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IoT-NGIN

D8.3
Marketing & promotional tools (2nd Iteration)

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AUTHOR(S)	Małgorzata Stebakow (CAP), Ghasan Bhatti (CAP), Anna Duszyńska-Trojanowska (CAP), Nolwenn Le Ster (CAP)
REVIEWER(S)	Felix Maier (EDD), Fiona Williams (EDD), Calvo Alonso, Daniel (ATOS)
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List of Acronyms and Abbreviations

5GPPP	5G Infrastructure Public Private Partnership
AIOTI	Alliance for Internet of Things Innovation
BDVA	Big Data Value Association
CSA	Coordination and Support Action
DIH	Digital Innovation Hubs
DoA	Description of the Action
ENoLL	European Network of Living Labs
EU-IoT	European Internet of Things
IoT	Internet of Things
IoT-NGIN	Next Generation IoT as part of Next Generation Internet
MOOC	Massive Open Online Courses
NGI	Next Generation Internet
NG-IoT	Next Generation Internet of Thing
ONF	Open Network Foundation
OSM	Open Source MANO
SDO	Standards Development Organisation
SME	Smart Metter Experts

Executive Summary

This report constitutes the deliverable D8.3 Marketing & promotional tools (2nd Iteration) of the IoT-NGIN project.

The communication and marketing concept of the project IoT-NGIN lies in interacting with the different target groups and having them involved actively throughout the lifetime of the project. Different target audience groups are being engaged at different phases through relevant dissemination tools, measures, and key messages.

The report also presents a set of indicators to track and measure the effectiveness of the communication activities of the project. Each key performance indicator has a goal to be achieved within the 36 months of the project.

This deliverable offers an overview of current marketing activities, identifying strategic growth areas and providing concrete examples. This document covers the creation of promotional materials such as brochures, posters and, more generally, the promotional material to be used for presentation of the project to the public. It also provides an up-to-date overview of online activities such as the hosting of a project website, the interactions on social media, and the creation of videos.

This document is produced as part of the work performed in WP8 and presents the activities involving marketing and the creation of promotional material and tools that have been conducted in the first 21 months of the project (between October 2020 and June 2022). Since this is an update of the relevant deliverable series, the present report complements and integrates the initial report D8.2 [1] that was submitted in April 2021. The purpose of this document is to provide a description of the project's communication strategy and promotional tools developed for the project.

1 Introduction

This deliverable is a living document comprising the different marketing and promotional tools created in the project for the purposes of disseminating the project objectives, activities, results and news to the intended target groups and the general public. The first version of the report was presented in the deliverable D8.2 [1] submitted in April 2021.

1.1 Scope & Purpose

The goal of Deliverable D8.3 is to describe the marketing and promotional material produced by the IoT-NGIN consortium from the start of the project until the end of June 2022 (M21) and to define the communication and outreach strategy.

This document covers two core elements: It presents the project promotional material designed to disseminate the key messages of the project to the interested stakeholders, and which represent key marketing tools. Then, it outlines the online presence of IoT-NGIN, with the website, the social network pages, and the videos of the project.

The document is produced by Work Package 8. Deliverable 8.3 embeds the work of tasks T8.1 "Fostering business innovation" and T8.4 "Dissemination, Communication & Training activities", providing an overview of the marketing and promotional tools developed by the project.

The document also presents the stages of the implementation of the strategy planned for the project in order to increase the reach of IoT-NGIN and more intense impact on a wide audience.

1.2 Structure of document

The document is divided into 5 sections:

- Section 1 presents the document introduction.
- Section 2 depicts the dissemination and communication strategy of the project.
- Section 3 presents the promotional tools designed for the project such as brochures, posters, and videos.
- Section 4 presents the marketing material that has been prepared so far, the project blogs and newsletters, and the online presence of the project, detailing, in particular, the IoT-NGIN website and the social network accounts.
- Section 5 concludes the document and presents the next steps.

2 Dissemination and Communication Strategy

2.1 Concept and Approach

The concept of IoT-NGIN dissemination is to create interactive communication channels between target groups (the end-users & regulators, the scientific community, the general public) and the project. IoT-NGIN has identified the target groups that are currently involved and those that will be involved in the various stages of the project's development.

A very important aspect of the dissemination concept is interactivity, obtaining and processing feedback from the nominated target groups, therefore we analyse this data regularly during the project.

The IoT-NGIN communication strategy has been presented in D8.2 [1] and updated in D8.6 [2] as summarized in Figure 1. IoT-NGIN communication strategy's intensity increases each year. IoT-NGIN dissemination activities are categorized based on the position of the target audience with respect to the time-to-market of the results:

- Phase I (Months 1-18): Selecting the dissemination channels, key messages, and communication activities towards innovation (Long time-to-market)
- Phase II (Months 19-30): Policy fostering business innovation (Midterm time-to-market)
- Phase III (Months 31-36): Matching market analysis and exploitation (Short time-to-market).

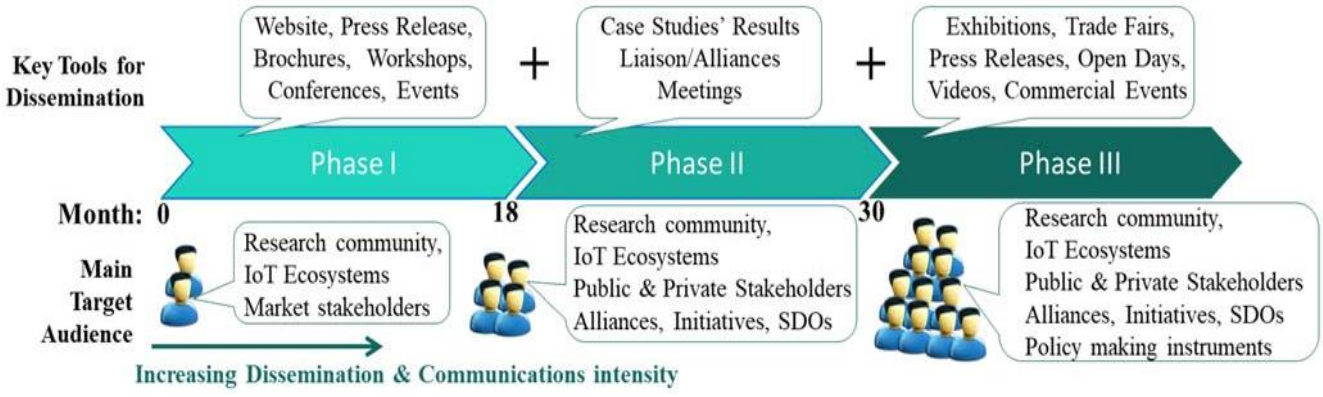


Figure 1: IoT-NGIN Communication strategy

2.2 Target Groups

To ensure an effective communication strategy, it is crucial that each target group receives the appropriate message at the right time and through the right channel as presented in Table 1Table 1: Target groups in IoT-NGINTable 1.

To maximize the impact, the target groups are reviewed and updated on regular basis in every communication phase. As presented in D8.2 [1], updated in D8.6 [2] and highlighted below, three different target groups have been identified for the impact creation activities, namely the end-users & regulators, and the scientific community and the general public.

Table 1: Target groups in IoT-NGIN

Target Group	Measure	Goal
End-users & regulators (e.g., Smart Energy Grid operators, farmers cooperatives, market stakeholders/decision makers)	Communication channels, events, advisory board, alliances, standardization organizations. Invitations to midterm and final IoT- NGIN Open Day events. Website and social media.	Achieve a consensus on requirements, functionalities and security issues that need to be addressed by next-generation IoT Create awareness of the IoT risks and future cyber/human threats, IoT-NGIN roadmap and human-centric security opportunities.
Scientific community (active ecosystem of all relevant IoT stakeholders SDOs, IoT/5G alliances)	Scientific conferences, journals/ magazines, mainly open access for larger impact. Website and social media. Special sessions in events.	Increase awareness and feedback towards the research gaps, requirements, functionalities, Human-centric and security issues for joint optimization of IoT and 5G infrastructure.
General public (Wider Audience and life-long learning community)	Short MOOC courses to create awareness of Next Generation IoT potential and IoT-NGIN features.	To accelerate the uptake of IoT-NGIN concepts and results for maximizing awareness of their availability.

To maximize stakeholder interest and uptake, IoT-NGIN ensures open development using well-established code management platforms that ensure efficient collaboration, code review and its management. The released code is available as open-source in the IoT-NGIN GitLab group[1]. It builds on existing networks (such as AIOTI, BDVA, NGI, ENoLL, 5GPPP) to promote the results. IoT-NGIN has established a docker image repository that hosts the developed component images and facilitates the continuous deployment of parts of the pipeline. An open-source version of the components is provided through the DockerHub profile[2]. The project organizes also thematic workshops to accelerate the familiarisation with IoT-NGIN's goals and vision.

2.3 Dissemination Activities towards the Research Community

In addition to the above-mentioned activities, IoT-NGIN engages in dissemination activities towards research community. The project plans to address the related scientific audience by disseminating the research concepts and actively engages the consortium partners.

Following the general open strategy of IoT-NGIN, the open access publishing option will be pursued for the scientific journals and conferences so that the target audience is maximized, simultaneously maximizing the impact of the relevant publications. IoT-NGIN aims to participate in conferences presenting and promoting its vision and offerings.

The consortium has published 2 journal articles in highly ranked international journals, and we have plans to publish more in the coming months to achieve all targets by the end of the project. The KPIs related to Contributions in international peer-reviewed conferences and Events are already achieved. We have made 2 contributions in peer-reviewed conferences, and we have contributed to 23 reputable events where the consortium partners represented the project and disseminate our results as keynote speakers and panellists.

The summary of the activity of all academic partners and KPIs related to the Research Community has been presented in the deliverable D8.6 [2] and updated in D9.3 [3].

2.4 Collaboration via CSA EU-IoT

IoT-NGIN as a part of several associations, communities, and standardisation bodies, aims to support measures for further development of IoT ecosystems, partnerships, stakeholders networking, contribution to pre-normative activities and to standardisation.

[1] https://gitlab.com/h2020-iot-ngin
[2] https://hub.docker.com/u/iotngin

In collaboration with Coordination and Support Action (CSA)[3], the project has the possibility for promotion via Alliance for Internet of Things Innovation (AIOTI) reports.

The project has participated in many activities organized by AIOTI. In May 2022, the IoT-NGIN contributed to IoT and edge computing use cases. The information provided will be included in a new report: "Research challenges in IoT and edge computing EU funded projects". IoT-NGIN will continue to actively participate in AIOTI initiatives until the end of the project. All details of our project's contribution to AIOTI have been presented in D8.6 [2].

The summary of the impact creation and dissemination initiatives, including the cluster and SDO activities has been presented in the D8.6 [2] and will be complemented in the deliverable D8.7 in M36.

2.5 Implementation of the strategy

The main goal of the IoT-NGIN dissemination and communication activities is to raise awareness of the IoT-NGIN technological, performance and scientific achievements. IoT-NGIN, as explained in the previous chapters, is based on leveraging and engaging existing networks and communities to activate sustainable IoT Ecosystems instead of building yet another new one.

To implement the strategy, the project has identified the following set of information tools to be used to reach all target groups as listed in Table 1.

- Project brochures: Short informational brochures about the IoT-NGIN project.
- Blogs: Topical short writings on technical issues and progress in the project.
- Newsletter: Summary of recent news about the project.
- Scientific publications: Conference and journal publications.
- Public deliverables: Publicly available deliverables on project results.
- Events and presentations: Events where the project has been represented.
- Project website: Open repository for much of the communication.
- Twitter: Important social media channel for sharing project news.
- LinkedIn: Another important social media channel for sharing project info.
- Videos: Videos about the project activities and results.

