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Architecture for Scalable, Self-*, human-centric, Intelligent, Secure, and Tactile next generation IoT



D9.2 Impact Creation Roadmap

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Type	Report	Dissemination Level	Public
Version	1.0	WP	WP9
Description	This deliverable focuses on Communication, Showcasing, Dissemination, Exploitation Plans and Standardisation Roadmap. It also provides the initial ASSIST-IoT indicative activities performed during the first months in above subjects.		



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Executive Summary

The ASSIST-IoT project, through the D9.2 deliverable, presents the initial plan which will be applied by the ASSIST-IoT Consortium, related to project's WP9 activities in the areas of communication, dissemination, standardisation, and exploitation, throughout the entire life cycle of the project. In parallel, the initial application of these plans, along with the activities performed during the first months of the project, are briefly presented.

Specifically, the communication plan is presented, emphasizing the various digital and non-digital communication channels in use, and the overall action plan developed for efficient communication of the project to all the relative stakeholders, aiming at maximising impact. Similarly, the dissemination action plan includes all the appropriate dissemination means that will be utilised for efficiently transmitting the results and the technological advances of the project, to the corresponding scientific, academic, administration, general and industrial targeted audiences.

ASSIST-IoT's initial standardisation roadmap and the partners' participation, along with their planned contributions to specific Standardisation Organisations are also presented, in parallel to the exploitation plans, and results targeted both by the project Consortium, at the project level, as well as by the partners individually, at the individual-partner level.

All the plans described in D9.2 will be constantly updated throughout the entire project lifetime, and adapted to the project's evolving requirements, for attaining the maximum impact. Adaptation will also take into account the changes in the environment, in which the project is being executed; e.g. the state and effects of the COVID-19 pandemic.

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List of acronyms

Acronym	Explanation
3GPP	3rd Generation Partnership Project
5G	5th Generation
5G IA	5G Infrastructure Association
5G PPP	5G Public-Private Partnership
AI	Artificial Intelligence
AIOTI	Alliance for Internet of Things Innovation
ANSI/ISA	American National Standards Institute / International Society of Automation
BDVA	Big Data Value Association
CEF	Connecting Europe Facility
CIS	Controls IoT Security
cPPP	contractual Public-Private Partnership
CPS	Cyber-Physical Systems
CSF	Cybersecurity Framework
CT	Core Network & Terminals
DDoS	Distributed Denial Of Service
DINRG	Decentralized Internet Infrastructure Research Group
DLT	Distributed Ledger Technology
DoA	Description of Action
DOTS	DDoS Open Threat Signalling
Dx.y	Deliverable No y of Work Package x
EC	European Commission
EFRA	European Factories of the Future Research Association
EFTA	European Free Trade Association
ENI	Experiential Networked Intelligence
ENISA	: European Union Agency for Cybersecurity
ESCO	European Cyber Security Organisation
ETSI	European Telecommunications Standards Institute
FG-AN	Focus Group on Autonomous Networking
FG-ML5G	Machine Learning for Future Networks including 5G
FIWARE	Future Internet open-source platform
GA	General Assembly
GSM	Global System for Mobile Communications
HLA	High Level Architecture

HMI	Human-Machine Interfaces
I2NSF	Interface to Network Security Functions
I2RS	Interface to the Routing System
IEEE	Institute of Electrical and Electronics Engineers
IEEE SA	Institute of Electrical and Electronics Engineers Standards Association
IEC	International Electrotechnical Commission
IETF	Internet Engineering Task Force
IIRA	Industrial Internet Reference Architecture
IoT	Internet of Things
IRTF	Internet Research Task Force
ISG	Industry Specification Group
IT	Information Technology
ISO	International Organization for Standardisation
ITU-T	International Telecommunication Union Telecommunication
JCT	Joint Technical Committee
JIEP	Joint and Individual Exploitation Plan(s)
KPI	Key Performance Indicator
KVI	Key Validation Indicator
M2M	Machine to Machine
MEC	Multi-access Edge Computing
ML	Machine Learning
MS	Milestone
MVP	Minimum Viable Product
NGIoT	Next Generation Internet of Things
NFV	Network Function Virtualization
NGO	Non-Governmental Organisation
NIST	National Institute of Standards and Technology
NMRG	Network Management Research Group
ODL	Open DayLight
ONF	Open Networking Foundation
OPNVF	Open Platform Network Function Virtualization
PC	Project Coordinator
PDL	Permissioned Distributed Ledge
PoC	Proof-of-Concept
RA	Reference Architecture

RAMI 4.0	Reference Architectural Model Industrie 4.0
RAN	Radio Access Networks
RTO	Research and Technology Organisations
SA	Service & Systems Aspects
SACM	Security Automation and Continuous Monitoring
SAI	Securing Artificial Intelligence
SDN	Software Defined Networks
SDO	Standardisation Organisation
SG	Standardisation Group or Study Group
SP	Special Publication
SRIA	Strategic Research and Innovation Agenda
STF	Standardisation Task Force
Telco	Teleconference
TF	Task Forces
TIC	Terminal Industry Committee
TM	Traffic Management
TSG	Technical Specification Groups
Tx.y	Task No y of Work Package x
W3C	World Wide Web Consortium
WG	Working Group
WPx	Work Package No x

1. About this document

1.1. Deliverable context

Keywords	Lead Editor
Objectives	<p>Objective 8: Impact creation, Showcasing ASSIST-IoT, and Disrupting the current market.</p> <p>Presented communication, dissemination, standardisation and exploitation plans will be intensively used for impact creation, and for efficiently promoting project's activities and results, as well as disrupting the current market, to meet project's set objectives. Specifically, D9.2 provides a comprehensive description and analysis of ASSIST-IoT impact channels, plans and mechanisms to be used for facilitating the fulfilment of objective No 8 and its KVIs.</p>
Work plan	<p>This deliverable belongs to the set of WP9 deliverables, and it is directly linked to all WP9 tasks' activities. T9.2 main objective is to set up project's initial impact plans and to devise and deploy sound impact creation action plans and strategies, required to allow the action to achieve maximum visibility, as well as to maximise impact within business and scientific communities, guaranteeing fast communication, dissemination, exploitation and adoption of its outputs.</p> <p>The ASSIST-IoT project, through this deliverable introduces to its partners, targeted audience and stakeholders its initial plans, which will be applied by the ASSIST-IoT Consortium to actions related to project's WP9 activities of communication, dissemination, standardisation and exploitation throughout the entire life cycle of the project. In parallel, the initial activities performed during the first months of the project are briefly presented.</p> <p>The use of ASSIST-IoT impact creation channels and the communicated content address almost all tasks of the project, impacting in this way not only WP9 activities but also all the rest ASSIST-IoT WPs.</p>
Milestones	<p>D9.2 has an initial contribution to WP9 milestone (as part of all WP9 activities):</p> <p>MS8: Feedback, Availability of Technical and Business Evaluations. [M36]</p>
Deliverables	<p>D9.2 is directly linked to two upcoming WP9 deliverables, since it provides the means for the communication and dissemination plans, strategies and activities to be described and performed within. Also, it is directly linked with one already submitted deliverable as it gives further insights on the already described activities:</p> <ul style="list-style-type: none"> • D9.1 Web Site, Social Media Channels and Communication Support Material [M6]✓ • D9.5 Report on Impact Creation Achievements & Plan for the Second Period [M18] • D9.8 Final Report on Impact Creation [M36]

1.2. Structure of the Document

This document is divided into 6 main sections, which present the different channels and mechanisms used for the efficient communication of the project. In detail:

Section 1: Introduces the reader to the purpose and scope of this document, its format, and its audience.

Section 2: It provides a brief presentation of the ASSIST-IoT communication channels that have been already set up and used while it also presents the communication plan to be applied. It also elaborates on the control, monitoring and statistical mechanisms and tools used, while the first communication activities, performed during the first months of the project, are presented.

Section 3: Provides information about the ASSIST-IoT dissemination means and activities, such technical papers, workshops and publications and the knowledge diffusion to scientific and academic audience through the presented dissemination plan.

Section 4: Describes the initial Standardisation roadmap along with the ASSIST-IoT involvement to SDOs and alliances. Initially planned contributions to the SDOs are also outlined.

Section 5: Describes the initial exploitation plans and strategy both at project and partners' level.

Section 6: This section concludes the document.

1.3. Target Audience

All ASSIST-IoT partners, through their participation in WP9 tasks, will conduct and participate in multiple ASSIST-IoT impact activities, in various ways, depending on their competence fields, as well as the means, material, and audience to be addressed. For instance, industrial partners will target relevant industrial sectors through their client portfolio, while academic and research institutes will target relevant technical and scientific audiences presenting and showcasing the attained project results and KPIs.

Different target audiences' identification is important in order to build and implement effective communication, dissemination, standardisation and exploitation plans, which will serve suitably each profile by providing the relevant information about ASSIST-IoT project's activities and outcomes. Each target audience will receive the content that is most suitable to its interests, knowledge and needs.

Specifically, the target audiences of D9.2 are as follows (see also Figure 1):

- **IoT sector-industry:** Any group that has an industrial professional background, technical knowledge and expertise, and is working on IoT-related areas. In this group, producers, suppliers, vendors and SMEs are involved.
- **IoT Actors and IoT related research projects and communities:** will be contacted as the reference research and innovation community, to coordinate strategic and operational efforts, helping to validate and sustain the ASSIST-IoT outcomes, and ensure more effective uptake of IoT technologies in the target verticals, with the ambition of contributing to the excellence and leadership of the European industry in a global perspective.
- **Public and private service providers:** Current providers of IoT services, network operators, verticals and other relevant institutions that are interested in ASSIST-IoT services and systems.
- **Academia and Research institutions:** Academic institutions from the ICT and IoT sectors, e.g., higher education institutions, like universities and educational centres as well as national, public and private research institutes.
- **Researchers and freelancers, both in the academia and the industry** will be devoted to spread the benefits of making use of the ASSIST-IoT concepts and technologies, but also to transfer and promote the scientific and technical know-how generated within the project. This target group can be effectively reached by initiatives and institutions in Europe and Worldwide.
- **Standardisation Bodies and Open-Source Communities** are an essential target to maximise the industrial impact, by fostering the uptake of IoT developments, and contributing to the creation and adaptation of new standards and services.
- **Public Authorities, Initiatives and Policy Makers** given the continuous evolution and versatile worldwide applicability of IoT landscape-ecosystem, and the speed of its spreading adoption, good information and meaningful engagement can go a long way to facilitate timely and effective exploitation.
- **Citizens / General Public:** comprises a wide group of stakeholders including citizens, students, and non-governmental organisations (NGOs) that could benefit from the adoption of the new IoT services and enhanced IoT capabilities offered via the ASSIST-IoT outcomes

- **General Press:** includes specialised press and media agencies, online and offline channels, used to amplify the communication efforts of the ASSIST-IoT and thereby increase the impact of the planned dissemination and showcasing activities.
- **All ASSIST-IoT partners, collaborators, and stakeholders:** This document is addressed to the entire ASSIST-IoT consortium and has the role to introduce everyone to the impact means that have been set up and used through the lifetime of the project. Target stakeholders such as the industrial players, SMEs and researchers in the IoT vertical segments (smart automations, smart cities, mobility, factories of the future, eHealth, media, entertainment etc.) that could uptake and/or complement and extend the ASSIST-IoT concepts, technologies and applications. The aim is to raise awareness about the work and results of the project, and reach consensus on pilots, functionalities and targeted performance. The industry can be effectively reached by joint forces of the consortium, which gathers several industrial actors that are prominent in the IoT/NGIoT scene and will play an essential role in the further engagement of other industry players from the broader ICT arena (e.g., 5G).

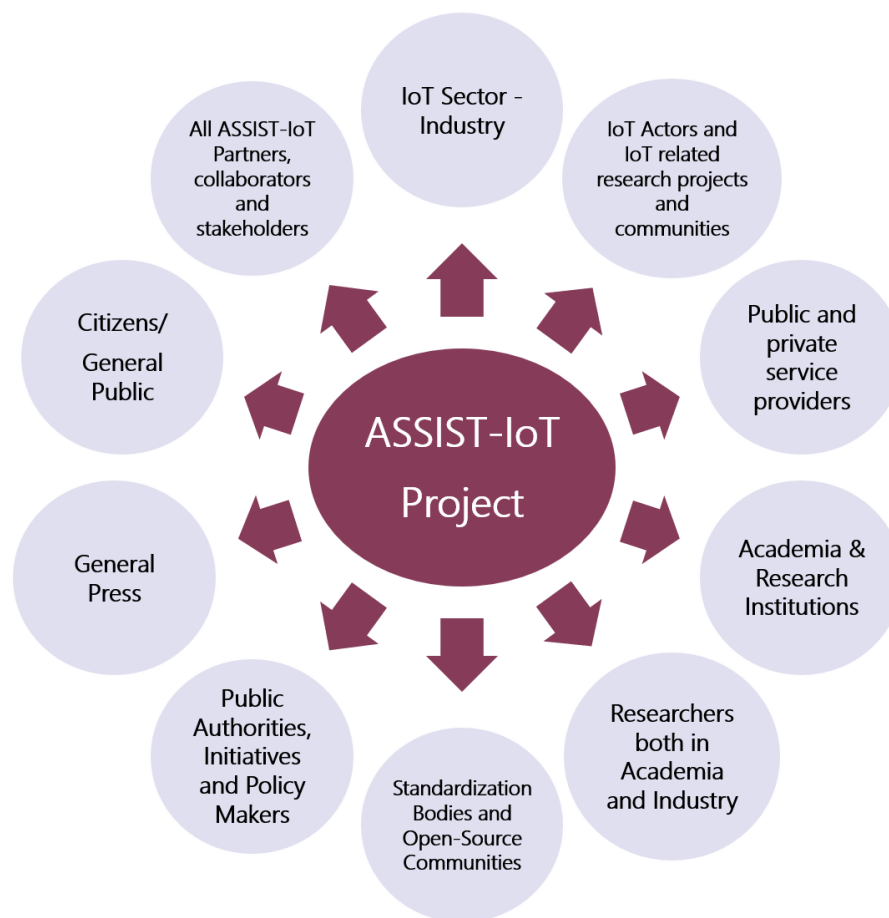


Figure 1. ASSIST-IoT D9.2 Target Audience

2. Communication Impact

ASSIST-IoT impact activities will be accomplished by all partners in different ways, depending on the sector type of each partner, its area of expertise, as well as the means, the content, and the target audience that it will address. In order to facilitate the reader, a Dissemination and Communication definition is presented briefly, according to the directions of the European Commission regarding the projects under the umbrella of HORIZON 2020.

“Communication on projects is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange” [1] . Communication activities’ main target is to ensure impact, by attracting a wide audience, including most popular media, and means, and the general public. Therefore, in order to achieve an impactful communication plan and strategy it is of vital importance to use a less technical language, so that a non-specialist audience can easily understand the attributes and the outcomes of the project. Extensively, communication actions cover each angle and aspect of the project, while the dissemination activities are centralized mainly on the outcomes and the technical aspects of the project. That is why the dissemination activities utilise a more technical and academic language and address the equivalent academic, scientific and technical audiences.

Furthermore, communication activities are initiated and drafted from the very beginning of the project or even before its official initiation in order to ensure its smooth operation during the first period of action. On the other hand, dissemination activities are mainly utilised whenever technical incentives come to surface, or when there are results and the need for sharing them to the targeted audience of such project outcomes. Inseparable part of any communication plan of any project, is the engagement with the society. For achieving this goal, every communication plan should target multiple audiences, technical and non-technical, scientific and non-scientific. From this point of view, the research that is being conducted in the project should be made available for supporting and benefiting the society, and for the public welfare. On the side of dissemination, the research outcomes will enhance specific industries and verticals. Briefly, communication activities include visual identity, project website, social media, leaflets, posters, newsletters, videos, press releases, etc.

Communication activities are of crucial importance for the project’s successful diffusion of knowledge, for raising awareness and for attracting potential supporters, verticals, end users and stakeholders. The main objectives that will be fulfilled by the ASSIST-IoT communication actions, are:

- To raise awareness of the project to the relevant industries and stakeholders,
- To communicate project activities, innovations, findings and recommendations,
- To attain high project visibility and increased awareness to the broadest audience,
- To build communication connection and to enhance collaboration with other research initiatives, such as the H2020 program, and the NGIoT community, ensuring alignment with ongoing projects, and influence on other research EU work groups and associations such as the 5G-PPP.

More information, concerning the communication plan and actions is available in the following subsection of Section 2, while an extensive description of the dissemination plan and activities follow in Section 3.

2.1. Communication Channels and Supporting Material

In this section, a brief overview of all active ASSIST-IoT communication channels is made. Please note that there has been an extensive presentation of the ASSIST-IoT communication channels in D9.1. However, in order to better understand the processes of the communication activities, especially as the projects evolves, it would be helpful to briefly present them again, as they have evolved since they are already in practical use for at least 5 months (at the time of editing this deliverable). The ASSIST-IoT channels set up and extensively used are:

- ASSIST-IoT logo,
- ASSIST-IoT extra images,
- ASSIST-IoT Website,
- ASSIST-IoT Social media Channels,
- ASSIST-IoT Newsletter,
- ASSIST-IoT Leaflet,
- ASSIST-IoT Poster,
- ASSIST-IoT Press Release Template.

2.1.1. ASSIST-IoT logo

At the very early stages of the project (at the proposal phase), the design and development of a distinctive logo took place which allowed the project to secure a clear and well-identified branding appearance and awareness. The ASSIST-IoT logo has two variations. The original version, with the bubbles on the left side of the ASSIST-IoT wording, and a social media variant with the bubbles above the wording (primarily for use in social media accounts).



Figure 2. ASSIST-IoT logo



Figure 3. ASSIST-IoT logo variation (mainly for use in social media accounts)

2.1.2. ASSIST-IoT Website

The website will be the major tool of communication and promotion of the project and it has been already introduced and thoroughly analysed in D9.1. It was developed early during the project's launch, and was activated in the middle of November 2020. **The ASSIST-IoT official website is accessible at: <https://assist-iot.eu/>, functioning as an informative portal**, where details about the project and its activities are published, sustaining the project's scope across multiple vertical industries and various stakeholders.

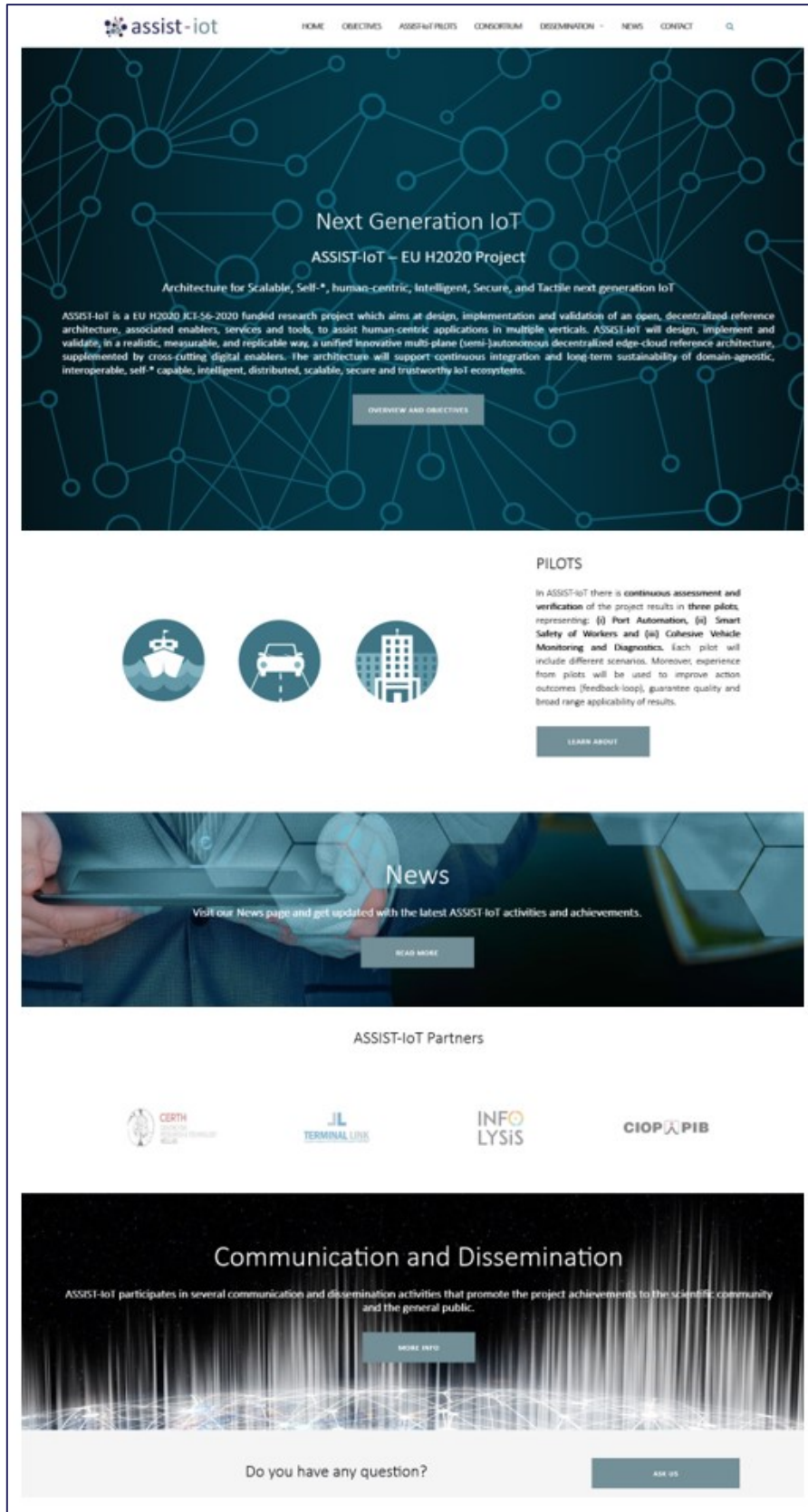
The design of the ASSIST-IoT website reflects the overall visual identity and transmits knowledge, as well as innovation. The public project website enables external and internal audiences to be informed on the project's approach and objectives, its news and events, and provides the contact information of the project leader. Moreover, the website serves as a “public business card” for stakeholders with an interest in the project, or the action/impact resulting from it.

The website is focused on the Consortium's shared understanding of the project's scope and objectives, for creating impact to the market through the efficient communication of ASSIST-IoT activities, results and achievements. ASSIST-IoT website will be live for the entire lifespan of the project and for an additional 3 years after its completion.

In detail, the ASSIST-IoT website is:

- Developed using WordPress (currently in ver. 5.6) by the INF team (T9.1 leader) and its constantly updated to newer versions/updates.
- Domain name owned and hosted by the UPV (PC) for 6 years.
- Content constantly maintained and updated by the INF team.
- It has multiple menu options-buttons available for covering all types of project's activities.
- It provides contact form, directly addressing the Project Coordinator and the WP9 leader.
- It is ReCAPTCHA v3 protected.

In a compact and comprehensive way, the website addresses the communication needs of the ASSIST-IoT project. Seven easy-to-access menu options are grouped into: Home, Objectives, Pilots of ASSIST-IoT, Consortium, Dissemination, News and Contact (Figure 4). More details on the design and content of specific webpages have been provided in D9.1 while an update on initial reported activities is also provided in Section 2.4.1 of this deliverable.



The screenshot shows the ASSIST-IoT website home page. At the top, there is a navigation bar with the ASSIST-IoT logo and links for HOME, OBJECTIVES, ASSIST-IoT PILOTS, CONSORTIUM, DISSEMINATION, NEWS, and CONTACT. The main header features a dark blue background with a network diagram and the text "Next Generation IoT" and "ASSIST-IoT – EU H2020 Project". Below this, a sub-header reads "Architecture for Scalable, Self-*, human-centric, Intelligent, Secure, and Tactile next generation IoT". A paragraph of text describes the project's goals, and a "OVERVIEW AND OBJECTIVES" button is present. The "PILOTS" section includes three circular icons representing port automation, smart safety, and vehicle monitoring, with a "LEARN ABOUT" button. The "News" section features a background image of a person holding a tablet and a "READ MORE" button. The "ASSIST-IoT Partners" section displays logos for CERTH, TERMINAL LINK, INFO LYSIS, and CIOP/PIB. The "Communication and Dissemination" section includes a "MORE INFO" button and a "Do you have any question?" prompt with an "ASK US" button.

Figure 4. ASSIST-IoT website home page

2.1.3. ASSIST-IoT Social Media Channels

Along with the project website, social media platforms contribute to the effective communication of ASSIST-IoT activities, achievements and highlights as well as the increase of awareness for it. The project's presence in a wide range of social media channels leads to the wider exposure of the impact of the project to diverse audiences, in a cost-effective and efficient way. Different social media channels (e.g., Twitter, LinkedIn, Facebook, Instagram and YouTube.) have been created from start of the project, to enhance the communication and reach the different target audiences.

ASSIST-IoT Consortium is monitoring and will constantly monitor the project's achievement and progress, through the below-described social media networks for enhancing communication of the impact and results of the project. Briefly, some benefits of using the social media are:

- Circulation of news, dissemination content, activities and results of the project,
- Creation of a distinguishable project identity and branding,
- Identification of new possible audience and new stakeholders,
- Keep the audience committed to the project through regular weekly posts,
- Monitoring the project impact,
- Relating and linking the project to other similar activities, projects, communities and associations (such as EU, H2020, NGIoT, 5G-PPP).

Specifically, the following ASSIST-IoT social media accounts have been created, are running and are actively used since early November of 2020: Twitter, LinkedIn, Facebook, Instagram and YouTube. Table 1 provides the access links of all ASSIST-IoT social media channels. A very descriptive description about the social media channels was included in the D9.1, which is available here: <https://assist-iot.eu/deliverables/>

Table 1. ASSIST-IoT Social Media channels

Twitter	https://twitter.com/AssistIot
LinkedIn	https://www.linkedin.com/in/assist-iot-project
Facebook	https://www.facebook.com/assistiot
Instagram	https://www.instagram.com/assistiot/
YouTube	https://www.youtube.com/channel/UC8Sedd5UyB8R61d9YDkkeGg

2.1.3.1. ASSIST-IoT Twitter Channel

Twitter is one of the world's most popular social media platforms and is useful for the promotion of ASSIST-IoT activities to the public, for expanding its global reach and effectiveness. The ASSIST-IoT Twitter account (<https://twitter.com/AssistIot>) provides a short outline of the project, and information on the number of followers, tweets, etc. Users may browse tweets, read them, retweet content, like, and comment. ASSIST-IoT uses Twitter account for communicating its events, as the news overview channel of the project, due to its short and lightweight tweeting constraints, not enabling lengthy posts and chattering. In addition, interaction with followers through Twitter messages, such as mentions, reshares and comments, increase project engagement, since it targets even more the community of non-followers, attracting them to read communicated material.

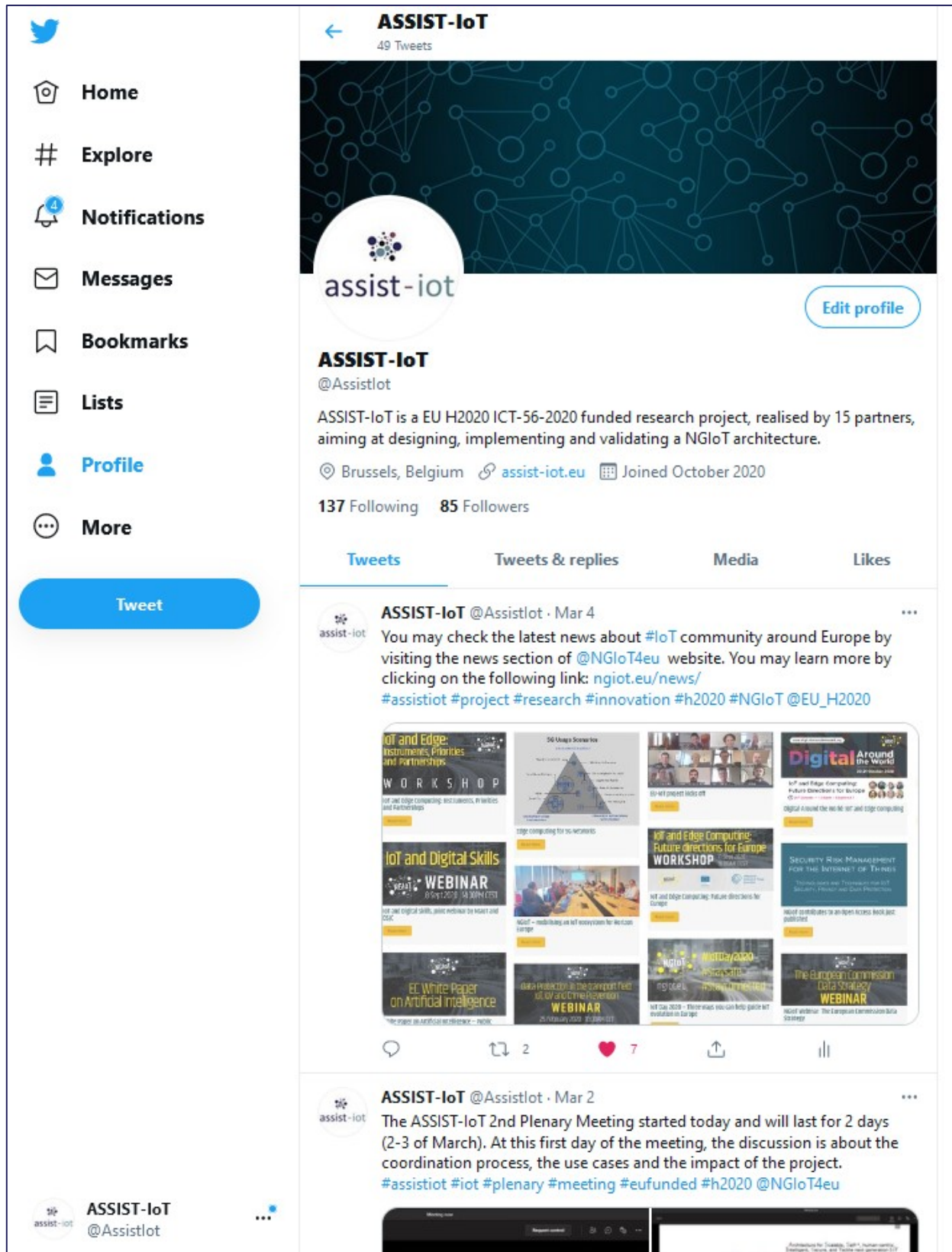


Figure 5. ASSIST-IoT Twitter account

2.1.3.2. ASSIST-IoT LinkedIn Channel

LinkedIn is the largest professional and business-oriented networking website internationally. It is a powerful social network tool which will enable the consortium to communicate sufficiently the accomplishments and the impact of ASSIST-IoT to the relevant industries and professionals. ASSIST-IoT LinkedIn account (<https://www.linkedin.com/in/assist-iot-project>), has already established its own network of links and distributes project's activities, objectives and accomplishments, to the LinkedIn connections/audience. On the bio of the LinkedIn account, a quick description of the project is also given, where LinkedIn follower can quickly browse through the account and engage with the content posted.

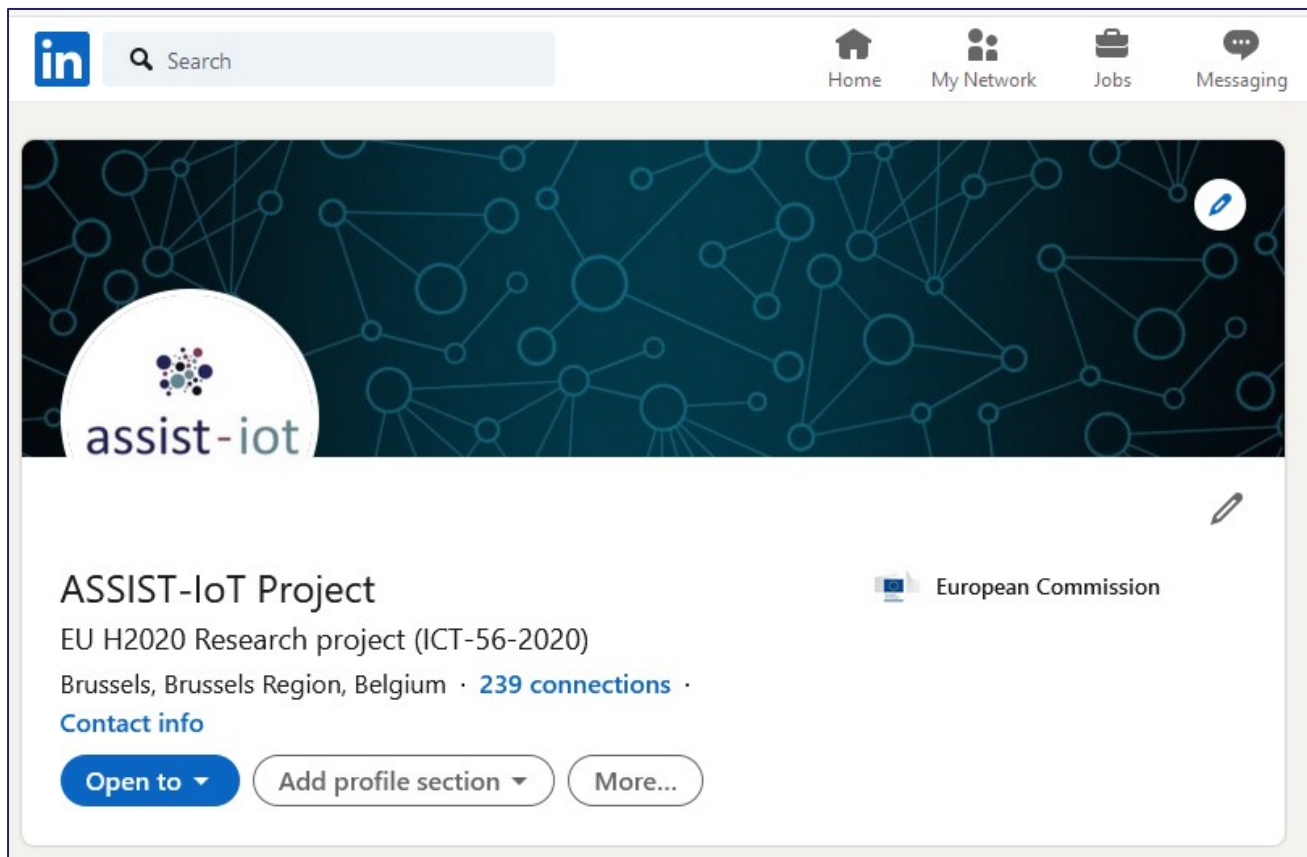


Figure 6. ASSIST-IoT LinkedIn account

2.1.3.3. ASSIST-IoT Facebook Channel

ASSIST-IoT project has also presence in Facebook. Facebook is one of the largest and most recognized social media platforms globally, and it is one of the best media to increase brand value and social media presence. The effect and the high popularity of this platform can significantly lead to the successful interaction between stakeholders and ASSIST-IoT. For ASSIST-IoT, Facebook account is used as a medium for "more general interest" material sharing. This does not mean that the project's technological and academic characteristics are not shared through the Facebook channel, but that they are communicated in a non-technical, easier to understand, language. Browsing the Facebook page of ASSIST-IoT (<https://www.facebook.com/assistiote>), users can be updated with the latest information about project initiatives. They can also engage in multiple ways such as likes, comments, shares, and persuade potential users/contacts to promote the project.

