EXPERIMENTATION AND VALIDATION OPENNESS FOR LONGTERM EVOLUTION OF VERTICAL INDUSTRIES IN 5G ERA AND BEYOND

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Deliverable D7.1

Dissemination, Communication and 5G PPP Engagement Plan

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GLOSSARY

Abbreviations/Acronym	*Description*
3GPP	*3rd Generation Partnership Project*
5G IA	*5G Infrastructure Association*
5G-PPP	*The 5G Public Private Partnership*
CO	*Communication Objectives*
DoA	*Description of Action*
Dx.y	*Deliverable y of Work Package x*
ETSI	*European Telecommunications Standards Institute*
EU	*European Union*
EuCNC	*European Conference on Networks and Communications*
GA	*Grant Agreement*
GA meeting	*General Assembly meeting*
IEEE	*Institute of Electrical and Electronics Engineers*
IoT	*Internet of Things*
ITU-R	*International Telecommunication Union-Radiocommunication*
KoM	*Kick-Off meeting*
KPI	*Key Performance Indicator*
Mx	*Month x*
NetApp	*Network Appliance*
NGI	*Next Generation Internet*
NGIoT	*Next Generation Internet of Things*
PU	*Public*
SME	*Small Medium Enterprise*
Tx.y	*Task y of Work Package x*
WG	*Working Group*
WP	*Work Package*
WRC	*World Radiocommunication Conference*

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EXECUTIVE SUMMARY

The EVOLVED-5G project, through the D7.1 deliverable, presents the initial plan which will be applied by the EVOLVED-5G partners, in the context of project's WP7 activities in the tasks of communication, dissemination, and engagement with 5G-PPP throughout the entire life cycle of the project.

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 maximum impact. Similarly, the dissemination 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, research, industrial and general public target audiences.

Furthermore, the engagement with 5G-PPP association is described, shedding light to the representatives of EVOLVED-5G project in the Steering board and Technology board respectively. In addition, the participation of EVOLVED-5G partners in the different 5G-PPP working groups is described.

All the plans described in D7.1 will be constantly updated throughout the entire project lifetime, and adapted to the project's evolving requirements, for attaining the greatest project visibility, audience and 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 as well as the commercial evolution of 5G.

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1 INTRODUCTION

1.1 SCOPE

This deliverable belongs to the set of WP7 deliverables, and it is directly linked to **Task 7.1 Dissemination and Communication Activities** and **Task 7.2 Engagement in 5G-PPP Activities** of WP7 framework. T7.1 main objective is to describe initial impact plans and to devise and deploy sound impact creation action plans and strategies, required to achieve maximum visibility, as well as to maximize impact within business and scientific communities, guaranteeing fast and efficient communication, dissemination, exploitation and adoption of its outputs. Planned activities will be monitored throughout the project lifetime and periodically amended, so to ensure long term effectiveness and attainability. Dissemination activities will target related markets and industries with the objective of fully exploiting the novel business opportunities that are raised from related market activities and business functions. In parallel, T7.2 focuses on the engagement with 5G-PPP activities. The project and technical coordinators of the project represent EVOLVED-5G in Steering Board and Technology Board respectively. In addition, the project contributes to 5G-PPP advances through its participation to several 5G-PPP Working Groups (e.g., SME, Pre-Standardization, Architecture, Test, Measurement and KPIs Validation).

The EVOLVED-5G project, through this deliverable introduces to its partners, target audience and stakeholders its initial impact plans, which will be applied by the EVOLVED-5G consortium to actions related to project's WP7 activities of communication, dissemination, and engagement with the 5G-PPP association throughout the entire life cycle of the project. In parallel, the initial activities performed during the first five months of the project are briefly summarized and presented.

As part of the scope of this deliverable, it is worth mentioning that the use of EVOLVED-5G impact creation channels and the communicated content, address almost all tasks of the project, impacting in this way not only WP7 activities but also all the rest EVOLVED-5G WPs.

1.2 TARGET AUDIENCE

All EVOLVED-5G partners, through their participation in WP7 tasks (and specifically in T7.1 and T7.2), will conduct and participate in multiple EVOLVED-5G 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, and interaction with 5G-PPP and rest EU 5G-PPP projects which will serve suitably each profile by providing the relevant information about EVOLVED-5G project's activities and outcomes. Each target audience will get informed with the content that is most suitable to its interests, knowledge and needs.

In specific, the target audience of D7.1 is as follows:

- **Industry sector:** Any group that has an industrial professional background, technical knowledge and expertise, and is working on industry-related areas. In this group, producers, suppliers, vendors, verticals and SMEs are involved.

- **Industrial and 5G 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 EVOLVED-5G outcomes, and ensure more effective uptake of technological innovations 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 or future providers of 5G services, network operators, verticals and other relevant telecommunication providers that are interested in 5G services and systems.
- **Academia and Research institutions:** Academic institutions from the ICT and industrial sectors, e.g., higher education institutions, like universities and educational centers 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 EVOLVED-5G pillars 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 maximize the industrial impact, by fostering the uptake of 5G and NetApp developments in an industrial context 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 5G interoperability, 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 organizations (NGOs) that could benefit from the adoption of the new IoT services and enhanced IoT capabilities offered via the EVOLVED-5G outcomes.
- **General Press:** includes specialized press and media agencies, online and offline channels, used to amplify the communication efforts of the EVOLVED-5G and thereby increase the impact of the planned dissemination and showcasing activities.
- **All EVOLVED-5G partners, collaborators, and stakeholders:** This document is addressed to the entire EVOLVED-5G 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 industry 4.0, 5G and NetApp vertical segments (factories of the future, telecommunication companies, software enterprises etc.) that could uptake and/or complement and extend the EVOLVED-5G 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 5G/NetApp scene and will play an essential role in the further engagement of other industry players from the broader ICT arena (e.g., IoT, NGIoT, NGI).

2 DISSEMINATION AND COMMUNICATION PLAN

2.1 OVERVIEW

Before proceeding with the Communication and Dissemination plan and strategy, which is presented in detail in Section 2.4, it would be useful to interpret the terms 'communication' and 'dissemination', in order to define them and facilitate better understanding of the corresponding activities. Next, in sections 2.2 and 2.3 the Channels of Communication and the Means of Dissemination are briefly presented.

Communication[1]: Communication actions do not involve project results only, but also the project actions in general such as the societal challenges, impact and added value of the project to a wide and versatile audience. Thus, communication activities target a much wider audience, including the media and the general public. It is important to use a less technical language so that a non-specialist audience can easily understand the goals and means of the project. Part of the communication activities are the early setup and effective use of communication channels throughout the project lifetime. For example, communication activities include visual identity, project website, social media, leaflets, posters, newsletters, articles, videos, press releases, etc.

Dissemination[2]: aims at maximizing the impact of research results in the public domain. Therefore, the target audience of dissemination activities is any potential user of the project results: the scientific community, stakeholders, industry, policy makers, investors, civil society, etc. Consequently, setting potential targets and results in the dissemination plan is very important, as well as presenting the targeted audience and the means to be used for achieving them: scientific papers, conferences, workshops, presentations, demonstrations etc.