The achievements for each of the above tools are detailed in the following sections of this deliverable.

[3] https://cordis.europa.eu/programme/id/H2020_ICT-56-2020

The project follows a three-phase approach to outreach and impact creation, as follows:

1. **Phase I (Months 1-18): Selecting the dissemination channels, key messages, communication activities towards innovation.**

During phase I the target was the research community and market stakeholders. To establish and maintain the IoT-NGIN brand, IoT-NGIN designed, launched, and maintained a dedicated website[4] at the service of the project and of the community. IoT-NGIN also created and animated dedicated communication channels and dissemination tools to effectively promote the project's concepts and results. These channels support the European Commission's IoT initiative, present events and regularly update information related to the project. The key message in the communication was emphasizing innovation with a relatively long time-to-market.

In Phase I, due to the Covid 19 pandemic, the dissemination activities and strategy related to it have changed. Since the number of conferences, expositions were highly reduced, the dissemination activities were forced to redirect to online connections and increase the importance of the social media dissemination.

2. **Phase II (Months 19-30): Policy fostering business innovation.**

The scope of Phase II (current phase of the project) of the IoT-NGIN outreach strategy is to actively reach out to targeted stakeholders and the public to generate interest and demand for the IoT-NGIN activities and outcomes. In phase II, the extension of the target audience to public & private stakeholders, alliances, initiatives and SDOs must be increased in order to better adapt IoT-NGIN solutions to the market needs. For this target group of future clients, a set of workshops should be organised to get feedback and have a better understanding of their actual needs, what they are using and how the IoT-NGIN tools and solutions can be integrated with their actual systems.

As the visibility of the project was the goal in Phase I, in Phase II it is more important to target and connect potential customers of the solution. During this phase, partners of the consortium attended or will attend the annual flagship events such as:

- IoT Week 2022[5] where our consortium was represented by one of our partners and presented the IoT NGIN use cases and demos in Dublin.
- IoT Solution World Congress[6] in Barcelona, where our project had 2 booths and we were able to provide insights into the development of our assets.
- EuCNC[7] event in Grenoble, France:

[4] https://iot-ngin.eu/
[5] https://iotweek.org/
[6] https://www.iotsworldcongress.com/
[7] https://www.eucnc.eu/

We had the honour of hosting Pearse O'Donohue, Director of Future Networks at DG CONNECT, at our booth during the first day of the EuCNC and 6GSummit 2022. The consortium has presented the demos of different use cases prepared for this event.

- EU-IoT Hackathon[8] in Munich, Germany where 3 of our consortium colleagues from I2CAT, ATOS and RWTH have been nominated as a part of the jury.
- First inter-sessional consultations[9] organized by the UN General Assembly

  Among rare organizations, one of our partners was honored with a presentation at the first inter-sessional consultations organized by the UN General Assembly. We took part in a discussion panel in which we highlighted EU initiatives to strengthen cybersecurity capabilities among UN member states. All EU Member States participated in the event, as well as organizations with observer status, such as the European Union.

- European Big Data Value[10] Forum events (a complete list of events has been provided in the D8.6 [2])
- Several GAIA-X workshops (a complete list of events has been provided in the D8.6 [2]).

Promotional activities, including continuous animation of the portal and media channels, have been continued. Bi-annual editions of the newsletter have been produced and disseminated; videos and demos have been produced and published.

3. Phase III (Months 31-36): Matching market analysis and Exploitation

In phase III, the market and stakeholders have to be targeted based on the results and information collected during phase II of the project by organising demonstrations and workshops to refine the exploitation strategy and market penetration strategy. The keyword of Phase III should be interactivity, getting feedback from stakeholders, feedback to be used in the final development of IoT-NGIN tools, and feedback to be used in market study and market penetration strategy. This phase will actively engage and support all stakeholders in the network of European IoT and NGI, built by IoT-NGIN through its dedicated promotional activities. Broad outreach in Europe and beyond will also be the key to ensuring a sustainable ecosystem that will continue beyond project duration, paving the way for Horizon Europe[11]. The results of the IoT-NGIN project will be presented to key communities. Promotional activities will still focus on continuous population and animation of the website and media channels and developing promotional materials. The remaining tree editions of the newsletter will be produced and disseminated; videos and demos showing the results will be launched and produced. Active participation at external events and presentations is expected. The roadmap will be presented and promoted widely in and beyond the IoT communities.

[8] https://eu-iot-hackathon.devpost.com/
[9] https://www.privanova.com/privanova-discusses-cybersecurity-at-the-un/
[10] https://www.bdva.eu/european-big-data-value-forum-2022
[11] https://www.horizonresultsbooster.eu/

3 Promotional Tools

A careful selection of different promotional tools is used to achieve the communication and outreach objectives of the project and to reach the relevant stakeholders through appropriate channels. This section details the developments made by the project in the use of these selected promotional tools and provides a view into the activities planned in the future. The following chapter presents all promotional tools from M1 to M21 including the 1st iteration of the report described in D8.2 [1].

3.1 Marketing and promotional KPIs

The following subsections illustrate the promotional material that has been prepared for communication and dissemination purposes and is available on the webpage for the promotion of the project. More precisely, the IoT-NGIN consortium has generated 39 blogs, 3 newsletters, 3 brochures, 1 video (+1 is in progress that will be available by the end of August 2022) and 3 posters. Figure 1 Figure 2 provides a concise view of the promotional material status.

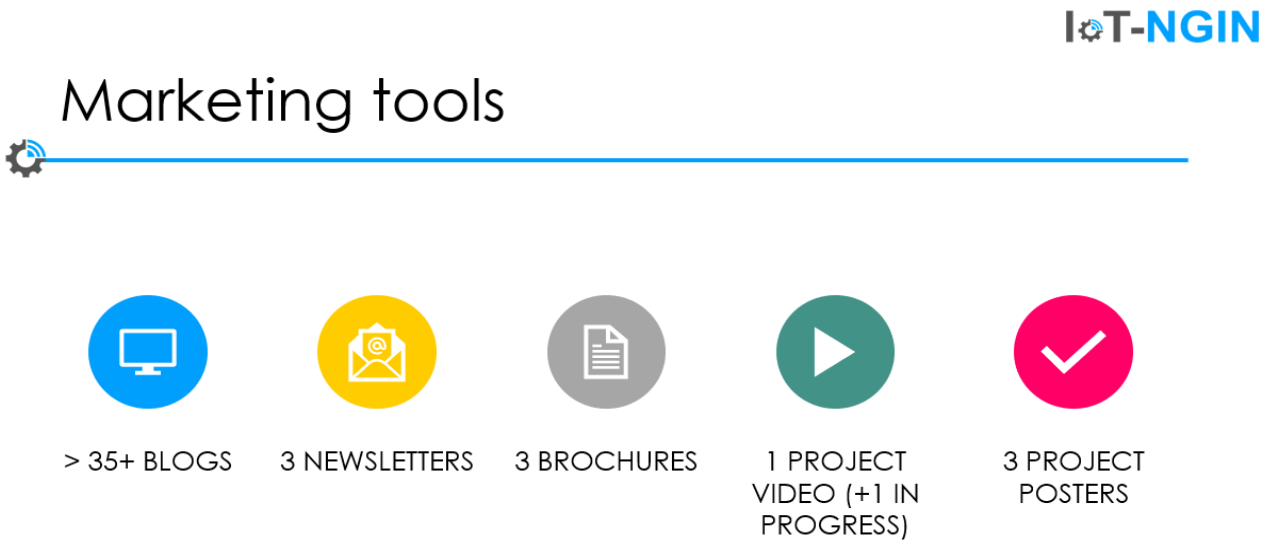


Figure 2: Promotional material overview at M21

It is important to validate the communication and dissemination efforts with promotional tools and strategies. Consequently, the consortium monitors the KPIs listed in the DoA related to the marketing and promotional tools. The following KPI list has been set for IoT-NGIN and is regularly reviewed as part of WP8 activities. Most of the KPIs have already been achieved, the rest will be achieved by the end of the project where the number of actions of the partners who are working on improving the key exploitable results of the IoT-NGIN will be summed up.

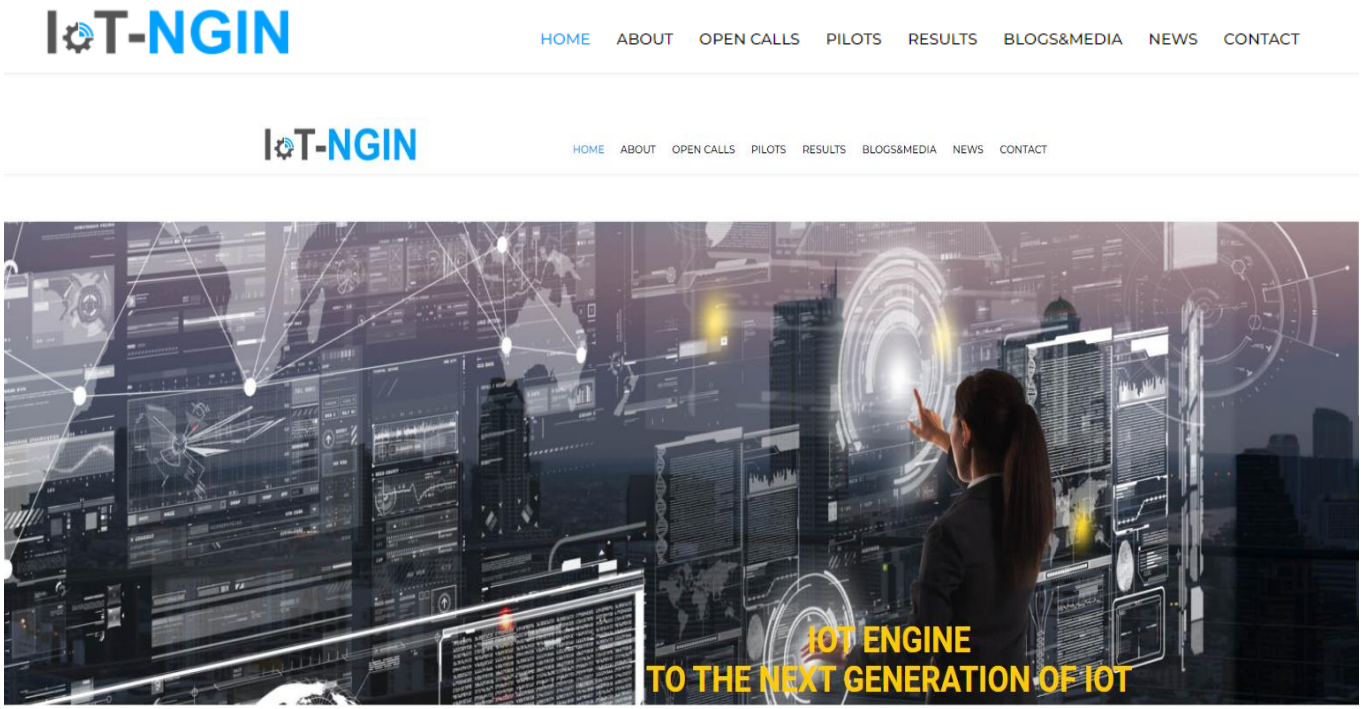
Table 2: Marketing and promotional KPIs, summary for the first 21 months of the project

Target Goal	Action	KPI	Measure	Actual Measure
Ensure direct engagement of major stakeholders and industrial community	Branding and preparation of marketing collateral material	Number of newsletters/ blogposts	2 newsletters/year, > 120 blogposts	3 newsletters 39 blogposts
		Number of leaflets/ flyers/ brochures	2 per year	3 (+1 in progress)
		Number of posters/ Roll-ups	1 per year	3
		Number of videos/podcasts	> 3	1 (+1 in progress)
Grow IoT community and keep regular stakeholder engagement with news and insights	Project website	Visibility/popularity	< 5 results Google page (SERP)	Achieved (IoT search keywords are in the top positions)
		Number of visitors	>500 visits per year	Achieved
		Landing pages	> 1 page per topic (events, labs, etc.)	19
	Social media Channels	Number of followers on Twitter and LinkedIn	> 300 to each one of them from outside the project	~270 each
		Number of tweets including campaigns & monitor outcomes	> 120 (re-)tweets in year 1 > 300 (re-)tweets in year 2 and year 3	166 in Y1
		Number of YouTube video posts	> 10 video posts viewed by >100	4

3.2 Website

The publicly available website of the project is running and accessible to everyone. It is the primary information source of the project describing the project objectives, research areas, outcomes, and partners. The website was developed at the beginning of the project and the website address is https://www.iot-ngin.eu/[12].