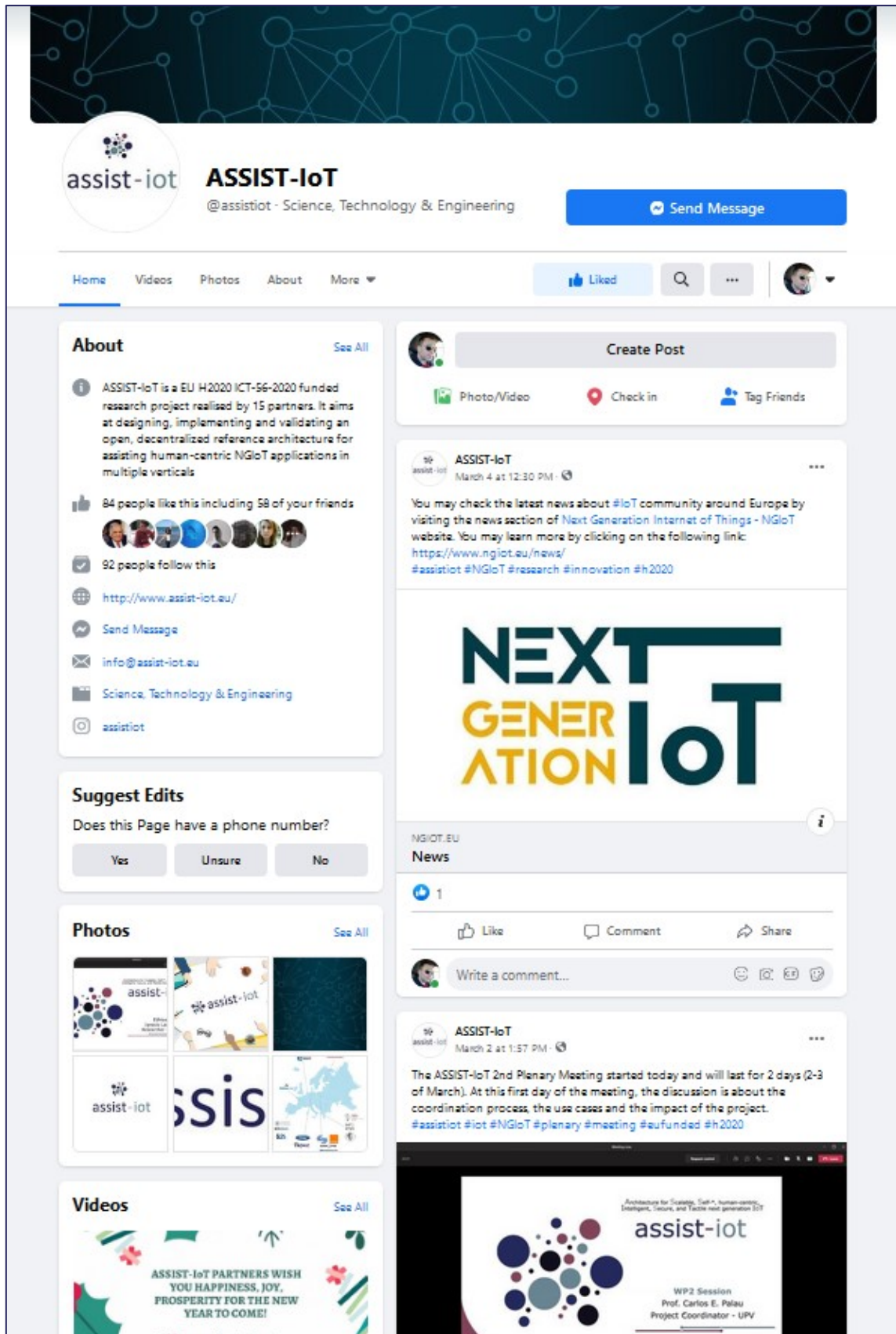


Figure 7. ASSIST-IoT Facebook account

2.1.3.4. ASSIST-IoT Instagram Channel

Instagram is the most popular image and video-sharing social media application. ASSIST-IoT Instagram account (<https://www.instagram.com/assistiot/>) takes advantage of this popular network by posting images featuring the project work and achievements, relevant material and reaching new audiences for enhancing the impact of performed dissemination and communication activities. This form of content offers the chance to make posts more lightweight, visually targeted and to the point, with more focus on the visual elements (such as photos, videos) and less on the textual content. ASSIST-IoT, based on the communication strategy reported in Section 2.2.2, will publish less technical text on the Instagram site but enriched with photos, to clarify and transmit the content of projects in a more clear and easier way. In addition, in the Instagram account bio, users can access project info and the link to the website (or any related activity link that is regularly posted under the bio).

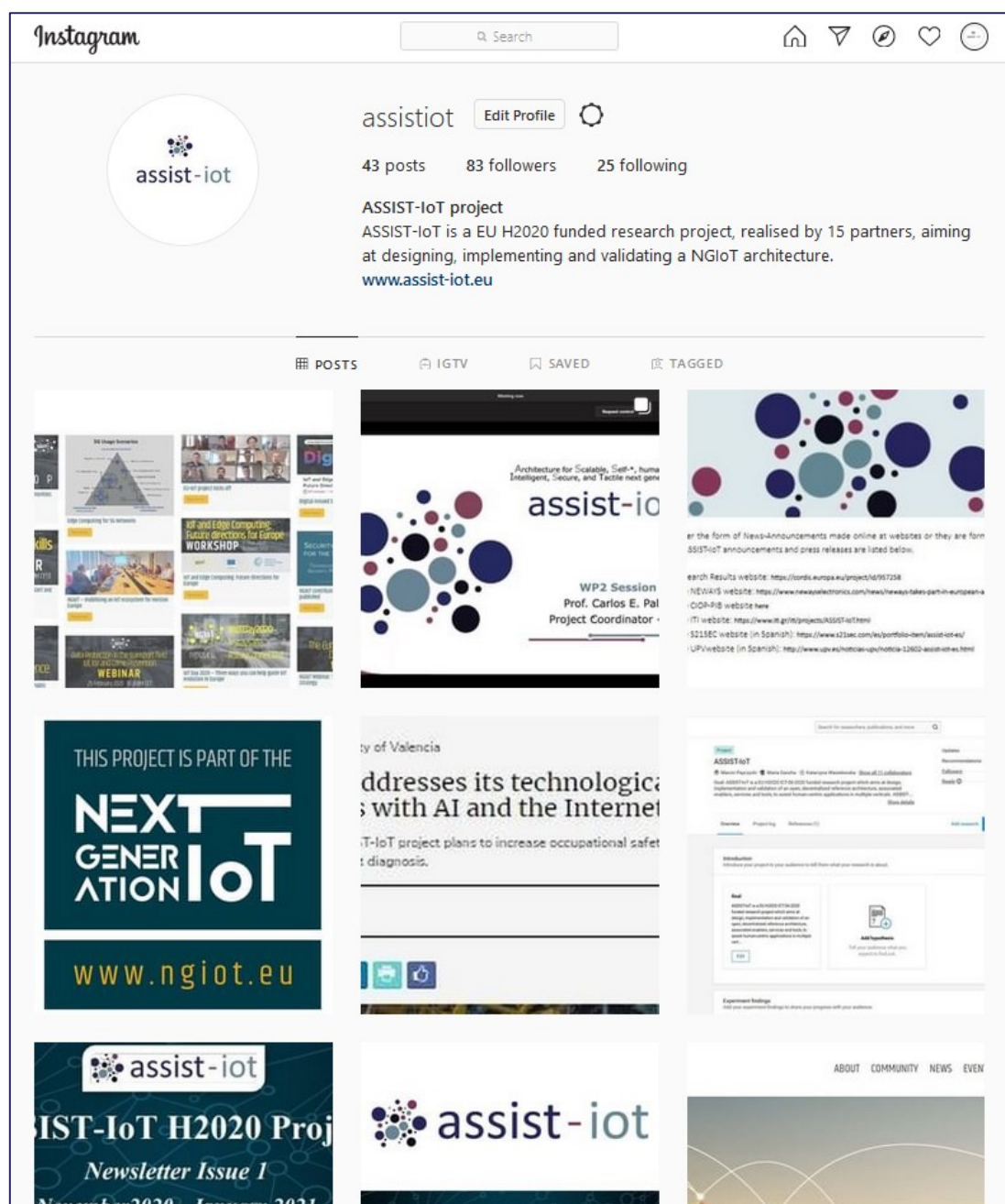


Figure 8. ASSIST-IoT Instagram account

2.1.3.5. ASSIST-IoT YouTube Channel

YouTube is one of the most significant and popular video distribution platforms on the Internet. The regular and consistent creation of video content will lead ASSIST-IoT to reach a worldwide audience and appear in Google search engine for audio-visual content, enhancing the successful promotion of the project. The ASSIST-IoT YouTube channel (<https://www.youtube.com/channel/UC8Sedd5UyB8R61d9YDkkeGg>) is updated regularly with videos since it is used for promoting and showcasing the project events. YouTube channel is already used to share videos from workshops and presentations.

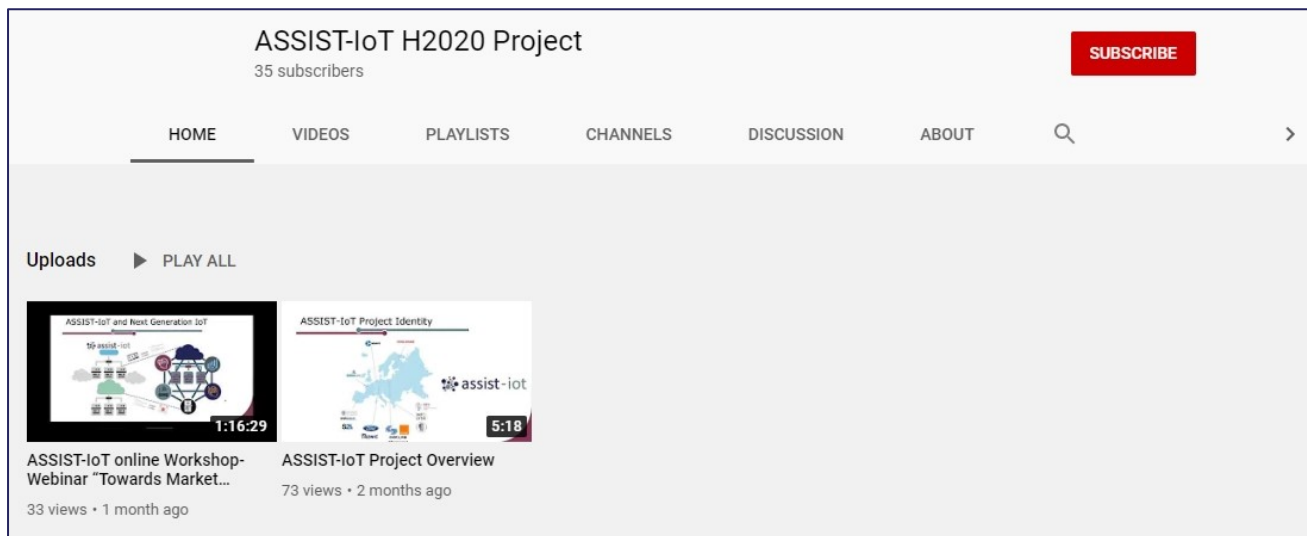


Figure 9. ASSIST-IoT YouTube account

2.1.4. Additional ASSIST-IoT Supporting Material

A brief overview of additional ASSIST-IoT communication channels in use is presented in this section. Details concerning these channels have been already provided in D9.1.

2.1.4.1. ASSIST-IoT Newsletter

The Newsletter is an important component of the communication activities as it is used to diffuse the latest news and achievements at regular intervals to the wider public and to different stakeholders. Its objective is to keep the project's community informed and engaged with the project's activities while achieving more visibility and impact. ASSIST-IoT Newsletter will be published quarterly (every 3 months), starting with the first issue that reports the period November 2020-January 2021(M1-M3). In each issue, there will be permanent sections, such as issue highlights, dissemination and communication activities and events news, plenary meeting updates, period published public deliverables information, project achievements etc. More details on the performed ASSIST-IoT Newsletter activities during the first months of the project, are presented in Section 2.4.3.

2.1.4.2. ASSIST-IoT Leaflets

Leaflets, either in digital or in printed format, will be used to boost communication of ASSIST-IoT activities by providing compact and crucial information, including project's name, logo, objectives, use cases, results etc., and leading to raised awareness and increased engagement during dissemination and communication events. During the initiation period, ASSIST-IoT leaflets have been created (all in A4 double-sided size). More details on the initially designed and used ASSIST-IoT leaflets are presented in Section 2.4.4.

2.1.4.3. ASSIST-IoT Poster

Posters, as communication means, can be used, in numerous forms of communication, dissemination and networking events, such as conferences, booths, presentations, webinars, workshops, training sessions and trials. Their main aim is to summarize the project concept, by briefly listing the objectives, as well as visualising the overall architecture of the project, on which the technological advances will be integrated, and the details of the use cases under testing. The key purpose of posters is informational, as it will provide the viewer, with lightweight and relevant data of the venture, its aims and its pilots. More details on the initially designed and used ASSIST-IoT posters are presented in Section 2.4.4.

2.1.4.4. ASSIST-IoT Press Releases

Press releases are considered the most appropriate way of disclosing the achievements of the project to a corporate and commercial communities in a more official sense. A press release initiation will help us to build easier a network of stakeholders around the project. Press releases will share summarised updates on particular project tasks and outcomes that must be officially communicated/announced to specific targeted markets. They will be released either at project level by the consortium or at partners level by each partner individually through its company's communication channels. More details on the initial Press releases activities are presented in Sections 2.4.1 and 2.4.4.

2.1.4.5. Extra means of Communication

Additional means of communication will be also used by ASSIST-IoT to increase its impact and communication efficiency, as well as for communicating results and activities from the performed dissemination activities. A relevant list of additional/potential means is as follows:

- Any type of online content related to ASSIST-IoT project (e.g., blogs, images, events' invitations etc.),
- Articles in newspapers,
- Articles in magazines,
- Interviews conducted by partners,
- Videos/slideshows from events that partners have participated in,
- Printed material such as brochures, stickers, etc.,
- Communication packages,
- Partner's communication channels (websites, social media channels and newsletters) for communicating ASSIST-IoT activities and results,
- Dissemination portals such as ResearchGate for communicating ASSIST-IoT scientific activities,
- Communication channels of communities and associations such as NGIoT and 5G-PPP (websites, social media channels, newsletters, and events) for further communicating ASSIST-IoT activities and results.

2.2. Communication Action Plan

ASSIST-IoT main communication target is to achieve maximum visibility and maximise impact within business and scientific communities to guarantee fast dissemination and adoption of its outputs. Communication activities of the project will be monitored and communicated through the project's lifetime, to ensure long-term effectiveness and attainability. Furthermore, part of the communication plan and strategy is to constantly look for new communication opportunities for ASSIST-IoT to get involved in order to make the impact created more powerful and effective. To accomplish this goal ASSIST-IoT project has defined specific communication procedures to be followed and applied.

ASSIST-IoT communication plan is focused on ensuring impact on society, technology advances, and strengthening European R&D. ASSIST-IoT core communication activities raise awareness about the project through several means and activities, like the project website and social media channels, newsletter, leaflets and posters, trials and showcases, etc. All communication actions scope is to address the full range of potential users including the academic, research and industrial communities, along with all related stakeholders and the general public.

2.2.1. ASSIST-IoT Communication Framework and Target Audience

ASSIST-IoT communication activities include all actions that will help diffuse the project's results beyond the consortium and the direct stakeholders, maximizing the project's contribution to industry and vertical innovation and research, and attracting a wide range of stakeholders that are invited to embrace and benefit from the ASSIST-IoT research findings. In this direction, the project's communication plan will:

- Set up and utilise communication channels,
- Identify target audiences,
- Define concrete and measurable communication actions,
- Establish a solid communication plan with realistic objectives/targets,
- Establish control, monitoring and evaluation tools and mechanisms,
- Implement the communication plan in a strategic way,
- Reach and address the informative need of the targeted audiences,
- Closely monitor the impact of the communication and apply corrective actions whenever necessary,
- Identify communication opportunities that can further reinforce project's visibility and impact.

The communication plan and actions will be executed jointly by all ASSIST-IoT partners. The T9.1 leader will coordinate the communication activities and provide guidance to all partners for ensuring the efficient application of the ASSIST-IoT communication plan. Appropriate selection of targeted audience is of vital importance in order to "address" correctly the project's communication actions. Addressing the appropriate audience entails to greater impact. Elaborating further the targeted audience presented in Section 1.3, the following audience groups will be also addressed by the performed ASSIST-IoT communication activities:

- **Industry:** all groups, which have an industrial background, a technical knowledge and expertise, and which maybe working in relevant areas of IoT. This group especially includes potential technology producers, suppliers, vendors, and SMEs (e.g., application developers and third-party providers of IoT related services).
- **Academia and Research:** higher education institutions (universities and academic centres, i.e., re-training of experts in new technologies and multimedia services and applications), as well as national, public, and private research institutes. Mainly from the ICT sector, but also from different verticals (initially, mostly related with the ASSIST-IoT pilots).

- **Public and private service providers:** current providers of IoT services, network operators, verticals and other relevant institutions that will switch, or adapt, to ASSIST-IoT services and systems soon.
- **Related communities and associations:** will be addressed as the reference research and innovation groups to help organize strategic activities, assisting in the sustainability of ASSIST-IoT outcomes and ensuring more successful uptake of IoT/NGIoT innovations in the target verticals, with the aim of contributing to the European industry's excellence and leadership on a global scale.
- **Stakeholders and the broadest possible audience (General Public):** this group represents the potential end-users and actual IoT products and services at consumer end for the future. In a broad sense, this covers the whole society.

Within this communication framework, two types of actions will be followed by the ASSIST-IoT consortium, to achieve its communication goals:

- **Online actions:** based on the use of website, social media channels, workshops, online events, and coordination mechanisms such as mailing lists, Only Office repository and Microsoft Teams channel.
- **Offline actions:** based on on-site and face-to-face actions such as workshops, presentations, trials, and seminars. These offline actions will take place whenever the COVID-19 situation allows the face-to-face meetings, and various types of events will resume.

Furthermore, such activities will have double nature. In other words, activities will also be different concerning their interaction and engagement character. Specifically:

- The **non-interactive activities** include communication of any related activity and information through website articles, press releases and technical and non-technical articles, magazines, and books.
- The **interactive activities** include human interaction and aim to establish more trusted relationships between the consortium members and potential stakeholders, thus strengthening the target audience involvement. Such activities include the use of communication and dissemination material such as posters, leaflets, presentations, workshops, special sessions and panels at important international venues. All of these activities will follow the ethics guidance set out in D1.1, D1.2 and D2.3 deliverables.

In order to achieve an effective communication plan for each activity of the project, the following variables must be taken into consideration:

- The nature of each event that the ASSIST-IoT project is going to participate through its members,
- The nature of each ASSIST-IoT activity,
- What the members are allowed to communicate by the Ethics committee of the project,
- The targeted audience (technical - non-technical),
- The content of the communication process,
- The means of the communication process,
- The purpose of each communication action.

Another important action of the ASSIST-IoT communication framework is the establishment of contact points, with regards to ASSIST-IoT, organizations and communities such as NGIoT community that ASSIST-IoT project has joined and is attending. NGIoT organizes and endorses IoT related European projects. NGIoT main goals, in brief, are to foster the development of business models, innovation activities and skills building, providing the ground for adoption and development of IoT empowered solutions, and to support and coordinate outreach and impact creation activities, across the NGIoT ecosystem, by orchestrating communication and dissemination efforts, open calls promotions, event organization and participation, and contributions to open source, pre-normative and standardisation initiatives. Therefore, this collaboration will boost the impact of the project in multiple ways and will bring ASSIST-IoT to close collaboration with the remaining ICT-56 projects (IoT-NGIN, TERMINET, iGENIOUS, IntelliIoT, VEDLIoT) and NGIoT CSAs (EU-IoT, NGIoT, OPENDEI). Up to now, ASSIST-IoT project is monitoring close the Next Generation Internet of Things association activities (<https://www.ngiot.eu/>) and has already promoted this association through the ASSIST-IoT social media

channels, highlighting also the participation of ASSIST-IoT in its initiatives (Figure 10). For better monitoring of the NGIoT association, all WP9 task leaders has been registered to the NGIoT dedicated mailing list, and to the dedicated online repository, where the related material is available for joint communication. At an initial point, the INFOLYSIS team has sent ASSIST-IoT material to the NGIoT, for publishing in the NGIoT's March newsletter issue, and for the NGIoT online news portal/website.



Figure 10. ASSIST-IoT NGIoT sticker

2.2.2. ASSIST-IoT Communication Plan and Strategy

In this section, communication action plan is presented, providing the major guidelines (timeline, stages, activities, means to be used, etc.) for the successful and effective communication of the project, per communication channel and targeted audience. ASSIST-IoT will engage in a comprehensive and well-structured, set of activities, to ensure a broad promotion and effective communication of the developed concepts, technologies, pilots/trials, and overall results. This will include offline and online communications, digital presence, participation to and organisation of events, interaction with NGIoT community, and liaisons with relevant national/local initiatives, as well as with other European research and innovation actions. While the planned activities, and their timing, will be refined as the project progresses, the core structure of the envisaged ASSIST-IoT communication plan has been organised as follows in Figure 11.

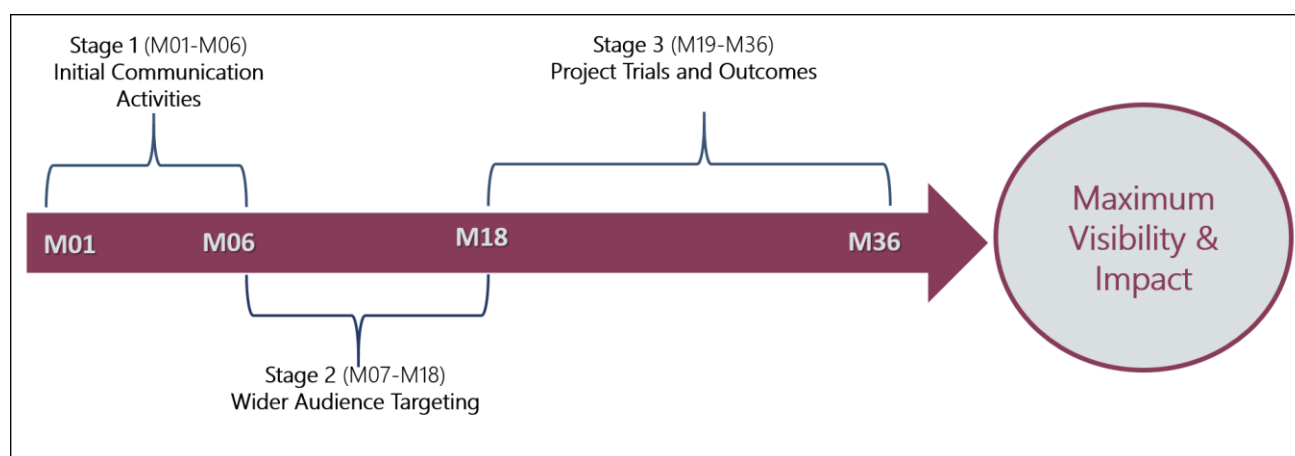


Figure 11. ASSIST-IoT Communication Time Plan

- **Stage 1: Initial Communication activities (M1-M6)**

Scope: As it can be clearly seen in Figure 11. ASSIST-IoT Communication Time Plan, during the first months of the project (current period of the project), the main focus of the activities is to lay the foundation of the communication plan and establishing the digital presence of the project by the creation of communication channels, and performance of initial impact activities. The creation and the

management of a website, and social media channels, together with the use of project's logo and the definition of the communication guidelines is the first and the most important step of the project's image/branding. Furthermore, other activities such as creating the poster, leaflets, press release template initiate their actions. At this stage, the content that will be generated and communicated over communication channels (website, social media, newsletter) will be general, related to the ASSIST-IoT project, its objectives, uses case and to the IoT industry.

Measures: The ASSIST-IoT logo and website, the communication plan, a project introduction leaflet and poster, a project presentation (slides or video), dedicated social media channels established, participation to IoT related communities, press releases and the first issues of the ASSIST-IoT newsletter circulated.

- **Stage 2: Community Outreach and Wider Audience Targeting (M7-M18)**

Scope: In the second period (M7-M18) the main focus of the communication activities comes to the actions that connect the nature of the project with the community. The main objective is to reach the widest potential audience and find new key stakeholders. In other words, the actions concentrate on establishment of a connection point with the community and the industry, by addressing a wider audience and explaining how the project might be leveraged by specific communities, industry stakeholders and the society in general. For this reason, the material/content that will be communicated, will be more focused on the project's preliminary technical details and results on specifications, architecture, components, use cases and pilots of the project.

Measures: Slide-based presentations, and videos of first project results, several project news and dissemination activities communicated over the ASSIST-IoT website and social media, quarterly newsletters, updated leaflets and posters, press releases, communication packages (aggregated annual communication material) participation in selected communication events to promote the project and its initial results and trials, first open call organized. See Table 3, for finer measurement means that have been established.

- **Stage 3: Project Trials and Outcomes (M19-M36)**

Scope: The third period (M19-M36) of this plan, is focused on communicating and disseminating the project's outcomes. As the projects progresses, results from pilots and demonstrations will come to surface. So, the main objective of the communication team will be to outline and communicate them over dedicated channels by utilizing suitable methods for addressing the appropriate target audience and achieving the maximum impact. For that reason, the main content that will be communicated, will be focused on the pilots and outcomes of the project.

Measures: Promotional material in various forms, maximum communication of dissemination actions, project results and trials, established liaisons and co-organisation of events with other related IoT projects, a number of dissemination activities communicated over the project's website and media channels, including papers, technical reports, trials, demos/showcases, the quarterly-newsletter, interviews, participation to events, webinars, etc.

The main objective of ASSIST-IoT communication plan is to attain high project visibility and increase awareness to the broadest audience, technical and non-technical, by deploying the appropriate content to the right target audience, at the right time via the most suitable channels.

However, not only the content will be differentiated according to the needs and expertise of each target audience (and the communication stage the project is), but also the intensity of the communication. This intensity is to be derived from - and interrelated to - the different phases of the project (activities, achievements, and results), along with the communication channels used, as illustrated in Table 2. All communication activities will be carried out continuously, spanning throughout the project's duration, with increasing levels of intensity as the project advances and the communication team will have more project specific communication material to diffuse.

The principles of the communication plan, which will be followed throughout the project lifetime, are the following:

- All communication channels are continuously used and updated on a regular basis,
- The project's website is constantly updated with news and updated communication/dissemination content,
- Social media posts are made on a regular weekly basis,
- Higher frequency of posts during events, meetings, conferences etc.,
- Different strategy on posts/content used per communication channel, designed for addressing the appropriate audience,
- During the first six months of the project (M1-M6) an intensive communication of the project applies targeting to wider audience based on versatile content related to the project and IoT related topics for accumulating more visitors/follower,
- As the project advances the content becomes more technical and corresponding technical audience and academia are thus more intensively targeted,
- In the 3rd phase, the content focuses on results and exploitation methods targeting the potential users and customers.

Table 2. Content differentiation based on the project period's target audience objectives

STAGES	OBJECTIVE	TYPE OF CONTENT
M1-M6	Initial communication activities, establishing the digital presence of the project. Creation of communication channels and creation of targeted audience/followers.	General content about the project, its objectives, use cases, consortium and the IoT industry overall. Intense communication for introducing the project, raising interest, and attracting audience
M7-M18	Reaching the widest potential audience and find new key stakeholders. Targeting to the increase of technical, academic and scientific audience/stakeholders.	General content with preliminary technical details. Differentiation of content depending on the channels to be used. More intense communication of dissemination events and primitive trials results.
M19-M36	Focus on communicating the project outcomes and achievements to all targeted audiences.	Communication of the projects' outcomes and trial results. Intense communication by all channels of dissemination activities, and final trials/showcases.

For the communication plan, the website and social media channels are an indivisible part of the overall ASSIST-IoT communication strategy. Here, the T9.1 leader partner wants to ensure that all post/news communicated will be interesting and valuable both for social media users and the rest targeted audience. Such an approach will clearly facilitate the communication plan, but also will provide efficient communication of all research and development actions achieved in the project.

Further below, **each communication channel is presented separately and its role in the ASSIST-IoT communication plan and strategy is addressed:**

- 1) **Website:** ASSIST-IoT project will share its concepts, results, and achievements through its dedicated project website, which was developed and became live in M1. Content of the website will be supported by all project partners, to provide a common view of the project, and will be updated regularly providing a good overview of the major project activities and achievements. Especially the News and the Dissemination webpages are being and will be updated on a weekly basis, with community news, dissemination activities and accumulated project results.
- 2) **Social Media Channels:** Through Social Media, ASSIST-IoT promotes its objectives, announces events, showcases its activities and inform about relevant research outcomes. Posted content plays a crucial role in achieving communication plan objectives. As per the communication strategy, the content communicated over social media will be elaborated in such a way so as to meet the different

platforms' characteristics and target different (selected) audiences. For achieving this differentiated audience targeting, **starting from April 2021 (M6 of the project), the available content communicated through social media channels, will be differentiated. Twitter and LinkedIn will be used for targeting more technical, academic, and scientific audience (relevant to the project objectives and aims), while Facebook and Instagram will communicate content addressing mainly the general public (including administration and policymakers).** These “more general public posts” will have an informative role, giving insights about more general aspects of the project, IoT ecosystem, targeting audiences with less technical background, and IoT expertise.

- **Facebook/Instagram:** General content addressing mainly non-technical audience - Posts on ASSIST-IoT topics of general interest and communication of all dissemination and showcasing activities (Figure 12).

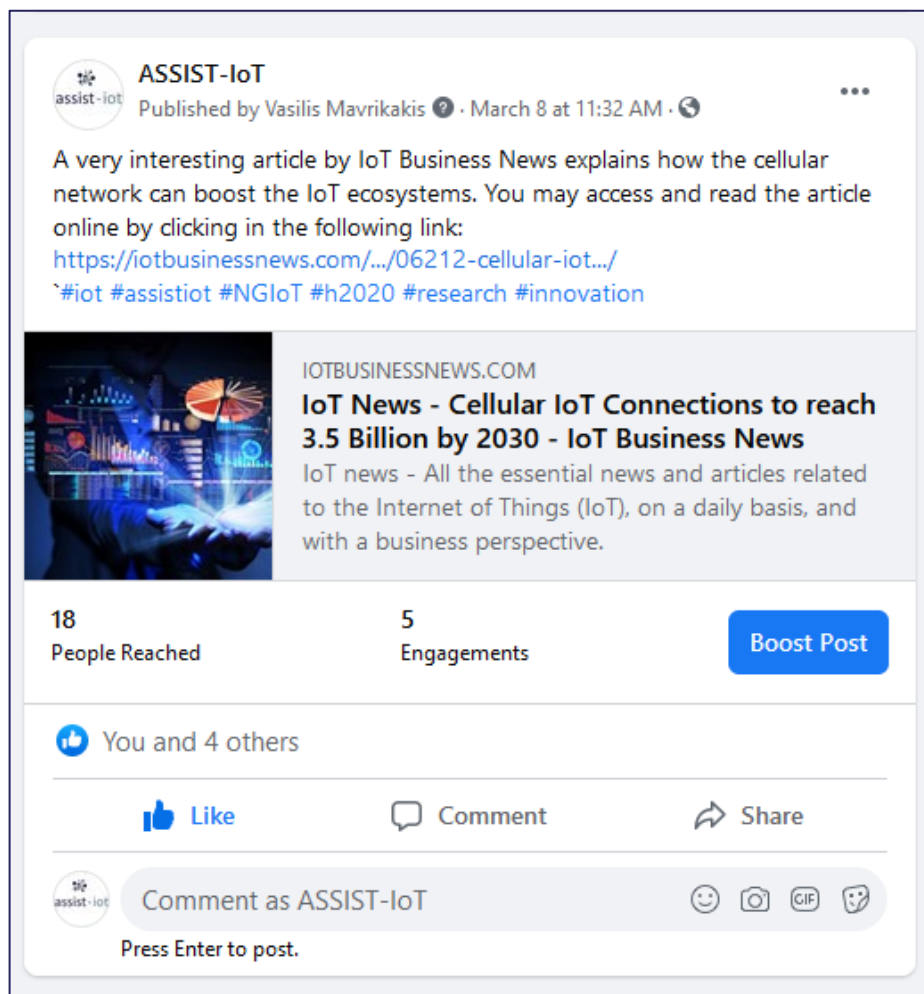


Figure 12. Indicative Facebook post of general topic

- **LinkedIn/Twitter:** Initially general content but from M6 and on more technical and project-focused posts aiming at technical and scientific diffusion of ASSIST-IoT results (Figure 13).

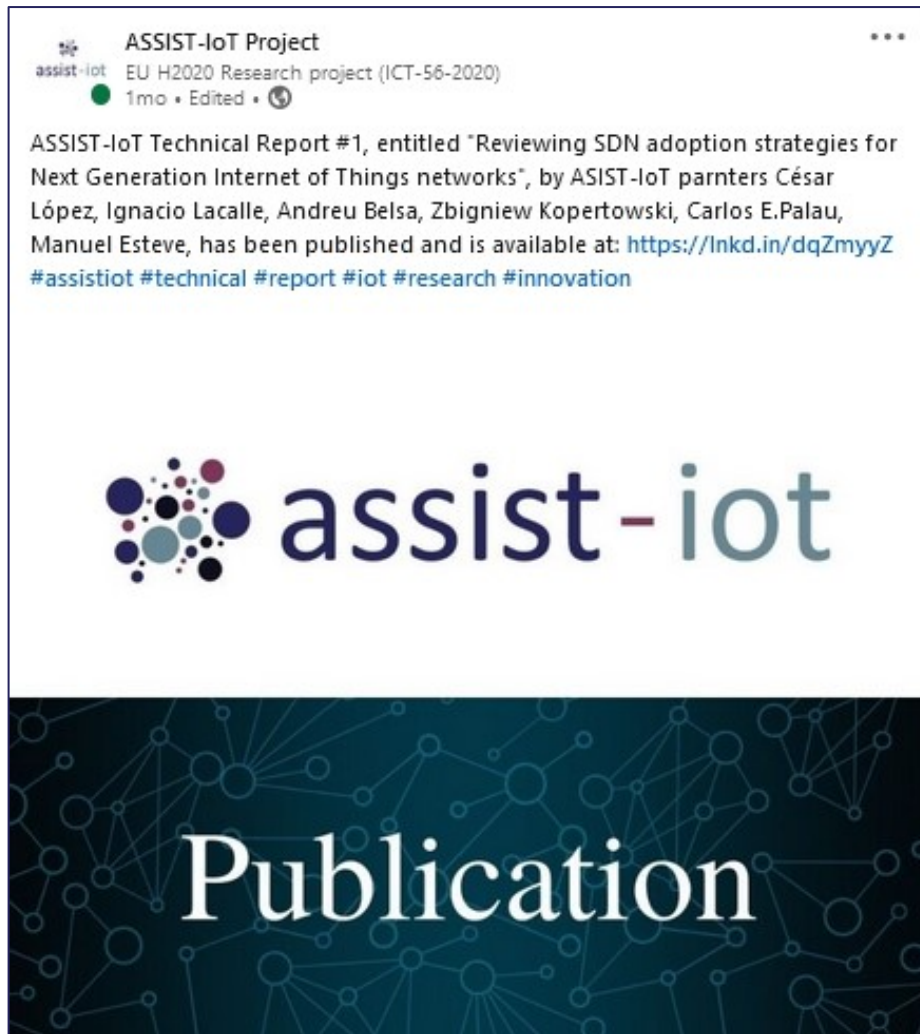


Figure 13. Indicative LinkedIn post of technical topic

- **YouTube:** Addressing all types of audiences (technical and non-technical) with videos focused on presentations, conferences, events, trials tutorials etc.

In addition to the above strategy, along with the posts content differentiation, the use of **the #LearnAboutASSIST-IoT hashtag** will be also introduced. **It will be a special project focused hashtag that will be used for presenting content exclusively related to the ASSIST-IoT project.** For example, a post describing a project related activity of a partner (such as a publication), or an ASSIST-IoT trial executed, will bear this specific hashtag. The purpose of using such a dedicated project hashtag is for addressing easier the dedicated community, gathered around the project (easily recognizable project specific posts), facilitating searching of project related posts and also for attracting more audience interested in project's activities and results.

Besides the hashtags, **the use of mentions (@) for attracting more audience and making ASSIST-IoT more visible** to specific communities and associations will be also applied. Wherever applicable, we will mention organizations related to the European Research community and programs. Such organizations indicatively are the Cordis (<https://cordis.europa.eu/>), the Horizon 2020 (<https://ec.europa.eu/programmes/horizon2020/en>), NGIoT association (<https://www.ngiot.eu/>), 5G-PPP (<https://5g-ppp.eu/>) which are often mentioned in specific posts over ASSIST-IoT social media channels.

The T9.1 leader, in charge of maintaining the website and the social media update, will also use specific hashtags in order to attract more visibility and become part of different communities. Hashtags such as #research #innovation #project, etc. can provide connection to different research, academic and

technological activities. On the other hand, certain hashtags like #IoT, #InternetofThings, #EU or #NGIoT are expected to be very effective for our communication plan since they address certain communities and interests. Moreover, there is a specific category of hashtags that serve specific purposes concerning the funding origin of the project and its call. For instance, hashtags like #ict, #eufunded, #euresearch, and #h2020 express the that the project is part of a specific funding program by the European Commission (Figure 14). Also due to the fact the project is still in its initial stages we use the #new and the #project hashtags, in order to state current status and become a part of the EC research project' community, especially in the field of IoT.



Figure 14. ASSIST-IoT post with indicative hashtags

ASSIST-IoT social media strategy also includes the monitoring and mentioning of associations related to the project's vision. Such related association is, for instance the Next Generation Internet of Things association (NGIoT). ASSIST-IoT has already followed all NGIoT related social media accounts and started to communicate material (Figure 15) such as newsletters and articles from their official website (<https://www.ngiot.eu/>).

Furthermore, as already mentioned, special hashtag “#NGIoT” is used and will be used to promote the community and boost the awareness of this organization, along with the appropriate mention (@NGIoT) whenever applicable (depending on the social media channel used). Utilising the NGIoT association in social media channels will help the project to reach the widest possible audience (technical and non-technical) in the IoT field and reinforce its links and cooperation with other IoT projects of the ICT-56 call.

Actions like the ones mentioned in the previous paragraphs, boost the impact of the project making it more visible and distinctive through the communication channels of various communities. For instance, specific ASSIST-IoT activities have been projected and featured in the NGIoT website (<https://www.ngiot.eu/news/>), and in the NGIoT Newsletter issue #6 (released at the end of March 2021) (<https://mailchi.mp/da8e048b31c4/next-generation-internet-of-things-newsletter-5918004>).