Overall, both Communication and Dissemination activities are of crucial importance for the project's successful diffusion of knowledge, for raising awareness and for attracting potential supporters, industries and verticals, end users and customers. The main objectives that will be fulfilled by the EVOLVED-5G dissemination and communication actions are:

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

The following table[3] (Table 1) briefly summarizes the differences between these two concepts.

[1] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/glossary
[2] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/glossary
[3] https://projects.leitat.org/communication-vs-dissemination-whats-the-difference/

COMMUNICATION	DISSEMINATION
Covers the whole project (including results).	Covers projects results only.
Starts at the outset of the project	Happens only once results are available
Multiple audiences Beyond the project's own Community including the media and the Public.	Specialist Audiences Groups that may use the results in their own work including peer groups, industry, professional organizations, policymakers.
Informing and engaging with society to it can benefit from the research.	Enabling the take up and use of results.

Table 1 Brief summary of Communication and Dissemination concepts

2.2 CHANNELS OF COMMUNICATION

In this section, the Channels of Communication are presented, justifying their selection, role and characteristics. All presented EVOLVED-5G communication channels have been set up early in the project lifetime during its first months.

2.2.1 EVOLVED-5G Logo

The initial EVOLVED-5G logo was created at the very beginning of the project (during the proposal phase to be more accurate) and has diversified into different versions since then. The initial proposal logo is the one shown in Figure 1.

Figure 1. EVOLVED-5G Logo during Proposal Phase

Once the proposal succeeded, during its preparation phase, the logo was redesigned and a new one was used during the first month of the project (Figure 2). This version of the project logo consists of two main parts. The first part is a factory image which refers to an Industry 4.0 environment while the second part is the wording 'evolved 5G' which represents a boost to this environment to a Factory of Future (FoF).

Figure 2. EVOLVED-5G Logo 2nd version

A separate, more compact logo version was also created to be used in the social media accounts of the project.

Figure 3. EVOLVED-5G Social Media logo

During the KoM, partners openly discussed about updating the current main version of the logo in order to depict a more obvious connection between the factory and the wording. As a result, it has been decided for a rectangular grid to be added around the two parts, providing a more contemporary image. The logo appearing in public, in the project's and 5G-PPP websites changed to the new one (Figure 4) while the one used in social media (Figure 3) of the project was kept the same.

Figure 4. EVOLVED-5G Logo Website Logo (3rd version)

Starting from end of January 2021, the above-mentioned logo became the new main logo of the project along with several other variations created for versatile use in different formal events/occasions and media. Some of these variations are shown in Figure 5.

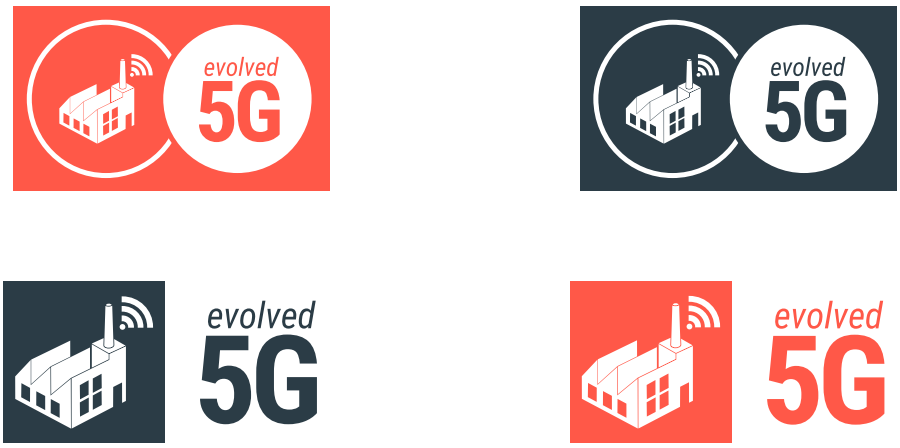


Figure 5. EVOLVED-5G Logo variations

2.2.2 EVOLVED-5G Website

The EVOLVED-5G project has established its official website at: https://evolved-5g.eu/, which acts as a portal for publishing information about the project, its identity, activities and results, ensuring that the project's scope is maintained and communicated across various vertical industries and stakeholders. The EVOLVED-5G website has been designed and developed in early January of 2021 and officially released in public on Friday 8th of January 2021.

In more detail, the EVOLVED-5G website is:

- Developed using WordPress ver. 5.7 by NCSRD and INF teams and it is constantly updated to newer versions/updates
- Domain name owned by INF partner for 6 years
- Website hosting is offered by INF
- Content constantly updated by INF and NCSRD teams on a weekly basis

- Contact Form is provided addressing the Project Coordinator, Technical manager and T7.1 leader
- reCAPTCHA v3 protection is enabled
- Google Analytics enabled