Below are some screenshots from the current version of the project website.



[12] https://www.iot-ngin.eu/

Vision

Empower Edge Cloud with federated on-device intelligence

Enforce interoperability and data sovereignty

Ensure trust, cybersecurity and privacy

Introduce novel human-centric interaction based on Augmented Reality

Pilots

The focus of the first trial is on comprehensive integration and evaluation throughout the development of the IoT-NGIN technologies. The task will ensure that the IoT-NGIN...

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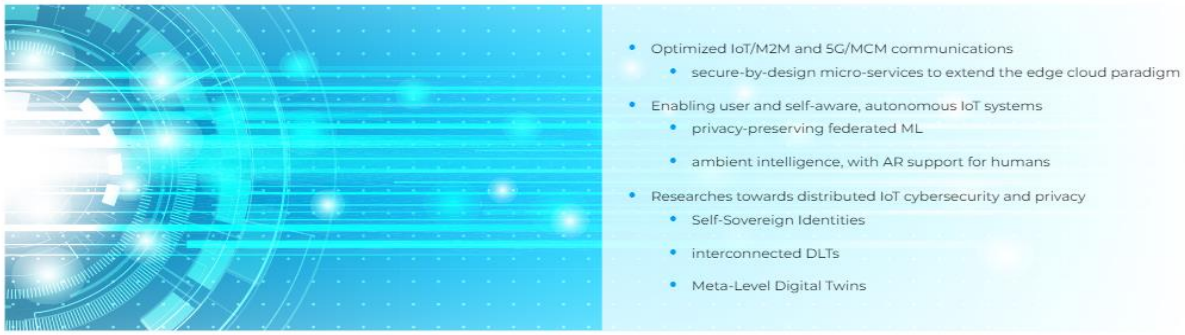
Technical Approach

Internet of Things (IoT) is one of the next big concepts to support societal changes and economic growth, being one of the fastest growing ICT segments. A specific challenge is to leverage existing technology strengths to develop solutions that sustain the European industry and values.
IoT-NGIN introduces novel research and innovation concepts, acting as the "IoT Engine" which will fuel the Next Generation of IoT as a part of the European Next Generation Internet. IoT-NGIN uncovers a patterns based meta-architecture that encompasses evolving, legacy, and future IoT architectures. The project also optimizes IoT/M2M and 5G/MCM communications, including using secure-by-design micro-services to extend the edge cloud paradigm. Moreover, it enables user and self-aware, autonomous IoT systems through privacy-preserving federated ML and ambient intelligence, with AR support for humans. Distributed IoT cybersecurity and privacy, for example, using Self-Sovereign Identities and interconnected DLTs to implement Meta-Level Digital Twins, are also among the main priorities of IoT-NGIN.

In a nutshell



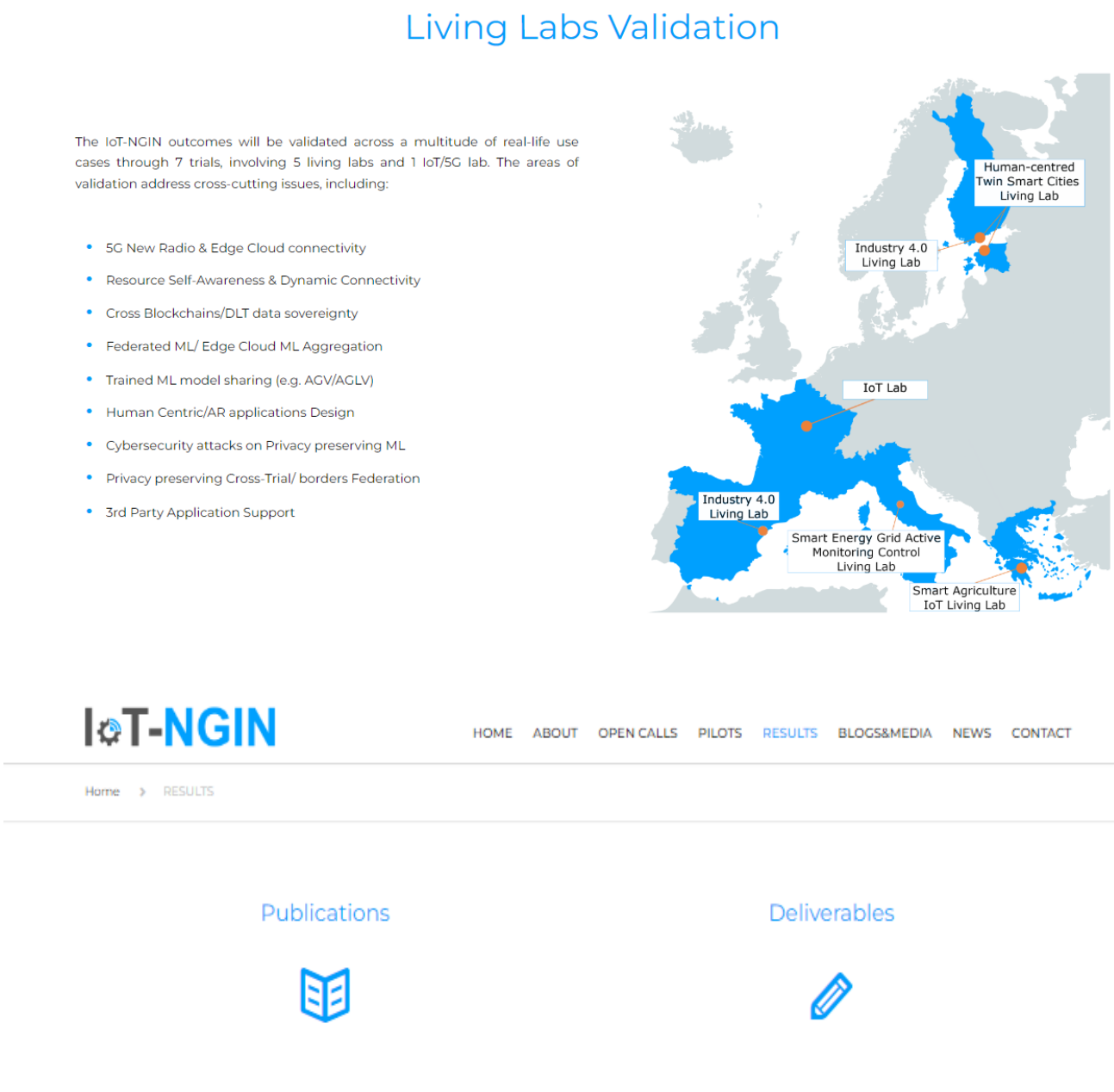


Figure 3: Project website screenshots

The structure of the website is as follows:

1. **Home Page -** providing general information related to the project vision, pilots, partners, and the social media channels.

2. **About** - On this page, we cover the technical objectives of the IoT-NGIN project as well as detailed information about partners.
   a. **Project**
   b. **Partners**

3. **Open Calls** - On this page, we describe the process of Open Calls dedicated to the candidates and the experts.
   a. **Open Calls for SMEs**
   b. **Open Calls for Evaluators**

4. **Pilots** - This page describes the Living Labs Validation and their use cases.
   a. **Trial 1- Trial 7**

5. **Results -** This page summarizes the technical results and publications submitted by the partners.
   a. **Publications**
   b. **Deliverables**

6. **Blogs & Media -** This page lists all the blogs that have been submitted by partners, giving a brief description of their contents. This page also contains the marketing materials created by the project.
   a. **Blogs**
   b. **Media**

7. **News** - This page describes the different news, events, and newsletters of the project.
   a. **News**
   b. **Newsletter**

8. **Contact** - the page refers to the contact page of IoT-NGIN.

In Google's keyword ranking, IoT search keywords are in the top positions, as shown in Figure 4.

Search item	Google search ranking
iot-ngin h2020	1st place
iot-ngin eu	1st place
iot-ngin european union	1st place
iot h2020 eu	1st place

Figure 4: Google keyword ranking

The website is regularly updated to assure that visitors get coherent and timely information about the project as it develops. The IoT-NGIN website has had 5,458 unique visitors counting from the beginning of the project. IoT-NGIN is very popular not only in Europe but also in the United States thanks to the latest dissemination activities at international events in the USA, as presented in Figure 6. Detailed statistics from the website, as shown in Figure 8, illustrate data related to user acquisition and behaviour and help us in trend analysis. Our international presence allows us to expect that potential IoT end users will not be limited only to European contacts and may result in the development of new projects or the continuation of our work on further projects.