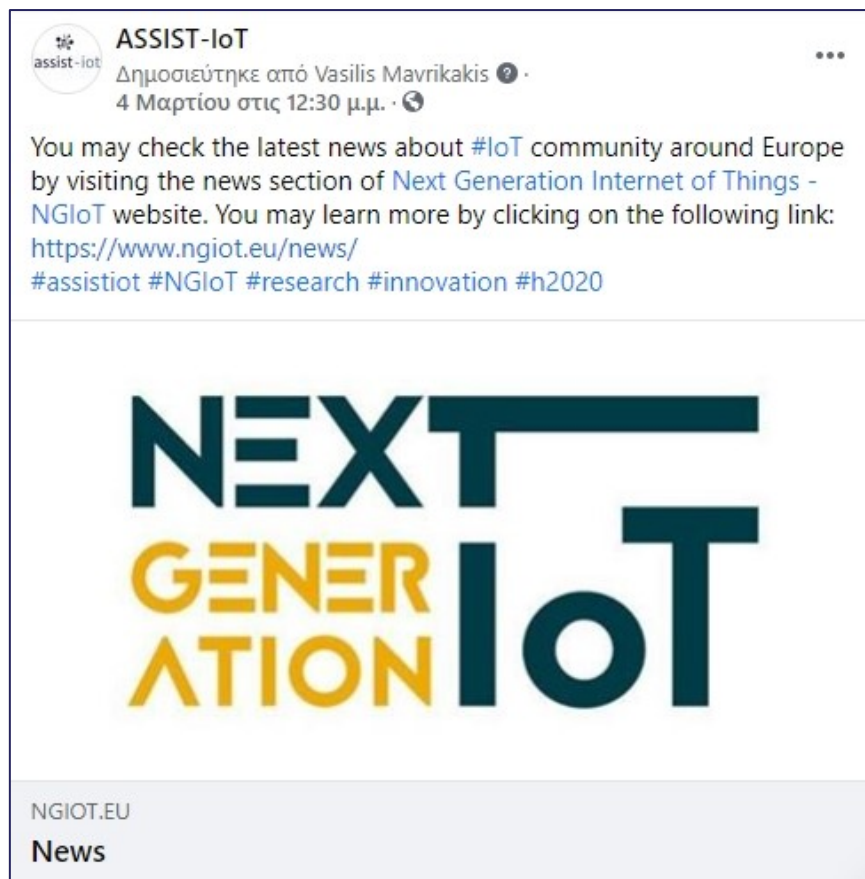


Figure 15. ASSIST-IoT post mentioning NGIoT community

A similar approach will be also followed for managing the ASSIST-IoT YouTube Channel, but from a different content perspective. In the YouTube channel, videos will be communicated, but only when there is availability from the equivalent activities (conferences, presentations, workshops, etc.) Since YouTube is a communication channel that gives the option to host videos and image-based communicative material, it is of high importance for it to be well maintained, and appropriately populated with related to the project's activities content (e.g., activities from events, meetings, use cases, overviews, pilots and demonstrations, etc.) and hashtags (for easier searchability).

In Figure 16, the step-by-step goals approach of ASSIST-IoT social media communication strategy is presented:

- **Audience actions like Follows and Likes at ASSIST-IoT social media activities**, will lead in the creation of a community. Also, these actions are the foundation of a sound communication strategy as it will make the project noticeable to the broadest possible audience.
- **The creation of a community around the project will lead to more awareness.** Awareness will make our project more distinctive. This situation will help all partners to place and connect the project better between their enterprising ventures. Also, it will boost the way partners demonstrate the project's outcomes.
- **Awareness from its side will lead to higher value.** The more valuable is something the more influencing is. In other words, higher value is the most important factor for a recognizable project and for a positive reaction by potential audience.
- **Briefly, the process is: higher engagement → increased awareness → additional value**

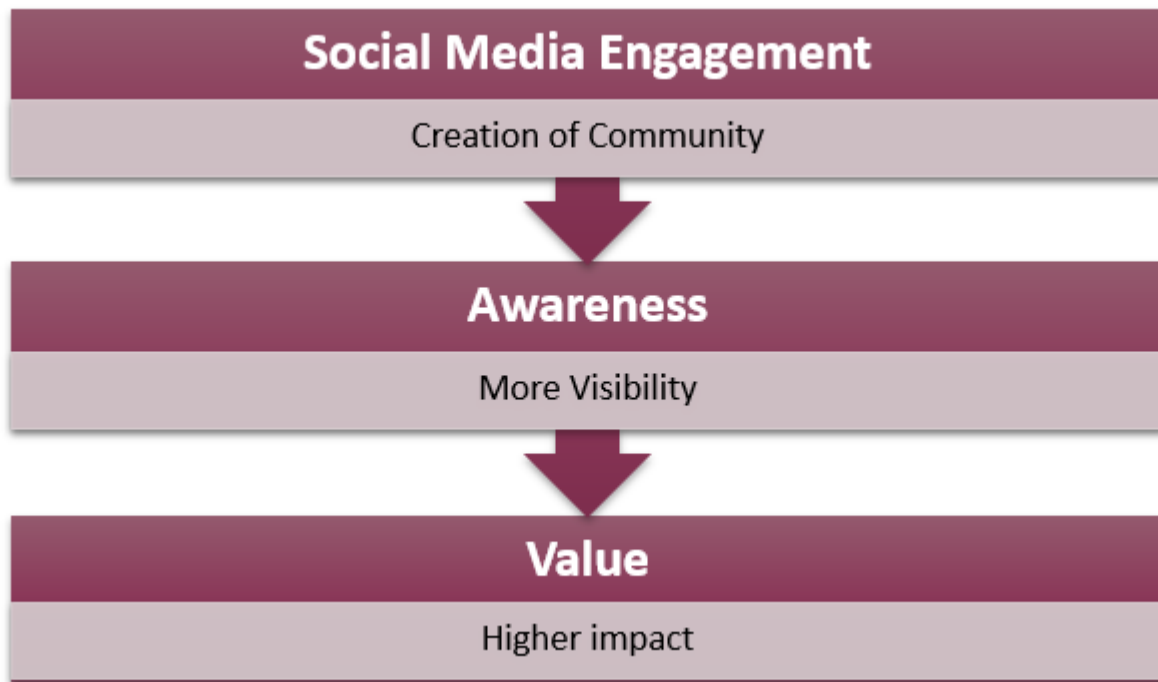


Figure 16. ASSIST-IoT social media channels' communication goals

As it is shown in Figure 16, the creation of a community is of utmost importance for gaining higher impact for the project. A successful project is a seminal project. Activities such as likes, comments and reshares will boost the visibility of the project creating a sound around it. A community plays a vital role to the successful of a digital marketing campaign. As a research project, ASSIST-IoT may not have the same goals and features as marketing campaign, but at this level creating a community would be helpful. Briefly, a community around the ASSIST-IoT project will help us reach broader audience, to build a solid relationship with stakeholders, to attract more web traffic, and last but not least will contribute to a higher engagement rate. Engagement rate is the number of the audience that is involved in ASSIST-IoT social media channels. It is a particularly important number because it shows how our audience is participating and interacts with the project communication channels. Higher engagement will lead to higher awareness. Awareness is the fact that shows how visible and recognizable will the project be. All these will lead to extra value. The more valuable the project will be the more impact will have.

In general, both the website and social media channels are crucial resources for empowering the project's communication impact and reach the respective audience targets, via the corresponding digital channels. **The fundamental element of the website and social media communication strategy is the regular update of these channels, on a weekly basis, targeting a weekly average of at least one news posted at the News page of the website and of two posts communicated through the remaining social media channels.** This approach will be adapted accordingly throughout the project lifetime. For instance, we would promptly, differentiate it according to any related special circumstances such as events, meetings, trials etc., where more intense communication is required. Moreover, in "slow interest times", like late July and August, we may reduce the intensity of communication, to avoid messages being lost in the flood of other messages upon return to work of the target audience. Any accumulated messages and activities will resume and communicated right after the potential short slow down period.

INFOLYSiS partner has already followed the above-described approach during the first months of the project both for the website and the social media, ensuring the prompt update of the website and social media channels. **ASSIST-IoT also considers different groups of persons to be targeted through different social media channels.** Through ASSIST-IoT social media channels, the consortium wants (a) to address relevant experts in the R&D areas and sectors that ASSIST-IoT deals with, such as IoT experts and projects from the European R&D community (H2020 projects, IoT and NGIoT community,

other ecosystems), (b) to involve additional ASSIST-IoT professional and industry users ranging from stakeholders, researchers, academia, administration and NGO's and end-users – to the general public – as well.

To sum up, the communication actions communicated over the website and social media accounts will indicatively cover the following subjects, events and areas:

- News and updates on the ASSIST-IoT activities (coverage of activities coordinated by ASSIST-IoT or activities that partners participate representing the project),
- Publications and presentations originating from workshops, conferences, journals, etc.,
- White papers and Technical Reports,
- Project showcases/demonstrations and pilots,
- Publications in articles, online sources, newspapers,
- Upcoming events calling stakeholders for papers (CfP) and events participation,
- Videos and photos,
- ASSIST-IoT partners related activities and achievements,
- ASSIST-IoT public deliverables,
- ASSIST-IoT Newsletter issues,
- Articles on popular IoT and NGIoT magazines addressing mainly the general public,
- Exclusive content explaining the nature of ASSIST-IoT project (technical and non-technical), addressing various stakeholders and sectors (scientific, academic ad industrial),
- Consortium plenary meetings (announcement, dates, texts, pictures, etc.).

The website and social media communication approach will not only be in line with the whole communication plan and policy of the project, as described in this document, but will also supplement parallel communication activities performed through other channels of communication and dissemination. It is also worth noting that the relevant content is already intensively shared in a coherent way among all social media accounts of the project (especially, within the first six months of the project). This methodology will be used for informational purposes to attract a larger audience and synchronously increase awareness of the project (branding), its nature, achievements and general goals to the widest potential public audience.

- 3) **Newsletters** will be issued quarterly to keep informed the relevant stakeholders about the various activities and the outcomes of the project. The consortium will be engaged to the frequent utilisation of the newsletter for the efficient communication of project information/activities to the general public. Newsletter issues will be used for communicating, in a summarised way, the project's activities and achievements of the reported quarterly period. Each newly issued version will be uploaded on the website, and will be communicated through projects' social media channels. Stakeholders will have access, and they will be able to easily download it and read it. The ASSIST-IoT Newsletter will be comprehensive, offering detailed updates on meetings, workshops, programs and publications over a specific duration of the life of the project. In the newsletter, the reader can also find links to the associated website with more information of the activities mentioned. The newsletter issues will be available in public through a dedicated newsletter webpage (<https://assist-iot.eu/newsletters/>) of the ASSIST-IoT official website.
- 4) **Leaflets** are created to give a brief info of the project objectives of all external and internal stakeholders and to engage the readers to have a closer look and provide them with the most essential project's innovations. Besides the previous communication actions, ASSIST-IoT project will intensively utilise the use of leaflets during events. Leaflets will be used for both physical and digital events and actions. Their main use is targeted for conferences, presentations, workshops, webinars and booths on events. However, this does not restrict their further use whenever suitable and applicable either in printed or digital format. In addition, ASSIST IoT initial leaflet versions are available in ASSIST-IoT website for online circulation in digital format to potential stakeholders. Here, it must be stressed that, for all practical purposes, leaflets and posters (see, the next bullet) are particularly effective mainly during face-to-face meetings. Unfortunately, due to the COVID-19 global pandemic, such meetings will not be back any time soon. It can be stipulated that possibility of using leaflets and posters physically may

materialize again in 2022. However, this cannot be guaranteed. Therefore, while recognising their usefulness, their printed/physical use is being postponed till there will be certainty that face-to-face events and activities will resume.

- 5) **Posters** are created to represent the project on conferences and similar events. Their main aim is to summarize the project concept, listing its objectives, as well as visualising the overall architecture on which the technological advances will be integrated as the project progresses. ASSIST IoT initial poster versions are available in ASSIST-IoT website in digital format.
- 6) **Press releases** by utilizing the press release channel, we create a network of stakeholders, which is active in the market in various IoT related industrial sectors. Press releases will share summarized information concerning specific activities and results of the project that need to be formally communicated/announced in specific targeted audiences in parallel to the deliverables. Press releases will have either the form of News-Announcements released on partners' websites and presented also in Press Releases dedicated ASSIST-IoT website page, or they will be formally communicated to target ASSIST-IoT audience/stakeholders and mass media (via email) using the ASSIST-IoT press release template.

In addition to the above-mentioned activities for all channels, to facilitate visual communication impact and easier recognition, specific photos/images have been designed, following a specific ASSIST-IoT visual template, to be used for accompanying certain types of news/posts. These images have two distinguished parts. On the top part there is a white background with the ASSIST-IoT logo. On the lower part there is a green based background with a grid graphic (like the main theme of ASSIST-IoT website). In this lower section of the image there is a wording explaining the purpose of this image (e.g., Newsletter, Workshop). These images have been already used in the News webpage of the website and in social media posts. So far, these images have contributed to the creation of a common branding image of the ASSIST-IoT communicated news. The images presented in Figure 17 should be treated as indicative examples.



Figure 17. Indicative images per ASSIST-IoT activity

Table 3 below summarises ASSIST-IoT mentioned communication activities, their timeline and the set of KPIs, along with the target audience that they intended to address.

Table 3. ASSIST-IoT Communication Activities

What	Description	Timeline/KPIs	Target Audience
Project logo and templates	Use of project logo and documents/presentation templates for creating branding and increasing project's visibility and audience engagement	Continuous activity from M1 to M36	All
Website	WordPress designed website, allowing easy retrieval of main action data with few clicks	Website running from M1 to M36 plus 3 years after the project's end Attracting at least 1000 visitors per year and at least 25000 views, 8000 sessions in total	All
Social Media	Social media channels (e.g. Facebook, LinkedIn, Twitter, etc.) used to communicate project news, activities and results	Continuous activity from M1 to M36. Presence with dedicated channels in LinkedIn, Twitter, Facebook, Instagram and YouTube. Accumulating at least a total of 1000 followers and making at least 600 total posts and attracting 50000 engagement/impressions through the project lifetime	All
Quarterly newsletters	Use of newsletter to improve project's news communications and increase engagement and visibility	Quarterly issues 12 issues to be released during project lifetime	All
Posters/leaflets/Press releases	Use of posters, leaflets and press releases to improve communication of ASSIST-IoT results and raise awareness during dissemination and communication events	Continuous activity from M1 to M36. At least 3 poster and 3 leaflet versions to be released during project lifetime	Scientific/academic/industry community, IoT communities and associations, Stakeholders
Dissemination package	Leaflets, press releases newsletters and videos explaining ASSIST-IoT's performed activities.	At least 1 per year summarising the project's annual activities (available either in printed or digital format through the website).	All (specifically media and the public at large)
On-site visits to field pilots	Selected user and stakeholder groups, e.g. construction companies, automotive companies and ports/terminals	At least 2 during project lifetime	Industry community

Irreplaceable part of the communication plan, and strategy, is also the control and monitoring mechanisms. The role of these mechanisms is dual. On the one hand they keep track of the activities performed by the ASSIST-IoT partners in order to ensure the prompt and up-to-date communication of the events, while on the other hand they assess and evaluate the process and effectiveness of the social media channels and website. More details about the overall plan and functionality of such mechanisms are presented in the following section (Section 2.3).

2.3. Communication Control/Monitoring and Performance mechanisms

ASSIST-IoT consortium, and especially WP9 and T9.1 leader, in order to closely monitor all planned communication and dissemination activities, have established dedicated some control and monitoring mechanisms. These mechanisms will continuously monitor and quantify the impact of the project's website and social media channels impact. Such monitoring mechanisms are of vital importance because they provide important feedback, keep track of impact effectiveness to the consortium and depict the project's progress. These tools also guarantee smooth collaboration between the members of the consortium. An initial overview of these mechanisms and tools has been presented in D9.1. In the following section an updated is provided after their operation/utilisation during the first months of the project.

2.3.1. Online Repository and Coordination Files

The ASSIST-IoT partners use the OnlyOffice platform, as a collaborative tool for sharing material and content. The OnlyOffice platform plays an important role in the successful collaboration and alignment of the Consortium's members. This online repository is segregated in dedicated folders created per Work Package and Task. Also, there are folders created for the deliverables and for project coordination facilities (e.g. project management handbook and material for public use). Furthermore, there is an option for online editing of files, a feature which is particularly useful in documenting and editing communication activities or files in general. All these OnlyOffice features are fully exploited by the INF team for establishing specific processes for monitoring performed communication and dissemination activities.

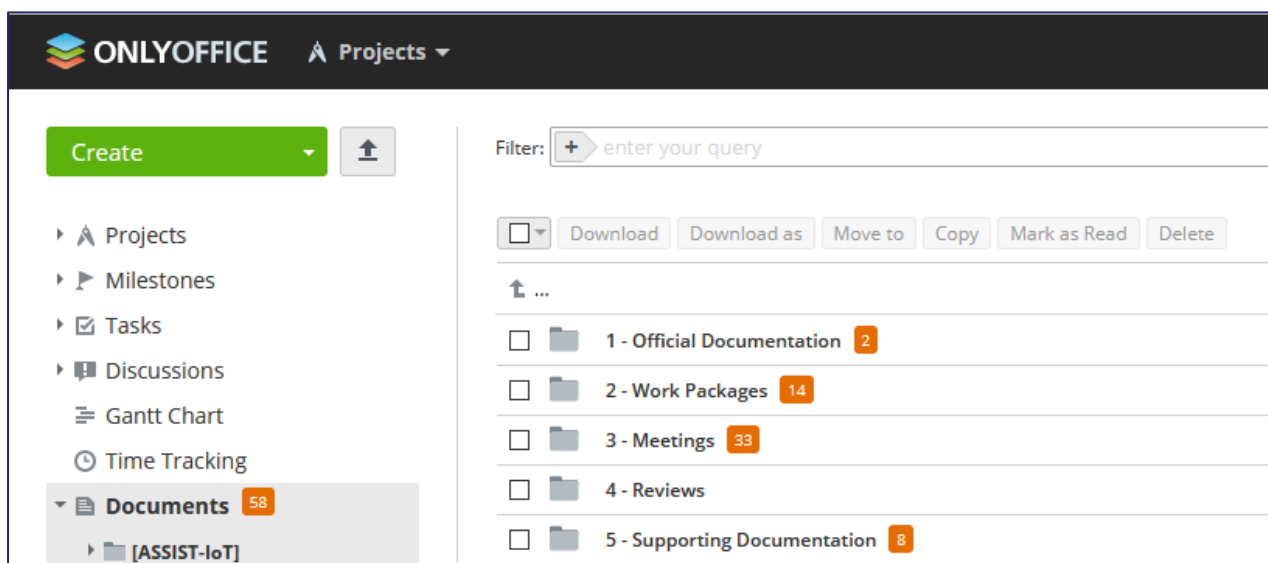


Figure 18. ASSIST-IoT OnlyOffice online tool

In particular, a process that relies on the use of two separate sheet files in the OnlyOffice repository was established for the efficient recording of the interaction and dissemination activities, conducted by each partner. These two files serve two different purposes:

- The first file is named “*WP9 Activities reporting*” and is completed after a partner performs a communication/dissemination activity related to the project.

- The second one is named “*Posts for Social Media*” and gives the partners the initiative to suggest potential content for upcoming posts at the project’s communication channels and/or news for the News web page.

There is a specific procedure concerning these spreadsheets files. Extensively, every partner should update these files with the information that he wants to be communicated by ASSIST-IoT channels. Every spreadsheet contains specific details that must be submitted by the interested partner such as: Activity No, Authors/Partners, Activity Title, Target (Event, Location, Date) and Description (Figure 19).

# Item	Authors/Partners	Activity Title	Target (Event, Location, Date)	Description
1	Marcin Paprzycki/IBSPAH	International Conference - Presentation	(ICRAIE 2020) (1-3 December 2020)	ASSIST-IOT partner Marcin Paprzycki from IBSPAH participated and presented in the 5th IEEE International Conference on Recent Advances and Innovations in Engineering on the 1st of December 2020. The presentation title was "Towards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems"
2	NEWAYS	ASSIST-IoT Online Article (7 Dec 2020) on BitsandChips	Article "Paving new ways for next-gen IoT" - BitsandChips	ASSIST-IoT website article entitled "Paving new ways for next-gen IoT" has been published online on BitsandChips. It gives information about the ASSIST-IoT Pilots. You may access the article here: https://bits-chips.nl/artikel/paving-new-ways-for-next-gen-iot/
3	All partners	Webinar-Workshop "Towards Market Review" on Monday 18 January 2021	Webinar-Workshop "Towards Market Review" on Monday 18 January 2021 10:00-11:00 CET	ASSIST-IoT project invites you to the online Webinar-Workshop "Towards Market Review" on Monday 18 January 2021 10:00-11:00 CET. Agenda: 10:00-10:30 Project Introduction, 10:30-11:00 Market Report Strategy and Questionnaire Survey results. You may join us online at: https://cutt.ly/sh1Vyre on the day of the event. For more information you may access our website and read more details about the ASSIST-IoT workshop: https://lnkd.in/dBcDTiv #assistiot #efunded #h2020 #new #project #workshop
4	CIOP-PIB	ASSIST-IoT Online Article (30 Dec 2020) on perosh.eu	CIOP-PIB participates in new Horizon2020 research project ASSIST-IOT	https://perosh.eu/news/ciop-pib-participates-in-project-assist-iot/
5	UPV	ASSIST-IoT Online Article (3 Jan 2021) on La Razon (in Spanish)	La industria encara sus retos tecnológicos con la inteligencia artificial y el Internet de las Cosas - La Politécnica lidera el proyecto europeo Assist-IoT	https://www.larazon.es/comunidad-valenciana/20210103/ybqf2gwzjhoFnP5kuvd4um2ue.html
6	UPV	ASSIST-IoT Online Article (3 Jan 2021) on economia3.com (in Spanish)	"La industria encara sus retos tecnológicos con IA e Internet de las cosas - El proyecto europeo ASSIST-IoT prevé aumentar la seguridad laboral en la construcción y optimizar el diagnóstico de fallos en vehículos" online article at economia3.com (in Spanish)	https://economia3.com/2021/01/03/295472-la-industria-encara-sus-retos-tecnologicos-con-ia-e-internet-de-las-cosas/?utm_medium=social&utm_source=twitter&utm_campaign=metricool&click=https://t.co/3lImUCWuVUJI
	Katarzyna Wasielewska-Michniewska/IBSPAH	International Conference - Keynote Presentation	International Conference on Research in Management and Technovation (ICRMAT-2020) December 05-06, 2020	ASSIST-IOT partner Katarzyna Wasielewska-Michniewska from IBSPAH participated and presented in the International Conference on Research in Management and Technovation (ICRMAT-2020) on the 6th of December 2020. The

Figure 19. ASSIST-IoT OnlyOffice WP9 activities reporting Excel file

Similarly, in the “*Posts for Social Media*” spreadsheet file, the requested details are: Item #, Partners, Activity Type, Text For Posting and preferred Social Media Channels (Figure 20).

	A	B	C	D	E
1	Item #	Partners	Activity Type	Text For Posting	Social Media Channel
2	1	UPV	Piece of news	ASSIST-IoT gets visibility through UPV's website" http://www.upv.es/noticias-upv/noticia-12602-assist-iot-es.html	Tw, Fb, Ln, Inst
3	2	INF	Project announcement	https://cordis.europa.eu/project/id/957258	Twitter, LinkedIn, Facebook, Instagram
4	3	INF	Project announcement	https://www.iti.gr/iti/projects/ASSIST-IoT.html	Twitter, LinkedIn, Facebook, Instagram
5	4	UPV	Online Article	A very interesting website article (in Spanish) by Economía3 describes the basic pilots and the nature of ASSIST-IoT project. It also presents the benefits of an IoT ecosystem in the recent world. You may learn more by clicking on the following link: https://economia3.com/2021/01/03/295472-la-industria-encara-sus-retos-tecnologicos-con-ia-e-internet-de-las-cosas/?utm_medium=social&utm_source=twitter&utm_campaign=metricool&fbclid=IwAR0AEqsjwiGnVMkTAsKYu2zXdWH3De1ZAEjwy10a_feOTMwvc9Y5NQCRdk#click=https://t.co/5NmUCWuVUH	Twitter, LinkedIn, Facebook, Instagram
6	5	SRIPAS	Research Gate Profile	ASSIST-IoT has a project account in ResearchGate platform. Feel free to follow us and learn all about our latest research activities. You may follow us and learn more here: https://www.researchgate.net/project/ASSIST-IoT	Twitter, LinkedIn, Facebook, Instagram
7	6	INF	NGIoT Collaboration	You may learn everything about the IoT and NGIoT community across Europe by following the Next Generation Internet of Things - NGIoT association. Learn more about it by clicking the following link: https://www.ngiot.eu/	Twitter, LinkedIn, Facebook, Instagram

Figure 20. ASSIST-IoT OnlyOffice WP9 posts for social media Excel file

Information provided in those spreadsheet files is extremely helpful. First, it provides an overview about the event and the activity performed by a partner. Secondly it helps to communicate it better and promptly over the most appropriate communication channel.

Furthermore, every partner representative attending to one event should upload any related material such as presentation files, camera ready papers, pdfs, photos etc. from the event he/she participated, in the WP9 dedicated folders in Only Office. Every partner must create a new subfolder for each new event he/she performs where she/he will upload any available material that may facilitate and improve the communication of the event (Figure 21).

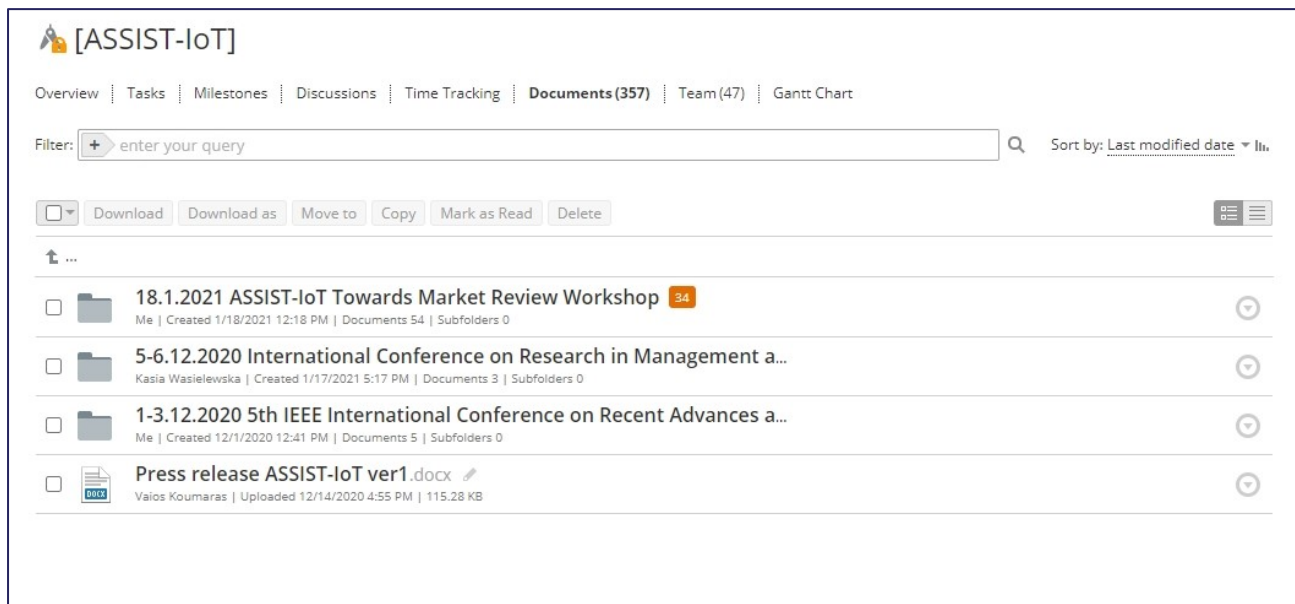


Figure 21. ASSIST-IoT OnlyOffice WP9 events' material folders

This process is already being followed by all partners and it is of utmost importance that all involved partners keep these locations updated and inform INFOLYSIS communication team for any new activity, ensuring the prompt communication of each activity.

2.3.2. Google Analytics, WordPress Jetpack, and Statistical Dashboards

As already reported in D9.1, ASSIST-IoT utilises several monitoring and statistical tools for evaluating the website and social media performance.

For the website, Google Analytics tool can provide in-depth and sophisticated data analytics, displaying key metrics and aspects linked to a website's performance and impact. Within the framework of ASSIST-IoT and through Google Analytics, the communication team will analyse the performance and impact of the ASSIST-IoT website on a monthly basis while statistics will be released internally (among the partners) on a quarterly basis. Any deviations or under performance, will be immediately spotted and corrective actions will be applied. Indicative Google analytics dashboard used for evaluating the February 2021 performance of the website is shown in Figure 22.

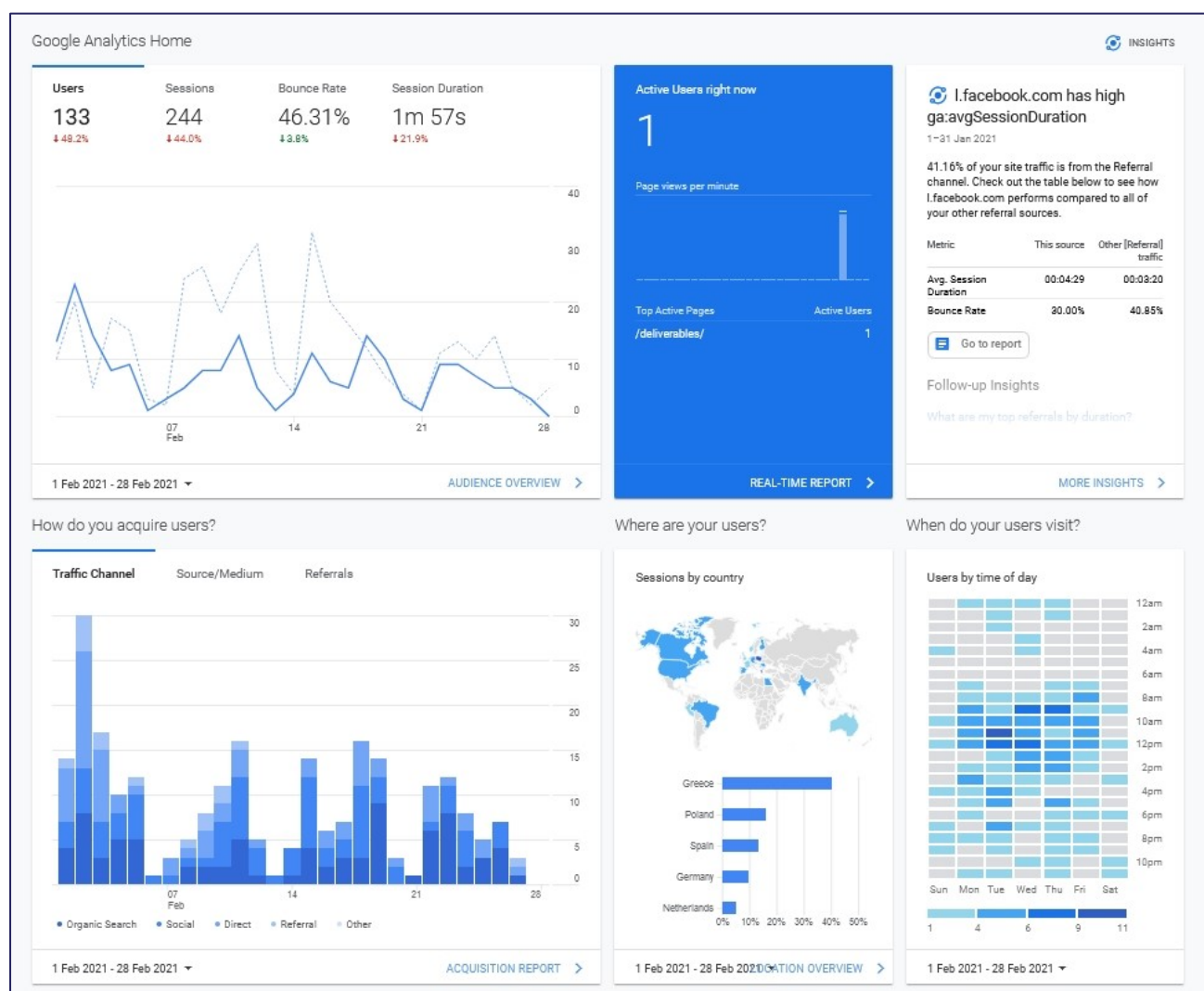


Figure 22. ASSIST-IoT Google Analytics Tool

Besides Google Analytics, INFOLYSiS partner has also utilized the WordPress Jetpack statistics to complement the analysis provided by the Google Analytics. WordPress Jetpack is a plugin, which gives the users of WordPress detailed statistical tools and features. It clearly indicates which parts/pages of the website are more popular and which kind of posts are more interesting and attention-gathering. Indicative WordPress Jetpack statistics dashboard used for evaluating the February 2021 performance of the website is shown in Figure 23.

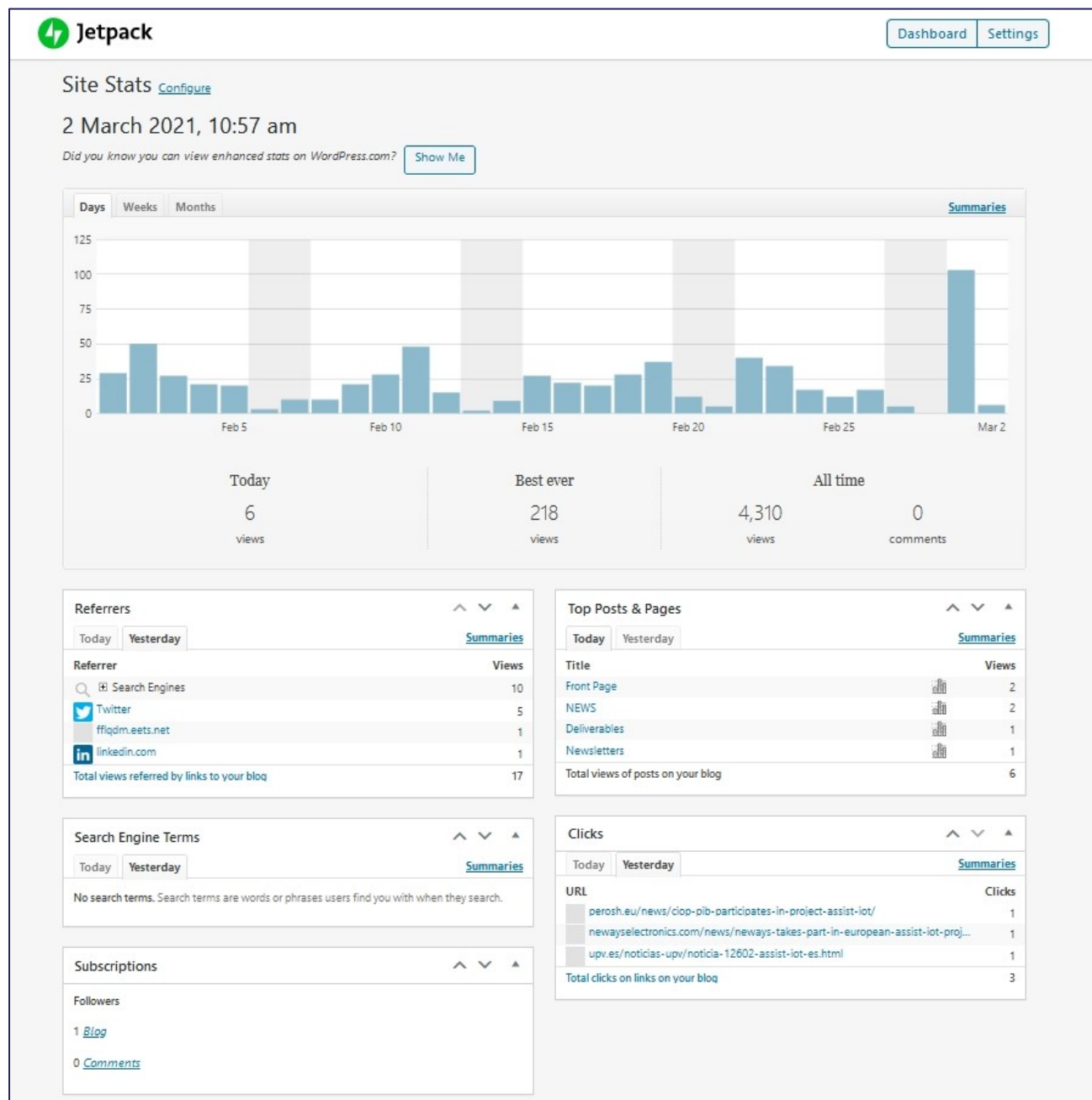


Figure 23. ASSIST-IoT WordPress Jetpack Online tool

In addition, the INFOLYSiS team collects and processes data, obtained from the ASSIST-IoT Website and Social Media channels, as part of ASSIST-IoT communication plan and strategy, through the Google Data Studio platform. The scope of this action is to evaluate, visualise and present these data in a way that can be easily accessed and understood by every Consortium member, while channels' performance can be also assessed under specific metrics and criteria. The visualised data depicts different aspects of website's and social media

functionality and shows the progress that has been made in use of these, different, digital channels in a specific period of time.