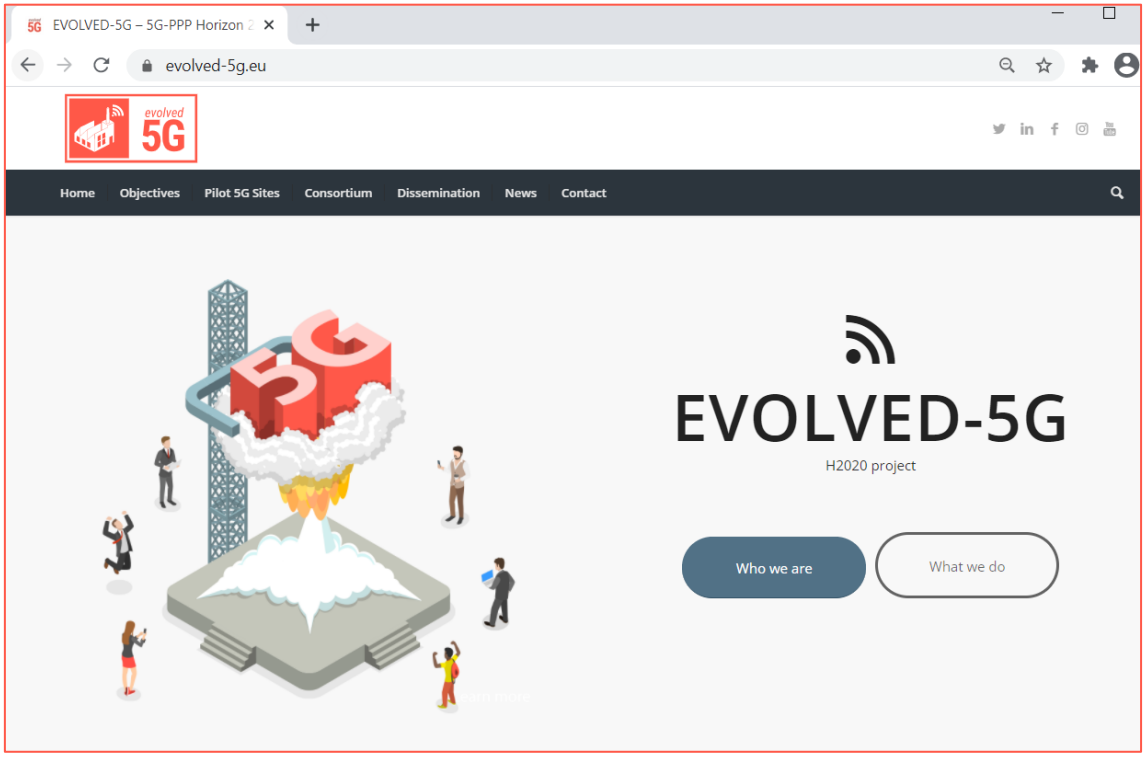


Figure 6. EVOLVED-5G Website Home Page and URL

The main EVOLVED-5G project communication and impact objectives are fulfilled by the website's compact, comprehensive, and easy-to-use structure. *Home, Objectives, Pilot 5G Sites, Consortium, Dissemination, News and Contact* are the 7 main menus options provided by the website as shown in Figure 7.

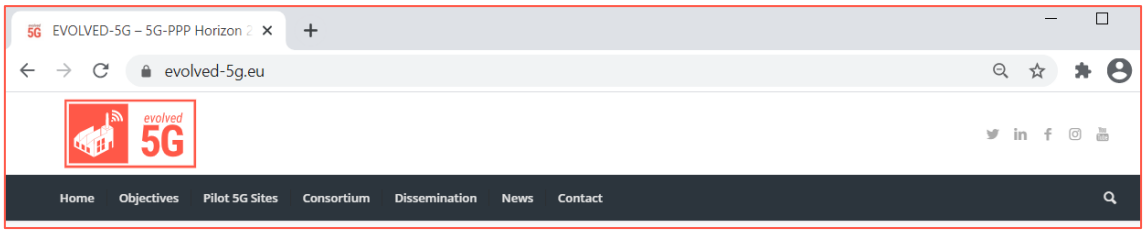


Figure 7. EVOLVED-5G Website Main Menu.

A footer section, shown in Figure 8, is also provided at the end of each webpage of the EVOLVED-5G website containing information of vital importance such as project identity, news' tags, information about Visitors and links to the EVOLVED-5G social media accounts. In the footer section, it is also stated, that the EVOLVED-5G project is an EU funded project part of the 5G-PPP partnership.

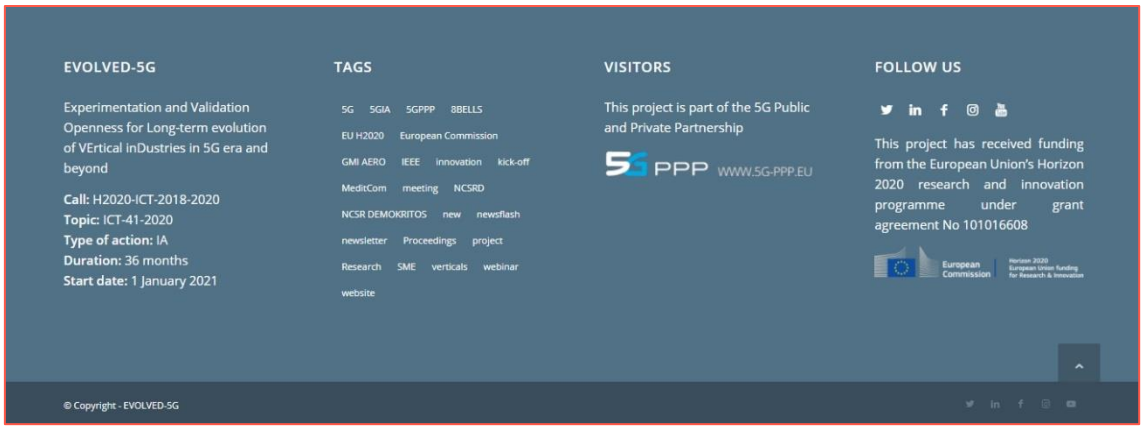


Figure 8. EVOLVED-5G Website Footer Section.

The basic menu options provided in EVOLVED-5G website are presented in detail in the following sections:

- **Home:** (https://evolved-5g.eu/) By visiting the Home Page of EVOLVED-5G Website, the visitor comes across with the main screen/content shown in Figure 6. Through this page one can have a quick overview of the project and easily navigate through the rest website sections/pages. EVOLVED-5G home page, acting as the first and main page of the website, aims initially to inform the visitors about the project's scope, NetApps and Target FOF Applications, an overview of which is also provided in Figure 9.

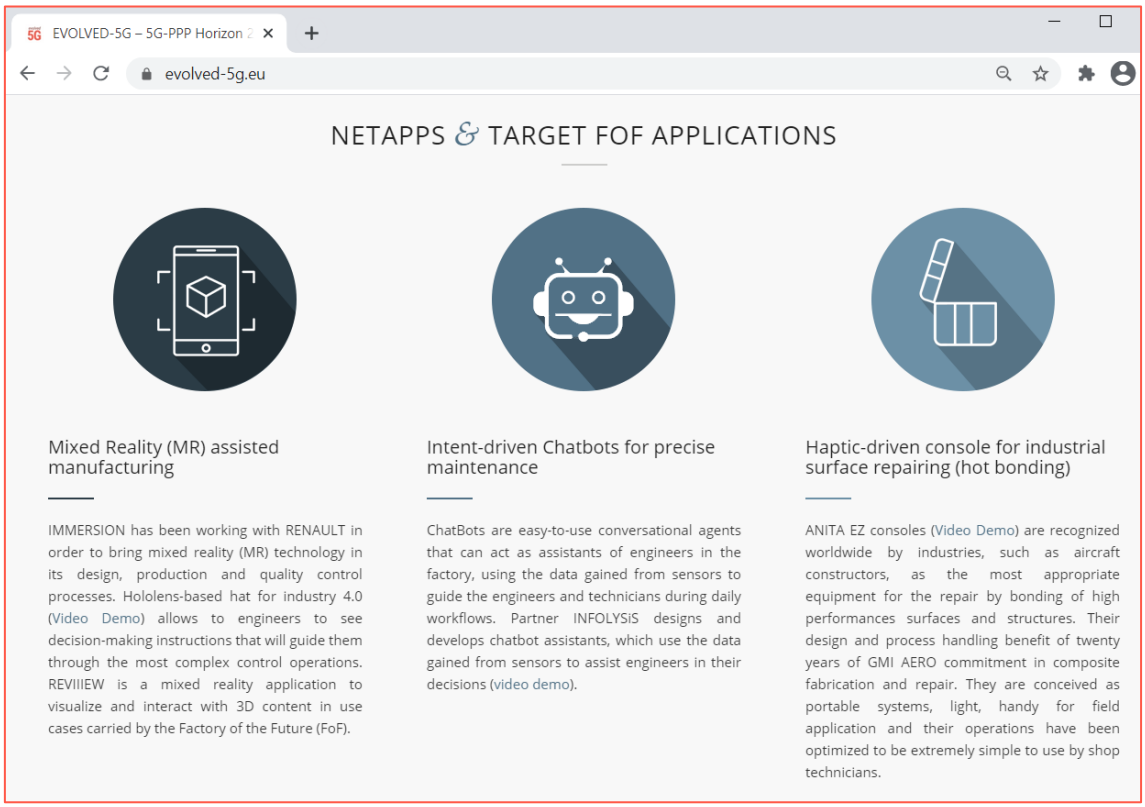


Figure 9. EVOLVED-5G Website NetApps & Target FOF Applications Section.