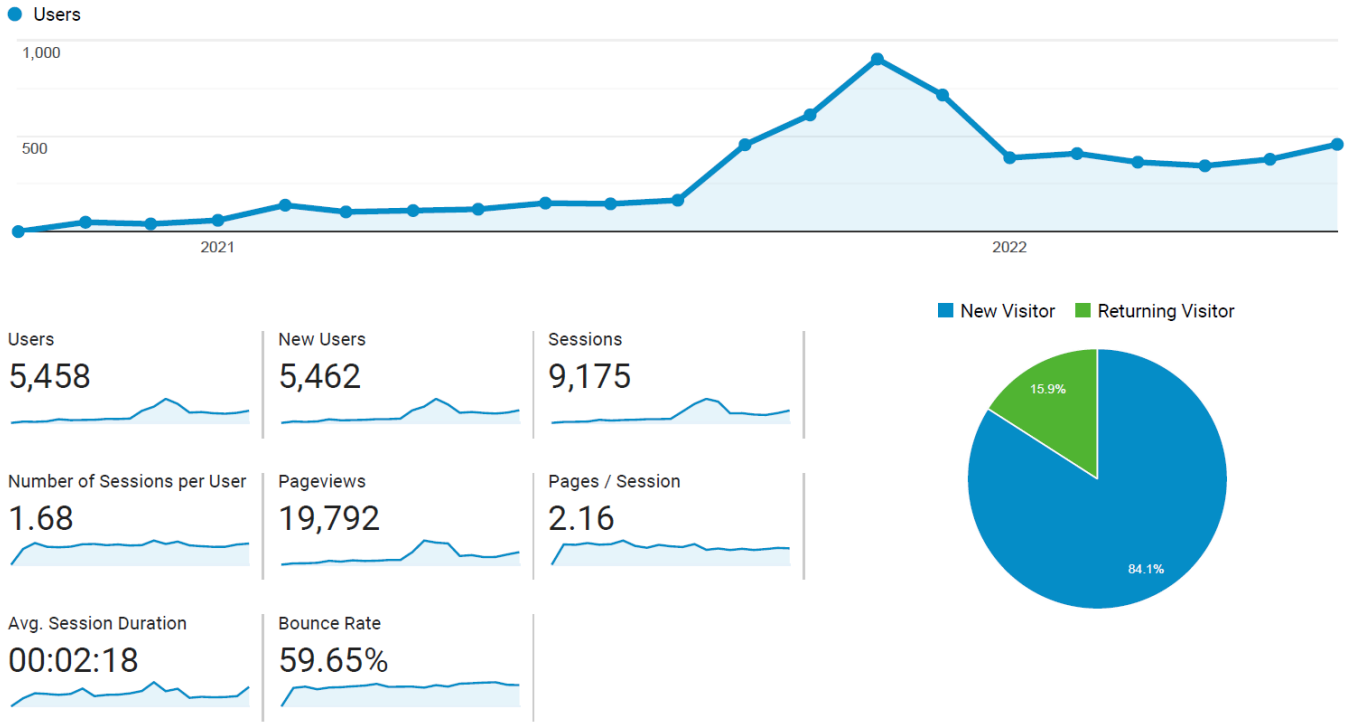


Figure 5: Website general data

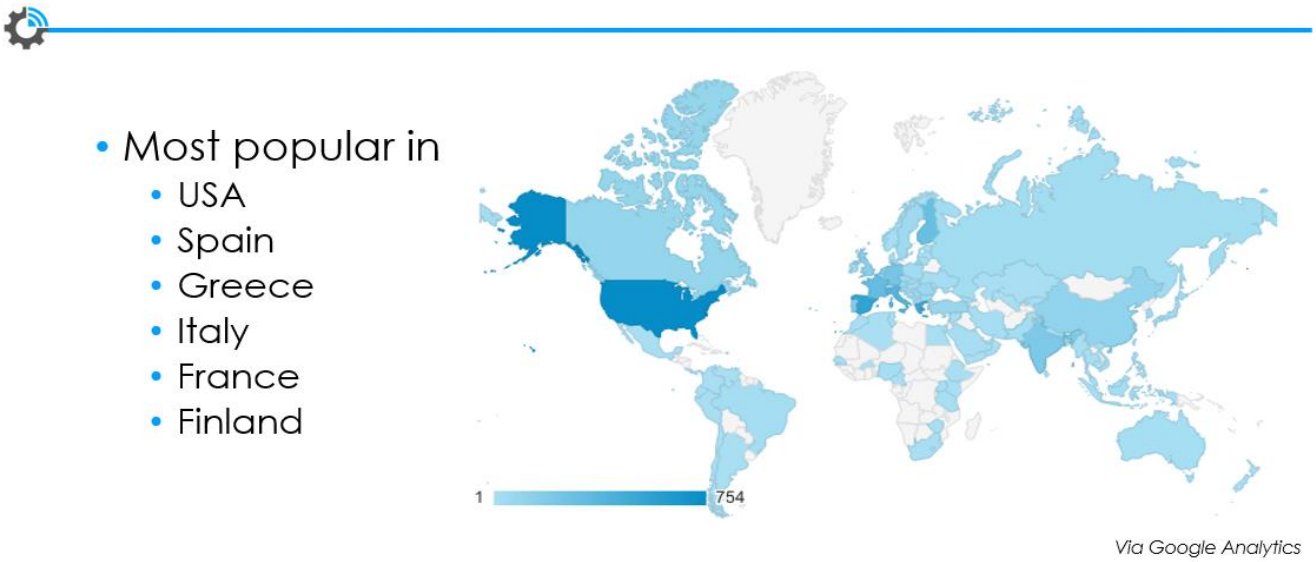


Figure 6: Popularity per country

	Language	Users	% Users
1.	en-us	2,527	46.10%
2.	en-gb	696	12.70%
3.	es-es	310	5.66%
4.	it-it	295	5.38%
5.	el-gr	173	3.16%
6.	fr-fr	140	2.55%
7.	en	118	2.15%
8.	zh-cn	103	1.88%
9.	de-de	85	1.55%
10.	pt-pt	80	1.46%

Figure 7: Popularity per language

Country		Acquisition			Behavior		
		Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
		5,458 % of Total: 100.00% (5,458)	**5,469** % of Total: 100.13% (5,462)	**9,175** % of Total: 100.00% (9,175)	**59.65%** Avg for View: 59.65% (0.00%)	**2.16** Avg for View: 2.16 (0.00%)	**00:02:18** Avg for View: 00:02:18 (0.00%)
1.	United States	**804** (14.57%)	801 (14.65%)	833 (9.08%)	92.92%	1.16	00:00:14
2.	Spain	**563** (10.20%)	560 (10.24%)	902 (9.83%)	53.55%	2.36	00:02:14
3.	Greece	**529** (9.59%)	527 (9.64%)	1,280 (13.95%)	48.12%	2.49	00:03:03
4.	Italy	**429** (7.78%)	426 (7.79%)	717 (7.81%)	48.81%	2.23	00:02:36
5.	France	**326** (5.91%)	319 (5.83%)	580 (6.32%)	54.48%	2.43	00:02:08
6.	Finland	**303** (5.49%)	303 (5.54%)	937 (10.21%)	51.23%	2.78	00:03:26
7.	Germany	**239** (4.33%)	236 (4.32%)	425 (4.63%)	56.24%	2.51	00:02:11
8.	India	**211** (3.82%)	210 (3.84%)	283 (3.08%)	66.43%	1.65	00:01:35
9.	Netherlands	**156** (2.83%)	151 (2.76%)	214 (2.33%)	65.89%	2.27	00:02:19
10.	Portugal	**147** (2.66%)	146 (2.67%)	220 (2.40%)	60.91%	1.64	00:02:16

Figure 8: IoT-NGIN website statistics

The webpage had 19,792 pageviews. The most visited pages besides the main page are "open calls", "about the project and partners", "blogs", "news" and "trials". It can be concluded that people visiting the IoT-NGIN website want to find out the most important information about the project and (then) look for news related to our presence in the media and finally get to know our results. The achieved attractiveness of the website is significant and proves that this source is important for our audiences.

The IoT-NGIN website has had a significant increase of impressions in November 2021, as shown in Figure 5. Detailed statistics from that time show that the most time was devoted to Open Calls, which confirms the great interest in the project. We expect the same interest in the coming weeks as the IoT-NGIN has recently announced Open Call #2 and invited SMEs active in IoT applications development to implement innovative IoT applications that use heterogeneous IoT and IoT-NGIN

components to offer new services and validate the IoT-NGIN components. It is expected that 10 applicants will be selected via this open call to enter the process and demonstrate the IoT-NGIN functionality. Sub-projects selected via Open Call #2 will start at IoT-NGIN month M28 (January 2023) and will run for 9 months. The competitive IoT-based application proposals will be selected to start a "DESIGN- EXPERIMENT- GROWTH" stages' programme[13].

Page	Pageviews	Unique Pageviews	Avg. Time on Page
	19,792 % of Total: 100.00% (19,792)	**15,969** % of Total: 100.00% (15,969)	**00:01:57** Avg for View: 00:01:57 (0.00%)
1. /	**4,554** (23.01%)	3,608 (22.59%)	00:01:25
2. /index.php/open-calls/	**3,762** (19.01%)	3,044 (19.06%)	00:05:13
3. /index.php/about/	**1,120** (5.66%)	912 (5.71%)	00:01:44
4. /index.php/blogs/	**837** (4.23%)	517 (3.24%)	00:00:56
5. /index.php/open-calls-for-evaluators/	**701** (3.54%)	575 (3.60%)	00:02:57
6. /index.php/partners/	**554** (2.80%)	433 (2.71%)	00:00:55
7. /index.php/news/	**539** (2.72%)	382 (2.39%)	00:00:51
8. /index.php/trial-1/	**413** (2.09%)	354 (2.22%)	00:00:55
9. /index.php/pilots/	**398** (2.01%)	313 (1.96%)	00:01:21
10. /index.php/trial-2/	**389** (1.97%)	321 (2.01%)	00:01:18

Figure 9: IoT-NGIN searched keywords

[13] https://iot-ngin.eu/wp-content/uploads/2022/06/Annex-2.-IoT-NGIN-Open-Call-2-Guide-for-Applicants-1.pdf