Through the Google Data studio, INFOLYSIS team processes and analyses monthly data of the social media channels, and releases internally (accessible via OnlyOffice, through a dedicated Google Data Studio URLs within it) **Statistical Dashboards per social media channel every 3 months**. Specifically, the ASSIST-IoT Social Media Google Data Studio Statistical dashboards are and will be, regularly issued at the end of each 3-month period, but they can be also issued upon request for a specified timeframe, covering a specific period of the project's run (6 months, annually, etc.). Every social media account will have its own statistical dashboard with visualisation of various Key Performance Indicators (KPIs), aiming always at achieving the most accurate evaluation results. **More details on the first period Statistical Dashboards are available in Section 2.4.**

The comparison of different period dashboards will bring in the surface positive (or negative) changes, trends or deviations, which will be confronted with the expected evolution of the communication strategy (more followers, more content, more impact, better penetration and visibility etc.) and the progress of the project. More details on the initially released dashboards are provided in the next section. Obviously, negative aspects will be spotted almost immediately, and will be remediated as needed, though precisely targeted actions.

2.4. Initial Communication Activities and Statistical Dashboards (November 2020 – February 2021)

The following sections report the communication activities performed per communication channel during the first the first months of the project. Indicatively, the 4-month period initial activities (November 2020-February 2021) are reported. For the website and social media channels also the corresponding 4-month Google Data Studio Statistical dashboards are provided. (Please note that since the editing of this deliverable was finalised in March 2021 and reviewed in early April it was not feasible to include also the March 2021 activities reporting since their statistics would be processed and produced by the second half of April).

2.4.1. Website Activity (M1-M4)

During this first period of the project (M1-M4), the website was extremely active. The different dissemination pages and the news section were regularly updated with ASSIST-IoT activities and news. Overall, in the first 4 months of the project, the website attracted more than 500 unique visitors and had more than 3300 views. Furthermore, more than 20 News have been posted on the News webpage and overall, more than 20 ASSIST-IoT activities have been communicated through the website (specifically through the dissemination webpages).

The following figures showcase the communicated activities per webpages.

Figure 24 reports the first Technical reports that was made available for downloading on the ASSIST-IoT Publications webpage.

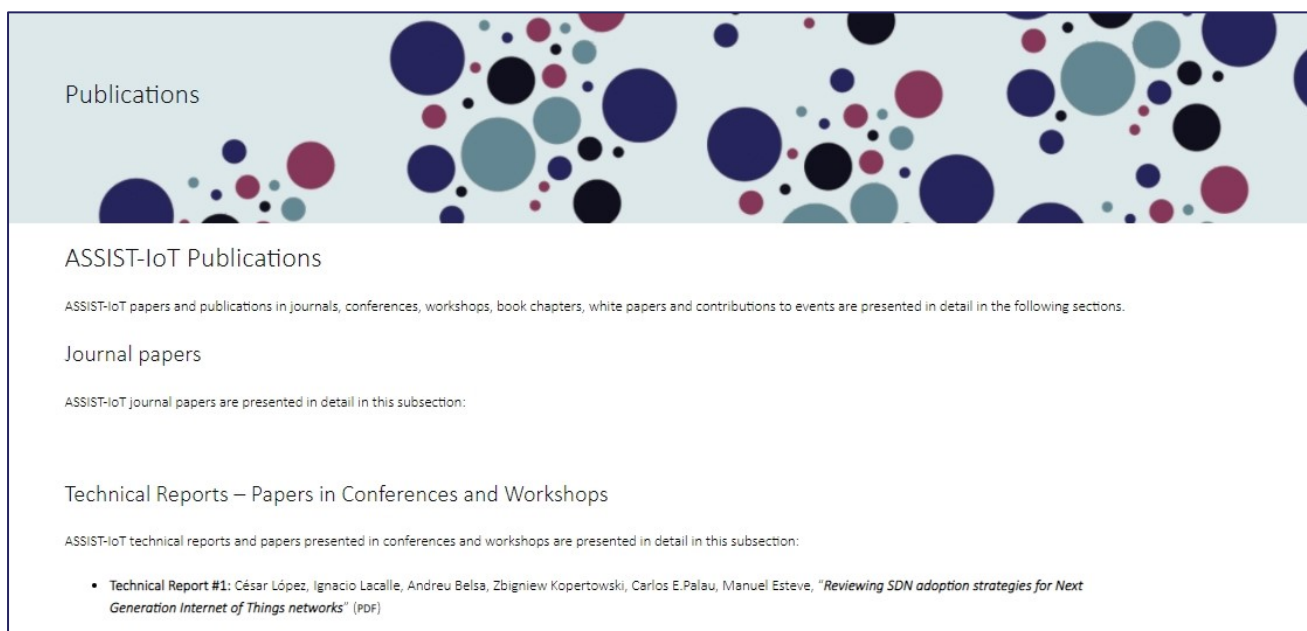
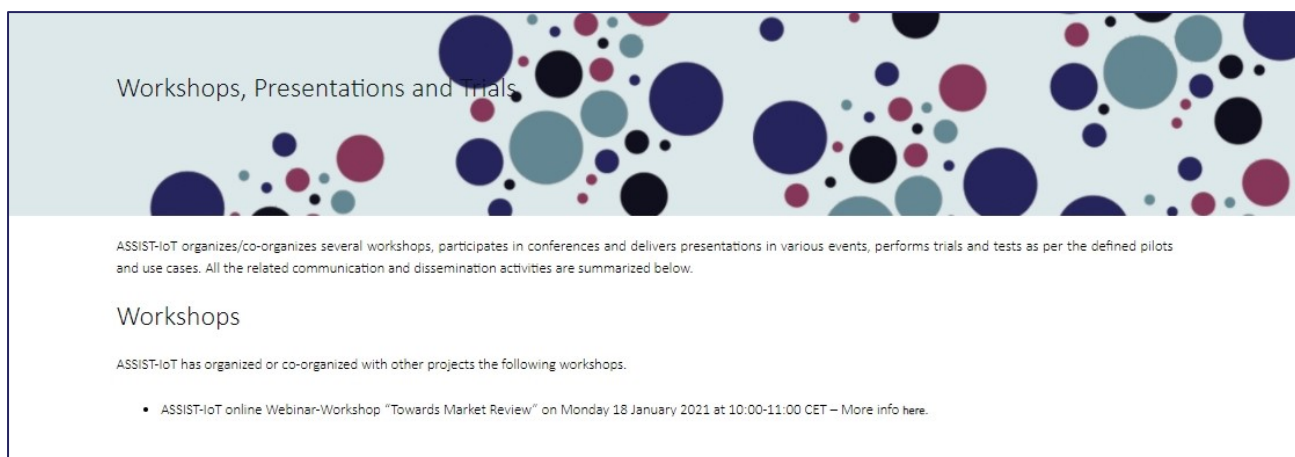


Figure 24. ASSIST-IoT Publications Webpage

Figure 25 reports the workshop that was organised by ASSIST Consortium and its details are shown on the ASSIST-IoT Workshops and Presentations webpage (a link is also provided for the recorded workshop video hosted at the ASSIST-IoT YouTube channel).



Workshops, Presentations and Trials

ASSIST-IoT organizes/co-organizes several workshops, participates in conferences and delivers presentations in various events, performs trials and tests as per the defined pilots and use cases. All the related communication and dissemination activities are summarized below.

Workshops

ASSIST-IoT has organized or co-organized with other projects the following workshops.

- ASSIST-IoT online Webinar-Workshop "Towards Market Review" on Monday 18 January 2021 at 10:00-11:00 CET – More info here.

Figure 25. ASSIST-IoT Workshops, Presentations and Trials Webpage

Figure 26 reports the ASSIST partners' project presentation in various events. Details per presentation, and event, are provided on the ASSIST-IoT Workshops and Presentations webpage. Up to end of February 2021, seven presentations have been communicated.

Presentations

ASSIST-IoT partners have participated in various events in order to promote ASSIST-IoT activities and achievements through presentations. The table below summarizes all presentations made by ASSIST-IoT partners in conferences, workshops, special sessions and info/business days.

EVENT	EVENT DETAILS	PRESENTATION TITLE
1 5th ICRAIE-2020	ASSIST-IoT partner Marcin Paprzycki from SRIPAS participated and presented in the 5th IEEE International Conference on Recent Advances and Innovations in Engineering on the 1st of December 2020	Towards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems
2 ICRMAT-2020	ASSIST-IoT partner Katarzyna Wasielewska-Michniewska from SRIPAS represented the project by giving a presentation in the International Conference on Research in Management and Technovation on the 6th of December 2020	Second rise of semantics in the era of next generation system architectures
3 BDA 2020	ASSIST-IoT partner Marcin Paprzycki from SRIPAS participated and presented in The Eighth International Conference on Big Data Analytics (BDA 2020), Sonipat, India, December 2020	Towards Edge-Fog-Cloud Continuum in the Next-Gen of IoT Ecosystems
4 2nd MARC2020	Marcin Paprzycki from SRIPAS, ASSIST-IoT partner, participated and presented in the 2nd International Conference On Machine Learning, Advances in Computing, Renewable Energy and Communication (MARC2020), Ghaziabad, India, December 2020	Onwards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems
5 5th ICCSCI	ASSIST-IoT partner Marcin Paprzycki from SRIPAS participated and presented in the 5th International Conference on Computer Science and Computational Intelligence (ICCSCI), virtual, Nov 2020	Towards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems
6 3rd International Conference on Smart Systems	Marcin Paprzycki from SRIPAS represented ASSIST-IoT project in the 3rd International Conference on Smart Systems: Innovations in Computing, that took place in Jaipur, India on January 2021	Onwards Edge-Fog-Cloud Continuum in the Next-Gen IoT Ecosystems
7 National Seminar, The West Pomerania School of Business	ASSIST-IoT partner Marcin Paprzycki from SRIPAS took part and presented in the National Seminar organized by West Pomerania branch of Polish Information Processing Society at the West Pomerania School of Business, Szczecin, Poland, January 2021	Towards Edge-Fog-Cloud Continuum in the Ecosystems of the Next Generation of IoT

Figure 26. ASSIST-IoT Presentations

During the first 4 months of the projects, several online articles have been published referring to the project, its use cases and partners. So far 4 articles have been communicated over the Articles webpage (Figure 27).



Articles

ASSIST-IoT published articles

ASSIST-IoT articles are published in several media such as journals, newspapers, websites, newsletters etc. All published articles are presented in detail on the following sections

1. "Paving new ways for next-gen IoT" online article by Bits&Chips: <https://bits-chips.nl/artikel/paving-new-ways-for-next-gen-iot/>
2. ASSIST-IoT online article at Partnership for European Research in Occupational Safety and Health (PEROSH) website: <https://perosh.eu/news/ciop-pib-participates-in-project-assist-iot/>
3. "La industria encara sus retos tecnológicos con la inteligencia artificial y el Internet de las Cosas – La Politécnica lidera el proyecto europeo Assist-IoT" online article at La Razon (in Spanish): <https://www.larazon.es/comunidad-valenciana/20210103/vbqf2gwxzjhofnp5kuwd4um2ue.html>
4. "La industria encara sus retos tecnológicos con IA e Internet de las cosas – El proyecto europeo ASSIST-IoT prevé aumentar la seguridad laboral en la construcción y optimizar el diagnóstico de fallos en vehículos" online article at economia3.com (in Spanish) [here](#)

Figure 27. ASSIST-IoT Articles Webpage

Similarly, the initial press releases announcing the beginning of the project made by the EC, and various ASSIST-IoT partners are provided through the Press releases webpage (along with the appropriate access links per press release).



Press Releases

ASSIST-IoT press releases have either the form of News-Announcements made online at websites or they are formally communicated to target audience (via email) using the ASSIST-IoT press release template. ASSIST-IoT announcements and press releases are listed below.

- ASSIST-IoT at CORDIS EU Research Results website: <https://cordis.europa.eu/project/id/957258>
- ASSIST-IoT announced at the NEWAYS website: <https://www.newayselectronics.com/news/neways-takes-part-in-european-assist-iot-project>
- ASSIST-IoT announced at the CIOP-PIB website [here](#)
- ASSIST-IoT announced at the ITI website: <https://www.iti.gr/iti/projects/ASSIST-IoT.html>
- ASSIST-IoT announced at the S21SEC website (in Spanish): <https://www.s21sec.com/es/portfolio-item/assist-iot-es/>
- ASSIST-IoT announced at the UPV website (in Spanish): <http://www.upv.es/noticias-upv/noticia-12602-assist-iot-es.html>

Figure 28. ASSIST-IoT Press Release Webpage

On the Deliverables webpage (Figure 29 and Figure 30), the submitted version of the public deliverables has been made available (with a special note that they are not definitive documents since they may experience changes after the EC review).

Deliverables

ASSIST-IoT Deliverables are listed below. All public (PU) deliverables are available for downloading.

Please note that documents with symbol "*" are not definitive documents and may experience changes after review from the EC.

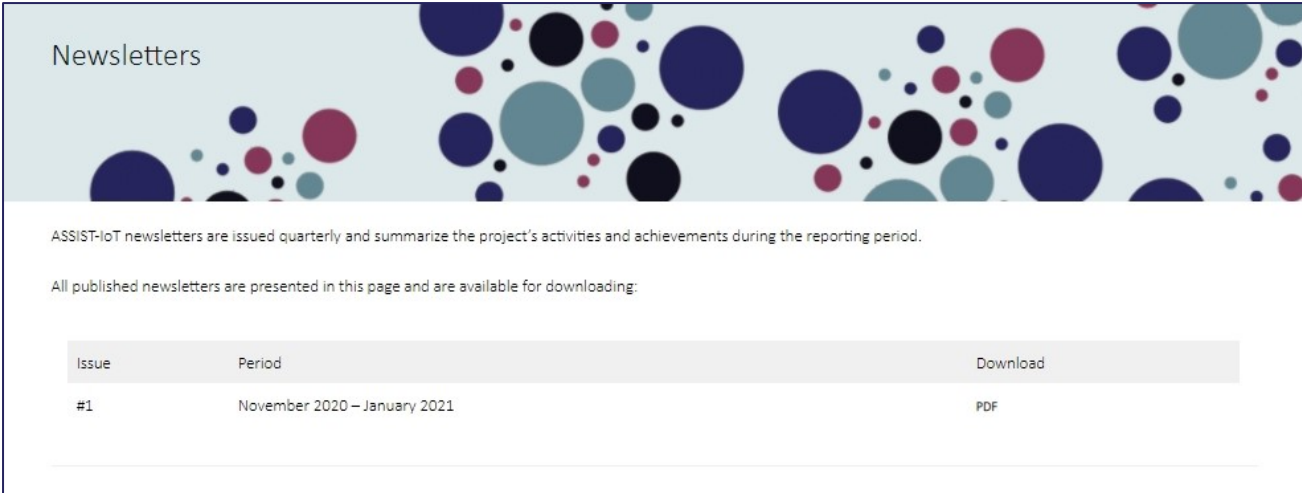
Del. No	Deliverable name	WP No	Lead Partner	Type	Dissemination Level	Delivery Date	Download
D1.1	H – Requirement No. 1	1	UPV	Ethics	Confidential	M6	
D1.2	POPD – Requirement No. 2	1	UPV	Ethics	Confidential	M6	
D2.1	Project Management Handbook	2	UPV	R	Public	M1	PDF*
D2.2	Data Management Plan	2	UPV	ORDP	Public	M6	
D2.3	Ethics and Privacy Protection Manual v1	2	CERTH	R	Public	M3	PDF*
D2.4	Ethics and Privacy Protection Manual v2	2	CERTH	R	Public	M18	
D2.5	Risk Management v1	2	UPV	R	Public	M9	
D2.6	Risk Management v2	2	UPV	R	Public	M18	

Figure 29. ASSIST-IoT Deliverables Webpage - Image 1

D9.1	Web Site, Social Media Channels and Communication Support Material	9	INF	R	Public	M3	PDF*
D9.2	Impact Creation Roadmap	9	INF	R	Public	M6	
D9.3	Report on Contribution to Standardisation and International Fora – Initial	9	ORA	R	Public	M18	
D9.4	Report on Contribution to Standardisation and International Fora –Final	9	ORA	R	Public	M36	
D9.5	Report on Impact Creation Achievements and Plan for the Second Period	9	SRIPAS	R	Public	M18	
D9.6	Business Models and Marketing Operations – Initial	9	PRO	R	Public	M18	
D9.7	Business Models and Marketing Operations – Final	9	PRO	R	Public	M36	
D9.8	Final Report on Impact Creation	9	INF	R	Public	M36	

Figure 30. ASSIST-IoT Deliverables Webpage – Image 2

On the Newsletter webpage (Figure 31), the released Newsletter issues are made available for downloading. Up to the time that D9.2 was under editing the Newsletter issue #1 has been released while the issue #2 was under editing.



Newsletters

ASSIST-IoT newsletters are issued quarterly and summarize the project's activities and achievements during the reporting period.

All published newsletters are presented in this page and are available for downloading:

Issue	Period	Download
#1	November 2020 – January 2021	PDF

Figure 31. ASSIST-IoT Newsletter Webpage

The announcements of upcoming events, in which ASSIST-IoT partners may participate on behalf of the project, are communicated through the upcoming events webpage (Figure 32) while all the past events (in which ASSIST-IoT partners participated the project was represented) are hosted in the past events webpage (Figure 33). During the first 4 months, ASSIST-IoT has participated in 8 events.



Upcoming Events

Upcoming Events such as conferences, workshops, special sessions, invited talks and presentations in which ASSIST-IoT participates are presented in this page.

- 2021 Joint EuCNC & 6G Summit, 8-11 June 2021, Porto, Portugal
- MWC 2021, 28 June – 1 July 2021, Barcelona, Spain

Figure 32. ASSIST-IoT Upcoming Events Webpage



Past Events

All events such as conferences, workshops, special sessions, invited talks and presentations in which ASSIST-IoT participated are summarized on this page:

- National Seminar, The West Pomerania School of Business, Szczecin, Poland, January 2021
- ASSIST-IoT online Webinar-Workshop "Towards Market Review" on Monday 18 January 2021 at 10:00-11:00 CET
- 3rd International Conference on Smart Systems: Innovations in Computing, Jaipur, India, January 2021
- The 8th International Conference on Big Data Analytics (BDA 2020), Sonapat, India, December 2020
- 2nd International Conference On Machine Learning, Advances in Computing, Renewable Energy and Communication (MARC2020), Ghaziabad, India, December 2020
- International Conference on Research in Management and Technovation, virtual, December 2020
- 5th IEEE International Conference on Recent Advances and Innovations in Engineering, December 2020
- 5th International Conference on Computer Science and Computational Intelligence (ICCSICI), virtual, November 2020

Figure 33. ASSIST-IoT Past Events Webpage

The News webpage (Figure 34) is the most regularly updated web page of the website, where all project news and activities are communicated. By the end of February more than 15 ASSIST-IoT News have been posted on this page.

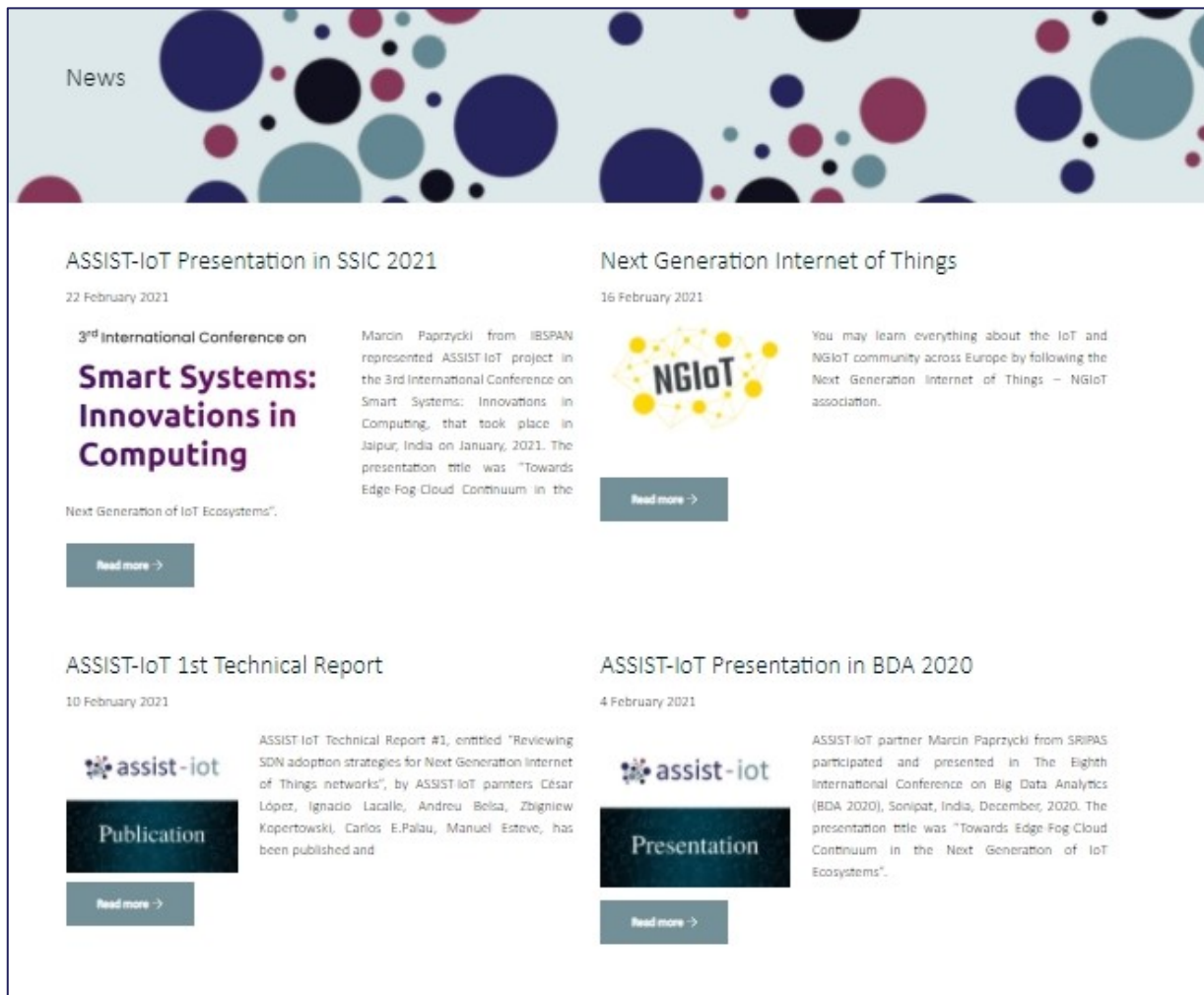


Figure 34. ASSIST-IoT News Webpage

The overall activities that have been communicated through the website, along with specific performance metrics, during the period November 2020-February 2021 are summarized in

Table 4.

Table 4. ASSIST-IoT Website Activities

Website views	>3400 page views
Website Visitors	>500 visitors
Website News Posts	>20 news posts
Presentations	7 presentations
Articles & Press releases	11 articles/press releases
Online Surveys	1 survey
Publications	1 technical report
Workshops	1 workshop

2.4.1.1 Website Google Analytics (M1-M4)

Google Analytics is connected to the ASSIST-IoT Website since 20th of November 2020. Figure 35 presents the Google Analytics ASSIS-IoT website dashboard for the period November 2020-February 2021.

The Google Analytics interface outlines a large amount of information and website statistics. Any interested viewer can easily spot the different metrics as they are provided in the Figure 35. In short, the number of users (555), the number of sessions (1.100) the bounce rate and the average session duration (2m 49s) are displayed, for the period M1-M4. Furthermore, this dashboard also provides information related to the path visitors followed for reaching the website, regional and demographic data, as well as information about the time that the website is more actively visited.

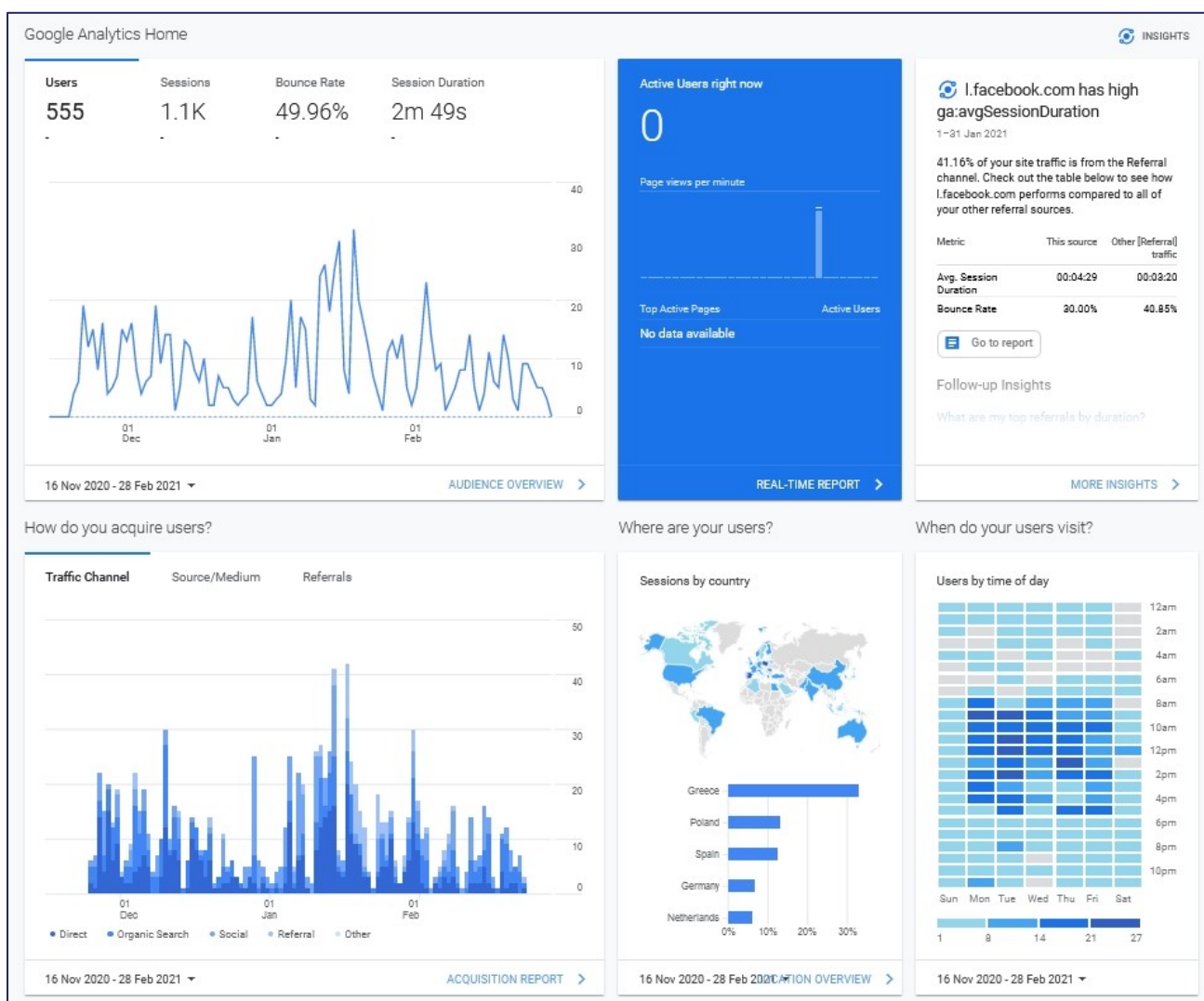


Figure 35. ASSIST-IoT Google Analytics Dashboard (M1-M4)

2.4.1.2 Website WordPress and Jetpack Statistics (M1-M4)

During the period November 2020-February 2021, the following website performance has been recorded and is being visualized through the WordPress and Jetpack Statistics (Figure 36, Figure 37 and Figure 38).

In Figure 36 we can see how WordPress monitors internally data concerning the operation and the functionality of the ASSIST-IoT website. In the top part of the specific dashboard an infographic shows in weekly basis the number of views and visitors. On the lower part of the dashboard, information related to the visitor’s activity is provided. First, there is an overview about the referral channels that bring visitors to the ASSIST-IoT website and then the dashboard lists the most popular (in views) webpages of the website, while also highlighting the regional background of individual visitors.

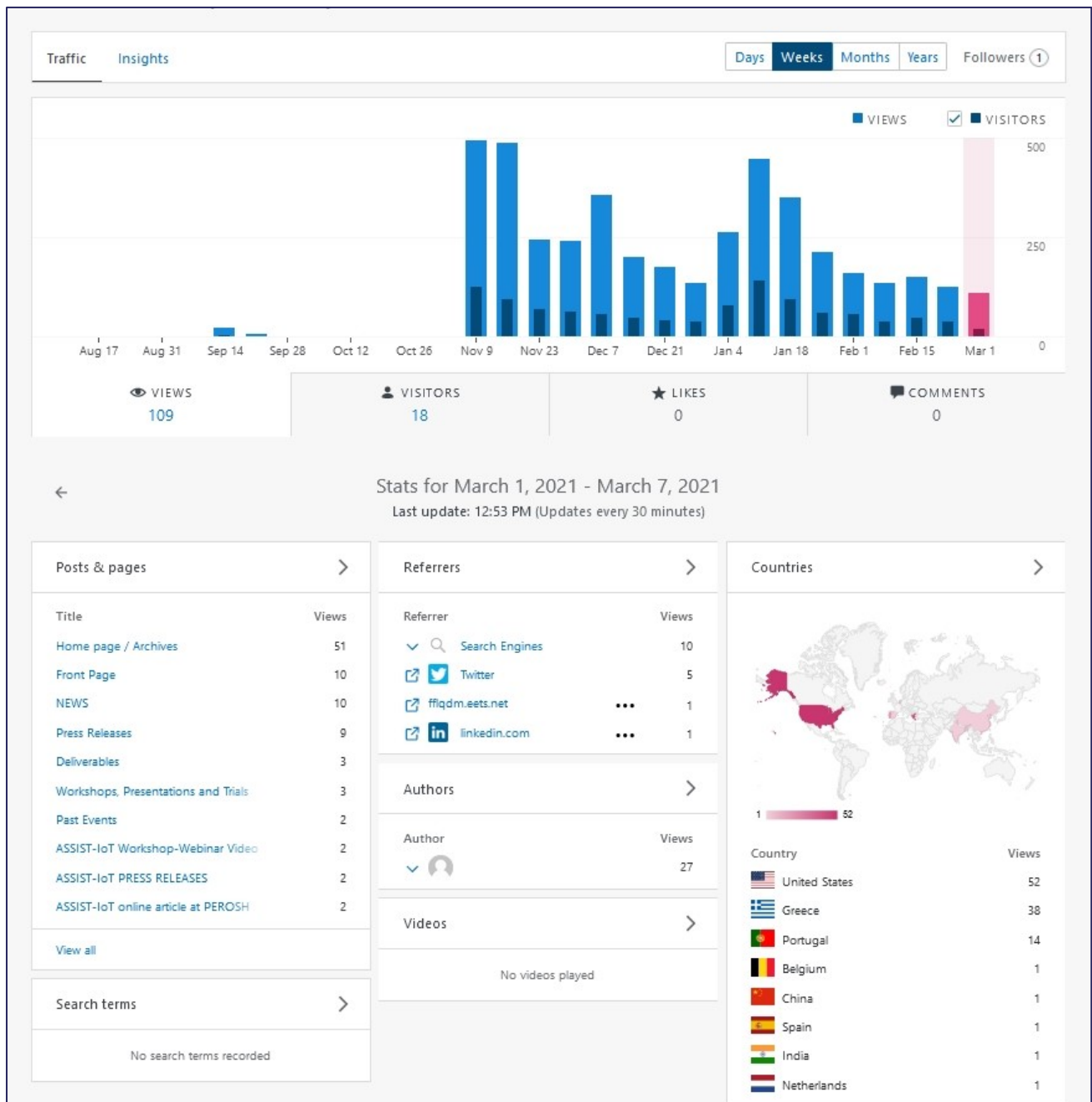


Figure 36. ASSIST-IoT WordPress Dashboard (M1-M4)

In Figure 37 Jetpack statistics interface (add on plugin in WordPress for the provision of additional statistics) depicts through a diagram the weekly viewing activity of the ASSIST-IoT website. Right under the graph it summarizes the total views per day while highlights the peak performances. For instance, we can see from this

figure that until that day the website acquired 4,310 views in overall and the best performance was 218 views in a single day.

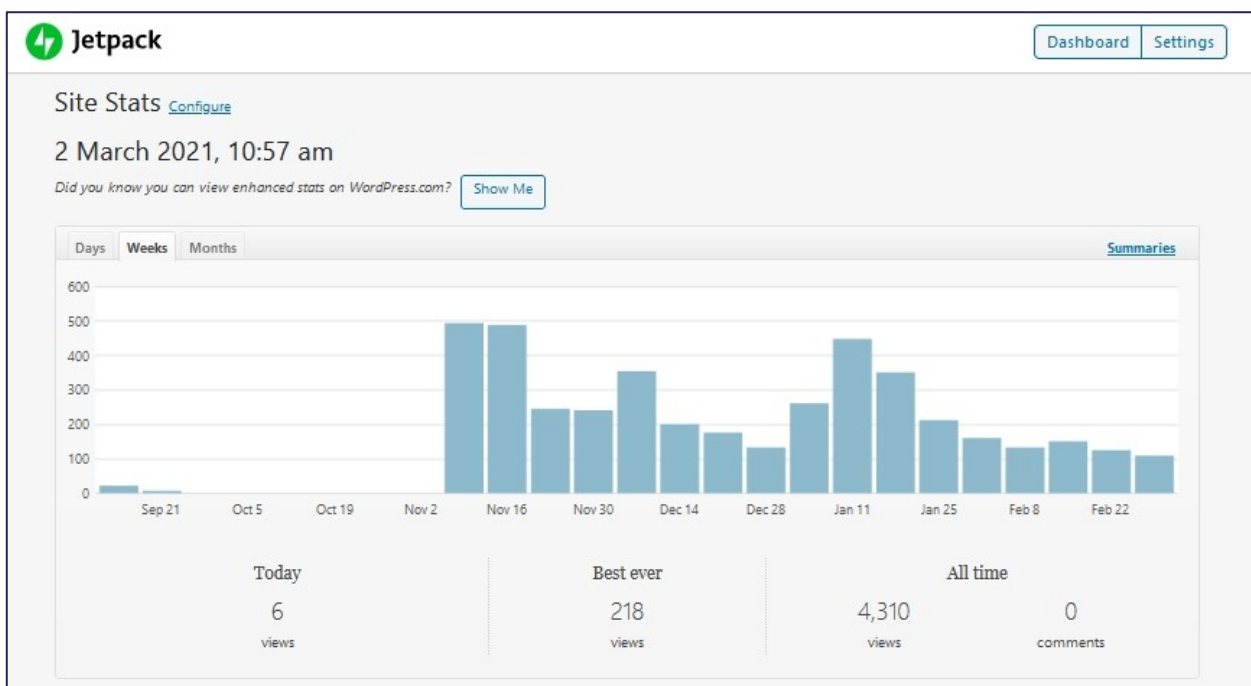


Figure 37. ASSIST-IoT Jetpack Dashboard No1 (M1-M4)

Similarly, Figure 38 is related to referrers activities as it briefly overviews and lists the referral points, and the different paths that visitors followed in order to reach the project's website. For instance, we can easily spot the search engines that visitors used to find the ASSIST-IoT website. The vast majority of the visitors used Google to reach the website, while at the same time different search engines (Bing, Baidu, etc) were used in a clearly lowest level. The rest part of the list is dedicated to the other channels of the digital existence of the project, the social media. At this category, Facebook and LinkedIn distinguish as the most influential reference points. Next, Twitter and Instagram follow. At this point there are also mentioned some other referral points that brought a significant number of visitors in the project's website such as the Universitat Politècnica de València, and the ResearchGate.