This page is cleverly designed to draw users' attention and curiosity, causing them to scrutinize and search for more information about the EVOLVED-5G Project. For example, the "Why Us?" and "Featured Work" sections, existing in the Home page and shown in detail in Figure 10, provide key information about the project's pioneer actions and links to other key pages so as the user can be intrigued and keep searching further through the rest pages of the website.

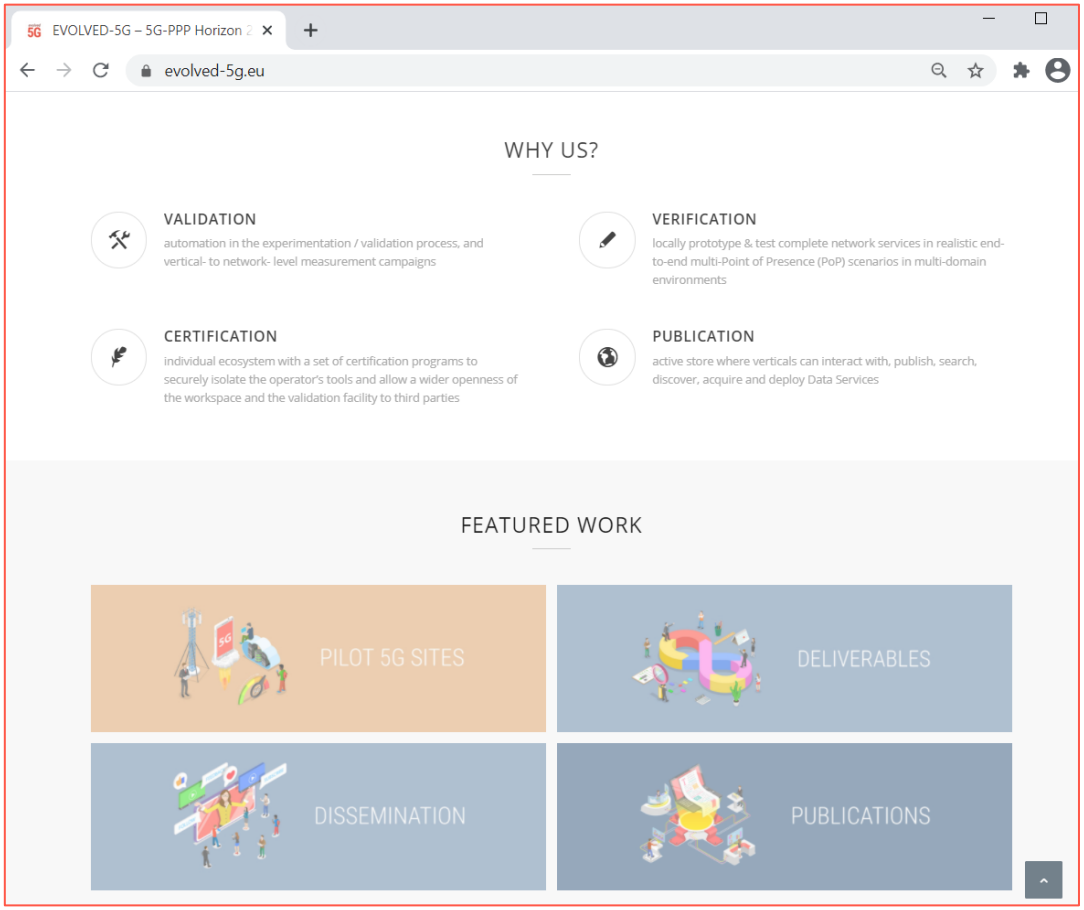


Figure 10. EVOLVED-5G Website Home Page 'Why us?' and 'Featured Work' Sections.

Additionally, the last section of EVOLVED-5G Home Page (Figure 11) is dedicated to the consortium members. All partners' logos are hyperlinked pictures, provided here in a carousel format, for the visitors to be able to have a quick view of all the partners' profiles, composing EVOLVED-5G consortium and learn more about each of them by visiting their corporate websites.

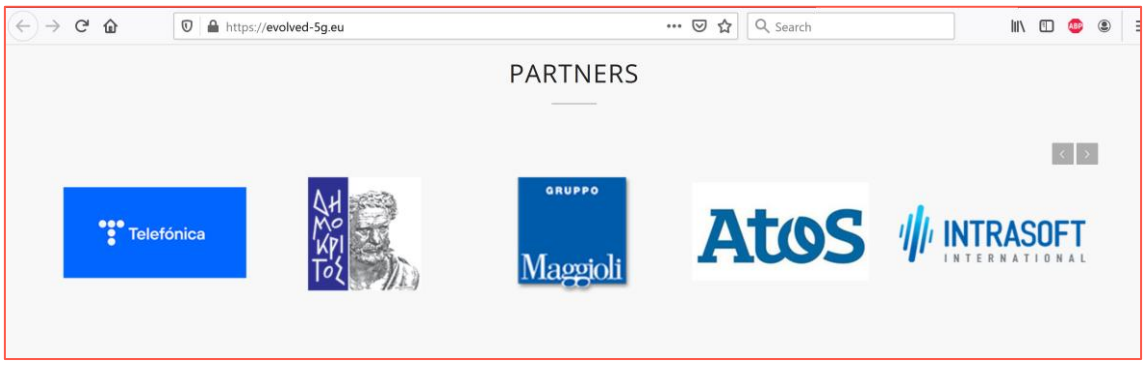


Figure 11. EVOLVED-5G Website Home Page 'Partners' Section.

- **Objectives:** (https://evolved-5g.eu/objectives/) This webpage provides information about the objectives of the project. When first entering the Objectives Page the users find a header, shown in Figure 12, indicating the scope/content of the chosen page.