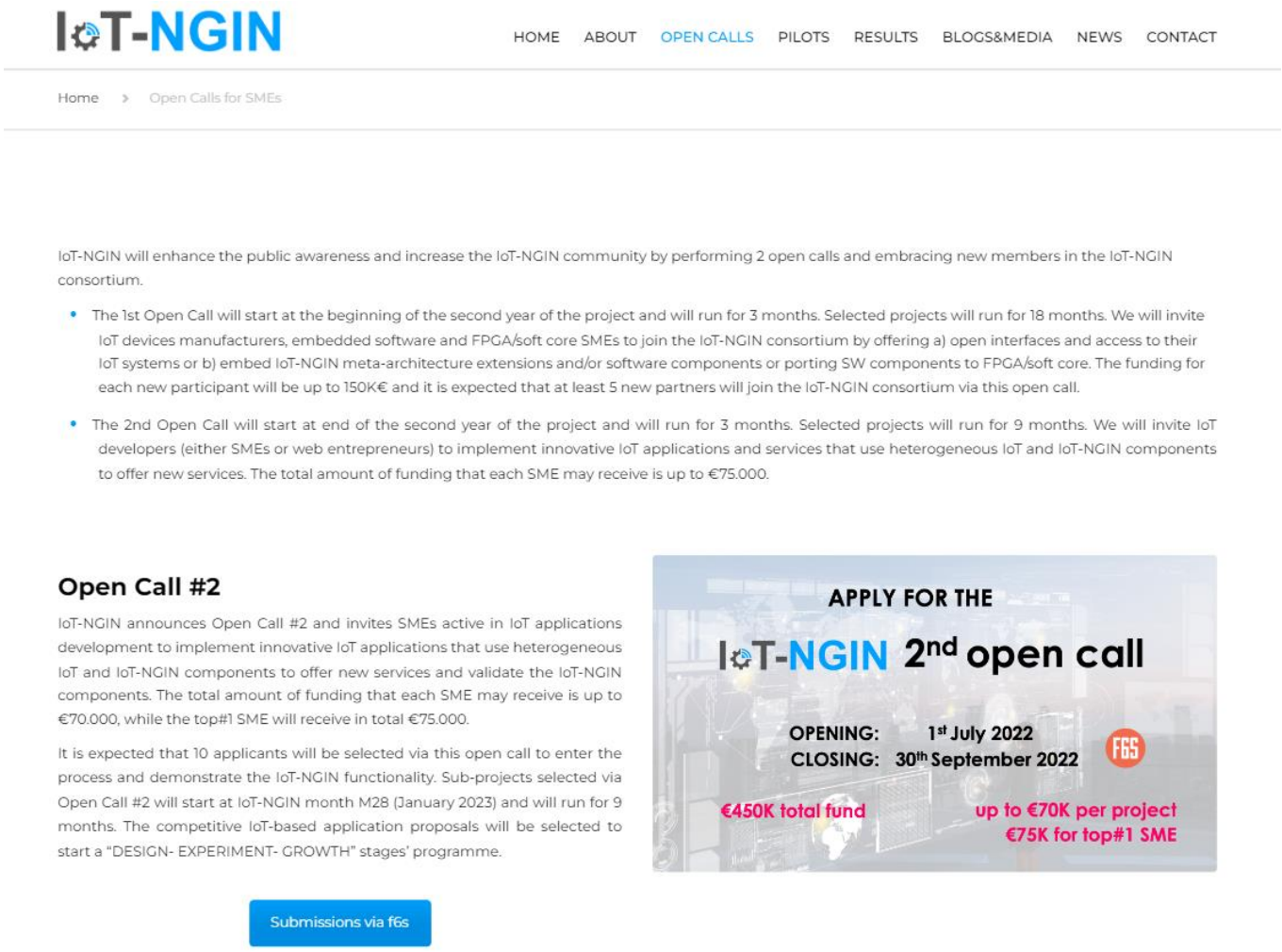


Figure 10: 2nd IoT-NGIN Open Call

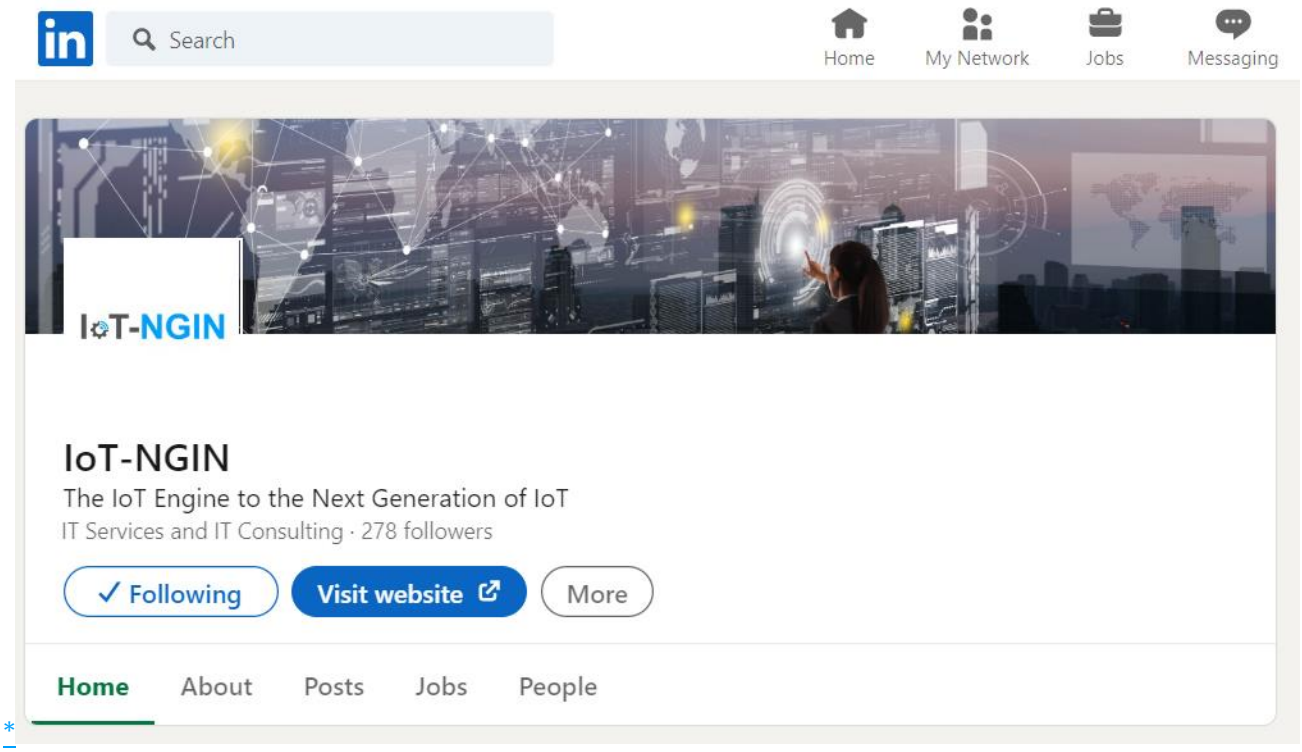
3.3 Social Media

Social Media channels occupy a highly important place in the communication plan of any EU project. Given their global reach and almost negligible cost, they are a highly cost-effective promotional tool.

For the IoT-NGIN project, we have decided to reach out to relevant stakeholders and audience using **LinkedIn** and **Twitter** as the official mediums for social media dissemination and communication. Through these channels, we communicate with a wide audience and disseminate the results.

LinkedIn: LinkedIn helps us connect with relevant stakeholders and audience. It is one of the most powerful media with 600 million professional profiles, which means nearly an unlimited supply of network connections. LinkedIn is a very important tool for networking and allows us to build the connections with end-users. Another purpose is to keep our followers up-to-date with the developments and activities in our project. LinkedIn also helps us also to stay up-to-date with changes in the IoT ecosystem.

The LinkedIn page of our project with **278 followers** and more than **200 posts** is available at the IoT-NGIN LinkedIn profile[14].



[14] https://www.linkedin.com/company/iot-ngin/

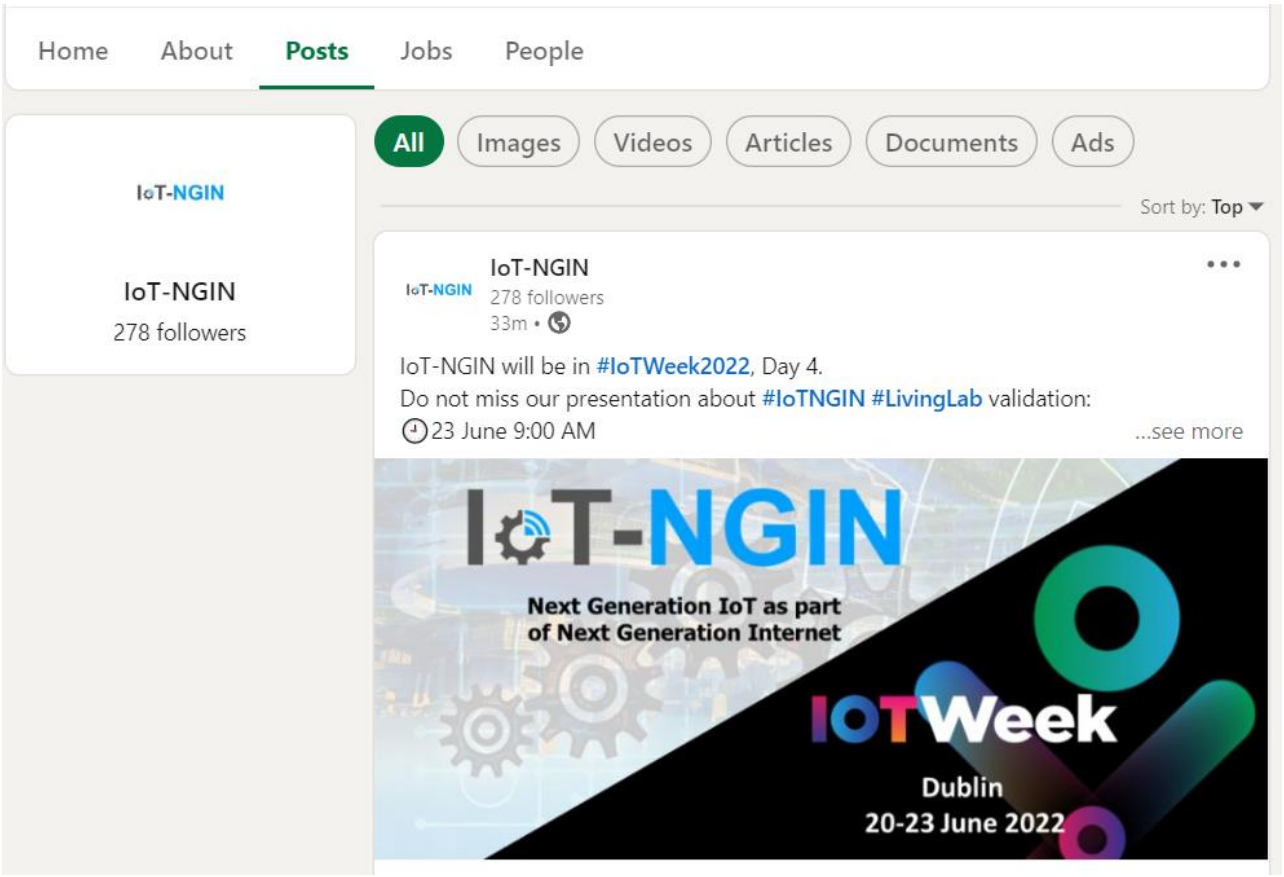

Home
About
Posts
Jobs
People
IoT-NGIN
278 followers
All
Images
Videos
Articles
Documents
Ads
Sort by: Top
IoT-NGIN
278 followers
33m •
IoT-NGIN will be in #IoTWeek2022, Day 4.
Do not miss our presentation about #IoTNGIN #LivingLab validation:
23 June 9:00 AM
...see more
IoT-NGIN
Next Generation IoT as part of Next Generation Internet
IOTWeek
Dublin
20-23 June 2022

Figure 11: LinkedIn Screenshots

Twitter: Twitter helps us drive the information related to the project with a less targeted mode of communication. The posts on Twitter are used to post multiple updates for events not only related to IoT-NGIN but also to different initiatives in which our project is involved such as NGIoT[15] and EU-IoT. The Next Generation Internet of Things (NGIoT) initiative is a growing community of projects and related initiatives at work to maximise the power of IoT made in Europe.

We spread these posts to all our audience without targeting specific stakeholders. The Twitter page of our project with **273 followers** and more than **470 tweets** is available at the IoT-NGIN Twitter profile.[16]

[15] https://www.ngiot.eu/
[16] https://twitter.com/IotNgin

Figure 12: Twitter Screenshots

3.4 Newsletters

The project newsletters are published on a bi-annual basis throughout the project duration.

As of June 2022, tree issues have been published.

All published newsletters can be found on the IoT-NGIN website, in the newsletter section under the following link[17].

[17] https://iot-ngin.eu/index.php/newsletters/

IoT-NGIN

Newsletter Spring 2022

Dear Reader,

the spring weather treats us very well so far with all nature coming back to life, which fills us with optimism and joy. Unfortunately, not everyone in Europe can feel the same. IoT-NGIN partners empathize with Ukrainians and all the people affected by the war and wish for this conflict to end soon, so we could all cherish peace and freedom again.

IoT-NGIN has reached its half. We are approaching the interim review and many components and developments look more mature.

In our third Newsletter, you can find the updates on the project's recent achievements, the presentation of our 3 Consortium partners, the status of our Living Labs, a short introduction of the 1st Open Call results, and some news.

I hope you'll enjoy it!

Yours sincerely,

Dr. Ghasan Bhatti (Capgemini)

Project coordinator

Project status

IoT-NGIN can boast of having provided technical contributions in 5G, AI, Tactile Internet and IoT cybersecurity and data sovereignty.

Enhancements on 5G have been provided through research on relay selection strategies to support 5G network coverage extension via Device-to-Device (D2D) communications, 5G enhancements ensuring QoS features towards Time Sensitive Networking (TSN), as well as implementation of the Network Slice Management System (NSMS) following the 3GPP specifications [TS 28.531]. 5G capabilities exposure APIs for facilitating management of 5G services and a secure edge cloud solution have been also specified.

Moreover, IoT-NGIN develops a hybrid edge-cloud MLaaS (Machine Learning as a Service) framework, in line with BDVA SRIA4.0. The platform covers the whole ML lifecycle, supporting ML training via privacy-preserving Federated Learning (FL) and online learning, inference on IoT devices and polyglot model sharing.

Furthermore, the IoT-NGIN work on Human-Centric IoT through Ambient Intelligence and Tactile Internet focused on the design and development of enhanced object recognition, based on both visual and non-visual methods, FIWARE-based Digital Twinning of IoT devices and pervasive security via a flexible identity management and access control service, as well as initial work on Augmented Reality (AR) tools.