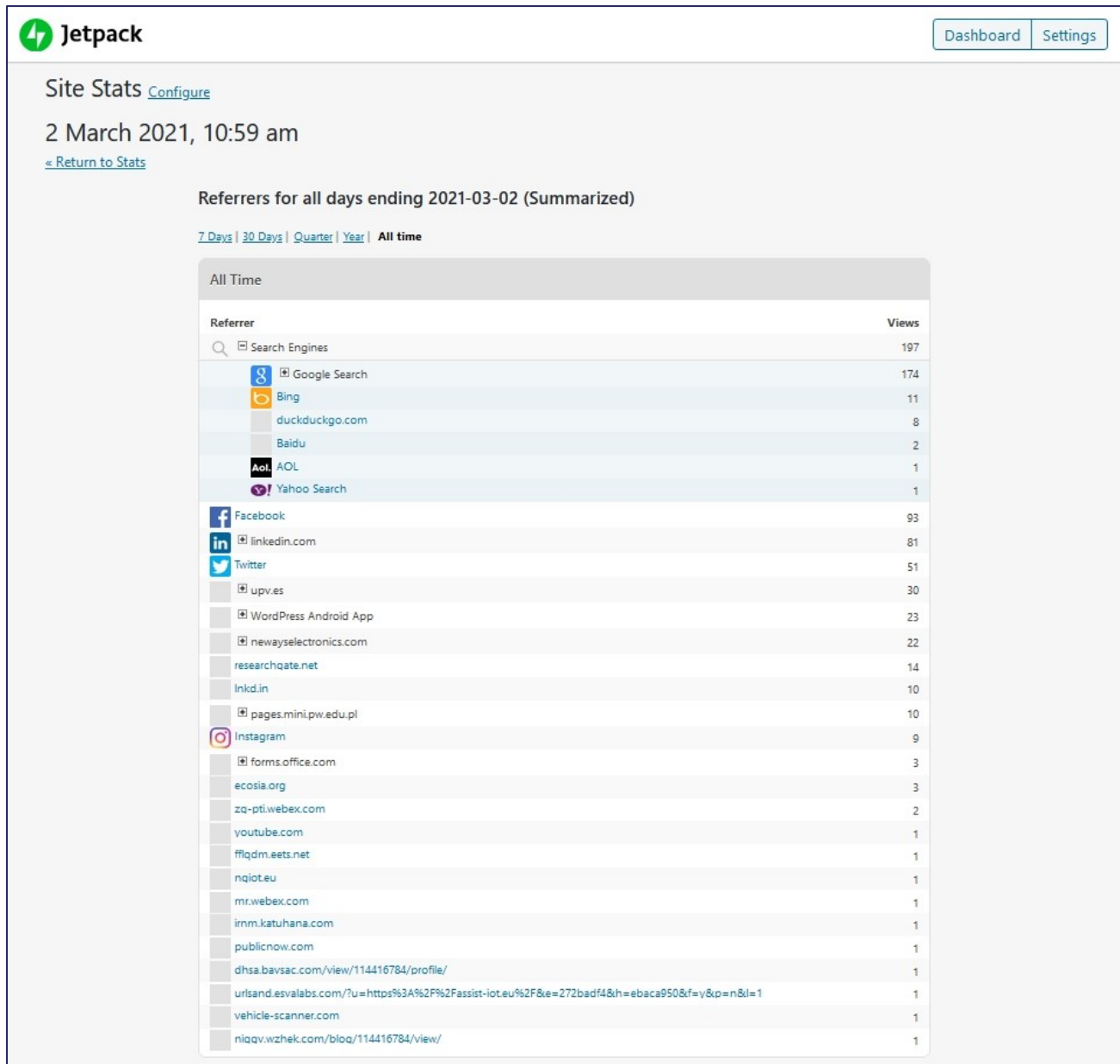


Figure 38. ASSIST-IoT Jetpack Dashboard No2 (M1-M4)

Figure 39 briefly depicts and categorizes the most popular and visited webpages of the ASSIST-IoT website during the first 4 months. The most visited part of the website is the front/home page (1,573), with the news (415) and the pilots (385) webpages to follow. Many visitors showed also interest for the Webinar-Workshop news post as it was the first coordinated event organised by the partners of the Consortium.

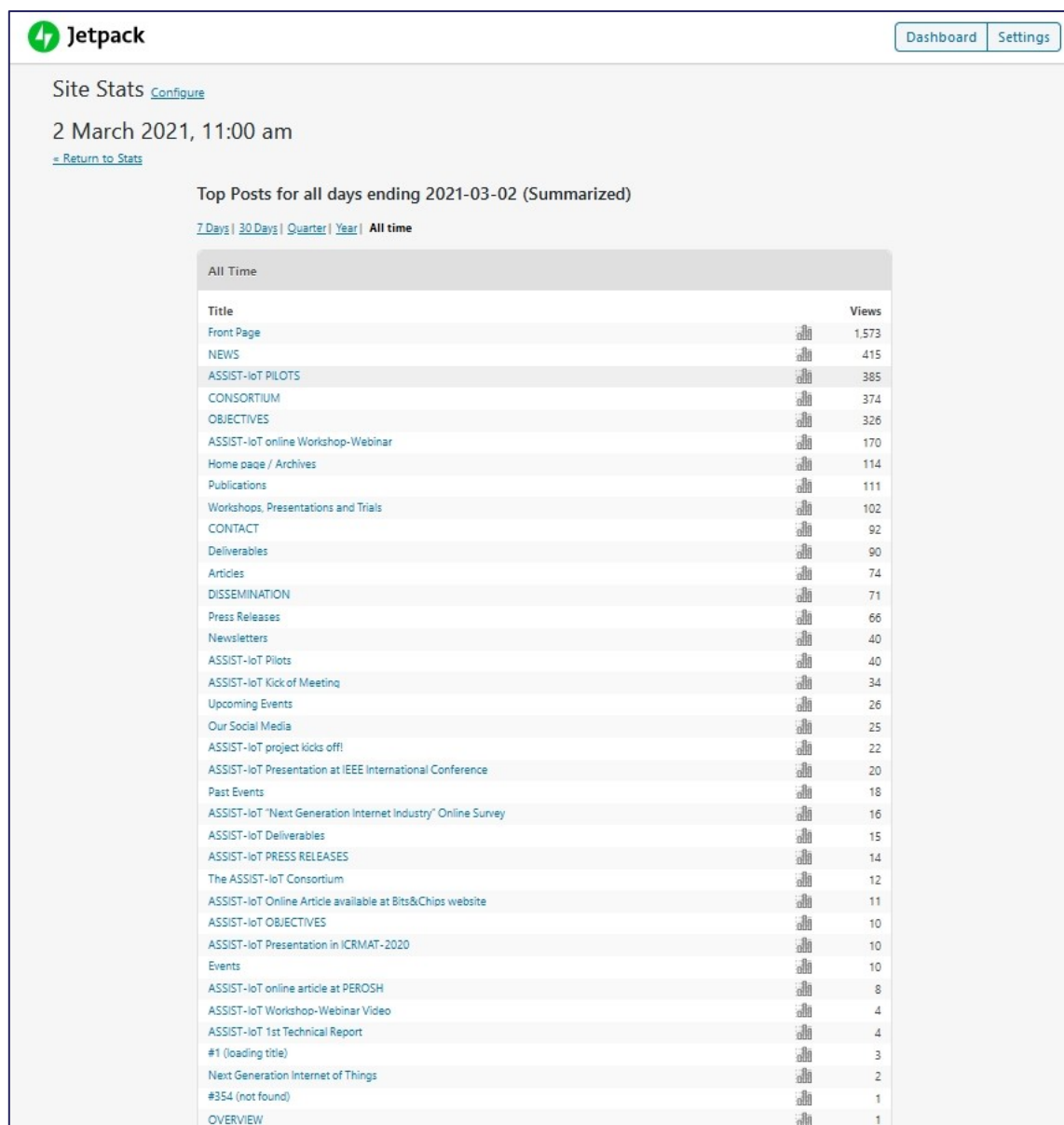


Figure 39. ASSIST-IoT Jetpack Dashboard No3 (M1-M4)

2.4.1.2 Website Google Data Studio Statistical Dashboard (M1-M4)

The Website Statistical Dashboard, created using Google Data studio, reveals detailed information about the website functionality and performance, during the period November 2020-February 2021. It provides information related to the number of sessions, the new users, the average session duration and the total amount of views. It also provides the path that each visitor followed to reach our website. For instance, 104 of the followers came through the Google search engine, while 35 came via the LinkedIn profile. The dashboards created for the ASSIST-IoT Website can also be really enlightening concerning the geographical origins of the users. Most of our visitors came from Europe (429), something that is very sensible, as we talk about an EU project. However, visitors came also from America (74), Asia (48), from Africa (3) and Oceania (3) too. It also provides information about the device that visitors use to enter the Website. Most of the ASSIST-IoT visitors use desktops (73,5%) while 25,6% of the users prefer mobile devices. Finally, only a small percentage of around 0,9% prefer the tablet devices. One may access online the Website Google Data Studio dashboard (first 4-month period) in the following link:

<https://datastudio.google.com/reporting/9b2a810a-3a3e-4717-83f3-fcaedb241bd8/page/pmtsB>.

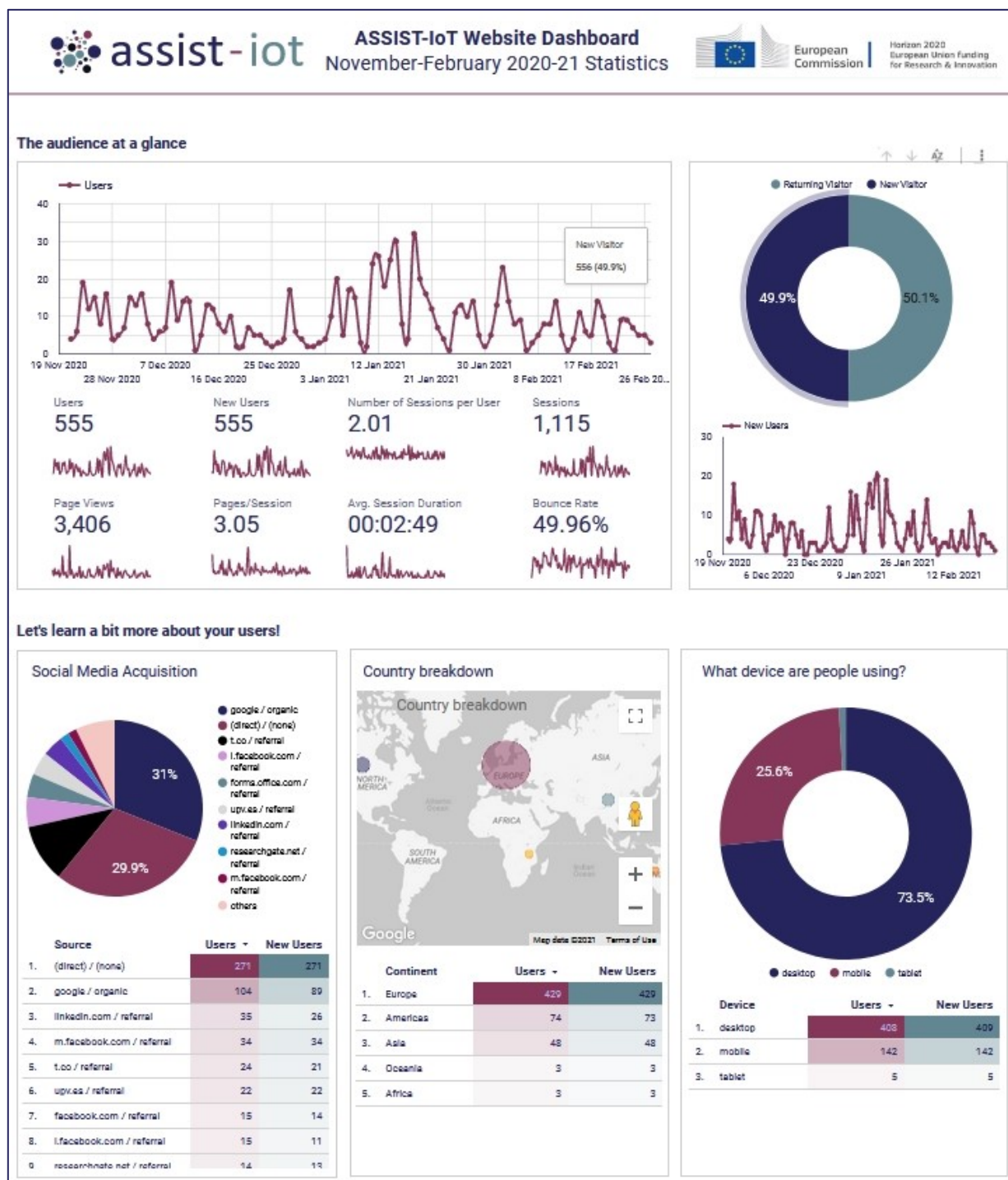


Figure 40. ASSIST-IoT Website Statistical Dashboard (M1-M4)

2.4.2. Social Media Activity (M1-M4)

In the following sections the communication activities performed through the ASSIST-IoT social media channels during the period November 2020 – February 2021 is presented per channels. In addition, every social media channel has its own statistical dashboard, with visualization of various Key Performance Indicators (KPIs), produced.

2.4.2.1. Facebook Activity

During the first four months of the project, the ASSIST-IoT Facebook account has communicated 40 posts, gaining 92 followers, 642 total page views and 3,056 total reach (Table 5).

Table 5. ASSIST-IoT Facebook statistics

Posts	40 posts
Followers	92 followers
Page Likes	84 page likes
Page Views	642 profile views

The Facebook Dashboard (Figure 41) was created using Google Data Studio. In this Dashboard one can view a line chart showing the progress of page views and engagement throughout the time and a table showing the reach of each post published in the examined period. Period statistics are also provided giving information about several KPIs with respect to the specified timeframe. For instance, the number of posts (40) and page views (642) are two of those KPIs. Additionally, there is also a section of Total Statistics, which refers to the whole duration of the project and mentions information such as the number of followers (92) and page likes (84).

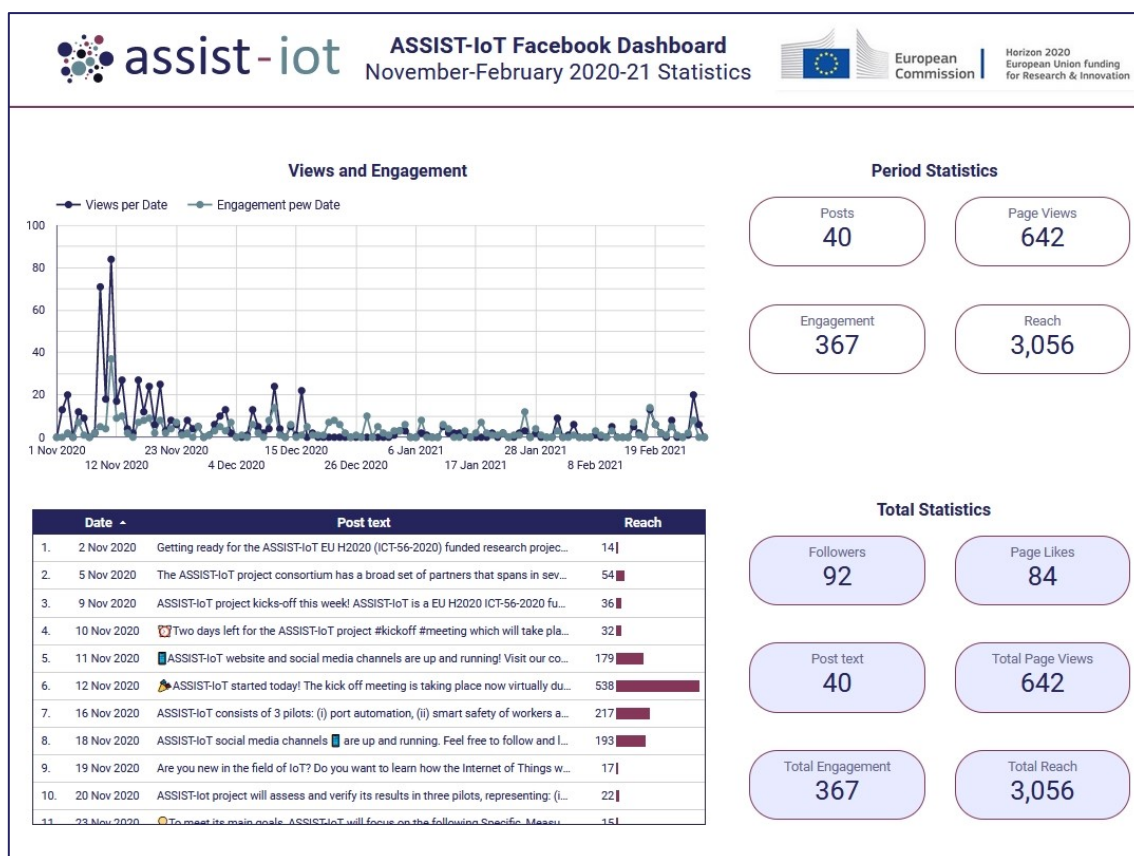


Figure 41. ASSIST-IoT Facebook Statistical Dashboard (M1-M4)

One may use the following link for accessing the Facebook Dashboard for the period of November-February 2020-21:

<https://datastudio.google.com/reporting/47f73ba0-6929-4b50-89bd-ac14129a078a/page/j5mpB>.

2.4.2.2. Twitter Activity

In the ASSIST-IoT twitter account, during the first four months, 44 tweets were conducted, gaining 271 likes. The average amount of engagement was 0.07 which is not an insignificant number concerning that the project

is still in a very early stage. There were also 96 retweets from followers and members of the consortium (Table 6).

Table 6. ASSIST-IoT Twitter statistics

Tweets	44 tweets
Followers	85 followers
Retweets	96 retweets
Likes	271 tweet likes

A Twitter Dashboard was created using Google Data Studio, containing not only the statistics mentioned in the previous paragraph but also many additional KPIs for the period. For instance, a line chart with the number of likes per tweet date is provided while also one can find a table with all the tweets published in the examined period along with the post likes, impression and engagement, with respect to the post. In the “Period Statistics” section one can find gathered information describing the performance with respect to the examined period. Specifically, in the previous section we can find the number of tweets (44) and retweets (96) among other information. Lastly, we can also find the section of “Total Statistics” which refers to statistics gather from the beginning of the project and gives a brief overall of the Twitter account with information such as the number of followers (85) and following accounts (137).

In the following link you may access the Twitter Dashboard of ASSIST-IoT for the period of November-February 2020-21:

<https://datastudio.google.com/reporting/e5fa004b-94f4-45c9-9720-ea3d2b45a5bf/page/4YFqB>.

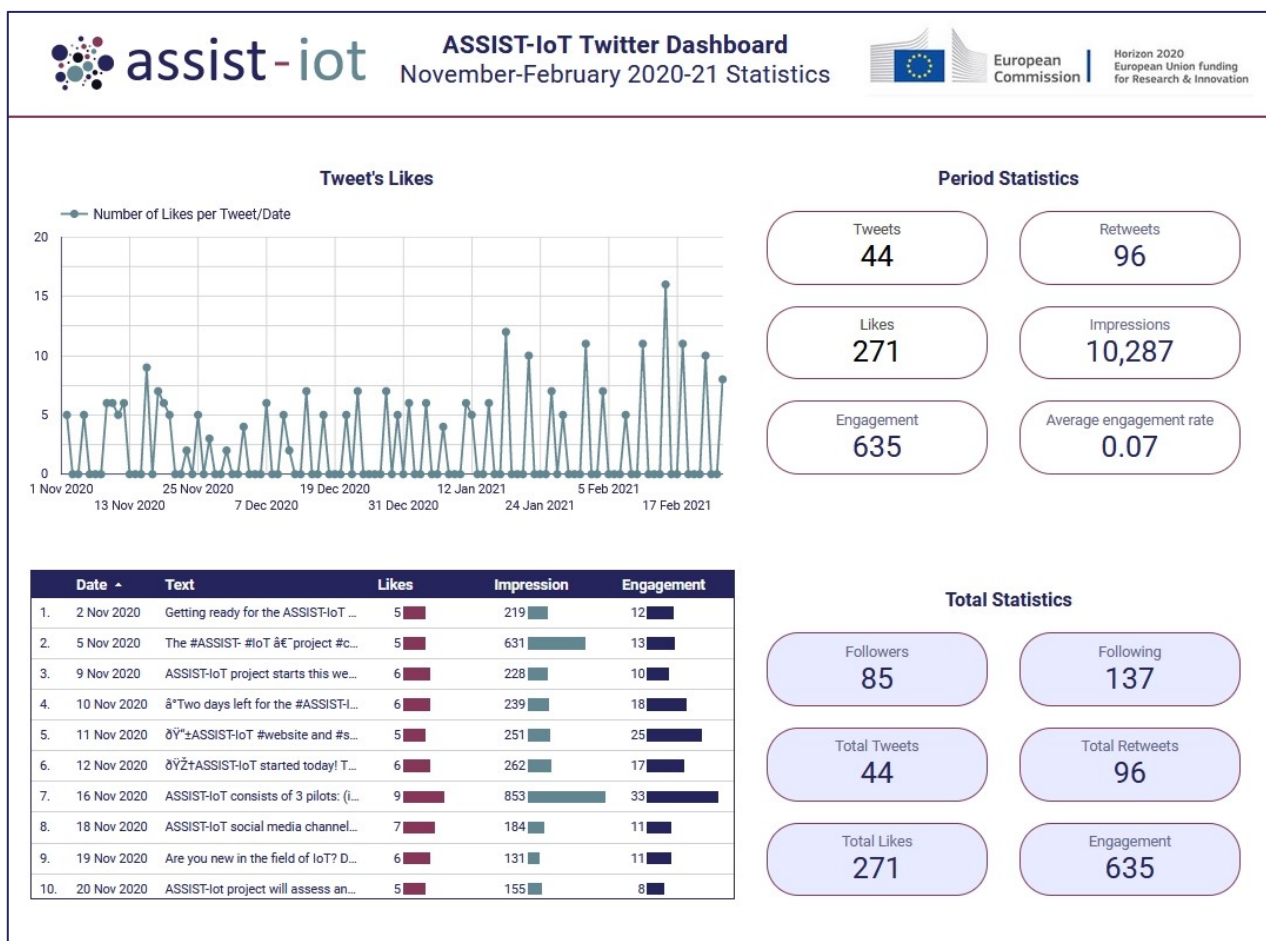


Figure 42. ASSIST-IoT Twitter Statistical Dashboard (M1-M4)

2.4.2.3. LinkedIn Activity

LinkedIn profile seems to be the most attractive social media channel of ASSIST-IoT, during these first months. ASSIST-IoT LinkedIn profile has attracted 231 connections and 244 followers. It has reached 455 likes originating from 42 posts (Table 7). These posts have also attracted 12,319 views in total (Figure 43).

Table 7. ASSIST-IoT LinkedIn statistics

Posts	42 post
Connections	231 connections
Followers	244 followers
Profile Views	224 views
Likes	455 likes

Using Google Data Studio INFOLYSiS team has created a LinkedIn Dashboard to be used for the visualization of the statistics needed for the evaluation of the LinkedIn account. More specifically, the dashboard consists of a line diagram describing the post views, a table of the posts that have been published with the respective likes and finally the Period and Total Statistics sections. The last two sections include information according to the total number of posts, post views, likes, reshares, followers and connections with respect to the examined period of time.

In the following link one can find the LinkedIn Dashboard of ASSIST-IoT for the period of November-January 2020-21: <https://datastudio.google.com/reporting/42ea0e21-b727-4b09-a116-0199984ae37a/page/1SSqB>.

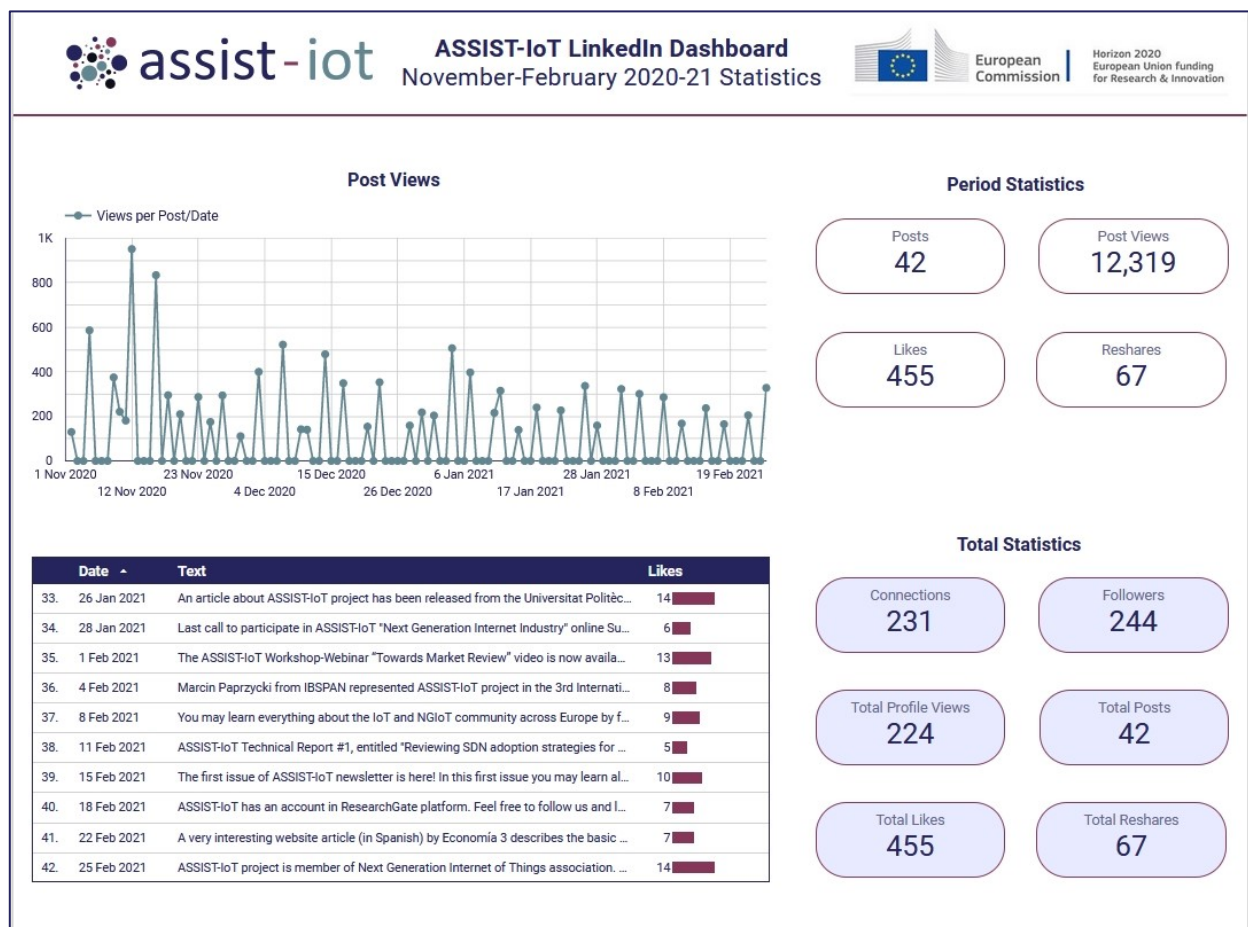


Figure 43. ASSIST-IoT LinkedIn Statistical Dashboard (M1-M4)

2.4.2.4. Instagram Activity

During the reporting period (M1-M4), the ASSIST-IoT Instagram account has collected 327 total likes, from total of 40 posts. It has gained at these four months 78 followers and 192 profile visits. It has also a total reach of 839 (Table 8).

Table 8. ASSIST-IoT Instagram statistics

Posts	40 posts
Followers	78 followers
Profile Visits	192 visits
Likes	327 likes

The Instagram Dashboard is generated using Google Data Studio containing the information mentioned above in the section of Period and Total Statistics while also metrics about impressions and reach are also provided in those sections. The dashboard also includes a line chart with the impression and reach per post and also a table with the number of likes per post over time.

In the following link one may access the ASSIST-IoT Instagram Dashboard for the period of November-February 2020-21:

<https://datastudio.google.com/reporting/426bfcac-8a8a-4fe2-83d3-78b6b4648daf/page/rKQqB>.

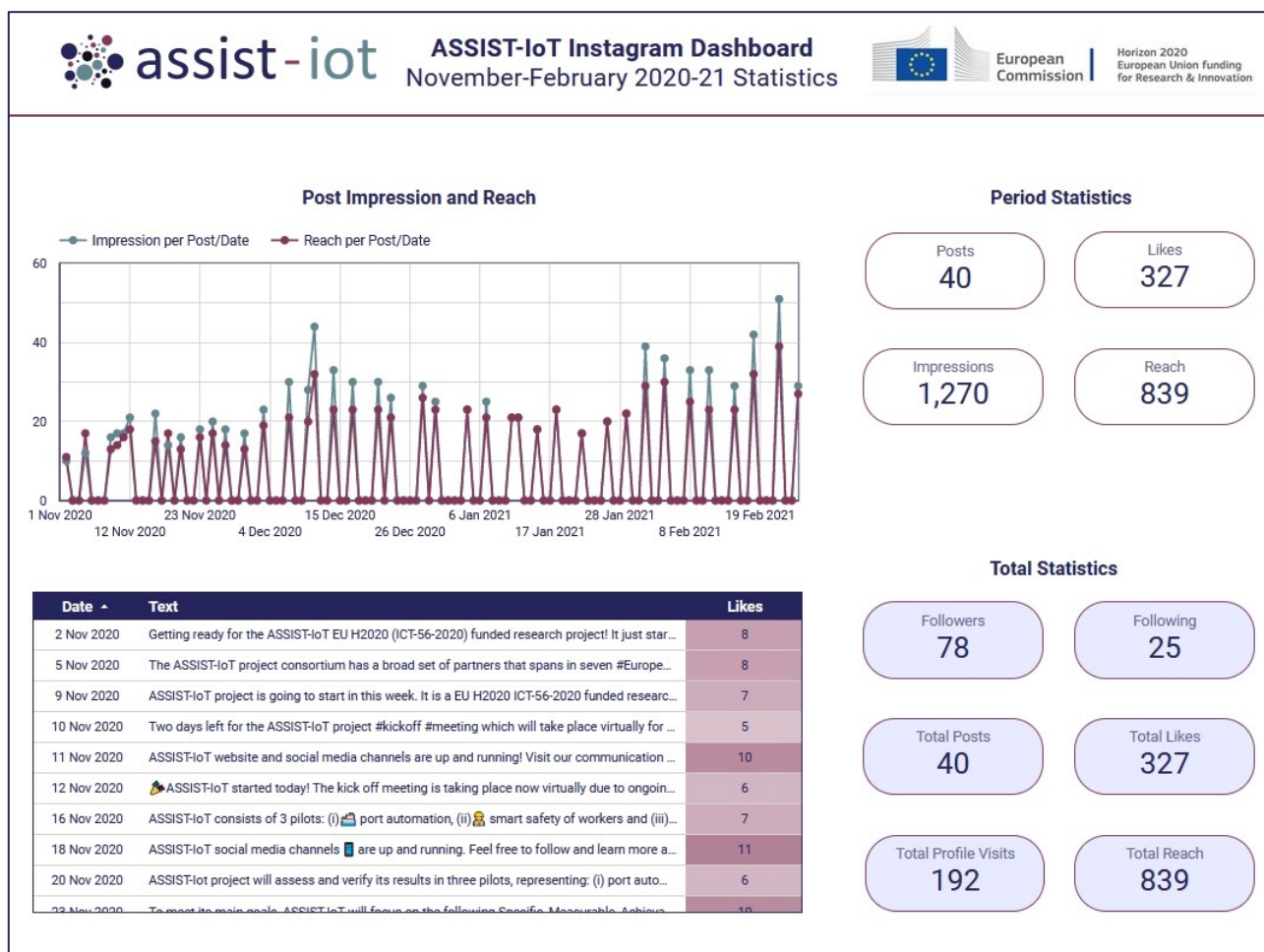


Figure 44. ASSIST-IoT Instagram Statistical Dashboard (M1-M4)

2.4.2.5. YouTube Activity

At this early stage of ASSIST-IoT there are two videos' publications at the project's YouTube channel. The first one is a short introductory video of the ASSIST-IoT project, while the second one is the session recordings of the online ASSIST-IoT Workshop organised on 18th of January. So far, the ASSIST-IoT YouTube channel has attracted 33 subscribers and 94 total views. Moreover, the two posted videos have gained 14 likes (Table 9).

Table 9. ASSIST-IoT YouTube statistics

Videos	2 videos
Subscribers	35 subscribers
Total Views	94 video views
Likes	14 likes

In summary, the Table 10 provides an aggregate overview/impact of the overall communication activities and actions communicated over social media channels during M1-M4.

Table 10. Social media Statistics Impact (M1-M4)

	Posts	Likes	Followers
Facebook	40	84	92
LinkedIn	42	455	244
Twitter	44	271	85
Instagram	40	327	78
YouTube	2	14	35
Total	168	951	534

2.4.3. Newsletter Activity (M1-M4)

The first Newsletter issue, reporting the first quarter, was released in the middle of February 2021. Moreover, the second issue of the Newsletter is under editing and it is scheduled for release by middle May 2021. In the first issue of the ASSIST-IoT Newsletter there was a brief overview of the project's scope and use cases along with the initial activities of the project. The activities that were communicated through this first issue are (Figure 45):

- 1 Video-Project Overview
- 7 Presentations
- 4 Articles
- 1 Workshop-Webinar
- 1 Questionnaire/Survey
- 6 News-Press Releases
- 3 Submitted Deliverables
- 8 Upcoming Deliverables

Note that the first Newsletter issues, along with the remaining ones that will follow on a quarterly basis, will be available for downloading on the Newsletters webpage: <https://assist-iot.eu/newsletters/>



Figure 45. ASSIST-IoT Newsletter – Issue #1 cover page

2.4.4. Leaflets, Posters and Press Release Activity (M1-M4)


During the current reporting period, three ASSIST-IoT leaflets have been created (all in A4 double-sided size). ASSIST-IoT leaflets include a short overview of the project's scope and actions. Leaflet updates will be also

released through the project lifetime. The leaflets have been crafted in a way to be utilised either in printed or in digital format. The first version of the leaflet (available in two colour variations) on the first page describes the overview of the project while on the second page briefly illustrates the ASSIST-IoT pilots with their different scenarios. The second version of the leaflet summarises the whole picture of the project and has cohesive design with the poster offering homogeneity between the two communication materials.

The ASSIST-IoT poster was released in early January in both A1 and A2 sizes, giving insightful information about the project nature. At this first 4 months of ASSIST-IoT operation there has been 2 different poster versions in both A1 and A2 sizes.

Both ASSIST-IoT leaflet and poster current versions are available online (Figure 46) for downloading at the ASSIST-IoT website on the main Dissemination page: <https://assist-iot.eu/dissemination/>

Obviously, as already stated, these communication means have been prepared under the assumption that face-to-face activities will be available and that they will be used primarily in the printed format. It is now clear, that such opportunities will not materialize till at least after Summer of 2021 or early 2022 (based on the COVID-19 wave lockdowns, and the speed of vaccination). However, it is estimated that updates of leaflets and posters will be undertaken as the project progresses, no matter if face-to-face events resume or not.



The screenshot shows the ASSIST-IoT website's Dissemination page. The header includes navigation links: HOME, OBJECTIVES, ASSIST-IoT PILOTS, CONSORTIUM, DISSEMINATION, NEWS, CONTACT. The main content area features a decorative background of colorful circles and the following text:

DISSEMINATION

ASSIST-IoT throughout its life time will participate in several Communication and Dissemination activities.

ASSIST-IoT targets publications in selected and high-impact journals and magazines on communications/networking, reputed international conferences and events. In addition, presentations and participation in workshops, invited talks, poster sessions and business events are a vital part of the communication and dissemination activities of the project.

All related ASSIST-IoT activities such as Publications, Conferences, Workshops, Presentations, Articles, Demonstrations, Press Releases and many more are reported in detail on the sub-menu sections of the "Dissemination" menu. Feel free to guide yourself through all webpages.

ASSIST-IoT public communication material, such as leaflets and posters, is available for downloading:

ASSIST-IoT Leaflets: Leaflet 1, Leaflet 2, Leaflet 3

ASSIST-IoT Posters: Size A1, Size A2

The footer section includes:

- ASSIST-IoT**: "Architecture for Scalable, Self-*, human-centric, Intelligent, Secure, and Tactile next generation IoT"
- Call:** H2020-ICT-2020-1
- Topic:** ICT-56-2020
- Type of action:** RIA
- Duration:** 36 months
- Start date:** 1 November 2020
- Tags:** 5G-PPP architecture articles article ASSIST-IoT bid data analytics communication conference consortium deliverables EU H2020 ict ict56 ieee innovation IoT IoT KPI KVI market market review news NGIoT objectives online partners pilots presentation press release project questionnaire research results socialmedia stakeholders strategy SURVEY technologies technical verticals video webinar workshop youtube
- Visitors:** 4,492 hits
- Follow Us:** Twitter, LinkedIn, Facebook, Instagram, YouTube
- Project Funding:** This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957258
- Logos:** European Union, European Commission, Horizon 2020 European Union Funding for Research and Innovation

Figure 46. ASSIST-IoT Leaflets and Posters – Available online

Press releases have either the form of News-Announcements, released on partners' websites and presented in Press Releases dedicated ASSIST-IoT website page, or they are formally communicated at project level, targeting audience/stakeholders and mass media (via email), using the ASSIST-IoT press release template. The ASSIST-IoT press release template has been edited since November 2021 and is available to all partners. During

the reporting period, 6 press releases have been communicated by EC and ASSIST-IoT partners and are available online for downloading at the ASSIST-IoT website on the Press Releases webpage.

2.4.5. Other Activities

Furthermore, communication activities occurred in the organization of a Workshop and an Online Survey in the context of WP3. In order to attract more audience, the workshop, and the online survey, were highly communicated through the website and the social media channels of the projects.

Specifically, during the reporting period, a workshop activity occurred not with a strictly communication background, but in the context of WP3. The workshop entitled “Towards Market Review” utilised all ASSIST-IoT means of communication to be successfully communicated. In specific, there was an extensive communication and promotion through social media channels and website for attracting interested parties to register and attend.

In parallel, the social media were utilised for the circulation of a questionnaire about the ASSIST-IoT “Next Generation Internet Industry”. This online survey was targeting both internal and external stakeholders. After the successful accomplishment of the Workshop, a video from the day of the event was created and uploaded to ASSIST-IoT YouTube channel. Moreover, this video was communicated through ASSIST-IoT channels showcasing the initial technical attributes of the project to a wider audience.

Closing Section 2.4, Table 11 summarises the communication impact created through ASSIST-IoT communication channels, as per the defined ASSIST-IoT communication plan and strategy, during November 2020-February 2021.