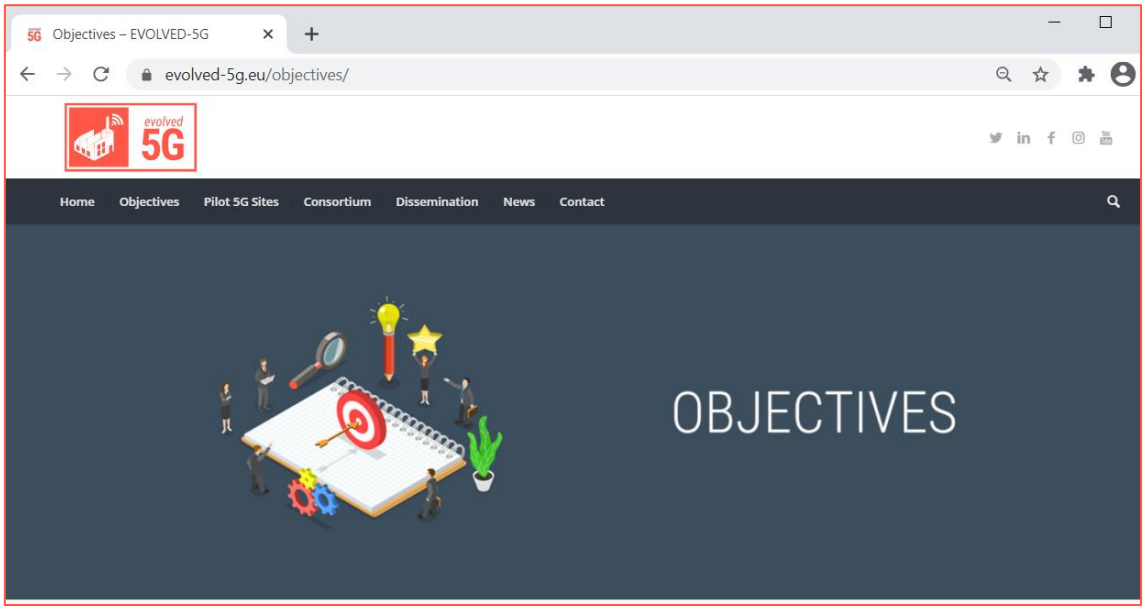


Figure 12. EVOLVED-5G Website Objectives Page.

On a first approach, in this page, the project's motivation and scope is vividly described along with a picture of all the components describing initial EVOLVED-5G architectural approach, as shown in Figure 13.

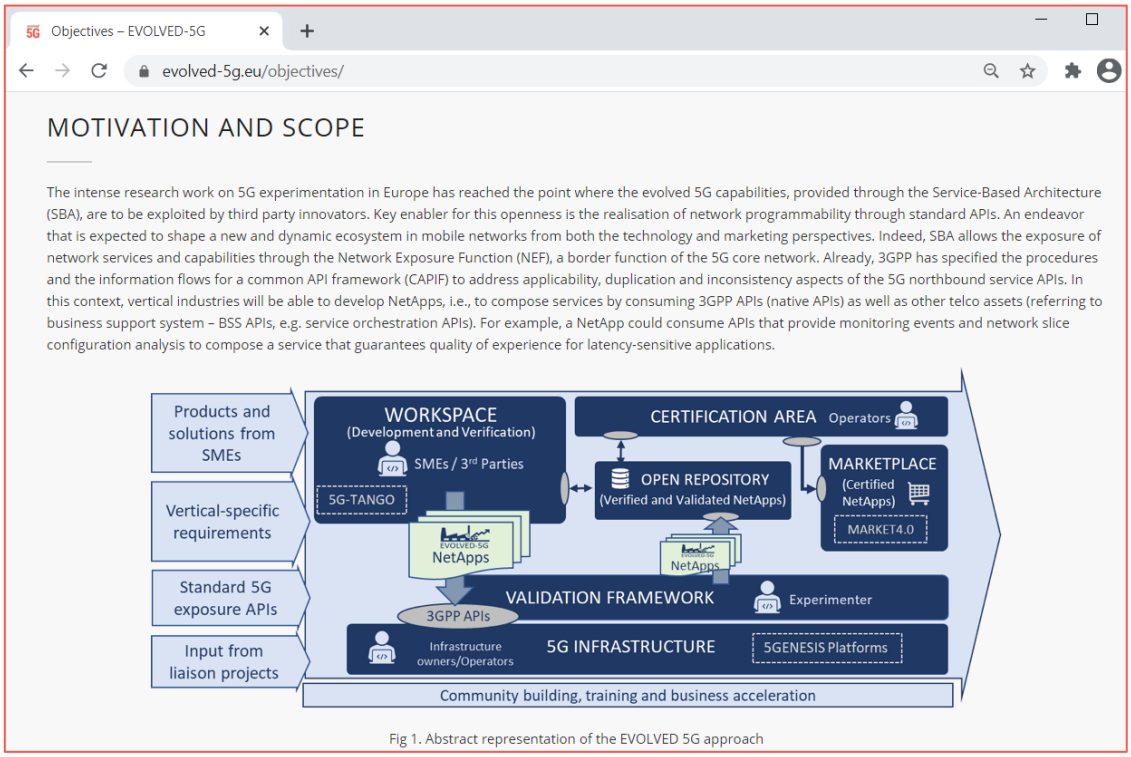


Figure 13. EVOLVED-5G Website Objectives Page 'Motivation and Scope' Section.

Following the project's motivation and scope section, there is a more in-depth analysis on all the objectives that need to be addressed within the project, as shown in Figure 14.

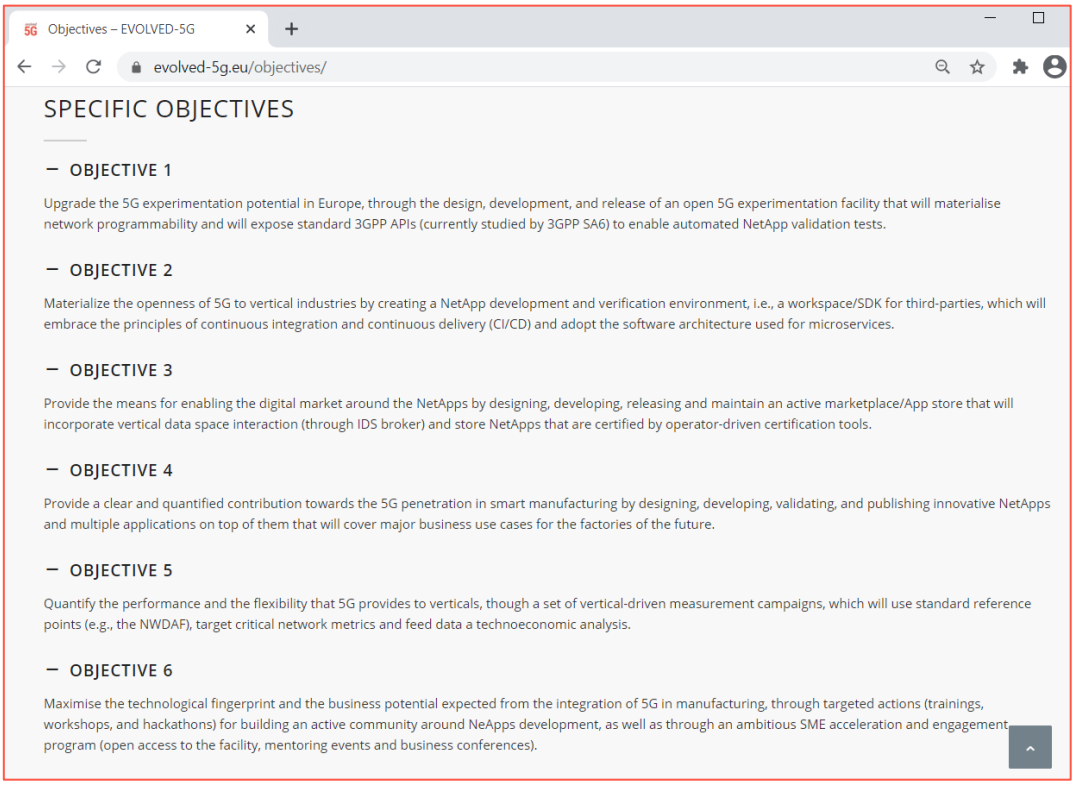


Figure 14. EVOLVED-5G Website Objectives Page 'Specific Objectives' Section.