Open Call 1 – 5 New projects

We are happy to welcome 5 new partners in the IoT-NGIN community, which have been distinguished among the candidates of the 1st Open Call. The new participations will exploit and advance the IoT-NGIN meta-architecture and will support new use cases integration in the Living Labs. The additional innovation will be brought via:

- The Smart Viticulture Management system for better environmental sustainability (SmartViT) by BEIA Consult
- Deploying ML models on Drone Microcontroller system (MLDrone) by ACCELIGENCE
- The DEvelopment Environment of Professional solutions in the field of Industrial Internet of Things (DEEP IIoT) by CATIE
- The Next Generation Conversational Wearable Medical Device for Chronic Disease Prevention (QuasaR-NGIN) by ThinkBioSolutions
- The Electric Grid Monitoring by Open-Access IoT (EGMOI) by ENERGIOT

Latest News

- IoT-NGIN in OSM Ecosystem Research: IoT-NGIN has been listed in the ETSI OSM Ecosystem Research by our partner, i2CAT. ETSI OSM is the NFV MANO stack, which is aligned with ETSI NFV architectural framework. In IoT-NGIN project, i2CAT utilizes ETSI OSM as the NFV MANO for the orchestration of container-based network services, which is integrated in its Network Slice Management tool (SOE) as a part of the 5G Resource Management API. The developed API will enable the service migration for IoT devices so that they can run their processes as container-based network services in the 5G edge cloud.
- Our partner Privanova is honoured to announce that it was among rare organizations presenting at the First intersessional consultation of the Ad Hoc Committee established by the UN General Assembly to elaborate a comprehensive International Convention on Countering the Use of Information and Communications Technologies for Criminal Purposes. As part of his presentation, Mr Sahito highlighted Privanova's role as a partner in numerous EU-funded innovation projects aiming to reinforce cybersecurity measures and fight cybercriminality, including IoT-NGIN.
- IoT Solutions World Congress 2022 (IOTSWC2022), Barcelona: Synelixis welcomed the congress participants in HALL 4, Booth D415, inviting them to learn the latest capabilities and features of our IoT Precision Agriculture Solution SynField and their latest innovations in research initiatives, including IoT-NGIN. Moreover, i2CAT kindly welcomed attendants in Hall 4, Stand C321, Booth 19 to inform about their IoT/5G-based NewSpace activities, partially conducted in IoT-NGIN.

Upcoming Events

The IoT-NGIN partners are especially excited about the upcoming IoT events:

- EuCNC: 2022-06-07 to 2022-06-10, Grenoble, France https://www.eucnc.eu/

  IoT-NGIN will be present in an exhibition booth.

Figure 13: The most recent IoT NGIN Newsletter, Issue 3

By the end of the project, the consortium has tree newsletters to be published, one in the fall of 2022 and two in 2023. In each issue of the newsletter, the Project Coordinator reports on the state of progress, two to three consortium partners have the opportunity to introduce themselves. We also present upcoming events and share important information about the project. The newsletter is published on the website and promoted on the project's social media.

3.5 Blogs

To ensure effective communication and dissemination the project publishes monthly blog posts on the project website. As of month M21 of the project, the IoT-NGIN consortium has published

39 blog posts. Below is the list of the titles. The full texts are available in the blogs[18] section of the IoT-NGIN.

- E-Mobility in Terni pilot site
- Dissemination, communication, and exploitation in IoT-NGIN
- Steps towards cybersecurity and information security
- e-Mobility in Terni pilot site
- Leveraging Generative Adversarial Networks (GAN) for malicious attack detection (MAD) in IoT
- Making Europe fit for the Digital Age (GAIA-x)
- SECURITY AS KEY ENABLER FOR RELIABLE MOBILE COMMUNICATIONS
- Addressing a fragmented IoT connectivity market
- Containers and Unikernels – More Isolation for your Software
- IoT-NGIN and big data in industry
- Honeypots as Moving Target Defense (MTD) in IoT Systems
- Access control in IoT networks
- IoT and energy asset management: a new framework for a multi-objective analysis
- Machine Learning in the browser
- Smart City Living Lab and IoT-NGIN technologies
- IoT-NGIN Open Call 1
- Device-to-device communications, a good friend of cellular networks
- Internet of Things in industrial environments
- Ambient Intelligence and Tactile IoT in IoT-NGIN
- New paradigms for AI on the Edge
- Implications of IoT system on European Lives
- Automated Decision-Making Systems & IoT for Smart Agriculture
- European smart charging stations overview
- GPU passthrough in OpenStack
- Privacy-preserving Identifiers for IoT
- Is 5G over hyped?
- Mission Critical Networks for secure communications in critical operations
- MicroVMs to reduce the overhead of virtualization
- CAD models & industry 4.0
- Cybersecurity for IoT Federated Learning
- From cloud to fog to edge and swarm computing!
- IoT based monitoring of Smart Grid
- Predictive Digital Twins
- The urban digital twin supports Living Lab activities
- Benefits of GDPR Compliance for Exploitation of Project Results

[18] https://iot-ngin.eu/index.php/blogs/

- D2D, an innovative communication approach
- Machine Learning Operations (MLOps): shortening the gap from laboratory to production
- Next Generation Internet and IoT as a part of it
- Computer Vision for Smart Agriculture

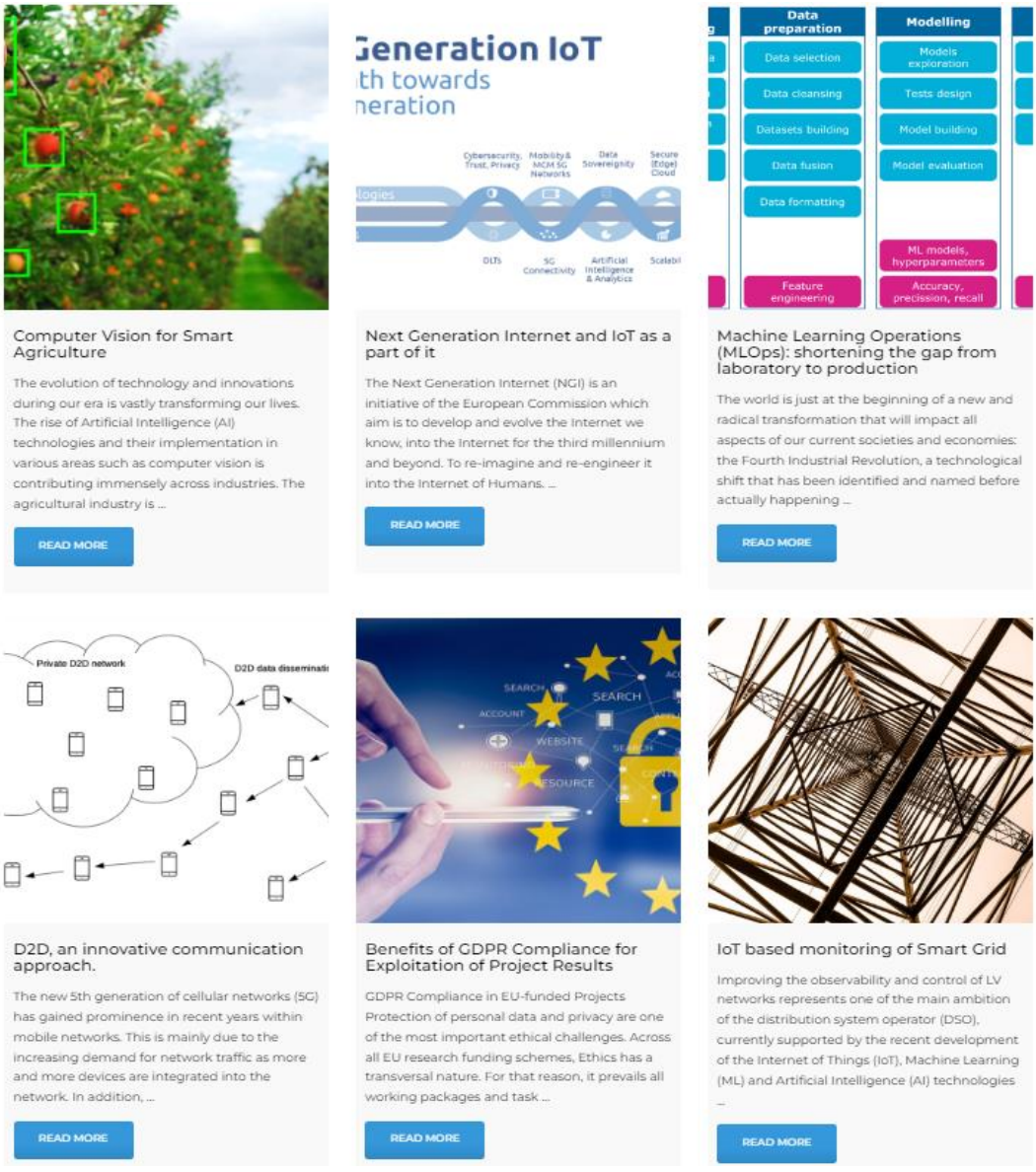


Figure 14: Blog posts screenshot

3.6 Public Deliverables

Most of the deliverables produced in the project are publicly available, which can then be utilized and accessed by industry and research stakeholders. Below is a list of the public deliverables thus far. Please refer to the deliverables section[19] for details and full texts.

- D1.1 - Definition analysis of use cases and GDPR Compliance
- D1.2 - IoT meta-architecture, components, and benchmarking
- D3.1 - Enhancing deep learning / reinforcement learning
- D2.3 Secure and Persistent Communications Layer (Ver. 1)
- D4.1 PRESS Framework Analysis
- D4.2 Privacy, Reputation and Mutual Auditability toolbox
- D8.2 Marketing and Promotional Tools
- D8.6 Dissemination and Standardisation Activities

[19] https://iot-ngin.eu/index.php/deliverable/

4 Marketing Materials

The project has already released and will continue to release multiple versions of project brochures/flyers and posters throughout the project duration. Due to the pandemic situation in the first phase of the project, we put a stronger emphasis on the digital version of the marketing materials. The following sections summarize these activities.

4.1 Brochures

The project has provided three brochures that are described respectively in Figure 15, Figure 16 and Figure 17. The digital version of the brochures is shared with the consortium partners to be printed and distributed for project outreach and promotion.