Table 11. ASSIST-IoT overall communication impact (M1-M4)

Mean	Channel - Section	URL	Activity
Website	News	https://assist-iot.eu/blog/	>20 posts
	Publications	https://assist-iot.eu/publications/	1 Technical Report
	Workshops/ Presentations / trials	https://assist-iot.eu/workshops-presentations-and-trials/	7 presentations 1 workshop
	Press Releases	https://assist-iot.eu/press-releases/	6 press releases
	Events	https://assist-iot.eu/events/	8 events attended
Social Media	Facebook	https://www.facebook.com/assistiot	40 posts and 92 followers
	LinkedIn	https://www.linkedin.com/in/assist-iot-project	42 posts and 244 followers
	Twitter	https://twitter.com/AssistIot	44 tweets and 85 followers

	Instagram	https://www.instagram.com/assistiot/	40 posts and 78 followers
	YouTube	https://www.youtube.com/channel/UC8Sedd5UyB8R61d9YDkkeGg	2 videos and 35 subscribers
Leaflets		https://assist-iot.eu/dissemination/	3 leaflet versions
Posters		https://assist-iot.eu/dissemination/	2 posters
Newsletters		https://assist-iot.eu/newsletters/	1 issue (and the 2 nd issue under editing)

3. Dissemination and Showcasing Impact

Original Dissemination strategy, as described in the proposal, and approved in the Grant Agreement, has been conceptualized before the COVID pandemic. It involved standard mix of in-person presentations, publications, and (social-)media-focused activities. The COVID pandemics forces serious reflection and adjustment of the strategy of dissemination mechanisms, and specific activities that are to be undertaken within the action duration. At the time of preparation of this document it is assumed that a semi-normal state of the world, which was originally assumed for the dissemination and showcasing activities, may return in 2022 (possibly, in the last quarter of 2021, but this assumption is rather optimistic and is more likely to be realised in late November or December of 2021).

Currently, the work conducted within the scope of the action is focused on sustaining the timeline of key deliverables. Here, so far, only minimal (few days long) delays have been observed, and it is likely that all upcoming deliverables will be completed on time. However, it has been observed that completion of these deliverables, without the benefit of face-to-face meetings, requires a lot more effort. For instance, partners spend hours discussing things that could have been fixed within minutes, during a face-to-face meeting in front of a whiteboard, supported by informal coffee-break discussions.

Let us, therefore, consider how the COVID pandemics already affects, and how it can affect long-term dissemination efforts. First, let us note that it may only seem that the pandemics should not affect electronic means of communication of project outcomes (as described above). This does not necessarily need to be the case. For instance, success of social media communication depends on users spending time tracking work-related social media posts. However, stress and burnout caused by, and related to, online work from home may decrease willingness of potential readers from seeking and consuming professional content. This risk has been recognised and the situation will be tracked using the, above described, dashboards. In case of underperformance of any communication channel, appropriate countermeasures will be applied.

Since a lot more of actual work-effort is required to deliver contractual results in the core of the action, it has been observed that this has detrimental effect on capabilities of delivering some of the envisioned scientific dissemination content. Specifically, we are finding that there is much less (if any) time left to prepare “papers for conferences/journals”. This must be contrasted with the ability to deliver presentations at conferences. Due to the fact that representatives of academic/research partners are invited as keynote speakers, a number of presentations, introducing the project have been already delivered. This point is further addressed in what follows.

In this context, it is also worth mentioning that, as the moment of writing this document – Q1 of 2021 – no reasonable (solid) predictions can be made vis-à-vis conference availability in the future. While the largest/flagship conferences are likely to “stay alive” and have switched, or are in the process of switching, to 100% telepresence/virtual, large number of smaller/domain focused conferences decided to cancel “current year (2020/21) editions” and postpone reopening till 2022. Hence, any strategic planning for conference participation is extremely difficult at this point in time.

Here, it is also important to reflect on the following aspect of 2021 conferences, when considered from the point of view of dissemination of project results. While publication of a contribution within conference proceedings remains an important dissemination goal, missing are the remaining two important aspects of conference involvement. It has been observed that the audience that participates in sessions during telepresence-based conferences is much lower (in number) than during the on-site events. This is caused by the possibility of joining “own talk” (and a few selected others) and returning to the remaining work-related activities (something that is not this easy during an on-site conference, where staying for additional talks is a norm). Moreover, all possibilities of discussing/mingling/interacting with other participants, which result in disseminating and promoting the action, are gone. Even something as simple as distribution of leaflets to conference participants (placing a poster by the Reception Desk and exchanging business cards) is impossible. This substantially reduces the actual impact of a conference participation.

Taking all these into account, it has been decided to proceed as follows.

- a) New risk related to potential reduction of impact of dissemination activities (measured in number of publications and/or conference/seminar presentations) has been added to the Risk Management

document of the action (upcoming D2.5). In this way the developments within the area of dissemination of, primarily scientific, results will be tracked with higher intensity, while the dissemination strategy will be adjusted to react to the changing environment (refer to the sections below).

- b) Initial, envisioned, strategy is being restructured, based on the assumption that standard activities will become available, again, starting from year 2 of the action. However, it should be kept in mind that, material presented in following sections has to be treated as a preliminary and tentative one (which will be also updated and presented in future related deliverables). Specifically, if situation around the world returns to pre-pandemic standards, then this strategy will be pursued. In case of more virus mutations and further lockdowns, the proposed strategy will have to be revamped (an update of the dissemination strategy will be provided in the next deliverable D9.5).

3.1. Means of Dissemination

Following material has been adapted from the original proposal. The key dissemination means, to be used as either core or additional means of ASSIST-IoT dissemination, are:

- **Scientific publications and participation in project related conferences:** ASSIST-IoT intends to disseminate its high-quality innovative results in carefully selected peer-reviewed scientific journals (including their special issues) and magazines. Moreover, partners will maximise dissemination of project-related work through selected conferences and special events (Table 13) for the initial list of journals/conferences/books).

However, for the reasons outlined above, current focus of the action has shifted to the core work that has to be completed to deliver the expected practical results – as required in the list of milestones and deliverables found in the Grant Agreement. Moreover, considering the fact that current impact of conference participation is substantially reduced, it was decided that conference participation will become an important target of dissemination in years 2 and 3 of the action. Here, it is worth noting that, while the virtualisation of work requires a lot more effort of participants, it also saves the travel budget. Therefore, as soon as travel possibilities reopen (for instance first members of “academic partners” of the consortium will be fully vaccinated), participation in travel-requiring dissemination activities will be possible to a larger extent. By then it should be also known, which events have survived COVID, and which have been folded forever. This knowledge will be used to redesign the conference participation plans.

As far as publications are concerned, following the guidelines of the EU for open access to scientific knowledge, produced within the European funded projects, ASSIST-IoT is fully committed to use all available measures for allowing open access to all publications, and other research results, wherever commercial and industrial exploitation allows doing so. This being the case the Consortium plans to have all public project deliverables uploaded to the project website, to be open and freely accessible. Proceeding in this direction the following procedure has been developed, realising the Green Access model of publishing.

- (1) All scientific publications, upon their completion, are going to be released as Technical Reports of the ASSIST-IoT action, published on the WWW site, and promoted in Social Media. Moreover, they will be (and are) uploaded to the ResearchGate project area. For later stages of the project, those will be analysed to be uploaded to the Open Research portals like Zenodo and RiuNet (see deliverable D2.2 – Data Management Plan).
- (2) While ResearchGate can be treated as one more social media outlet, it is focused on scientific content, and work somewhat differently. Therefore, we have created a ResearchGate project available here: <https://www.researchgate.net/project/ASSIST-IoT>. Currently it has 16 followers and 186 reads. It contains the description of the project, link to its website, and the first Technical Report uploaded. This communication channel will be used as one more way of reaching the academic/scientific-minded audience.
- (3) Upon the actual publication of the content of the Technical Report, the website (and the ResearchGate project site) will be updated with full citation of the published material (including the DOI identifier – see D2.2 – and the link to the publication page).

(4) In this way **all scientific results of the project will be immediately publicly available** (as Technical Reports), without potential problems with the copyright owners (publishers), and without the need to pay for open access (which is impossible, since the EC does not allow open access funds to be requested within the project budget). This entails the publication under a Green Access approach, that has been set out as the preferred way in ASSIST-IoT in case Open Access is not available (see, D2.2 – Data Management Plan). At the same time, information (full citation) about publication details will also be available for referencing.

- **Showcases:** The project plans to organise showcases and demonstrations (to reach relevant industries and governing bodies). Specifically, project Consortium members, having the necessary experience and track record, will organize special showcases as appropriate, in the likes of IoT Week, 5GEurope, or TRA.

However, it is, currently, impossible to prepare a detailed plan of target events, as it is unclear which events, among those that existed in 2019, will overcome COVID restrictions, and will remain available in 2022 and on. The same comment applies to the next four dissemination activities that have been planned, as well. These activities cannot become fully successful as means of project outcome dissemination, as long as mid- to large-scale face-to-face events cannot be organized.

- **Community building events:** The project plans to organise hackathons, public challenges, events focused on special groups such as pre-university students, young professionals, women in tech to disseminate, test, challenge and expand key ASSIST-IoT features such as security and privacy, NGI pillars enablers, etc.
- **Direct dissemination activities:** Open events targeted to verticals, end-users, and other interested parties will be organised by ASSIST-IoT during the action, to disseminate project results were, and remain, in the plans. These events include: Exhibitions in industrial and scientific events, special sessions, invited presentations at conferences, as well as public talks.
- **Organization of tutorials and seminars:** Action outcomes will be disseminated in the form of seminars and training events, organised by academic partners within their Universities and targeted to undergraduate and graduate students. Moreover, industrial partners will seek organization of tutorials and panels within large conferences (or other events), to disseminate expertise acquired by their participation in ASSIST-IoT.
- **EC dissemination mechanisms and events:** ASSIST-IoT partners will actively participate in the EC activities organized at programme level, to provide input towards common activities and receiving feedback, offering advice and guidance and receiving information related to H2020/Horizon Europe program implementation, standards, policy and regulatory activities, national or international initiatives, etc. Here, ASSIST-IoT will actively collaborate within the scope of the CSA, which has been funded to support all six projects from the ICT-56 call. Currently, representatives of the action have participated in the first meetings organized by the CSA and have joined the mailing list, which is going to be used to coordinate further actions.
- **Liaising with other projects:** The Consortium will collaborate with ongoing projects, to exploit opportunities for knowledge exchange and improving dissemination and communication among target audiences. In particular, collaboration is being established with the remaining projects funded within the ICT-56 mechanism. First, it should be recognised that among them a CSA (The European IoT HUB - Growing a sustainable and comprehensive ecosystem for Next Generation Internet of Things) has been funded. It has started its operation with some delay (first contact established in late February 2021), but it can be expected that it will facilitate collaborative efforts between the RIA projects (listed on page: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/ict-56-2020>). ASSIST-IoT is committed to actively participate in actions spearheaded by the CSA. Moreover, some interactions have been initiated on the basis of personal acquaintance between leaders of some of these projects and of ASSIST-IoT (already reported in the NGIoT association analysis in the Communication section of D9.2 and additional details also provided in the following section).
- **White papers:** may be prepared in conjunction with relevant European Technology entities and respective industry fora. This instrument will be used to guide and help stakeholders understand the concept and approach of ASSIST-IoT.

However, considering current state of the world, possibility of following this pathway to dissemination will be assessed in Q4 of the project. Here, (a) it is possible that some work in this direction will be undertaken within the CSA (this was, for instance, the case of the INTER-IoT action, where the related CSA organized White Paper preparation); (b) it is possible that this type of activity will materialise form Workshops organized by the ASSIST-IoT (initially alone or with a single other project partner, but planned to be further developed; see, next Section).

3.2. Dissemination Targets and Timeline

As stated above, effects of pandemics are such that it is extremely difficult to specify targets for successful (and worthy pursuit) dissemination activities. Nevertheless, the potential targets, specified in Table 12 and Table 13 remain valid. Overall, in Q1 2021 it is possible to make reasonable predictions for activities that will take place between now and January 2022 (see, next paragraph).

Regardless, on March 5th, 2021 a workshop for the HICSS 2022 (to take place on January 2022, <https://hicss.hawaii.edu/>) conference was proposed. The conference selection was made on the basis of the following assumptions: (1) conference is one of the most renowned systems science conferences in the world – matching the ASSIST-IoT approach to the Next Generation IoT; (2) conference is organised in USA, which is rapidly progressing with vaccination of its citizens, making the in-person organization of the meeting likely; (3) conference brings together researchers from Europe, America and Asia – providing a perfect possibility for reaching out to global audience. However, it turned out, HICSS workshops do not publish papers in HICSS proceedings. Hence, the workshop has been withdrawn, and a mini-symposium will be proposed for the (January) 2023 edition of the conference. Proposal will be prepared in January 2022 and we hope to include in it as many as reasonable projects from the ICT-56 cohort.

Second, working together with the ICT-56 INGENIOUS project a workshop proposal has been submitted and accepted to the IEEE GLOBECOM 2021 conference. Here, the reasoning was as follows. GLOBECOM is one of the flagship IEEE conferences and it covers majority of areas that have been formulated in the ICT-56 call. This proposal was accepted and by May 2021 the call for papers will be prepared.

It is expected that, working within the scope of the ICT-56 CSA additional scientific event proposals will be submitted to IEEE ICC, IEEE SMC or IEEE INFOCOM. Detailed actions will depend, also, on conferences locations and their organizers (will among them be persons who ASSIST-IoT leadership – or leadership of other cohort projects – is personally familiar with).

As noted, for these initiatives it is assumed that they will be used not only to promote outcomes of the ASSIST-IoT action, but also facilitate cooperation among all ICT-56 projects and NGIoT. Note that the GLOBECOM workshop, which involves multiple stakeholders as organizers, is planned to be repeated with invitations to co-organize extended to the leaders of the remaining ICT-56 projects (one representative per projects).

Separately, the ASSIST-IoT leadership is in advanced negotiations to organise a Special Issue of the IEEE Internet of Things Journal. It is expected that the proposal will be prepared in late May/early June 2021. It is estimated that the completion of this Special Issue will take place in late 2022.

At this stage, the remaining targets for 2021 are conferences to which members of academic/research partners are invited as keynote speakers. These conferences have publications either in IEEE Digital Library, or in one of Springer book series (LNCS, LNEE, ACI, etc.). These venues are perfect for presenting, for instance, limited in scope contributions based on requirements analysis of the pilots. Specifically, it is expected that contributions discussing ASSIST-IoT perspective on role of IoT in port logistics, worker safety, car inspection and car software management, will be prepared. These are expected to be published (be in production) by the end of 2021.

As far as contributions to journals, the first one that is planned is related to the ASSIST-IoT architecture. While the initial version of the architecture is going to be finalised and placed in D3.5, work on it will go on. In particular, it will be confronted with requirements collected from the pilots. As a result, a “publishable in a high-quality journal” first version of the architecture should be available at the end of the Summer 2021. Therefore, in late June 2021 calls for Special Issues in key journals, with deadlines in September/October 2021 will be

analysed. This is because, selecting a SI may speed up publishing process (over normal publication workflow). As a result, the target journal will be identified, and specific paper completion deadline fixed.

Further analysis of targets for scientific dissemination will be performed in the period July-August 2021, when the state of COVID, and its effects on conferences, as well as capability of preparing disseminable material versus the need to deliver technical results, will be much clearer.

To maximise dissemination impact, for each group/audience, several targeted dissemination activities are planned, and specific provisional metrics are set since the proposal level (Table 12). Please note that as already stated, proposed initial targets are tentative and might be adapted as the project progresses and after evaluating the COVID conditions that may further affect the timing and execution of specific dissemination activities.

Table 12. ASSIST-IoT Dissemination Activities' Tentative Targets

Dissemination Activities	KPI	Target	Targeted Audience
Scientific Publications	Number of publications	>20	Scientific Community
Presentations in scientific events	Number of presentations	>20	Scientific Community
Showcases	Number of showcases	>5	Scientific/industry community
Exhibitions in scientific and industrial events	Number of exhibitions	>5	Industry community
Organization/Attendance of events (tutorials/workshops)	Number of events	>10	Scientific/industry community
Education (seminars/courses)	Number of courses/seminars	>10	Scientific/industry community
Whitepapers	Number of whitepapers	>5	Scientific/industry community
Liaison with projects	Number of contributions	>10	Scientific/industry community

3.3. Dissemination Plan and Strategy

Overall, the dissemination strategy, consists of reaching out to selected audiences through specific communication channels and activities. Specifically:

- **Scientific publications and participation in related conferences:** outreach to scientific audience; **means:** publications, conference presentations; use of social media: LinkedIn, ResearchGate, Twitter; time frame – ongoing.
- **Showcases:** General audience, scientific audience, administration, business. **Means:** showcases at selected venues; use of social media: LinkedIn, Twitter, Facebook; time frame: starting M12 (depending on COVID situation).
- **Community building events:** General audience, scientific audience, administration, business. **Means:** hackathons, public challenges, events focused on special groups such as pre-university students, young professionals, women in tech; use of social media: LinkedIn, Twitter, Facebook; **Time frame:** likely starting M12 (depending on COVID situation).
- **Direct dissemination activities:** General audience, scientific audience, administration, business. **Means:** hackathons, public challenges, events focused on special groups such as pre-university students, young professionals, women in tech; use of social media: LinkedIn, Twitter, Facebook; **Time frame:** likely starting M12 (depending on COVID situation).
- **Organization of tutorials and seminars:** General audience, scientific audience, administration, business. **Means:** open events targeted to verticals, end-users, and other interested parties – forms: exhibitions in industrial and scientific events, special sessions, invited presentations at conferences, as well as public talks; use of social media: LinkedIn, Twitter, Facebook; **Time frame:** likely starting M12 (depending on COVID situation).
- **EC dissemination mechanisms and events:** General audience, scientific audience, administration, business. **Means:** primarily, as facilitated by the CSA; use of social media: LinkedIn, Twitter,

Facebook. **Time Frame:** likely starting M12 (depending on vision brought on board by the CSA and the COVID situation).

- **Liaison with other projects:** Started with participation in the CSA and NGIoT; after CSA is over, to be continued on the basis of developed relations; use of social media: LinkedIn, Twitter, Facebook. **Time frame:** ongoing.
- **White papers:** May be prepared in conjunction with relevant European Technology entities and respective industry fora; use of social media: LinkedIn, Twitter, Facebook; **Time frame:** on the basis of the needs (materializing, for instance, in the context of the CSA).

Table 13 summarises a tentative list of potentially targeted journals, conferences and book series. This table originates from the proposal and the Grant Agreement. At this stage it remains valid. However, it will be thoroughly re-evaluated after July 1, 2021, when the pandemics prognosis will become more reliable.

Table 13. Main journals, conferences, book series related with ASSIST-IoT

Journals	Technical	IEEE Trans. on Software Engineering; IEEE Communications; IEEE Network; Elsevier Future Internet; IEEE Internet Computing; Elsevier Computer Communications; Elsevier Future Generation Computer Systems; ACM Transactions on the Web; Elsevier Expert Systems with Applications; Elsevier Journal of Network and Computer Applications, IEEE Pervasive Systems, IEEE Internet of Things Journal, IEEE Sensors Journal, IEEE Transactions on Human-Machine Systems, Information Fusion, ACM Transactions on Internet Technology, European Journal of Information Systems, Journal of Safety Research
	Pilot oriented	IEEE Trans. on ITS, Elsevier Transportation Research, IEEE Trans. on Affective Computing, International Journal of Occupational Safety and Ergonomics, Work and Occupations Port Strategy, World Cargo News
Conferences	Technical	IEEE Sensors Conference, IEEE Conference on Systems Man and Cybernetics, Federated Conference on Computer Science and Information Systems (FedCSIS), Internet and Distributed Computing Systems, International Conference on Internet Computing, International Conference on Internet Technologies and Applications, International Semantic Web Conference, International Conference on Web Information Systems Engineering, International World Wide Web Conference
	Pilot oriented	European Transport Conference, World Conference on Transport Research, IEEE ITSC, International Conference on Smart Wearable Systems, Sustainability & Digitisation: Future Directions for PPE Innovation, Port Technology; Terminal Operators Conference (TOC); Port Equipment Manufacturers' Association (PEMA) Technical Meetings, FEPOR Annual Meeting, European BIM Conference, BACnet Building Automation Conference, Digital Human Modelling and Applications in Health, Safety and Risk Management.
Books	Technical	Springer Series on Internet of Things, Springer Briefs in Cooperating Objects, Lecture Notes on Computer Science, Lecture Notes on Electrical Engineering

3.4. Initial Dissemination Activities

Concerning the initially performed dissemination activities, please note that in Section 2.4 and particularly in the Table 11, one may access and read all the activities that have been performed and communicated through the ASSIST-IoT communication channels for this first reporting period M1-M4. More dissemination activities will be reported in the upcoming WP9 deliverables (D9.5 and D9.8).

In specific the following initial dissemination activities have been performed:

- **Technical report** (<https://assist-iot.eu/publications/>)
 - César López, Ignacio Lacalle, Andreu Belsa, Zbigniew Kopertowski, Carlos E.Palau, Manuel Esteve, “*Reviewing SDN adoption strategies for Next Generation Internet of Things networks*” ([PDF](#))

- **Workshop organised (<https://assist-iot.eu/workshops-presentations-and-trials/>)**
 - ASSIST-IoT online Webinar-Workshop “Towards Market Review” on Monday 18 January 2021 at 10:00-11:00 CET (<https://assist-iot.eu/2020/12/24/assist-iot-online-workshop-webinar/>)
- **Presentations (<https://assist-iot.eu/workshops-presentations-and-trials/>)**
 - 5th ICCSCI, “Towards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems”, Nov 2020
 - 5th IEEE ICRAIE-2020, “Towards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems”, Dec 2020
 - ICRMAT-2020, “Second rise of semantics in the era of next generation system architectures”, Dec 2020
 - BDA 2020, “Towards Edge-Fog-Cloud Continuum in the Next-Gen of IoT Ecosystems”, Dec 2020
 - 2nd MARC2020, “Onwards Edge-Fog-Cloud Continuum in the Next Generation of IoT Ecosystems”, Dec 2020
 - 3rd International Conference on Smart Systems, “Onwards Edge-Fog-Cloud Continuum in the Next-Gen IoT Ecosystems”, Jan 2021
 - National Seminar, The West Pomerania School of Business, “Towards Edge-Fog-Cloud Continuum in the Ecosystems of the Next Generation of IoT”, Jan 2021
- **Articles (<https://assist-iot.eu/articles/>)**
 - “Paving new ways for next-gen IoT” online article by Bits&Chips: <https://bits-chips.nl/artikel/paving-new-ways-for-next-gen-iot/>
 - ASSIST-IoT online article at Partnership for European Research in Occupational Safety and Health (PEROSH) website: <https://perosh.eu/news/ciop-pib-participates-in-project-assist-iot/>
 - “La industria encara sus retos tecnológicos con la inteligencia artificial y el Internet de las Cosas – La Politécnica lidera el proyecto europeo Assist-IoT” online article at La Razon (in Spanish): <https://www.larazon.es/comunidad-valenciana/20210103/vbqf2gwxzjhofnp5kuwd4um2ue.html>
 - “La industria encara sus retos tecnológicos con IA e Internet de las cosas – El proyecto europeo ASSIST-IoT prevé aumentar la seguridad laboral en la construcción y optimizar el diagnóstico de fallos en vehículos” online article at economia3.com (in Spanish). It can be accessed [here](#)
 - “ASSIST-IoT Webinar-Workshop video”, NGIoT website, <https://www.ngiot.eu/assist-iot-webinar-workshop-video/>

4. Standardisation Roadmap

In this deliverable, the initial standardisation activities roadmap and the strategy for the project duration, are presented. The objective is to deploy technical project outputs to standardisation processes in selected relevant Standard Developing Organizations (SDO's). For this purpose, firstly in D3.1, the analysis of existing standards gathering the most recent insights into the current IoT architectures, including but not limited to hyperconnectivity, interoperability, edge/fog computing, distributed intelligence, human-machine interfaces (HMI), DLT and semantics, and tactile Internet, with a special focus on existing and proposed SDOs was performed. Secondly, existing SDO's and pre-normative initiatives, in terms of currently on-going standardisation work in relevant technical domains of the project, were analysed. Based on above analysis the gaps in the standardisation work were initially identified. Moreover, the standardisation activities roadmap for the project was planned. Next, by identifying Consortium partners current and planned involvement in different SDO's and initiatives, the initial strategy for standardisation activities in relevant SDO's in the technical domains was specified. Below, in subchapters the detailed information about mentioned analysis, work plans and standardisation strategy are presented.

It is worth noting that the task T9.3 (in charge of standardisation and pre-normative activities in ASSIST-IoT) started in M3 (January 2021), thus in M6 (writing of this deliverable), the actions performed have been limited to identification, planning and assignment of roles/teams, within the Consortium members.

4.1. Relevant Standardisation Bodies and Initiatives

Identified for ASSIST-IoT potential contributions to standardisation and pre-normative activities are related to the subjects in different technical domains in the project scope like: industrial IoT, data processing, networking, cybersecurity, artificial intelligence and more. The relevant identified standardisation organisations and initiatives are the following:

- **ETSI:** European Telecommunications Standards Institute provide recommendations in different key global technologies, with most relevant to ASSIST-IoT project results areas like in IoT, AI, Networks and Security Sectors. Several **ETSI Industry Specification Groups (ISG)** are target for future project contributions, either in the form of direct content for their specifications and reports, or by means of PoC-based (Proof-of-Concept) analysis of their specifications. In particular,
 - **IoT** (with applications in IoT, security in IoT, semantic interoperability, smart M2M communications),
 - **NFV** (focused on Network Function Virtualization orchestration, management, security and reliability),
 - **ENI** (dedicated to exploring data-intensive, policy-based, AI-enabled network management techniques),
 - **MEC** (with the goal of defining an architecture and easy cloud and IT resources at the network edge),
 - **PDL** (standardizing best practices and technologies in permissioned DLT) and the recently launched),
 - **SAI** (where security implications of applying AI are being considered) are the most promising objectives).
- **ITU-T:** International Telecommunication Union Telecommunication Standardisation Sector coordinates standards for telecommunications and Information Communication Technology such as X.509 for cybersecurity, Y.3172 for machine learning, between its Member States, Private Sector Members, and Academia Members. Most relevant Study Groups for contributions are SG-13 Future Network & Cloud, SG17 Security and Focus Group on Machine Learning for Future Networks including 5G (FG-ML5G). Several groups are specially interesting for the scope of ASSIST-IoT:
 - **FG-AN** (Focus Group on Autonomous Networking): This group pursues the definition (and publication of reference documents) of future autonomous real-time networks and the delivery of an open platform to test pre-standards technologies. It is sub-divided in 3 working groups (requirements, architecture and enablers and proof of concept), and the contributions can be

made only by members (Orange Poland is a partner in the ASSIST-IoT project) before the scheduled group meetings via the description of the contribution using a public template. This focus group is of great interest for the scope of WP4 of ASSIST-IoT, in particular for the works to be conducted under task T4.2.

- **AIOTI:** Alliance for Internet of Things Innovation aims to contribute to the creation of a dynamic European IoT ecosystem, where activities focus on well-defined areas of development: horizontal (research, innovation eco-systems, policy, standards and distributed ledger technologies), and vertical cross disciplinary IoT subjects. AIOTI gathers a heterogeneous set of members that are very experienced on the development of research and innovation actions in the European context. AIOTI includes 13 working groups. Among those, the most interesting for ASSIST-IoT are: DLT (for task T5.4), standardisation (for task T9.3) and Policy and Strategies (that might be followed by project partners to contribute to the discussions about NGIoT-edge directions and references). AIOTI publishes timely deliverables that are going to be studied by the ASSIST-IoT Consortium, which are afterwards open to public consultation. Additionally, AIOTI requires membership for allowing active participation in the working groups. In the project OPL and UPV are the members of AIOTI. Orange is the member, with interest especially in WG3, related to standardisation work among main SDO's.
- **3GPP:** The 3rd Generation Partnership Project (3GPP) unites telecommunications standard development organization of current and future generations of mobile communications technologies. The standards development work in 3GPP is organized in Technical Specification Groups (TSGs), namely: Radio Access Networks (RAN), Service & Systems Aspects (SA) and Core Network & Terminals (CT). For ASSIST-IoT most relevant is the TSG SA group.
- **5G PPP:** The 5G Public-Private Partnership brings together cross-project work groups focused on common issues as the basis for convergence on technical and strategic aspects of 5G at the EU programme level. The Work Groups stem from the 5G-Infrastructure Association activities and the 5G PPP projects themselves. The relevant WG is working on the 5G security and pre-standardisation, and R&D topics to be standardized.
- **IETF:** Internet Engineering Task Force is open standardisation organization in the area of Internet-related technologies. In the context of 5G, the main areas that IETF is focusing on includes network slicing, MEC, machine learning at network level, and security & privacy. Several **Working Groups in the IETF (DOTS, I2NSF, SACM)** have been focusing on aspects related to policy-based open security management and monitoring. In what relates to the **IRTF**, the **DINRG** is a target for contributions related to open, distributed security, as well as **NMRG** can be considered for matters related to network telemetry and intent-based network management.
- **IEEE:** IEEE is the world's largest professional association dedicated to advancing technology. It is a widely accepted format for writing and submitting research papers commonly used in technical fields. IEEE comprises a lot of working groups associations that are focused in different areas. For contributing to the on-going plans, membership is required. At this stage, the following groups have been deemed as the most relevant for ASSIST-IoT's purposes:
 - **IEEE SA (Standards Association):** This association within IEEE is divided into six Practice Areas, being relevant for ASSIST-IoT these three: Artificial Intelligence, Connectivity and Telecom, and Foundational Technologies. Each of those areas issue standards on their fields (e.g., IEEE P7000) but are also devoted to certification, education and training on those matters. Standards and position papers are publicly available but in order to get involved on pre-normative discussions membership is required. Orange is a corporate member of IEEE SA with full access to working groups and voting rights. OPL as a part of Orange is an active member in the selected WG's. A portal of the opportunities of participating is always active and alive. Other groups (e.g. P2961) might be identified and targeted in the short future. Please note that Dr. Karachalios, Managing Director of IEEE SA, is a member of ASSIST-IoT Advisory Board, and will support ASSIST-IoT strategy and actions.
- **ECISO:** The European Cyber Security Organisation is a fully self-financed non-for-profit organization, private counterpart to the European Commission in implementing the contractual Public-Private Partnership (cPPP) on cybersecurity. It unites a variety of European cybersecurity stakeholders across

the EU Member States, the European Free Trade Association (EFTA) and H2020 Programme associated countries. ECSO is structured in the following working groups:

- WG1: Standardisation, certification, and supply chain management.
- WG2: Market deployment, investments, and International Collaboration
- WG3: Sectorial demand and users committee
- WG4: Support to SMEs, coordination with countries and regions
- WG5: Education, training, awareness, cyber ranges
- WG6: SRIA and Cyber Security Technologies

S21SEC and OPL are the members of the organisation with the main interest in WG1 and WG6 focusing on cybersecurity aspects.

- **ENISA:** European Union Agency for Cybersecurity: The European Union Agency for Cybersecurity, ENISA, is the Union's agency dedicated to achieving a high common level of cybersecurity across Europe. Established in 2004 and strengthened by the EU Cybersecurity Act, the European Union Agency for Cybersecurity contributes to EU cyber policy, enhances the trustworthiness of ICT products, services and processes with cybersecurity certification schemes, cooperates with Member States and EU bodies, and helps Europe prepare for the cyber challenges of tomorrow. Through knowledge sharing, capacity building and awareness raising, the Agency works together with its key stakeholders to strengthen trust in the connected economy, to boost resilience of the Union's infrastructure, and, ultimately, to keep Europe's society and citizens digitally secure. Similarly, S21SEC and OPL are members of the agency, focusing on initiatives and best practices elaboration in IoT security subjects.
- **ISO/IEC:** International Organization for Standardisation/International Electrotechnical Commission offers for experts a neutral and independent platform where they can discuss and agree on state-of-the-art technical solutions with global relevance, most relevant subcommittees are: SC25 Information security, cybersecurity, and privacy protection; SC41 IoT and Digital Twin; SC42 Artificial Intelligence.
- **FIWARE** is framework of open-source platform components to accelerate the development of Smart Solutions, initiative created community with more than 150 cities, 19 iHubs, a FIWARE Accelerator Programme, and strategic partnerships with GSMA, TM Forum, CEF, and ETSI, amongst others. FIWARE, although not being specifically oriented to deliver standard or pre-normative document, is an initiative that is gaining traction as a technological reference for open source IoT deployments. As a matter of fact, its core component Context Broker ORION was recognised as a CEF building block by mid 2018. FIWARE allows public (without membership fee) to contribute to their data models, and to make suggestions related to their tools.
- **EFFRA:** European Factories of the Future Research Association is a non-for-profit, industry-driven association promoting the development of new and innovative production technologies. The main objective of EFFRA is to promote research and innovative solutions on production technologies within the European Research Area by engaging in a public-private partnership with the European Union called 'Factories of the Future'. EFFRA is gathering private and public resources to create an industry-led programme in research and innovation with the aim of launching market-oriented cross-border projects throughout the European Union. UPV as a member of the association will bring the Assist-IoT outcomes to stimulate creation of the new research programmes and projects.
- **BDVA:** Big Data Value Association is an industry-driven international not-for-profit organisation with more than 200 members all over Europe, to develop the Innovation Ecosystem for the data and AI-driven digital transformation in Europe delivering maximum economic and societal benefit. The most relevant aspect of BDVA's offering is to be aware of the advances in the field of Industrial Data Spaces (mentions in the GA to ensure exploration and alignment). In particular, this observation might be conducted in ASSIST-IoT via the Task Forces of Programme (TF1) and Data Sharing Spaces (TF10). Participation in the BDVA TFs require membership. UPV is a member of this organization. Additionally, BDVA produces a good quantity of position papers during a year, so ASSIST-IoT will be able to follow their recommendations also that way.

- **5GIA** is a European association focused on the advances in reference initiatives and standardisation focused on “Smart Networks and Services” based on 5G technologies. The main objective is to support and promote European leadership in the area of 5G and ensuring a voice and role of Europe in the new wave of mobile technologies, while also representing the “Private (Industry) side” in the H2020 5G-PPP. 5GIA discussions are structured in 12 working groups, that deliver timely papers about findings, meetings and objectives. While those documents are released for the public (free of charge), the participation on the different WGs requires membership. UPV is planning to participate. Up to now, the most interesting WGs identified are: Pre-standardisation (for task T9.3), Security (for task T5.2), Architecture (task T3.5 and ASSIST-IoT as a whole), Network Management and QoS (task T4.2) and Automotive (pilot in T7.3).
- **TIC4.0** - The Terminal Industry Committee 4.0 (TIC 4.0) initiative aims to bring together representative companies from both the Terminal Operators industry and Port Equipment Manufacturers and Suppliers to collectively work on the elaboration of such standards. Terminal Link (partner of ASSIST-IoT) is the president of the Committee. One of the objectives is promote the deployment and adoption of selected existing standards and those developed by TIC 4.0 by the sector.

Above identified SDO’s and initiatives are most suitable for the project technical scope but not limit potential contribution to other standardisation work in forums like TM Forum, IoT Forum or other organisations like OneM2M, W3C (World Wide Web Consortium).

4.2. ASSIST-IoT Contributions Domains and Participation to Standardisation Bodies

ASSIST-IoT will contribute through provision of recommendations on reference implementations, and contribution to pre-normative activities, to standardisation, both horizontally and vertically in pertinent domains (i.e. addressed in pilots). Recommendations on the reference implementation of promising IoT standards, serving the founding pillars of the architecture, will come from coordinated consolidation of results obtained through standard implementation and pre-normative activities at the platform and/or pilot levels. Regarding pre-normative standards, ASSIST-IoT will differentiate between domain independent/horizontal domain actions addressing the requirements that are the same across different domains (e.g., communication technologies or protocols); and domain dependent/vertical domain actions that are specific for application domains, like the three pilots planned in ASSIST-IoT.

4.2.1. Standardisation gaps

The vision of ASSIST-IoT involves the creation of a reference architecture, that aims at being a blueprint for the NGIoT adoption. The architecture will target standardisation, as it aims at being widely adopted in the short-to-mid-term future by the NGIoT deployments in Europe and world-wide. This fact shows how relevant for the project are standardisation mechanisms. Thus, action extends current frame of standardisation actions, influencing the Standards Development Organisations into new activities of standardisation, or new versions of already existing. The gaps in the standardisation are analysed in different H2020 projects (CREATE- IoT, CHARIOT, MONICA LSP), in ETSI ST505 and in AIOTI [2] where the gaps are gathered and analysed. Considering the above and our findings at the early stage of the project we can distinguish gaps in IoT standardisation:

- smart networking technologies and connectivity interoperability (IoT devices and gateway, IoT gateway and core network),
- global ontologies and semantic interoperability,
- APIs for application portability to connect to multiple ecosystems,
- translation mechanisms for data interoperability,
- unified models/methods for massive deployments / scalability,
- software development components in the ecosystem,

- accessibility and usability for non-specialised users,
- platforms interoperability:
 - fragmentation due to competing platforms
 - unified global naming
 - multiplicity of HLA's and service platforms
- data governance
- cybersecurity (confidentially, integrity, availability).