In **Objectives** Page is also included a detailed table with information about the metrics set for evaluation and verification of each objective.

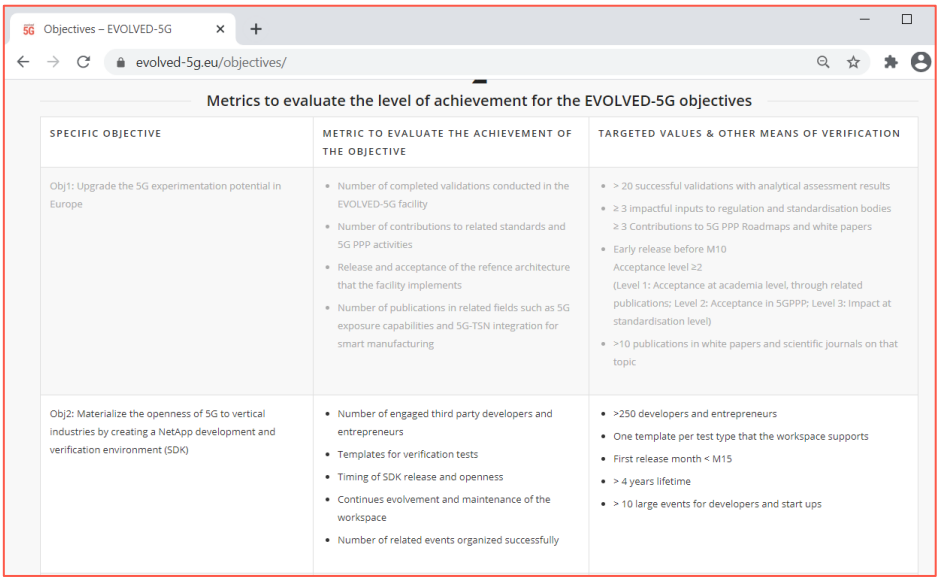


Figure 15. EVOLVED-5G Website Objectives Page Table of Metrics Section.

- **Pilot 5G Sites:** (https://evolved-5g.eu/pilot-5g-sites/) Pilots 5G page aims to introduce the visitor to the two 5G-PPP ICT-17 5GENESIS project's experimentation infrastructures on which the proposal is built (Athens and Malaga 5GENESIS experimental platforms). An overview of the specific experimental platforms is initially provided (Figure 16) which is then followed by a more detailed description of the two platforms.

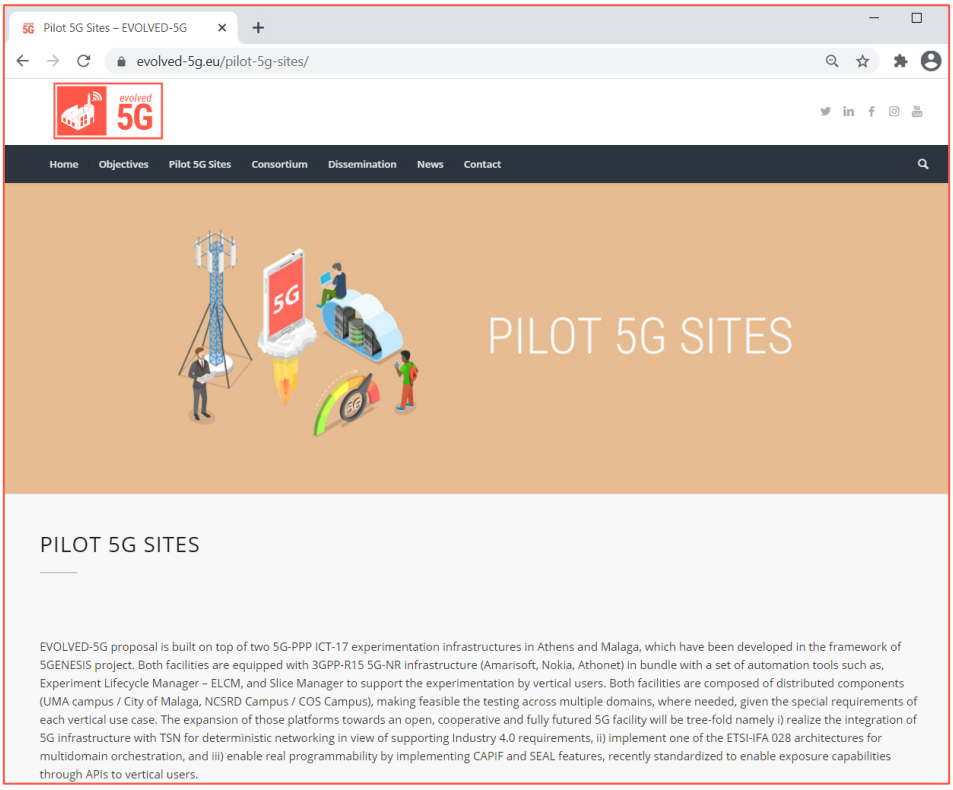


Figure 16. EVOLVED-5G Website Pilot 5G Sites Page and Section.

As shown in Figure 17, Athens Platform is first described, providing two dropdown menus with a short description of the platform and its available technologies.