Figure 15: IoT-NGIN, Brochure 1

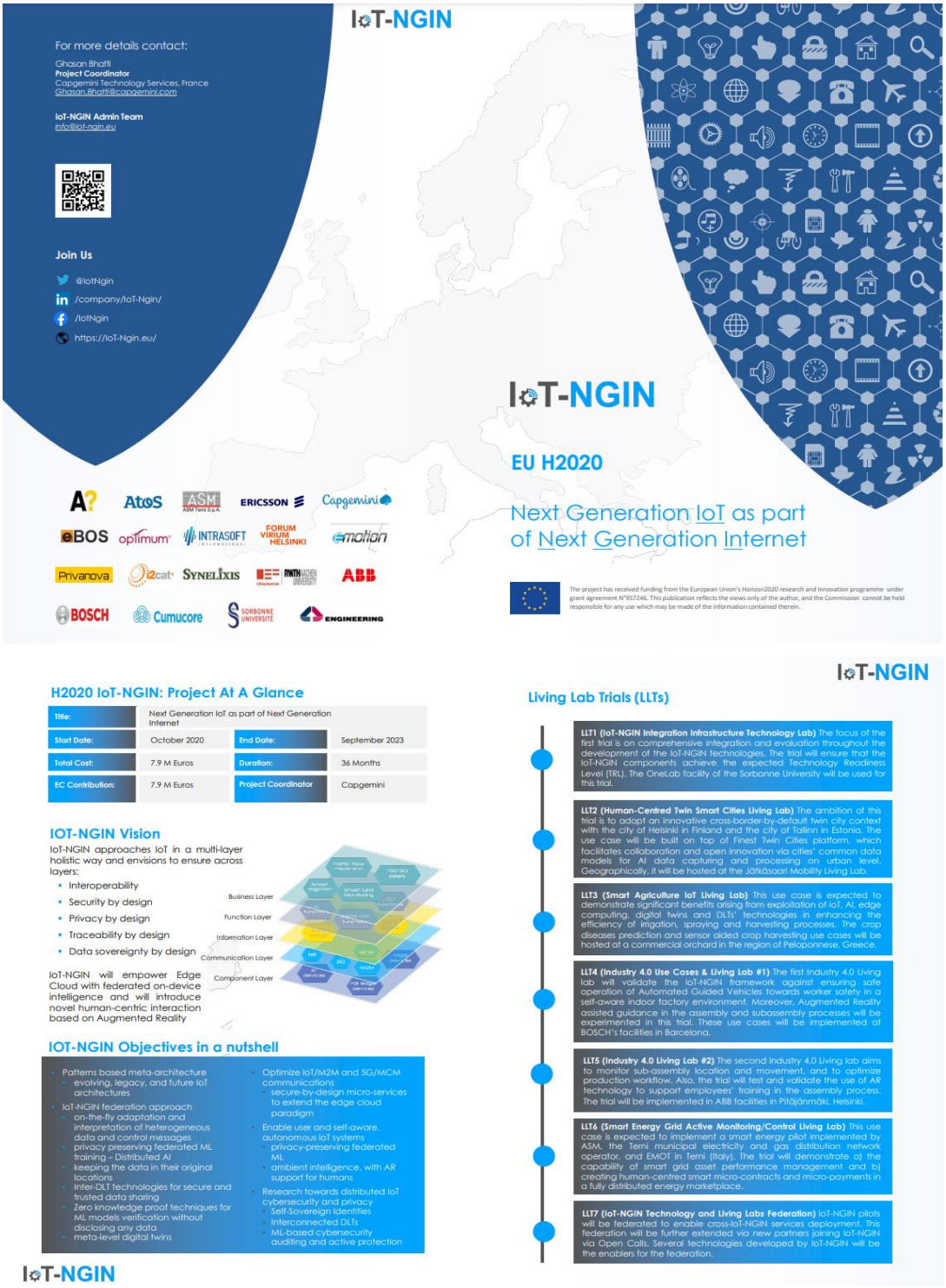


Figure 16: IoT-NGIN, Brochure 2

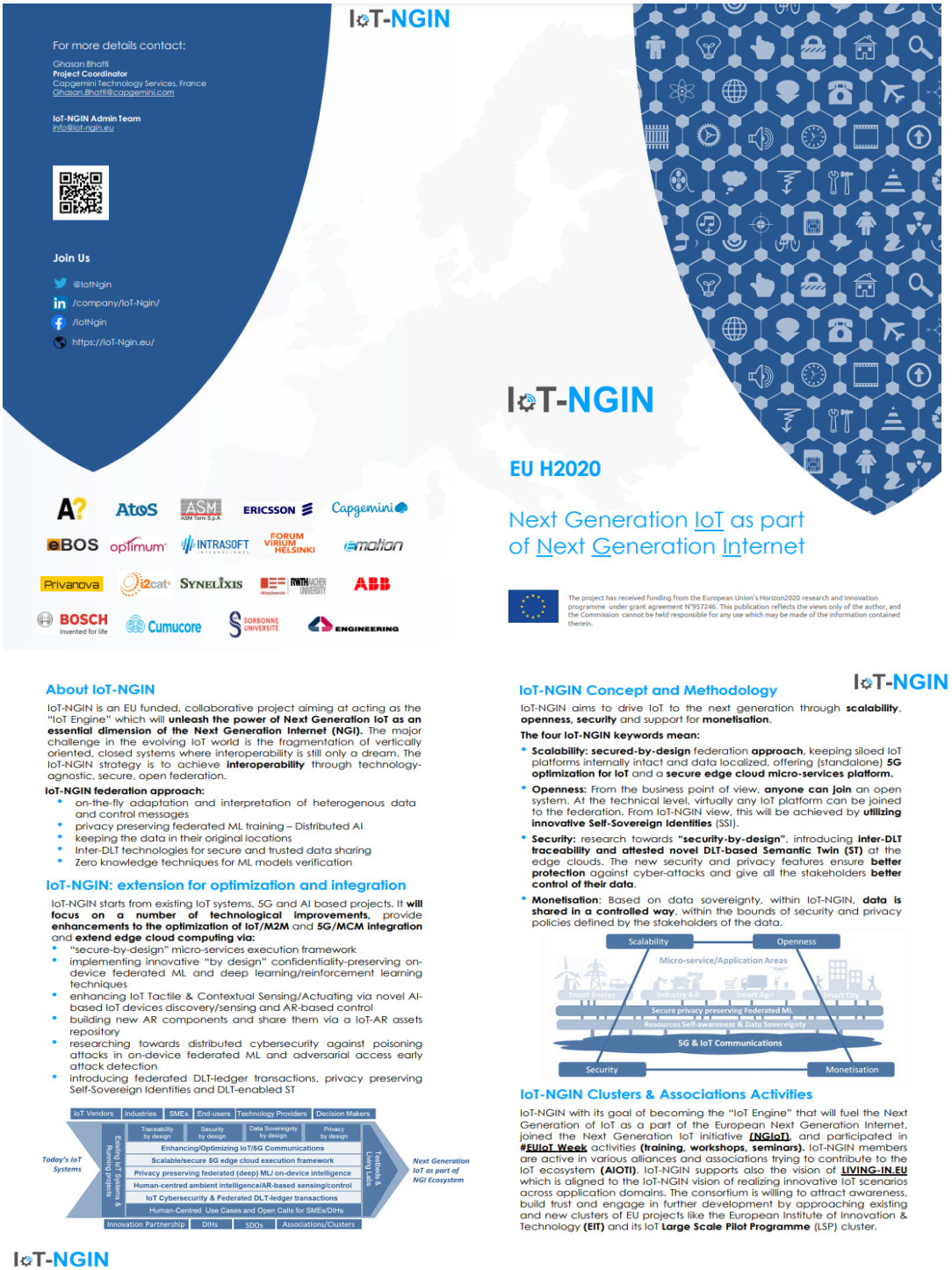


Figure 17: IoT-NGIN, Brochure 3

4.2 Posters

Three project posters have already been designed and made available on the project website and they are described respectively in Figure 18, Figure 19, Figure 20. The digital version of the posters is shared with the consortium partners to be printed and distributed for project outreach and promotion. All of them were printed and displayed during the recent events on EuCNC in Grenoble, France, IoT Week in Dublin, Ireland, IoT Solutions World Congress 2022 in Barcelona, Spain.

