *Moderated debate on the value to be derived and the barriers to adopting on a large-scale edge investment from cloud* ○ Michael Metzger Principal Engineer, Smart Energy Systems, Siemens ○ Damian Bevan Cloud Architecture Lead, Gemserv ○ Laurent Schmitt Head of Utilities & European Developments dcbel, President Digital4Grids ○ Tanya Suárez CEO BluSpecs, EU-IoT
11:10	**Closing comments** ○ Natalie Samovich Co-founder Resilient Group, Chair AIOTI Energy ○ Marion Malafosse Policy Manager, smartEN

EU-IoT and OntoCommons Workshop

Time	Description
3:00-3:10	**Welcome** Rute C. Sofia (fortiss/EU-IoT) Rita Giuffrida (OntoCommons/Trust-IT)
3.10-3.20	EU-IoT overview - Monique Calisti, 10m OntoCommons overview, TBC 10m

3.20-3.30	Interaction session 1: Poll on Ontological interoperability (aspects) - what is important, on which domain do you apply them, set of challenges, etc
3:30-4.35	**Session I:** perspectives on Ontological Interoperability, challenges and key priorities Chair: Speakers: • StandICT/OntoCommons Technical Working, Arkopaul Sarkar and Ray Walshe • EU-IoT, Standardisation and Open-Source activities, Rute Sofia, • OpenDEI focus on standardisation, Antonio Kung, Trialog, • AIOTI WG priorities, Laura Daniele TNO • SmartM2M (ETSI SAREF), TBC Questions and answers (10m)
4:35 - 4:45	**Interaction session 2:** Challenges and key priorities - your perspective Challenges (perhaps mapped to the different entities presenting) Priorities (similar) Allow the audience to enter also their own challenges and priorities
4:45-6:00	Panel: Recommendations for ontological interoperability across vertical domains Chair: Speakers: • IAOA - Stefano Borgo (CNR) To be confirmed • NIST - Serm • ETSI - NAME TO BE CONFIRMED • AIOTI WG priorities, Laura Daniele (TNO) • BFO - Barry Smith • Industrial Data Space Associations - Check Questions and Answers