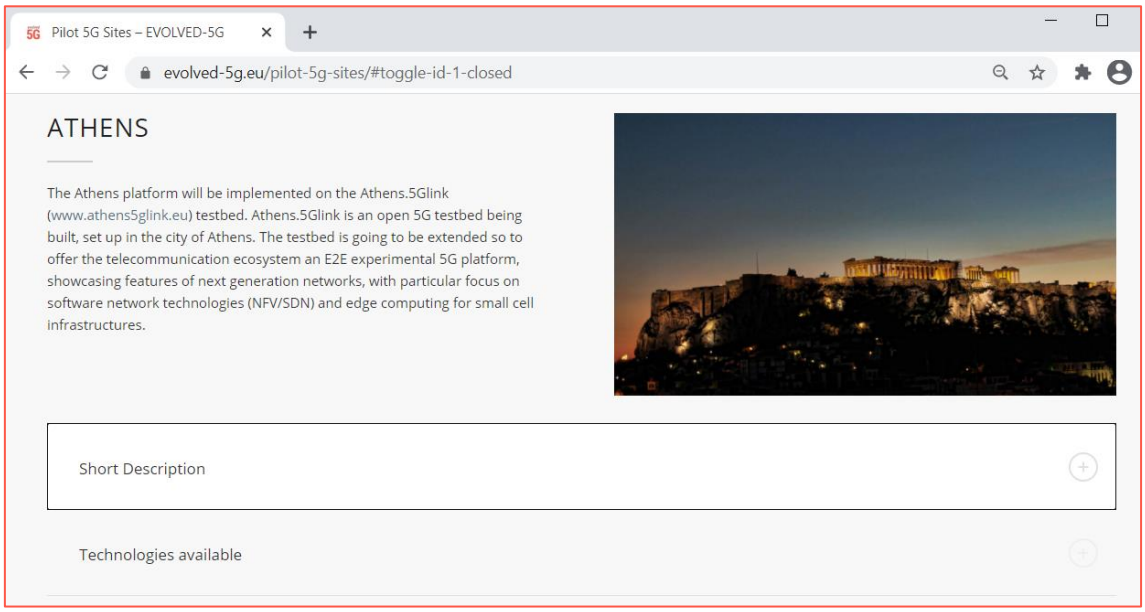


Figure 17. EVOLVED-5G Website Pilot 5G Sites Page 'Athens Infrastructure' Section.

Following the Athens platform, Malaga platform is also presented, as shown in Figure 18.

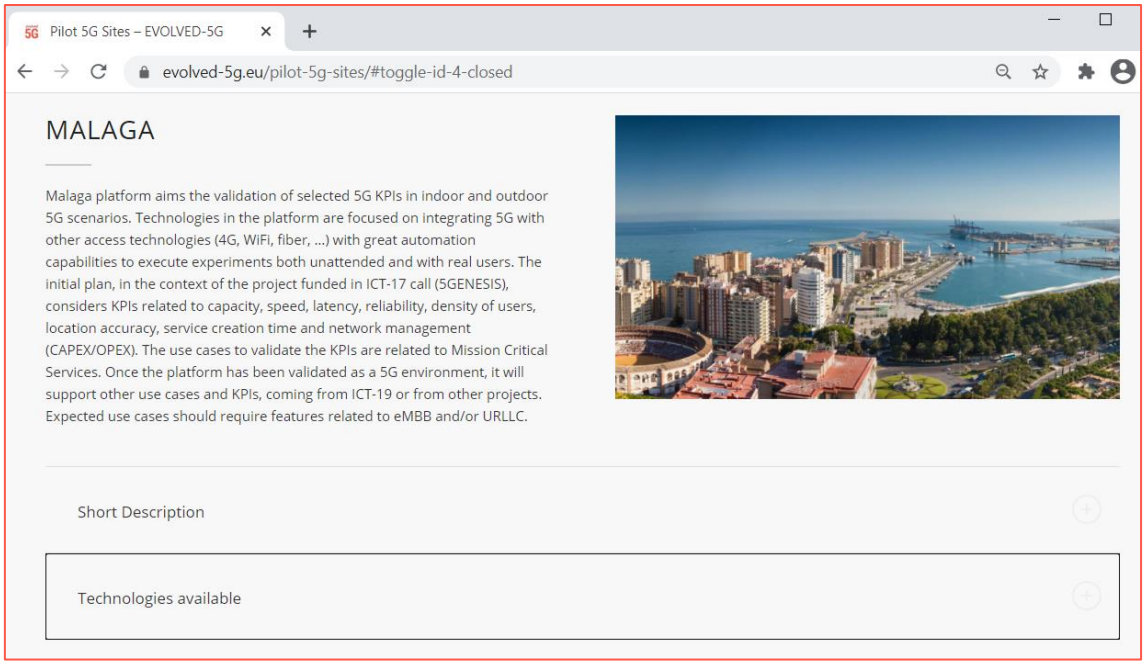


Figure 18. EVOLVED-5G Website Pilot 5G Sites Page 'Malaga Infrastructure' Section.

- **Consortium:** (https://evolved-5g.eu/consortium/) The EVOLVED-5G consortium is presented in this page. The respected indicative header is shown in Figure 19.

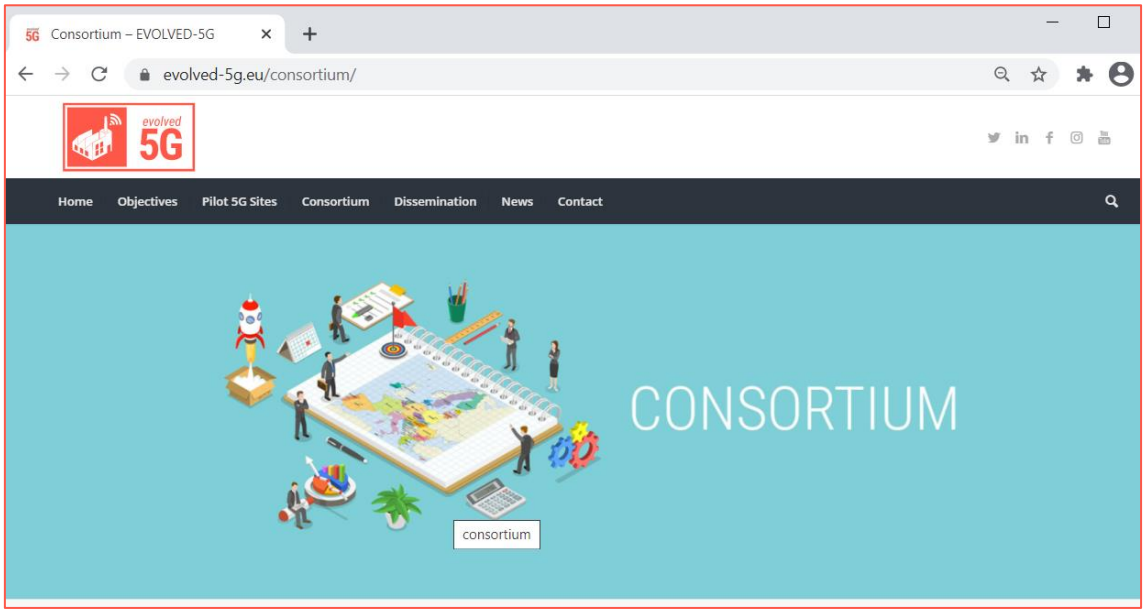


Figure 19. EVOLVED-5G Website Consortium Page.

As shown in Figure 20, in Consortium Page, users can find a list of hyperlinked photos, with the logos of the consortium members, which they can click in order to be redirected to each member's corporate website and find more information about the specific partner.