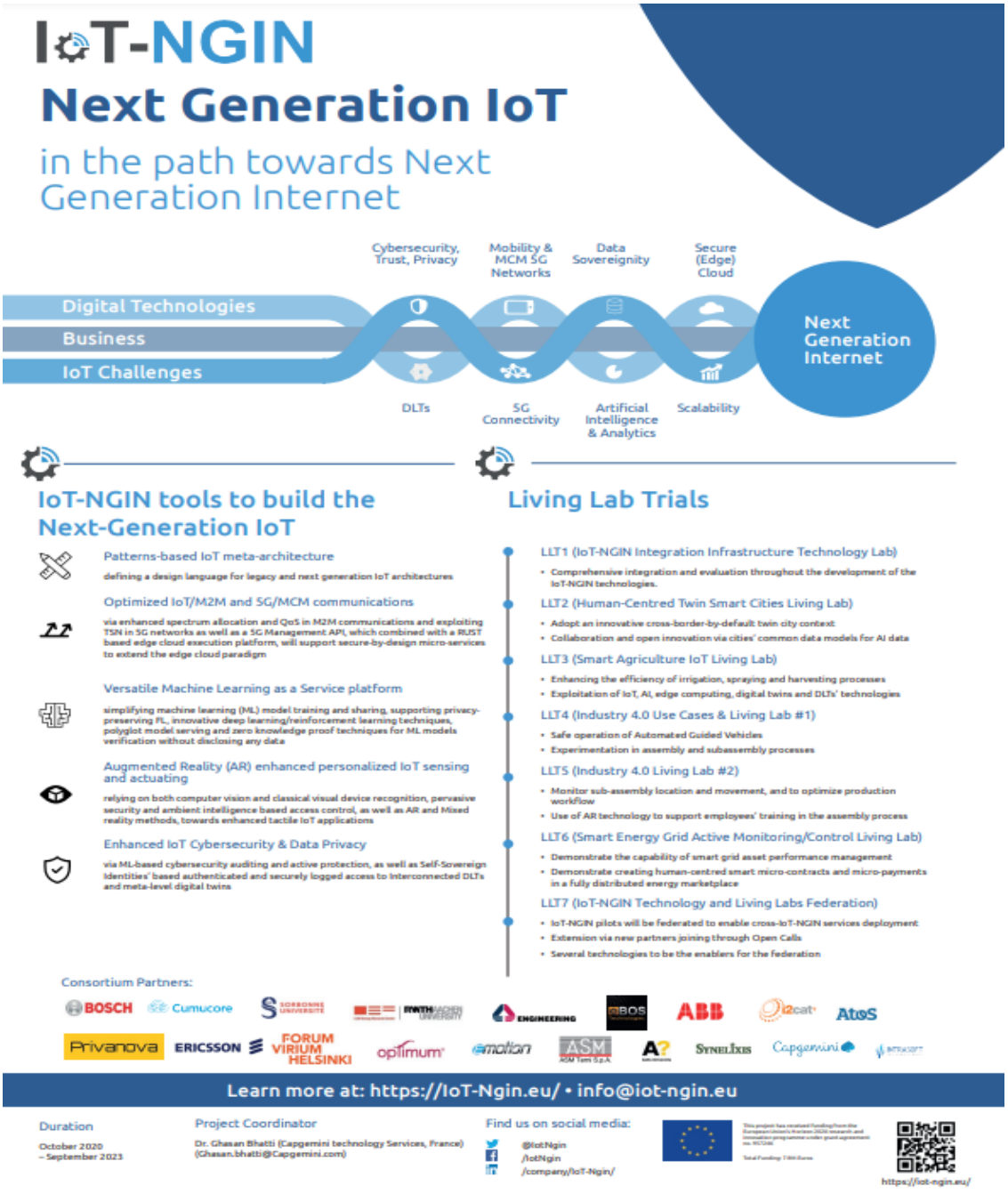


Figure 18: IoT-NGIN, Poster 1

Figure 19: IoT-NGIN, Poster 2

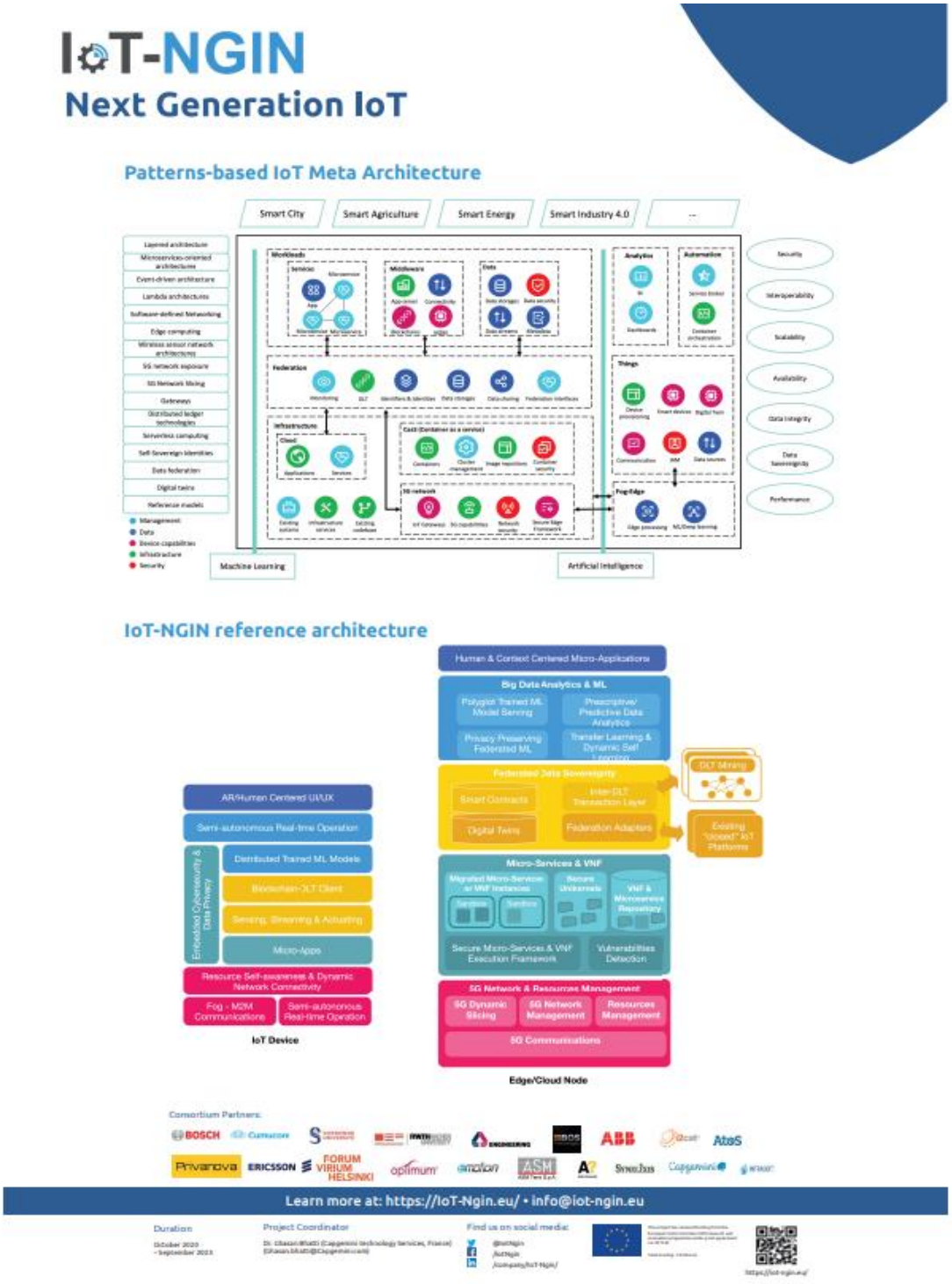


Figure 20: IoT-NGIN, Poster 3

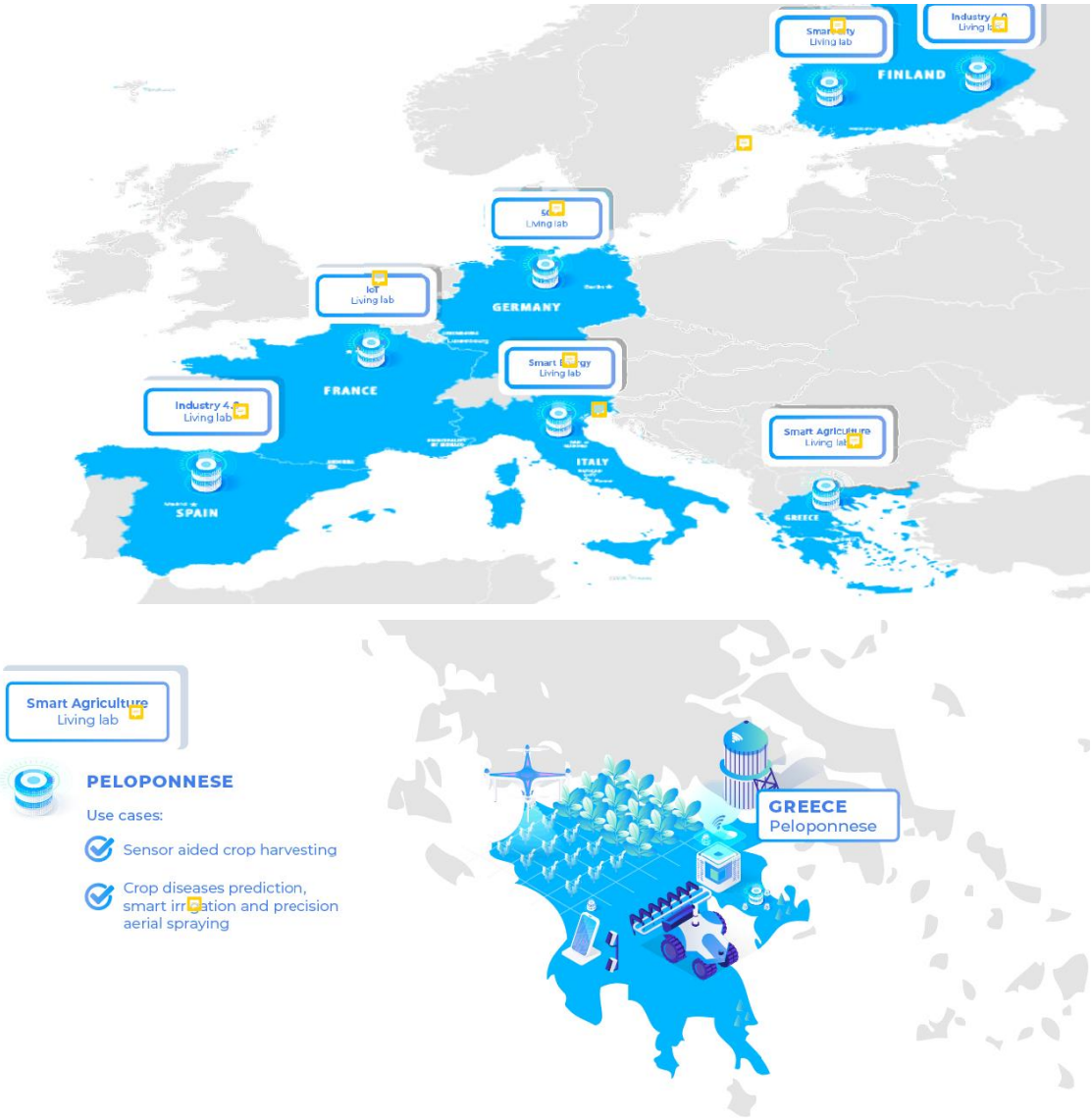
4.3 Videos

The first consortium video was released in M13. The screenshot of this video can be found in Figure 21. This video included the introduction and described the general objectives and goals of the project. The video has been published on the IoT-NGIN website and on the project's YouTube channel[20] and disseminated on all IoT-NGIN channels.

The second video will provide detailed information about the Living Lab trials and the validation of use cases as shown in Figure 22. The second video is in progress and will be released by the end of August 2022.

Figure 21: IoT-NGIN video 1

[20] https://www.youtube.com/channel/UCE9C_yYWVXcrAlc2i4wKUjw/featured


FINLAND
GERMANY
FRANCE
ITALY
SPAIN
Smart Agriculture
Living lab
PELOPONNESE
Use cases:
Sensor aided crop harvesting
Crop diseases prediction,
smart irrigation and precision
aerial spraying
GREECE
Peloponnese

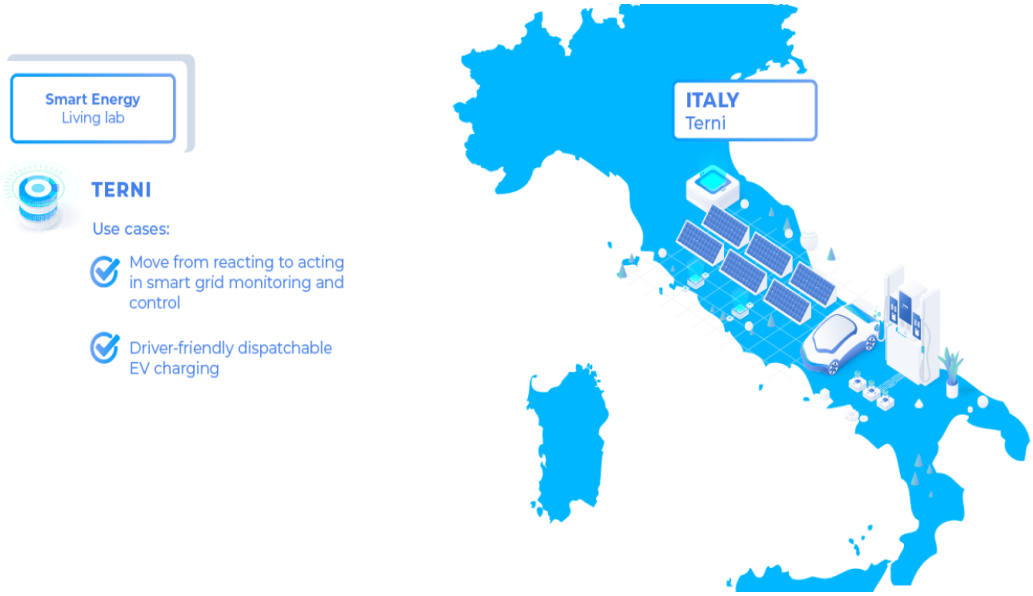


Figure 22: IoT-NGIN screenshots of draft version of the video 2

5 Conclusions and Next Steps

This deliverable presents the marketing materials and promotional tools employed during the first 21 months of the project. The deliverable gives an overview of the dissemination and outreach activities and communication channels already implemented and planned for the remaining duration of the project. The dissemination and outreach activities will be monitored and tracked closely and regularly to ensure that the dissemination KPIs are met and that the project has a wide and significant reach and impact.

In the current year of the project, the set of marketing and promotional tools has been expanded substantially to manage the increase in the exposure of the project during its final months. In particular, the consortium has participated in several innovation and industrial events in the IoT domain and plans to be more active in all IoT-related events till the end of the project. The project will continue to intensify dissemination activities in both industrial and research media, closely connected to the main exploitation paths of the project.

The visibility of the project is increasing, and the number of people interested in IoT assets is growing, as can be seen in the growing number of social media followers and visitors to our website. Relationships with several organizations develop well. The project has extensive interactions with NG-IoT, EU-IoT, BDVA, AIOTI, and many others. Project partners disseminate information about the IoT-NGIN project through participation in many EU initiatives and organizations and participation in thematic workshops. The list of relevant events has been extensively described in D8.6 [2] and updated in D9.3 [3]. The project has already achieved a significant impact with the initial project results.

The project will continue to increase its impact by creating more marketing materials and disseminating results by attending reputable events, workshops, interviews, and webinars. As the project progresses, the partners are expected to obtain more mature results, leading to an increased dissemination, standardization and exploitation potential of the project, which will be summarized in the second iteration of the deliverable D8.7 "Dissemination & Standardization Activities (2nd Period)" in the month M35.

6 References

[1] IoT NGIN, "D8.2 Marketing & promotional tools (1st Iteration)," H2020-957246 IoT-NGIN Deliverable Report, 2021.

[2] IoT NGIN, "D8.6 Dissemination & Standardisation Activities (1st Period)," H2020-957246 IoT-NGIN Deliverable Report, 2022.

[3] IoT NGIN, "D9.3 Period 1 Project Progress," H2020-957246 IoT-NGIN Deliverable Report, 2022.