4.2.2. Main contribution domains

In order to contribute to the current standardisation landscape ASSIST-IoT has identified several standardisation goals and potentialities in several specific standardisation domains:

- (i) Internet of Things domain:
 - a. ASSIST-IoT will specifically focus on the application challenges and analysis of reference architecture diversities of IOT-A RA, RAMI 4.0, ETSI MEC, and IIRA as well as concentrate on the standards for DLT and semantic interoperability. Equally ASSIST-IoT will consider loosely coupled vendor neutral cross-sectorial micro-service RA, such as the EdgeXFoundry or global Fog standardisation efforts, such as OpenFog.
 - b. Big Data. One of the major challenges is the analysis of massive raw datasets. Some of the respective SDOs and initiatives are dedicated to this topic such as e.g. ISO/IEC JTC 1, ITU-T, W3C, OASIS, NIST. ASSIST-IoT will focus on the current gaps as e.g. use cases and reference architectures, standardisation of interoperability framework, semantic inconsistency in meta-models, and data quality.
 - c. Use cases and testbeds. SDO's are working on federated testbed standardisation (IEEE, ITU-T, ETSI) and use cases in ETSI STF601 and AIOTI WG3. The first contributions are expected in this subject.
- (ii) Artificial Intelligence. Recently, ISO/IEC JTC 1's has launched one of a kind standardisation programs on AI/ML in order to provide guidance to other international committees that are developing AI/ML applications (e.g. ITU-AI and ISO/IEC JTC SC 429). Due to the novelty of the AI/ML domain, ASSIST-IoT will monitor the standards development and consolidate project results (e.g. H2020 AI4EU), looking for opportunities to contribute to AI/ML framework architectures, components and use cases.
- (iii) Cyber-Physical Systems (CPS). ASSIST-IoT will consider the standards for adoption of CPS in its architecture and to boost the further development of CPS Reference Architecture and its components, focusing on administrative shell, as well as contribution from smart networking and virtualisation SDN/NFV: ONF, IETF (I2RS), ODL, IEEE 802 and OPNFV.
- (iv) Cybersecurity. ASSIST-IoT will integrate both IoT, edge and cloud (multi-layer) cybersecurity standards, particularly for the secure exchange and processing of data (e.g. ISO/IEC 27001 and 27002, NIST CSF (SP 800, SP 1800, SP500), IETF and ANSI/ISA 62443, and ETSI TR 103 305-3, Critical Security Controls, including a chapter for IoT Security); consolidating requirements, i.e. product, system, process, or technology environment, and look for opportunities to close the gaps in the existing standards as well as in the area of application security for ecosystem interoperability. In the field of cybersecurity also worth mention other initiatives and best practices published by ENISA on IoT security and other market-oriented initiatives like IoT security testing framework by ICSA labs and standards and schemas developed by IoT device vendors, such as: BITAG Internet of Things (IoT) Security and Privacy Recommendations, Cloud Security Alliance IoT Working Group, GSMA IoT Security Guidelines, and CIS Controls IoT Security Companion [3] [4] [5] [6].

4.2.3. ASSIST-IoT consortium partners involvement

ASSIST-IoT Consortium members are present in most important international standardisation bodies, committees, and initiatives and have experience in contributions to published standards and in pre-normative forums in different areas. In table below is presented the current list of partners engagement in standardisation work. As the ASSIST-IoT action progresses, however, it is expected that also other partners may become actively involved in standardisation-related activities.

Table 14. SDO's and partners roles

SDO, Initiative	Partners	Partner roles
ETSI	OPL	OPL is a member with delegates in different WG's
ITU-T	OPL	Different OPL representatives in SG-13 and SG-20, OPL is full member
AIOTI	OPL, UPV, ICCS	Participation in standardisation work (WG3), OPL and UPV are members. ICCS also supports these activities.
3GPP	OPL	OPL representative in the organisation
5GPPP/5G IA	OPL, ICCS	Orange and ICCS are members of WG's related to standards
ESCO	S21SEC, OPL	S21SEC and Orange are a members
ENISA	S21SEC, OPL	S21SEC and Orange are a members
5GIA	UPV	Potential participation by UPV
IEEE	OPL, UPV, NEWAYS	Orange is a corporate member, OPL is representative in different SG's, for the project in SG AI and CL participation with Neways and UPV
IETF	UPV	Contributions possible by many partners
ISO/IEC	OPL	OPL is participating in the organisation, possible contributions
FIWARE	UPV, OPL	UPV participates in the organisation
EFFRA	UPV	UPV participates in the organisation
BDVA	UPV	UPV participates in the organisation
TIC4.0	TL	TL leader of committee, actively working on standardisation

4.3. Roadmap and Strategy for Standardisation Activities

In the ASSIST-IoT project the main objectives for standardisation activities are in relation to the technical work and standardisation initiatives:

- Contribution to relevant SDO's/initiatives in selected technical areas,
- Analysis of the existing standards to reuse standardized technological solutions in the project,
- Look for the gaps in the standards and propose the updates,
- Disseminate standardisation project results in industry ecosystem,

- Achieve standardized technical solutions for interoperability of IoT systems,
- To be align with standardisation recommendations for use cases deployment and testbeds validation.

The standardisation activities in the project are closely related to technical outcomes. On the other hand, the standardisation work is usually a long-term process, thus planned activities will be conducted during whole project duration, as well as after project completion.

4.3.1. Roadmap of standardisation activities

ASSIST-IoT team has defined the plan of the standardisation activities, based on the work planned in individual Work Packages. In the presented roadmap (Figure 47), the whole project duration activities are showcased, indicating through checkpoints relevant milestones (at the middle and at the end of the project). It is expected that during the first period of the project there will be limited opportunities for participating in standardisation initiatives. However, already the first contribution activities were started. It is also expected that contributions to SDO's will increase over time in direct relation with the technical development of the project. According to the Work Plan, now in this deliverable the initial analysis for standardisation activities has outlined (via the roadmap/strategy depicted here below) . Deliverable D9.3 (dedicated to standardisation achievements) is planned for M18. It will be updated by the end of the project via D9.4 report.

In standardisation area three main actions have been defined:

1. Following and analyse the standardisation work.
2. Use standardized elements in project solutions.
3. Identification of subjects and collaborative contribution to standards (improve existing recommendations and initiate new one).

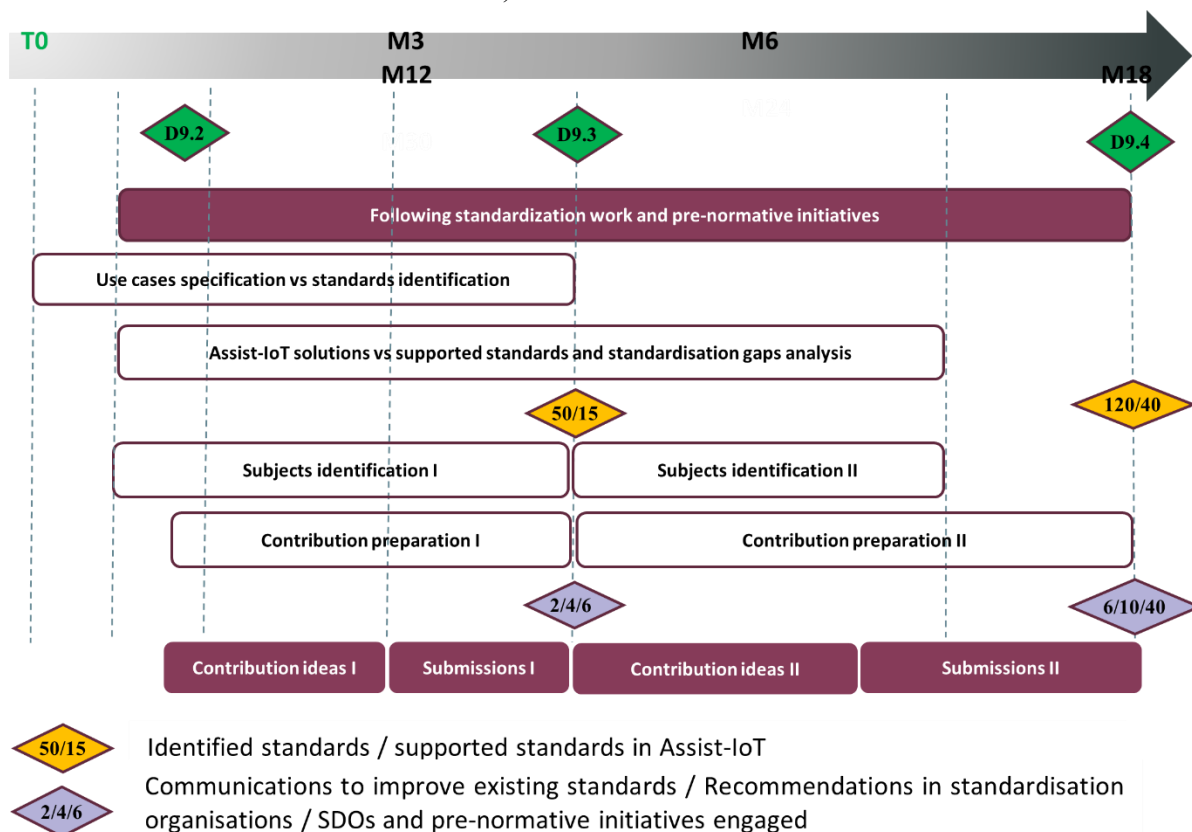


Figure 47. Target KPI for standardisation activities.

4.3.2. Standardisation strategy

In the context of above presented roadmap for standardisation activities, analysis of the standards, their gaps and partners involvement, the strategy for the ASSIST-IoT project is focused on the following elements:

1. Main technical domains in the project (in summary):
 - a. **IoT domain** in case of reference architecture, DLT and semantic interoperability, Fog/Edge Computing solutions, use cases specification.
 - b. **AI solutions**: federated machine learning, governance and practice of artificial intelligence as related to computational approaches to machine learning, algorithms and related data usage.
 - c. **Networking systems** with focus on smart networking, 5G, SDN/NFV and testbeds based on open-source solutions.
 - d. **Cybersecurity domain** with focus on enhance technical guides on IoT related security controls Influence, define or propose new security blocks on the reference architecture.
2. Main SDO's and standardisation initiatives most relevant for the project:
 - a. ITU-T - active partners involvement, full membership,
 - b. ETSI - partner delegates with active participation in WG's,
 - c. IEEE SA - three partners active involvement, corporate member (Orange),
 - d. AIOTI – two active members, especially in WG3,
 - e. ESCO/ENISA – active members in cybersecurity area.
3. Secondary interest SDOs: beside main standardisation SDO's it is foreseen to potentially contribute to IETF, 3GPP, ISO/IEC, TIC4.0 and others.

In table below the planned and started standardisation activities according to main technical domains and SDO's are presented. In each domain, ASSIST-IoT has identified and will actively participate (green box) in working groups specified in the table.

In table below the planned and started standardisation activities according to main technical domains and SDO's are presented. In each domain ASSIST-IoT has identified possible contributions at this stage of the project: started active participation in working groups (green box), plan to contribute (yellow box) and no relevant subjects currently (red box).

Table 15. Initial roadmap for planned contributions

Domain/SDO	IoT	AI	Networking	Cybersecurity
IEEE SA	CEC, CCSC, BDL, 802.24	AISC	LM, 802.16	CPSC
AIOTI	WG SD, DLT	WG SD	WG SD, Testbeds	WG SD, PaS
ETSI	IOT, PDL	AI, ENI	NFV, MEC	SAI
ITU-T	SG-20	SG-13, SG-16	SG-13	SG-17
ESCO/ENISA				Security

As mentioned earlier, in the first period ASSIST-IoT T9.3 team will concentrate the efforts and the resources on the selected standardisation areas most appropriate and relevant to the project outcomes. Furthermore, the upcoming period of the project will focus on tracking and creation of potential standardisation ideas. At current stage of project, according to defined strategy the first activities were started (see table below) in AIOTI and ETSI. It is expected that during the project evolution will be prepared next contributions especially for the second half of the project in different identified technical areas and in selected SDO's and standardisation initiatives.

Table 16. Initial roadmap for planned contributions

SDO, Forums, Initiatives	Partner	Proposition of contribution	Type	Planned Date
AIOT	OPL/UPV	WG3 contribution with use cases, "Beyond 5G: enabling technologies and challenges"	Improvement Engaged	Q2 2021
AIOT/ETSI	OPL/partners	WG3, Semantics contribution	Tutorial	Q2 2021
ETSI	OPL/partners	Use cases specification, STF601	Recommendation Engaged	Q2 2021
IEEE SA	OPL/UPV	IEEE P2961 Collaborative Edge computing	Recommendation	Q4 2021
ECISO	S21SEC	Analyse working groups of ECISO that better fits with ASSIS-IoT results Focus cybersecurity results of ASSIST-IoT	Activity reports of the project, presentation, or white paper	Q3 and Q4 2021
ITU-T	OPL/partners	ITU-T SG-20 contribution to IoT architecture	Improvement Engaged	2022
ETSI	S21SEC	Precise or enhance technical guides on IoT related security controls	Recommendation	2022

5. Exploitation Plans and Impact

5.1. Introduction

Exploitation is recognised as one of the key enablers for the success of the H2020 projects by European Commission. In EC reference terms [7], exploitation is defined as “*The utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.*” It should be worth to notice the differences between dissemination efforts and exploitation plans as shown in Table 17 [8].

Table 17. Dissemination and Exploitation

Dissemination	Exploitation
Describing and making available results so that they can be used	Making use of results , for scientific, societal, or economic purposes
Audiences that may make use of results	Groups and entities that are making concrete use of results
All results which are not restricted due to the protection of intellectual property, security rules or legitimate interests	All results generated during project. Participant shall make best efforts to exploit the results it owns, or to have them exploited by another legal entity.
Grant Agreement Art. 29	Grant Agreement Art. 28

An effective exploitation plan shall guarantee the following checklist [8]:

Key exploitable results

- Different types of exploitable results (knowledge, methods, agreements, networks, technologies) are clearly identified and their direct and indirect value and impact for different stakeholders are considered.
- The barriers and risks for exploitation (actual use of the results after project funding) are recognised and countered with appropriate measures.
- Describe concrete measures to ensure that the results meet real needs and will be taken up by potential users (e.g., engaging them in the project).
- Describe the roles and responsibilities of partners in exploiting results or supporting results exploitation by other (intermediate or end) users.

Exploitation and IPR management report

- Quantitatively and qualitatively (patent applications, licenses, copyrighted/copylefted material, registered designs, etc.).
- Patent applications have EU funding acknowledgement.

5.2. ASSIST-IoT Initial Exploitation Plan

The exploitation of results will increase the ASSIST-IoT competitive advantage, helping to improve products and services in new and existing markets (i.e., and not only in the specific industrial sectors where the ASSIST-IoT solution will be tested and validated). Moreover, the related ASSIST-IoT results, and range of future proof solutions, will be relevant and a source of inspiration for SMEs in general, helping to multiply their pace towards their own digital transformation. In this section the first version of ASSIST-IoT exploitation plan is presented. As detailed in the project proposal, the exploitation objective ASSIST-IoT is to design and implement an open software architecture (unified, innovative, multi-plane, semi-autonomous, decentralised and edge-cloud based) and its validation into three high-value industrial pilots but also applicable to any cross-vertical business process. Therefore, ASSIST-IoT aims to go beyond current both IoT and edge computing solutions, by exploring disruptive and beyond state-of-the-art solutions such as Self-*, distributed intelligence, tactile internet, and

DLTs. As shown in the Figure 48, the integration between industrial partners, NG-IoT technology suppliers (either equipment/infrastructure and/or service providers), and research and academia will enable joint exploitation synergies towards the creation of viable commercial solutions, by taking a broad cross-consortium perspective.

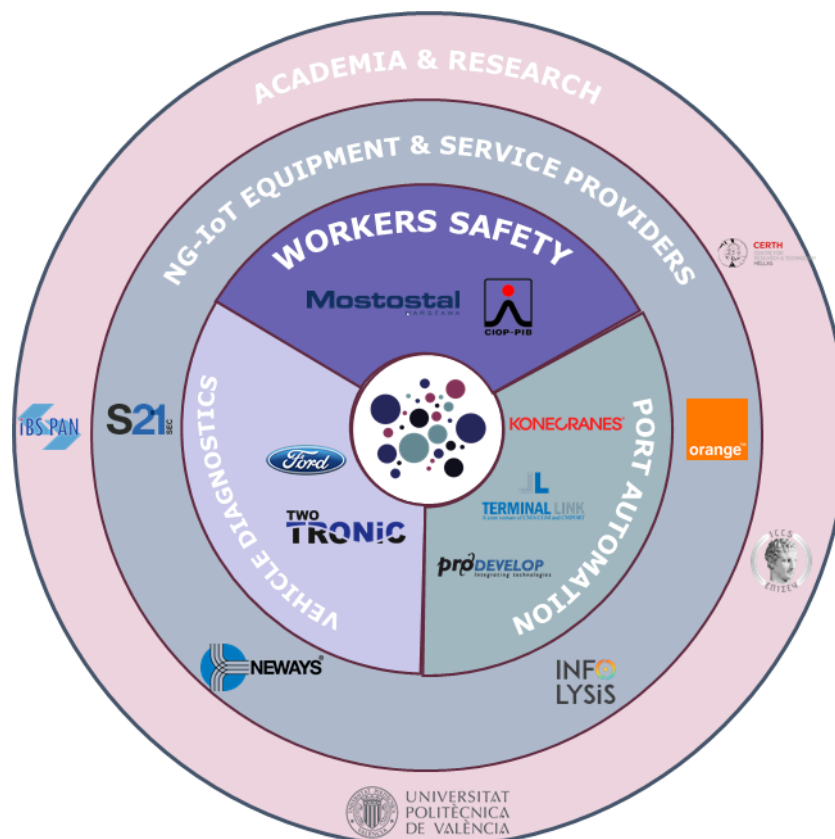


Figure 48. ASSIST-IoT exploitation ecosystem

The ASSIST-IoT Exploitation Strategy intends to move along two main streams:

- Joint Exploitation Plan with the final goal to define and implement an exploitation business model that will create the right synergies so that individual business plans on product and service innovations can be realised and return on investment plan for all the consortium partners. The Joint Exploitation plan considers all ASSIST-IoT dimensions, providing a harmonised approach to holistic ASSIST-IoT reference architecture exploitation.
- Individual Exploitation Plans defined by each partner of the project regarding their innovative and clearly market-oriented bundles of ASSIST-IoT outcomes with pre-existing, even proprietary background assets where applicable, to achieve a new impact in the research domain and in the commercial market.

In order to address several innovations stages at different times along the project duration and guarantee a successful exploitation of projects results, ASSIST-IoT joint exploitation plan will go along the following steps:

Step 1: Discovery and identification of Exploitable Results of the project and partners' interests:

Drawing from the Grant Agreement's tasks and deliverables description, it is possible to identify a number of different Exploitation Results of different nature: software, hardware, publishable document, datasets, etc. The goal of this step is to identify them, list them and update the template that is described above. Current document will contain a first iteration, while probably in the last deliverable regarding exploitation some new Exploitable Results are added to the list if necessary. However, the initial list should be considered mature enough to guide the process in the following months.

Step 2: Identification of IPR of each Exploitable Result:

In a first stage, there is a need to identify the ownership of the different results of the project, as well as dependencies with previous knowledge (background). It is important to do it in early stages because it helps to know which the constraints are (if any) at the beginning so it is possible to overcome potential barriers during the process.

Step 3: Identification of Joint and Individual exploitation opportunities:

It is important to identify those exploitable results that are candidate to be exploited in groups or individually, in order to put the focus in creating the group of partners that will work together in creating the business plan afterwards. Regarding individual opportunities, in a first stage only the interest will be identified while at the end of the process partners will need to provide more details on which opportunities do, they have as a result of being participating in the project.

Step 4: Selection process of where to put the focus on during project execution:

Not all exploitation opportunities will be feasible to be developed in individual business plans. The project (in fact, any project) has limited resources to make this intensive analysis for so many opportunities. Only 1 or 2 opportunities will be analysed in depth with a more detailed business plan. The project will justify the selection based on a number of criteria that fit with the expectations of the H2020 Framework Programme and the interests and available resources in the different organizations participating.

Step 5: On those selected, development of the business plan:

Business plan consists of the following aspects to be identified for the exploitation opportunities (as identified and selected in the previous steps):

- Customer segments to which the products/services are oriented.
- Value proposition for those customer segments.
- Market analysis: information about the size of the market, interest of potential candidate customers in different countries.
- Potential distribution channels: which are the channels that we will use to achieve our customers.
- Revenue streams: how the money will flow from payers to providers and for what.
- Key partners/stakeholders we need to involve in the process and take care of.
- Competitor's analysis: here we will identify which the main competitors are and what differentiates our offer from their current offer.
- Identification of barriers for exploitation and how we can overcome them.

The plan itself will provide concrete tasks towards the exploitation of the results. These tasks will be executed during project lifetime and afterwards. A budget to accomplish these tasks will be also identified, as well as how the partnership for the exploitation will access to those necessary financial resources (including internal investment). Business plan and exploitation activities will be lead based on well-known methodologies like Customer Development, Lean methodologies, etc. More details will be provided on the upcoming T9.4 related deliverables (D9.6 and D9.7)

5.3. Exploitation time plan

Figure 49 shows a tentative plan/roadmap of the ASSIST-IoT towards the non-commercial and commercial use and operation of ASSIST-IoT exploitable services and products within the timeframe of the project. It is important to mention that the Consortium bears in mind not only to design, deploy and validate an exploitation plan which starts up during the project life, but it goes beyond M36 when the project ends. The plan has been defined considering the journey that any innovative idea must cover before reaching the early market. Specifically, in detail:

- Innovative Idea is the starting point of the ASSIST-IoT project. It concentrates on the Consortium assumptions regarding if there is a potential need pending (from both the academia/research and market points of view) to be covered. Whilst the Consortium is based on a strong core of partners with enough knowledge, background, and real expertise, it is important to mention that this first step is plenty of hypotheses and assumptions that need to be validated. For instance, who will be the early adopters? Which is the gap ASSIST-IoT technology and services are going to fulfil? How are Consortium partners going to reach their customer segments? etc. The objective pursued by this initial stage is to have a better understanding and some evidence, which demonstrates both that there is a problem worthy to be solved and by whom.
- Problem/solution fit through its validation via an MVP (Minimum Viable Product). According to the start-up literature [9] this is the stage at which *a start-up business has a core group of happy and reference customers*, so that (1) it has already built an (or various) MVPs, (2) it has already found its early adopters (which are the people who will use it solution and/or pay for it according to a business model), (3) it has validated that real problem worth it to be solved, (4) it has managed to solve the problem of early adopters are experiencing, and finally (5), it has defined and validated a business plan which enables to charge enough for the service it is providing to its early adopters. so that it would be able to scale up this solution among different stakeholders. The objective pursued by this second stage is therefore, to define, implement and deploy an MVP, which satisfies and underserves needs coming from the early adopters previously identified by the Consortium.
- Product/market fit as the last stage and beyond the end of the Project lifetime. Whilst finding a problem worthy for ASSIST-IoT partners' early adopter's worthy to be solved is relatively easy, to reach the market with a validated business plan and a valuable product is really difficult and complex (even though taking into account that the starting point is a very innovative idea far enough to the market due to the complexity of the core business, e.g., federated learning, edge computing, or tactile internet). The product/market fit will be characterised by a high-level of satisfaction by a large set of happy customers (not only early adopters, but also the late majority), high retention rate, high product usage and revenue. The challenge pursued by this stage is to have a large set of loyal customers who enjoy the ASSIST-IoT outcomes.

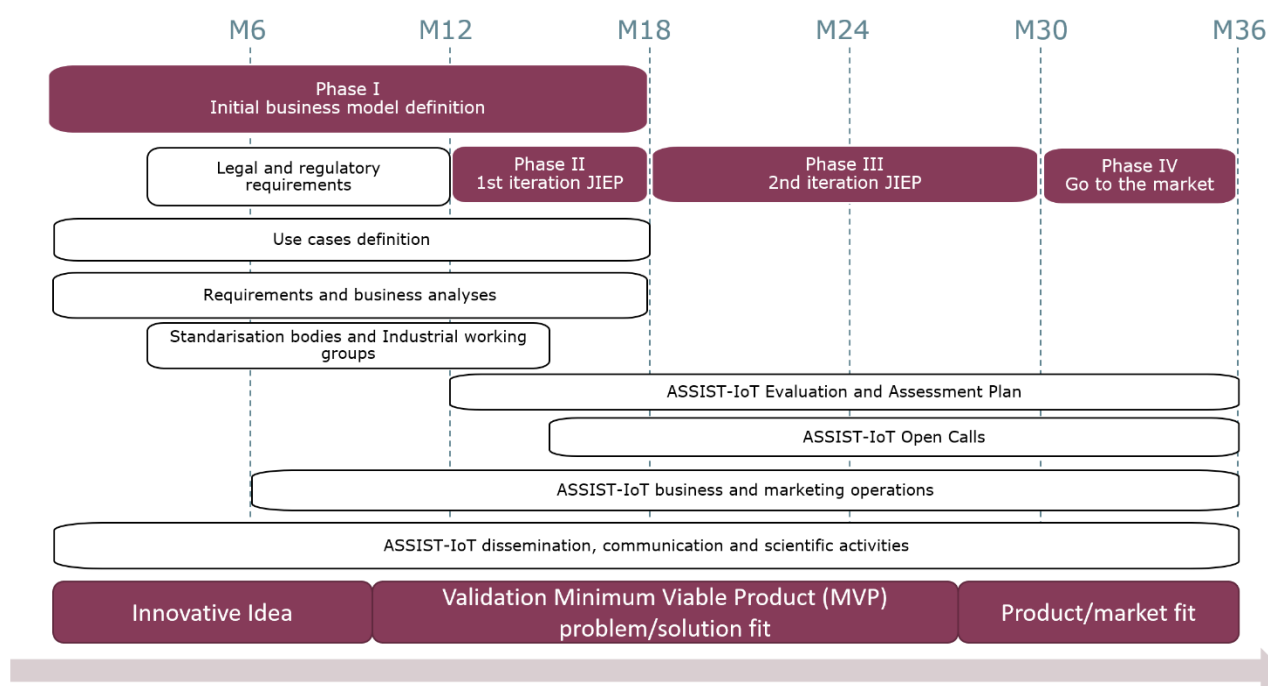


Figure 49. ASSIST-IoT exploitation time plan

5.4. ASSIST-IoT Partners Individual Exploitation Plans

Partners joined the proposal that later on became a research project based on their individual goals and objectives. As a whole, the ASSIST-IoT Consortium is a team of organizations with different natures and different ambitions that must cooperate with the common goal to make that ASSIST-IoT outcomes create an impact not only at their organizations but also in the society, or the societies they represent.

This chapter collects an update of the interests and expectations of each organization now that the project is running for some months and once the main features and hypothetical benefits of ASSIST-IoT are listed (please see deliverable D3.2 from WP3 where a detailed state of the art and needs, requirements and necessities coming from the industry are detailed). It is important to know in advance what are the main motivations of the partners which make up the Consortium in order to know priorities and to assign tasks oriented to exploit the results that are aligned with their interests and willingness. The goal is therefore to maximise the value of the invested resources.


The heterogeneity of the Consortium partners' activities will lead to different types of individual exploitation strategies, which can be either non-commercial (academic/research) or commercial (industrial). Thus, in order to maximise the technical and economic impact of the project, partners have designed individual exploitation plans as part of their exploitation strategies.

Starting from the initial statements in the proposal, the following sections provide complete and upgraded individual exploitation plans, on the base of first phase of project's life. They have been defined from the point of view of required functionalities linked to business cases to be developed within ASSIST-IoT, considering both industrial ecosystems and horizontal and transversal NG-IoT enablers (see Figure 48). NG-IoT equipment and service providers, the three industrial ecosystems (Maritime, Worker's safety, and Automotive) and the research & academia.

In order to track and gather the exploitation plan expectations per each partner of the Consortium, an individual exploitation plan template has been circulated among the staff (and will be periodically distributed once and again in the short and mid-term during the project timeframe). It will allow project partners to have the opportunity to measure and see how their exploitations expectations evolves and a better understanding of the ASSIST-IoT ecosystem.

5.4.1. Industrial Port Automation partners

5.4.1.1. Exploitation plan of partner TL

Individual Exploitation Plan		
Name of the partner: TERMINAL LINK	Partner's type: PRIVATE Container Terminal Operator	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>The port industry still has to develop the data technology. We make an intensive use of equipment (expensive and large) in a wireless environment with many interference and low possibility to control the security. On top of this we will need to interconnect with external vehicles (vessels, trucks and trains) to interchange the cargo. This development is complex and resolve the communication between devices in simple way would facilitate and reduce significantly the cost of implementation. Today the main reason to not implement remote control is the lack of a reasonable wireless technology to resolve the communication. The uses of</p>		

several commercial technologies (existing) combining with ASSIST-IoT can resolve this problem (wireless mesh+5G+Bluetooth)

What needs might be solved/met thanks to the results of ASSIST-IoT?

Authentication: To devices in proximity from different owner (external vs internal) needs to authenticate in proximity to open a direct peer to peer communication.

Redundancy: use several networks simultaneously (without limit) without data lost.

Latency: control the latency and report to the services the latency situation and forecast.

Bandwidth balance: balance all the available networks taking in consideration the redundancy and the latency.

What outputs will be created.

A middleware software acting as a gateway-router where through a central dashboard could be configure all the properties related before.

Where will the outputs be made available during and after the project?

At Malta Freeport Terminal (Malta):

We intend to run a remote operation crane (RTG) through different networks in a real hostile environment, if possible, in a permanent way.


Find a way to share all data from different systems with the humans (operators) with access control and data privacy control is expected to test as a POC during the pilot. If success a commercial product will be develop to implemented in all the equipment's.

Create a communication channel that would allow to communicate any truck (internal or external) with the crane for coordinate the operations (job confirmation, alignment and validation). Actually, this direct communication doesn't exist, all is done through a central server and all the exceptions resolved manually with the intervention of someone in the central tower.

Who are the potential users of your results?

Apart of all logistic chain (ports, transport, warehouses etc) this technology can be used in any environment that requires an interaction between devices of different ownership, with security, redundancy and latency control. Typical use case is heavy industry, remote equipment, large and complex networks configuration where authentication, redundancy is a must (multinetworks not VLANs).

5.4.1.2. Exploitation plan of partner PRODEVELOP

Individual Exploitation Plan		
Name of the partner: PRODEVELOP (PRO)	Partner's type: PRIVATE SME	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>PRODEVELOP will specifically oversee the development of new methodologies and engineering solutions in order to extract valuable knowledge and commercial value from increasing volumes of diverse data from distributed sources of information without the need to send the data to the cloud. Also, PRO will expect to make an impact in scalability of the Architecture of the ASSIST-IoT platform and the integration, testing and validation of the whole ecosystem.</p>		

What needs might be solved/met thanks to the results of ASSIST-IoT?

Container Handling Equipment are heavy machinery assets that have several subsystems running in real-time inside, all of them managed by controllers (such as PLCs, Programmable Logic Controller) and provided, deployed and maintained by different vendors and manufacturers around the world. These systems take the input directly from the machine or subsystem via sensors/transducers/encoders, execute the logic programmed in its internal memory and generates the useful outputs on actuators to physically control and enable the staff to manipulate the crane. Nowadays, the use of PLCs is prevailing in industrial automation over other possible solutions such as the use of computers (even the industrial ones) due to the extreme requirements of these environments: (i) performance, (ii) reliability, (iii) industrial design, (iv) de-facto standard and (v) low-cost devices. For all the previously aforementioned reasons, the PLC-based control is the market dominant solution not only in the maritime sector but also in the most relevant industries. However, current big data, extreme-scale analytics, AI, machine/deep learning, IoT and edge, fog or ubiquitous scenarios are based on desktop elements, servers and/or web technologies (in the broadest sense of the word). Therefore, there is a gap big enough to be closed between the place where the data is most accurate and precise, and where they could be analysed, interpreted and valuable knowledge for both commercial and academic domains could be extracted.

Consequently, (1) if we could ensure that the diverse and valuable data generated in the sources of the information (i.e. PLCs) is forwarded in the other way around, (2) efficient data processing/management achieved, (3) sufficient computing capacity in the edge elements of the architecture, (4) continuous integration which will enable the shared of knowledge between layers and also (5) the application of new algorithms, zero latency services and methodologies for interacting with the end-users (i.e. Tactile Internet) by the use of the core technologies developed in the ASSIST-IoT project, a complete Big Data and edge analytics platform will be at the disposal of the harbour which will be able to handle a vast amount of unwieldy data and visualize it in an intuitive manner.

What outputs will be created.

ASSIST-IoT is the enabler which will give Prodevelop the opportunity to develop, deploy, customize and optimize the Next Generation of the Industrial Big Data & IoT systems in a real port terminal. Whilst better analytics and accurate predictions are not possible through the first generation of IoT architectures, this current initiative will bring, thanks to the integration of Big Data technologies and edge analysis, advanced analytics to the industrial companies for: (i) alleviate the recurrent need to send the data to the central node which is normally located in the cloud (high latency so important delay taking strategic decisions), (ii) react faster to certain events which are identified as critical without the need of a vast processing in the cloud, (iii) be prepared for the forthcoming wave of new extreme-scale data-generator technologies and services (e.g. 5G, AR/VR devices, Tactile Internet, cyber-security, DLTs, neuromorphic and contextual computing, etc.) and (iv) reduce the extreme lack of scalability (and its associated computing needs) in the central node of the architecture (cloud premises).

Where will the outputs be made available during and after the project?

During the project, the outcomes of PRO will be available in official and agreed ASSIST-IoT project tools and repositories established for the project management in the way of reports or software repositories as established in the GA. When Open Calls will be carried out, outcomes will be at the disposal of the participants as agreed by the GA as well.

Finally, after the project ASSIST-IoT results, will be incorporated in the new offer of IoT services and products available in the catalogue of Prodevelop. Specifically, in detail PRODEVELOP has spent more than 25 years offering solutions to the port sector. A wide range of products and solutions have been used by different Port Authorities and associated areas like Terminals. Specifically, in detail:


- POSIDONIA SmartPort: IoT and Big Data solution for Smart Ports.
- POSIDONIA Operations: Ships graphical situation and operations (AIS, Radar, etc.)
- POSIDONIA Terminal 4.0

The outcomes of ASSIST-IoT will feed and improve all of the above.

Who are the potential users of your results?

The potential users of our results will be container terminals which are part of the Maritime Industry. Specifically, our results will be validated through the Maritime pilot which will demonstrate the benefits of the ASSIST-IoT approach by executing a group of use cases that have as main objective to show how the technologies developed could transform completely the way that complex industrial processes, infrastructure and equipment is managed in a demanding industry such as the shipping one.

5.4.1.3. Exploitation plan of partner KONECRANES

Individual Exploitation Plan		
Name of the partner: Konecranes	Partner's type: Transport & Logistics OEM	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>Container terminals are a perfect candidate for automation with their limited working areas, standardized items to be handled, repetitive tasks and a fixed set of known assets working in the process. However current trends show that the pace of building completely new terminals from ground up is slowing down and interest to automate existing terminals is increasing. This creates a new set of challenges as existing terminals have existing resources, processes, systems and infrastructure that need to be considered when moving towards remote or automated operation.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>Operators experience: Existing terminals have existing pool of operators that have used to operate cranes in a certain way for years or even decades. Outcomes of the ASSIST-IoT development and pilots will help Konecranes demonstrate how remote operation could improve the working conditions and help operators conduct their daily work in a more efficient manner.</p> <p>Connectivity: Existing container handling equipment used in container terminals are usually mobile equipment without proper reliable connectivity. Current wireless solutions available in the markets do not offer required redundancy for scalable and secure remote operation</p>		
What outputs will be created.		
<p>As an output of the ASSIST-IoT project, Konecranes expects to have an easily retrofittable remote operation product applicable to container handling equipment in container terminals. This product enables Konecranes to increase the productivity of Konecranes' customers while increasing safety and improving work ergonomics of the operators.</p>		
Where will the outputs be made available during and after the project?		
<p>Pilot installation shall be delivered to one of the ASSIST-IoT partner's (Terminal Link) container terminal in Malta: Malta Freeport. After the project, Konecranes plans to commercialize the solution and offer globally to container terminal operators.</p>		

Who are the potential users of your results?


Results and lessons learned will be utilized mainly for ports, container terminals and container depots but Konecranes will also utilize the results in other automated industries Konecranes works in paper, waste to energy, manufacturing etc.

5.4.2. Industrial Worker's safety partners

5.4.2.1. Exploitation plan of partner MOSTOSTAL

Individual Exploitation Plan		
Name of the partner: Mostostal Warszawa SA	Partner's type: IND	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>Mostostal Warszawa is a construction company that belongs to the international capital group Acciona. MOW is an example of the industrial stakeholder, particularly interested in the adoption of ASSIST-IoT results in order to improve safety and health at work. Therefore, MOW is going to exploit action results at various construction sites in Poland. Moreover, it is expected that experience gained from the ASSIST-IoT action will allow indicating further research directions on smart functionalities of the IoT ecosystem to be undertaken within the next activities. In addition, the results of the action will be exploited among other big construction companies in Poland, which belong to the Agreement for Building Safety in Poland.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>In 2018, one fifth (20.5 %) of all fatal accidents at work in the EU-27 took place within the construction sector. Due to dynamic nature of construction site, uniqueness of each construction, and involvement of stakeholders, ensuring safety is challenging. It is expected that based on the validation of the ASSIST-IoT architecture at the construction site, it will be possible to monitor the level of safety in this challenging and changing environment. The system will inform whether there is a high-risk situation on the construction, or someone needs immediate help.</p>		
What outputs will be created?		
<p>As a result of the ASSIST-IoT project will be a platform that guarantees the transmission of large amounts of data with low delays from many IoT sensors. The requirements for data types, hardware and platform operation will be tailored to the construction sector.</p>		
Where will the outputs be made available during and after the project?		
<p>The ASSIST-IoT results will be the basis for future scientific research and development in the field of occupational safety and health. Moreover, the novel knowledge produced within the ASSIST-IoT project as well as the know-how gained by MOW will be shared through the Agreement for Building Safety in Poland.</p>		
Who are the potential users of your results?		
<p>The main users of the results coming from the ASSIST-IoT project are stakeholders who actively participate in construction works. The developed platform will monitor the health and safety of both white- and blue-collar workers working on the construction site. It should be emphasized that the majority of blue-collar workers are subcontractors who regularly change on site. The platform will send the notifications to health and safety managers who supervised construction site.</p>		

5.4.2.2. Exploitation plan of partner CIOP-PIB


Individual Exploitation Plan		
Name of the partner: CIOP-PIB	Partner's type: Research organisation	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>As CIOP-PIB is a key research institution in Poland in the field of occupational safety and health (OSH), its priority will be to use the ASSIST-IoT results to ensure safer and healthier workplaces. However, this is a social impact that is expected rather in a long-term perspective, but which cannot be achieved without making an impact in other areas in a short-term perspective.</p> <p>Firstly, the development of innovative smart IoT devices that are aimed at monitoring hazards and respond to them appropriately with a human-centric approach will definitely increase usability and user acceptance of these devices at the workplace. Secondly, a technological progress in the domain of IoT devices increasing safety and health at work will allow for identification of further standardisation needs and contribution to future standards. Thirdly, it is expected that solutions verified under the ASSIST-IoT project will attract the attention of relevant businesses, not only from the construction sector, and as a result contribute to increase of awareness in relation to occupational safety and health.</p> <p>The application of IoT architecture in OSH is still an innovative approach, from both scientific and technical point of view. Therefore, the ASSIST-IoT results will contribute also to improving know-how and gaining a better knowledge on how to apply the IoT ecosystem to ensure the safety and health of workers and improve working conditions.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>According to the European statistics on accidents at work, the highest incidence of non-fatal accidents at work in the EU in 2017 was observed in the construction sector. Besides the fact that this sector has already adopted some ICT solutions to reduce the number of accidents, still the OSH performance in this sector remains on a low level. It is expected that thanks to the ASSIST-IoT project and the involvement of an end-user representative (i.e. a construction company), we will be able to address the sector needs and several solutions aimed at increasing OSH that correspond to those expectations will be developed. It is expected that based on the validation of the ASSIST-IoT architecture at the construction site, the needs coming from other industry sectors in relation to OSH may be either met, or at least supported.</p>		
What outputs will be created?		
<p>As a result of the ASSIST-IoT project, with respect to Smart Safety of Workers, a novel application field for IoT architecture will be created and developed, which can be then used by sectors other than construction and contribute significantly to the improvement of working conditions in Europe.</p> <p>It is foreseen that the ASSIST-IoT results will be used to fuel publications in international conferences and impactful journals.</p>		
Where will the outputs be made available during and after the project?		
<p>The ASSIST-IoT results will be the basis for future scientific research and development in the field of occupational safety and health. Moreover, the novel knowledge produced within the ASSIST-IoT project as well as the know-how gained by CIOP-PIB's team will also help enhance its training offer targeting OSH experts, operational managers, employee representatives and OSH management consultants.</p>		

Who are the potential users of your results?

Taking into account the fact that the Smart Safety of Workers pilot will be located at the construction site, companies interested in increasing safety and health from this sector are the main potential users of our results coming from the ASSIST-IoT project. However, experience gained from ASSIST-IoT is expected to be easily transferred to address the needs of other sectors. Therefore, all industrial companies dealing with OSH issues are potential users of the results obtained by CIOP-PIB within the ASSIST-IoT project. Moreover, our experience and results gained from ASSIST-IoT have a potential to be supportive for OSH regulatory bodies, as well as national and international agencies dealing with digitalisation in OSH.

5.4.3. Industrial Vehicle diagnostics partners

5.4.3.1. Exploitation plan of partner FORD-WERKE

Individual Exploitation Plan		
Name of the partner: Ford-Werke	Partner's type: Industry	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>Since both passenger cars as well as light commercial vehicles are gradually moving into IoT business models, Ford expects significant opportunities to deploy frameworks like ASSIST-IoT. Within the perimeter of the propulsion system controls domain, these opportunities are specifically seen around diagnostics and in-service conformity. The increased stringency of current and future emission legislation (specifically the EU7 emission initiative) are the strongest drivers for edge computing schemes, enabling statistical modelling and all kind of sub-system performance evaluations at the fleet level.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>Pre-EU7 the emission conformity was proved with a limited number of vehicles tested within a standardized and artificial test environment. The EU7 emissions initiative shifts the focus towards real world driving emission fleet surveillance. In order to address these challenges and to protect personal driver data in parallel, a logical consequence is to push surveillance intelligence towards the edge. Up to date the main technical limitations are wireless communication network coverage, communication network bandwidth and latency (e.g., certain use cases rely on 5G connectivity), Cyber Security and Functional Safety requirements within the overall context of connected features.</p>		
What outputs will be created.		
<p>Main output for Ford-Werke is a strategy to address the expected upcoming increased stringency within the EU7 emission regulation (please note final decisions on EU7 are still pending and we are working against assumptions). The before mentioned strategy includes technology for vehicle fleet surveillance to understand the emission distribution during real word driving and the ability to address potential deviations to ensure a permanent emission conformity. This will be accomplished with OTA calibration updates and the identification and repair of defect vehicles with the help of connectivity and AI methods.</p>		
Where will the outputs be made available during and after the project?		
<p>Outputs will be used within the automotive pilots (specifically within the diagnostic and in-service conformity part of the automotive pilot). Additionally, the idea is to use the outputs within series production of future vehicles with a combustion engine.</p>		

Who are the potential users of your results?

ASSIST-IoT outputs can be used by all car manufacturers which need to address the upcoming increased stringency of the EU7 emission initiative. Additionally, the legislator can benefit from the gathered data as the precise real word, (close to) real-time data simplifies decision making drastically. Also, the final customer benefits significantly, as the gathered data ensures and proves emission conformity which increases customer trust in the bought product.

5.4.3.2. Exploitation plan of partner TWOTRONIC

Individual Exploitation Plan

Name of the partner:
TwoTronic GmbH

Partner's type: Industrial

Logo:



In what ASSIST-IoT area do you expect to make an impact?

ASSIST-IoT is expected to give insights into potential technological solutions for the various challenges in the computing environment of the pilot application. How a cost-effective and technologically sound balance between edge computing for the local onsite application needs can be determined in the framework of centralized architectures, traditionally used within large automotive organizations? How can abstraction layers and intelligent interfaces support enablers for locally needed information and its processing, whereas global product and processes knowledge is traditionally modelled on central servers and corporation cloud systems? Is it possible to use ASSIST-IoT-technologies to define a generalized platform, which uses the underlying scanning functionalities to provide an entire ecosystem for various potential suppliers of market-driven functionalities? Having a demonstrator as pilot application supports an interactive discussion with both the end-users and potential providers along the supply chain.

What needs might be solved/met thanks to the results of ASSIST-IoT?

Important aspects are hereby AI-based inspection and advanced user visualisation of corresponding results under strict data security & privacy restrictions. Overcoming of slow existing networks to support higher data volumes coming from high-resolution series of colour images. Continuous AI improvement under federated & distributed approach. Better integration of necessary edge computing with central server needs of the market (OEM case, or rental business case)

What outputs will be created.

Pilot demonstration for new technologies and implementation approaches supporting individual market needs of dedicated use-case industrial partners. Information (brochures, website, live meetings) about small-packages demonstrators for efficient acquisition of AI-training data, for edge-oriented AI-engine performance, novel visualisation techniques for selected use cases. The small-packages demonstrators themselves as well as the complete pilot demonstrator: passenger car scanner with acquisition & visualisation edge nodes

Where will the outputs be made available during and after the project?


In a comprehensive pilot system on the TwoTronic premises. Small demonstrators at the sides of the developers. Optionally an additional pilot system will be demonstrated on a final customer (subject of running negotiations). This pilot system should demonstrate ASSIST-IoT technologies also after the project end and could be used as pilot for further demonstrators at additional sites, at least with some particular technology packages.

Who are the potential users of your results?

Automotive OEM-branch offices with garages, rental car business cases, logistics suppliers, fleet management companies e.g. for the last mile delivery. All these business cases represent only in Europe a multi-billion market

5.4.4. NG-IoT transversal enablers partners

5.4.4.1. Exploitation plan of partner OPL

Individual Exploitation Plan		
Name of the partner: Orange Polska S.A.	Partner's type: telecommunication service provider	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>The most important area for Orange Polska is the domain of the new IoT services and applications. For several years, Orange Polska has been intensively developing its offer of IoT services aimed to business verticals such as: smart city, energy metering, water metering, intelligent tracking etc.</p> <p>Another interesting for OPL area is 5G network. The development of 5G network and the identification of new use cases is key objective for OPL during ASSIST-IoT project.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>Thanks to the results of ASSIST-IoT project, it will be possible to identify and build new services for OPL customers. The IoT market is envisioned as one of the main areas of Orange's potential expansion. It is important to emphasize that OPL constantly develops new services in the B2B sectors. One of the new IoT business areas potentially interesting for Orange Polska are services for construction industry, which is near to the use case the smart safety of workers from ASSIST-IoT project.</p>		
What outputs will be created.		
<p>The outcomes of the ASSIST-IoT project would be exploited in the following Orange technical activities:</p> <ol style="list-style-type: none"> 1. Testing of innovative ASSIST-IoT platform architecture components. 2. Comparison of ASSIST-IoT components with technologies currently used by OPL 3. Integration and implementation of new IoT sensors and devices especially dedicated for building industry. <p>From the business point of view, Orange is planning the following operational activities:</p> <ol style="list-style-type: none"> 1. Internal (R&D) communication of ASSIST-IoT achievements and deliverables. 2. External communication (Marketing, B2B) of ASSIST-IoT innovations. 3. Creating new services based on ASSIST-IoT achievements. 4. Developing ASSIST-IoT achievements and solutions into business products. 5. Re-usage of ASSIST-IoT components in other projects. 6. Spreading ASSIST-IoT know-how in other Orange Labs Units among Orange Group (especially France, Spain and Romania). <p>In the scientific area, Orange Polska based on project achievements will contribute to cooperation with other partners to creation of standards, recommendations and tutorials. The main interest area is: 5G network, IoT services, Edge Computing and AI applications. Orange is member of many SDO's, and</p>		

normative initiatives will focus on ITU-T, AIOTI, ETSI and IEEE SA working groups. Creation and usage of standards for new solutions is one of the key elements of Orange services implementation strategy.


Where will the outputs be made available during and after the project

From a technical point of view, the key is to provide the prototype of IoT platform by ASSIST-IoT consortium. Based on the available software components, tests, and comparisons of the ASSIST-IoT solution with other platforms used by Orange will be carried out. Such a comparison will be possible when ASSIST-IoT platform components where be released mostly after the end of the project.

Who are the potential users of your results?

Potential users of solutions developed under the ASSIST-IoT project may be users of IoT systems, and in particular their administrators, system consultants and people involved in the implementation of technical solutions. When it comes to the business path, B2B Orange Polska customers may be potential users of new IoT services and applications.

5.4.4.2. Exploitation plan of partner NEWAYS


Individual Exploitation Plan		
Name of the partner: Neways	Partner's type: Consortium partner ASSIST-IoT	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
ASSIST-IoT helps Neways as a link and dynamic interaction platform between the physical and digital world to shape our digital transformation world in unprecedented ways. The strongest drivers are: Computing to the Edge, smart IoT devices, artificial intelligence, distributed ledger / blockchain technology, inter- operability, and hyper-connectivity. Neways expertise in developing IoT Edge nodes/gateways, Smart Devices and Embedded Intelligent systems will contribute to realising the pilots. By using the ASSIST-IoT results, making the proof of concept and developed turnkey solutions visible and exploiting as much as possible, this will contribute to faster adoption of embedded intelligent solutions and systems and easier commercialization of our Neways solutions and services.		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
To build actionable technologies, competencies, trained and experienced workforce and strategic partnerships to develop embedded IoT intelligence technologies.		
What outputs will be created.		
Common system technologies, turnkey solutions, and up-to-date competencies for developing and manufacturing embedded intelligence electronic hardware: edge devices, gateways, nodes, smart IoT devices, etc.		
Where will the outputs be made available during and after the project?		
The embedded intelligent Edge Nodes, Gateways and the various Smart IoT devices will be used within the pilot scenarios as a key part of the ASSIST-IoT project and as common system technologies and turnkey solutions, which may be available for all of our strategic partners and customers in the different vertical domains.		

Who are the potential users of your results?

In line with and based on the rapidly evolving technologies within the industrial, medical and automotive (electric vehicles) markets, and given our current market positions, these will be the vertical areas where the need for an integrated intelligent system of systems will initially develop most rapidly and where Neways, as a leading EMS company, can make a difference for our customers, by directly applying the ASSIST-IoT results and acquired expertise.

To make the commercialization of our Neways solutions and services easier and more convincing, the ASSIST-IoT development and results contribute to keeping our competences up-to-date and that Neways has the opportunity to apply the latest technologies, to be fitted by experienced, well-equipped and skilled employees.

5.4.4.3. Exploitation plan of partner INFOLYSiS

Individual Exploitation Plan		
Name of the partner: INFOLYSIS	Partner's type: SME	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>INFOLYSiS, considering the planned activities foreseen in the DoA, will exploit the ASSIST-IoT results by increasing INFOLYSIS's presence and penetration in the respective areas of research and will facilitate the processes to make the project achieve maximum visibility and to maximize its impact within the business and scientific communities, so as to guarantee a fast adoption of the project outputs and easier commercialization of its services.</p> <p>INFOLYSiS is a software company specializing in Chatbot applications, which can be used also as a front-user interface for IoT platforms in specific use-cases, such as smart-cities, training, maintenance etc. In that direction, INFOLYSiS, beyond the planned activities foreseen in the DoA, is potentially interested in jointly exploiting the IoT solutions that will be developed in the ASSIST-IoT project in order to further expand its supported chatbot portfolio, if significant and exploitable outcomes result for the pilots of the project.</p> <p>More specifically, INFOLYSiS would be in principle interested to explore the exploitation of the chatbot as an intelligent interface between the human-machine interaction, driven by the IoT platform, based on the experienced gained in the three pilots of the project, namely: (i) port automation, (ii) smart safety of workers and (iii) cohesive vehicle monitoring and diagnostics.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>INFOLYSiS participation in the ASSIST-IoT project in conjunction with the participation and outcomes of relevant projects (5GENESIS and 5G!Drones) will further enrich the know-how and the research expertise of the company in technologies that can further foster its R&D activities. INFOLYSIS will also exploit ASSIST-IoT results within scientific communities by intense communication and dissemination of the project's activities and achievements.</p> <p>The chatbot-assisted maintenance could provide interesting side-results for INFOLYSiS, since the chatbot could be used as complimentary solution by the maintenance engineers across the different industries that are demonstrated in the ASSIST-IoT pilots in order to retrieve repair instructions from existing maintenance documentation (PDF, Word) in an easy and flexible way.</p>		

What outputs will be created.

INFOLYSiS through its close collaboration with IT-related SMEs and industries of the consortium will communicate and distribute project's results and opportunities within these cycles, exploring potential extension and exploitation in the current markets, products and services. Dissemination activities will target related markets and industries with the objective of fully exploiting the novel business opportunities that are raised from ASSIST-IoT related activities and business processes. The outputs, created upon the successful demonstration of the ASSIST-IoT pilots, could be also used to support further tests and trials of potential innovative services such as the IoT platform of heterogeneous data sources and formats, providing the data fusion needed for over-the-top services and applications (like chatbots) which can be further used and exploited.


Where will the outputs be made available during and after the project?

The provision of the IoT platform upon the completion of the project will be the technology enabler that will allow the further consideration for potential exploitations by industries that are not foreseen in the DoA, like the chatbot industry of INFOLYSiS. Therefore, any potential further development for potential exploitation will be performed upon the completion of the project when the pilots/platforms will be capable of supporting further experimentation and testing.

Who are the potential users of your results?

The potential users of the proposed exploitation, beyond the ones foreseen in the DoA, are industry employees, system maintenance workers and technicians on site in several industrial sectors such as maritime, energy, factories of the future (FoF) and UAVs.

5.4.4.4. Exploitation plan of partner S21SEC GES

Individual Exploitation Plan		
Name of the partner: S21 SEC GES	Partner's type: Consortium partner ASSIST-IoT	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
DevSecOps and new IIoT / OT Managed Security Services S21SEC GES plans to use research results from ASSIST-IoT, to enhance the process of continuous integration and continuous deployment of managed cybersecurity services, using DevSecOps methodology, supporting the company strategy for SOC services provided by S21SEC globally. S21SEC will deliver a DevSecOps methodology that will guarantee security by design in the software deployment process of different software enablers for NG-IoT architectures like ASSIST-IoT and S21SEC will particularly focus on the cybersecurity enablers to be applied in this kind of architectures.		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
Managed Security Services ASSIST-IoT project objective aims to capitalize the new opportunities that arise from technology, customer needs and new demands. New technologies such as IoT and Industrial IoT opens new horizons with the help of novel network technologies and advanced data treatment using artificial intelligence giving as a result a next generation of IoT enabled technologies. These contexts will open and create new value opportunities as they power new data-driven approaches that are essential to improve security and efficiency for different application fields like Factories of Future with different verticals as Automotive Industry, Ports		

Environments, Construction Industry or Aeronautics, and in other application domains like Smart Cities or Health environments, among others. Finally, there is an increasing demand in the market for product optimization and customization and managed security services in this context.

The role of S21Sec in ASSIST-IoT will focus on the corporate strategy for deploying cybersecurity services. S21SEC will align business strategy with ASSIST-Io. S21SEC is responsible for the management of threats, detection and handling of breaches, the building of incident response and recovery capabilities in organizations, prevention techniques, education of the employees with the best cybersecurity practices, and alignment of business goals with the cybersecurity principles.

S21SEC will enhance with the results of ASSIST-IoT their offer for managed security services. For S21SEC is crucial that new offerings of managed services will be designed to improve, optimize, and transform the value creation throughout the value chain, both at supplier and user sides. Industrial SOC services that will be able to adequately detect and respond to threats associated to IoT and IIoT will be best placed to respond to the market needs. With ASSIST-IoT, S21SEC will achieve a new position to their offering for managed security services.

S21SEC also provides DFIR services (Digital Forensics and Incident Response), to complement company security plans, so ASSIST-IoT experience also could be addressed here for IoT and IIoT environments.

What outputs will be created.

DevSecOps Methodology

S21SEC will establish and apply methodology for DevSecOps (Development and Secure Operation) to be integrated in S21SEC corporate SOC for deploying new Managed Security Services using DevSecOps.

Managed Security Services

With ASSIST-IoT, S21SEC will improve the current portfolio for cybersecurity services. S21SEC ambitions to evolve and improve its multi SOC infrastructure, and because of ASSIST-IoT, new services for IoT and industrial IoT envision to be deployed to fit into different sectors covering their market needs and providing them a higher cybersecurity maturity.

Strategic position and growing

S21SEC GES plans to expand the knowledge and experience of ASSIST-IoT to further increase their standings and ranking as the biggest security specialized enterprise in Spain and will help to grow and consolidate, the offer as the most important cybersecurity pure player in Spain and Portugal, making stronger the valued 360° specialization in cybersecurity.

Different Cybersecurity enabler components for NG-IoT architecture

The S21SEC outputs generated because of ASSIST-IoT project will focus on the release of different cybersecurity enablers components to be applied in NG-IoT architectures and these results will also be included in the integration projects that S21Sec usually provides as consequences of SOC and CERT risk identifications. Regarding security monitor and incident response systems, S21SEC aims to integrate with the experience from ASSIST-IoT pilots in industrial sector specific security probes resulting from the project in its own SOC/CERT platform, to improve its monitoring and detection features. S21SEC will integrate cyber-training tools from and contents to complement its current training offer.

Where will the outputs be made available during and after the project?

The outputs of S21SEC during the project will be available in ASSIST-IoT project tools established for the project management in the way of reports or software repositories as established in the GA.

After the project ASSIST-IoT results, will be incorporated in the new offer of security managed services as mentioned will be available under the hiring of services to be integrated in S21SEC corporate SOC.

Who are the potential users of your results?

S21SEC customers

Results from ASSIST-IoT in terms of potential users of the solutions developed and deployed by S21SEC, will materialize by means of the increased service offer for managed security services to S21SEC customers in the industrial sector in different verticals, as transport, energy, health, and others.

5.4.5. Academic and Research partners

5.4.5.1. Exploitation plan of partner UPV

Individual Exploitation Plan

Name of the partner: UPV

Partner's type: University

Logo:



UNIVERSITAT
POLITÀCNICA
DE VALÈNCIA

In what ASSIST-IoT area do you expect to make an impact?

UPV as Project Coordinator and expects to make an impact in four technical areas related with the project goals. The research group will be supported by previous research and innovation actions led or with its participation. First, and the most prominent, UPV is expected to position ASSIST-IoT results among the main contributions in the definition of the Next Generation Internet of Things architecture and enablers orchestration principles. Second, it is expected to integrate and customise (to some extent) the capabilities of smart networking in the IoT field for the next wave of devices and equipment (taking advantage of virtualisation and software-definition including netapps). Third, UPV aims to gain huge experience in the federation of AI/ML services among IoT nodes, in the cloud continuum, from the device till the cloud going through the edge and far edge nodes. Four, we expect to enlarge the test base of projects that have achieved an all-encompassing integration of edge-to-cloud computing continuum installations in different verticals with special focus in transportation and logistics, AHA and Industry 4.0.

What needs might be solved/met thanks to the results of ASSIST-IoT?

UPV is a public and dynamic academic institution. Therefore, it can be realised that the “business” issues that can be solved (needs that can be met) by the execution of ASSIST-IoT are (i) enhancing the knowledge of specific technological fields developed in the project, (ii) gaining expertise and know-how with regards to actual deployments of technologies, (iii) augmenting the volume of the research team and consolidating that number, (iv) exploring new research lines and (v) envisioning potential continuation of the research through market-oriented actions (like technology transfer, consulting actions, start-ups or spin-offs creation). Considering this context, ASSIST-IoT will allow UPV research team to:

- a) Improve research indicators of research team (Project Coordinator and researchers) due to scientific contributions to the community.
- b) Enhance and excel the current knowledge on the established fields of IoT, interoperability, machine learning, data science, distributed real-time systems and global communications and networking.
- c) Consolidate the knowledge gained during the last few years about Big Data, DLT and 5G technologies.
- d) Reinforce the orientation of the group towards practical application of IoT and other technologies (ASSIST-IoT is pilot-oriented and human-centric by design), through technology transfer actions.

- e) Enlarge the expertise on the maritime ports vertical (5 research projects already -partially- devoted to that aim by the group)
- f) Keep a stable team of 4/5 researchers devoted to ASSIST-IoT throughout the project duration.
- g) Establish a new research line of the group: federation of IoT nodes, orchestration of enablers, distributed learning.
- h) Tighten the gap with the market via exploring the creation of associated spin-offs out of the results of the participation in ASSIST-IoT, including patenting and OSS initiatives contribution.
- i) Leverage the participation in ASSIST-IoT for granting industrial contracts (tech-transfer or consulting activities), or, at least, put the group in a better position for endorsing this line of work.

What outputs will be created.

We expect to create the following Key Exploitable Results (KERs) which IP would be (partially or totally) corresponding to UPV:

- A formal document (standard-like) for an NGIoT RA (reference architecture)
- A suite of enablers (according to ASSIST-IoT definition) targeted to solve certain issues and to provide global coverage to the Smart Networking Plane of the Architecture.
- Enablers targeting functionalities associated to the Devices Plane.
- Enablers targeting functionalities associated to the Application and Services Plane.
- A custom program based on open-source technologies with the aim of orchestrating enablers within the architecture of ASSIST-IoT.
- Detailed competences knowledge in different areas (IoT, AI, BBDD or stream processing) and verticals (port automation, industry 4.0, labour risk prevention or automation) in order to provide support to different companies, vendors and stakeholders including the creation of spin-offs.

Apart from the tangible KERs expected by UPV, another relevant results with regards to exploitation would be the following:

- At least 2 PhD theses will be conducted under the scope of ASSIST-IoT.
- Attendance to multiple scientific conferences.
- Presentation of multiple scientific papers (target to be defined) in conferences focused various technological domains.
- Lecture at the university about the project and its most relevant findings.
- Organisation of conferences and seminars within the University (including posters).

Where will the outputs be made available during and after the project?

During the project: ASSIST-IoT GitLab, REST APIs for the Open Callers as endpoints supported by on-premises servers.


After the project: Initially, in GitHub and/or other collaborative platforms. Exceptions may be code(s) or artefacts that would have particular interest for potential activities (such as spin-offs creation or patentability/registry from the side of UPV).

Additionally, UPV research team will keep track of the contributions performed to other OSS research projects and will label them properly to identify them as contributions from the work performed in ASSIST-IoT.

Who are the potential users of your results?

- **A formal document (standard-like) for an NGIoT RA (reference architecture):** SDOs, EC-funded projects, PPPs.
- **A suite of enablers (according to ASSIST-IoT definition) targeted to solve certain issues and to provide global coverage to the Smart Networking Plane of the Architecture:** ASSIST-IoT adopters, 3rd parties (open callers), stakeholders of the pilots, EC-funded projects, Industry in general wishing to explore NGIoT.
- **Enablers targeting functionalities associated to the Devices Plane:** ASSIST-IoT adopters, 3rd parties (open callers), stakeholders of the pilots, EC-funded projects, Industry in general wishing to explore NGIoT.
- **Enablers targeting functionalities associated to the Application and Services Plane:** ASSIST-IoT adopters, 3rd parties (open callers), stakeholders of the pilots, EC-funded projects, Industry in general wishing to explore NGIoT.
- **A custom program based on open-source technologies with the aim of orchestrating enablers within the architecture of ASSIST-IoT:** Global community of IoT developers, EC-funded projects, Open-source initiatives (like FIWARE et al.).

5.4.5.2. Exploitation plan of partner ICCS

Individual Exploitation Plan		
Name of the partner: ICCS	Partner's type: Research Institute	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>ICCS has a long history in the development of Virtual and Augmented Reality technologies as a leading member of the Mixed Reality community in Europe and through its leading position for many years of the European Association for Virtual and Augmented Reality (EuroVR). Through its participation to ASSIST-IoT, it will re-brand its position in this community through the integration of NGIoT aspects.</p> <p>ICCS will design and implement Augmented Reality applications and smart devices focusing on local intelligence and processing capabilities based on Artificial Intelligence. Augmented Reality services will be provided through applications that involve near real-time data flows. To this end, appropriate management of data at the different layers of the ASSIST-IoT architecture will be required. The end-to-end performance of Augmented Reality services, with or without connectivity, based on the ASSIST-IoT architecture will also be assessed in order to increase confidence in the proposed solutions.</p> <p>Artificial Intelligence / Machine Learning algorithms will be adapted so that they can run on low power devices, within edge-cloud continuum. In addition, if data movement will be necessary, pre-processing strategies for the minimisation of the volume of data sent to the cloud will be devised. Federated machine learning will also be applied where data privacy and decentralisation are required on top of computational efficiency.</p>		

What needs might be solved/met thanks to the results of ASSIST-IoT?

Intelligent wearable sensors will increase the operational health and safety of the workers at smart construction sites, especially with respect to fatigue and stress monitoring. The Augmented Reality services that will be developed will also allow the effective reporting of hazards and provide solutions in areas with low connectivity and industries that are falling behind in terms of digitalisation.

ICCS will exploit the ASSIST-IoT action both through the means of establishing itself as a prominent member of the Next Generation IoT community, capitalising further on its membership in the AIOTI platform, as well as through pursuing forms of exploitation of its results through publications and prototypes (or even patents). ICCS's scientific exploitation targets, including the production of research results and knowledge dissemination, will be focused on establishing experience in the design and programming of intelligent, self-embedded devices.

What outputs will be created.

The output that will be created includes novel Augmented Reality applications and a scalable content creation/management system which can efficiently integrate IoT data. A scalable prototype Augmented Reality service that will be applicable to other application areas will be validated in the scope of ASSIST-IoT.

Smart devices, in line with green ICT principles, that can be used for operational health and safety purposes in diverse application domains such as construction, mining, warehousing etc.

On top of the technological output, scientific knowledge will be disseminated through publications. In addition, the knowledge that was acquired through ASSIST-IoT will be transferred to other EU funded projects.

Where will the outputs be made available during and after the project?

ICCS is concurrently participating in more than a few H2020 projects with a significant role in the design and development smart wearables, Virtual / Augmented Reality applications and IoT platforms for the field of warehouse logistics, passenger ships safety and mining operations.

It is expected that through this project, ICCS will participate in at least three more relevant projects (in the ICT and/or transport domains) in the next three years, projecting an estimate of 1.2 million euros budget from EC resources.


The acquired scientific knowledge will be used at the university and more specifically in the School of Electrical and Computer Engineering. It will also serve as the basis for further research for higher technology readiness levels in new projects and in collaboration with the Industry in Greece. Further exploitation of the results after the end of the project through the institute's spin-offs will also be evaluated.

Who are the potential users of your results?

ICCS plans to further develop the technology that will be produced in ASSIST- IoT by customising it for the container terminal operations domain and introduce this technology to the Greek market. ICCS has a close collaboration with key Mediterranean ports, including Piraeus, Valencia, Algeciras, Koper, so it shall be able to exploit this technology with consultation and contracting activities in the next three years, estimating a budget of 250000 Euros from such activities. The institute also plans to exploit its research output from ASSIST-IoT in order to participate in innovation projects for the digital transformation of the Greek construction industry.

The results that will be generated by ICCS within ASSIST-IoT will be used by container terminal operators, construction end-users, researchers and university students within the Greek and European research community.

5.4.5.3. Exploitation plan of partner IBSPAN

Individual Exploitation Plan		
Name of the partner: SRIPAS	Partner's type: Academic	Logo: 
In what ASSIST-IoT area do you expect to make an impact?		
<p>As described in the project GA. 1. SRIPAS is the Technical Coordinator and thus will be involved, directly and indirectly, in all activities of the project. Moreover, taking into account specific expertise of SRIPAS team, we expect to make impact in the following areas: 2. All aspects of the project where, broadly understood, semantic technologies will be used. 3. Stream processing. 4. Artificial intelligence / Machine learning / Data analytics. 5. Federated learning. 6. Autonomous / self-* aspects of the ecosystem. 7. Architecture.</p>		
What needs might be solved/met thanks to the results of ASSIST-IoT?		
<p>SRIPAS is a public research institution. Moreover, some members of the SRIPAS team are also associated with academic institutions (i.e. University of Gdańsk, Warsaw University of Technology, Warsaw Management School). Therefore, the “business” that SRIPAS is involved in concerns: (i) expanding the knowledge of specific technological fields developed in the project, this includes (ii) expertise and know-how with regards to actual/current deployments of technologies, (iii) extending the number of members of the research team (with the hope of being able to keep the team supported by subsequent projects), (iv) further exploring existing, and establishing new research lines, and (v) preparing for potential continuation of the research through market-oriented actions (e.g. technology transfer, consulting, start-up/spin-offs creation). Hence, ASSIST-IoT will allow SRIPAS team to:</p> <p>Consolidate and substantially extend knowledge concerning IoT, interoperability, machine learning, data science, distributed real-time systems, semantic technologies, and self-* systems.</p> <p>Reinforce capabilities related to practical application of IoT and other technologies (ASSIST-IoT is pilot-oriented and human-centric by design).</p> <p>Enlarge the expertise in the area of semantic technologies (third project in this area).</p> <p>Keep a stable team of 4/5 researchers devoted to ASSIST-IoT throughout the project duration.</p> <p>Establish a new research lines of the group: federated learning and self-* systems.</p> <p>Leverage the participation in ASSIST-IoT for granting industrial contracts (tech-transfer or consulting activities), or, at least, put the group in a better position for endorsing this line of work.</p> <p>Use ASSIST-IoT participation as a leverage for obtaining future grants (local and international) in the areas pertinent to the work undertaken within the scope of the project.</p>		
What outputs will be created.		
<p>These described by the GA, which is the document that specifies precisely what has to be delivered within the scope of the project. The most pronounced expected outputs are:</p> <ul style="list-style-type: none"> • Reference architecture • Enablers targeting functionalities associated with the Data Plane. • Ontologies and tools related to application of semantic technologies. • Open-source solutions related to use/application of AI/ML/DA in the context of the pilots. • Open-source solutions related to federated learning. • Methods and tools related to autonomy/self-* mechanisms. 		

- Detailed competences knowledge in areas pertinent to the above, allowing support to different companies, vendors and stakeholders, including possibility of creation of (participation in) spin-off(s).

Where will the outputs be made available during and after the project?

Project website & GitHub repositories. Possibly within the SRIPAS website (after the project) to assure their long-term persistence after the project completion.

Who are the potential users of your results?

Enterprises, of all sizes that are involved in developing and using IoT solutions.

Academia – in the context of transfer of cutting-edge knowledge to students at all levels (undergraduate, graduate, and Ph.D. students).

5.4.5.4. Exploitation plan of partner CERTH

Individual Exploitation Plan

Name of the partner:

CERTH

Partner's type:

Research Institute

Logo:



In what ASSIST-IoT area do you expect to make an impact?

CERTH-ITI is a non-profit research institute located in Greece established in 1998. The institute is active in various projects and possesses experience and knowledge of novel technologies.

The institute experience is useful in an advisory role for ethics and privacy protection issues, as these are issues common with other research projects. Moreover, a major contribution is to be expected in the adoption of the DLT in the project. Appropriate actions to adopt the DLT in the architecture will be taken. The adoption of DLT with IoT and Federated Learning can be a differentiating point for the project. Finally, CERTH will take part in the testing and integration of the solutions that will be developed during the project.

What needs might be solved/met thanks to the results of ASSIST-IoT?

The implementation of AI to the use cases is pivot in driving innovation and supporting humans in their daily tasks. Security and privacy should be upheld in every solution to ensure their seamless adoption by the business partners. To achieve the appropriate security, the development is envisioned to be performed with DevSecOps cycle and the architecture will accommodate DLT. Finally, the solutions are to be applied in real-time in some cases, so the delivery of lightweight solutions may be required.

What outputs will be created.

The main contribution in the output will be the DLT infrastructure that will support the solutions developed in the project.

Where will the outputs be made available during and after the project?

During the project, CERTH will provide the necessary tools to the projects' partners to be able to contribute to developing seamlessly their solutions. After the project, CERTH will follow the common exploitation plan that will be developed in the project.

Who are the potential users of your results?

DLT continually gains traction and attracts the attention of the public. The DLT infrastructure can provide a layer of security to various business entities. The use of DLT can be invaluable in cases where multiple stakeholders with conflicting interests are involved. In the project context, work safety might be a candidate case that could have a DLT solution deployed.

5.5. Exploitation activities and plan conclusions

In summary, all the ASSIST-IoT industrial partners are interested in the exploitation of results, and the research organizations are interested in creating links with networks of technological companies that could add value to the project outcomes. At least one SME is interested in leading the process as well as reaching users and increase their offer by the new services, once tested and demonstrated that they provide a value through a validated MVP (Minimum Viable Product). The main concepts have been introduced and the overall methodology to be followed during project execution in order to implement a business and exploitation plan for the most promising results has been summarized in previous subsections. This methodology has been used in other research initiatives and has been proved to be adequate to identify which are the options for the exploitation, as well as the interests of partners, the dependencies with previous knowledge, and the refinement and discovery of the most promising results. Therefore, the limited efforts that normally a research project has, will be focused on the interests of partners and on what is feasible to be achieved.

6. Conclusion

This deliverable presented in detail the initial ASSIST-IoT Communication, Dissemination, Standardisation and Exploitation plans. ASSIST-IoT Target Groups, Communication and Dissemination Activities' Timeline and KPIs, targeted SDOs and contributions, partners' individual exploitation plans and initial performed ASSIST-IoT impact activities were also presented and analysed in D9.2.

The ultimate goal of the provided plans is to assist ASSIST-IoT to achieve the highest impact of results by addressing at its best all targeted audiences and relevant stakeholders. Provided plans and proposed actions refer to initiatives and activities targeted throughout the project duration and they might be adjusted, updated, and enriched according to the evolution of the project and the various opportunities that may arise.

Any potential updates on the mentioned plans and proposed actions will be reported in the upcoming WP9 deliverables. In these deliverables will be also reported all the performed activities for each reporting period of the project (M1-M18 and M19-M36 respectively).

7. References

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