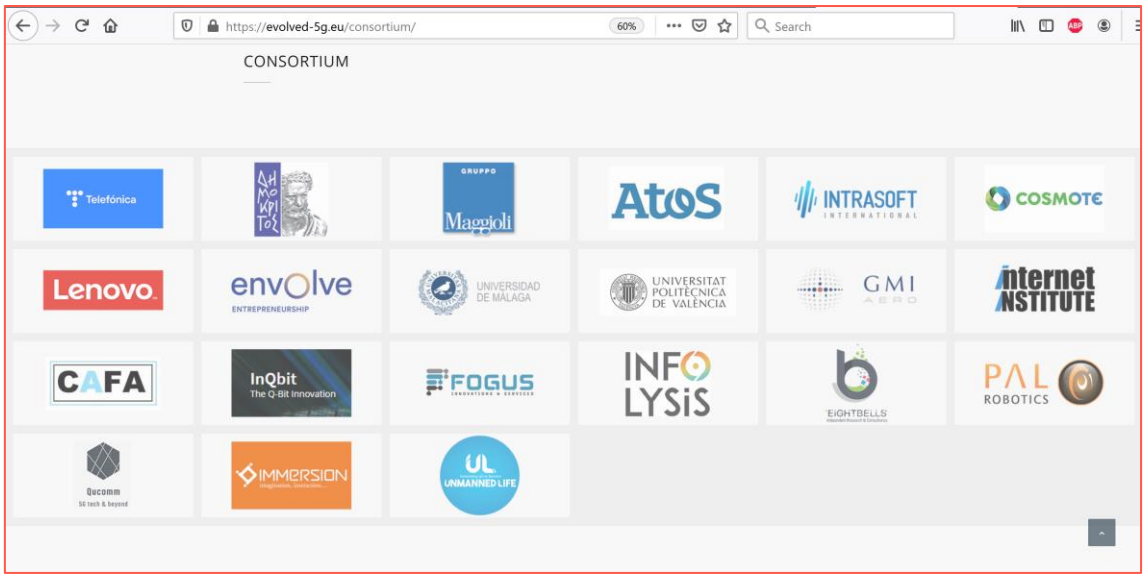
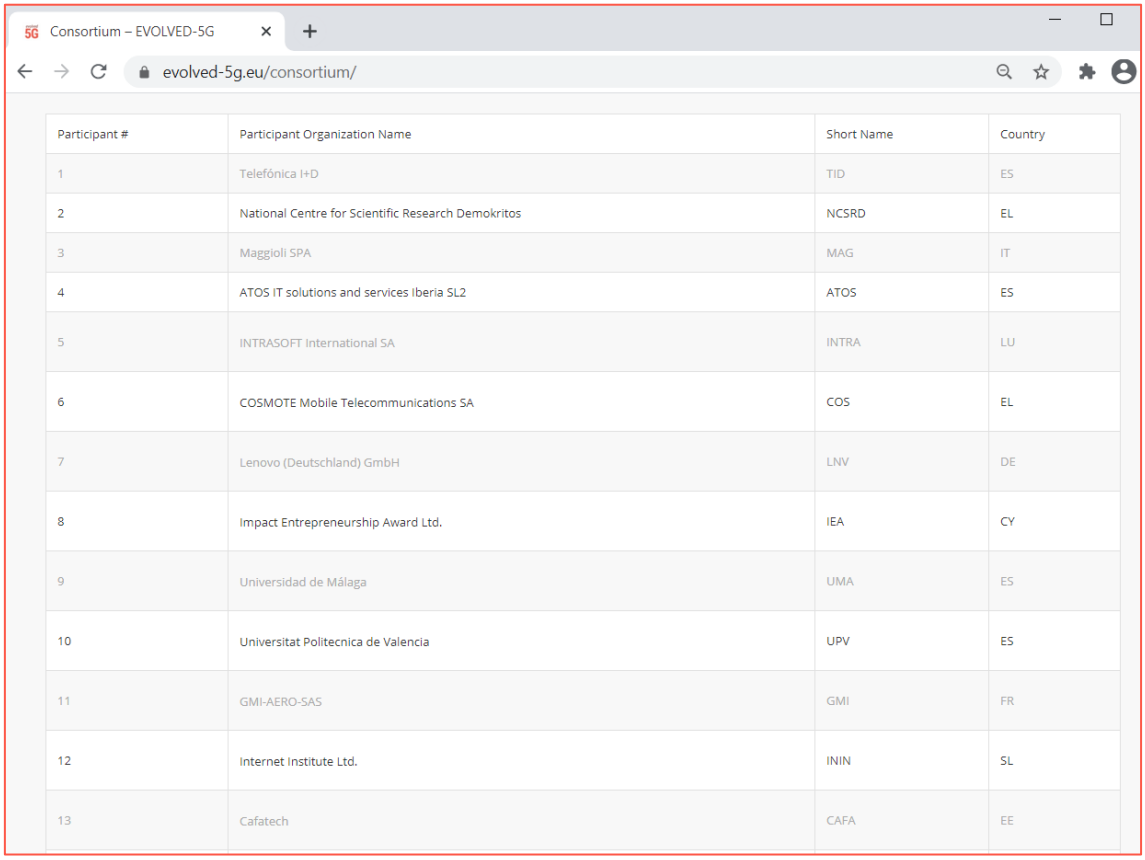


Figure 20. EVOLVED-5G Website Consortium Page 'Partners' Section.

After the partners' section, the user can also find a table (shown in Figure 21) with provides details on the official participant organization name along with the short name used within the project and the country where the organization is located.



Participant #	Participant Organization Name	Short Name	Country
1	Telefónica I+D	TID	ES
2	National Centre for Scientific Research Demokritos	NCSRD	EL
3	Maggioli SPA	MAG	IT
4	ATOS IT solutions and services Iberia SL2	ATOS	ES
5	INTRASOFT International SA	INTRA	LU
6	COSMOTE Mobile Telecommunications SA	COS	EL
7	Lenovo (Deutschland) GmbH	LNV	DE
8	Impact Entrepreneurship Award Ltd.	IEA	CY
9	Universidad de Málaga	UMA	ES
10	Universitat Politecnica de Valencia	UPV	ES
11	GMI-AERO-SAS	GMI	FR
12	Internet Institute Ltd.	ININ	SL
13	Cafatech	CAFA	EE

Figure 21. EVOLVED-5G Website Consortium Page 'Participant Table' Section.

- **Dissemination:** (https://evolved-5g.eu/dissemination/) This page provides all the necessary details about the dissemination and communication activities performed by EVOLVED-5G partners. More specifically, this page acts as a menu hosting several

submenus which group and list the forementioned activities. There are 8 different submenu options in this page, each dedicated in a specific section of the communication/dissemination activities. These options are *Dissemination, Publications, Workshops/Presentations/Trials, Articles, Press Releases, Deliverables, Newsletters, Events.*

Users can either choose the subpage in which they want to be transferred by hovering over the Dissemination Main Menu option, as shown in Figure 22, or they can enter the main Dissemination Page.

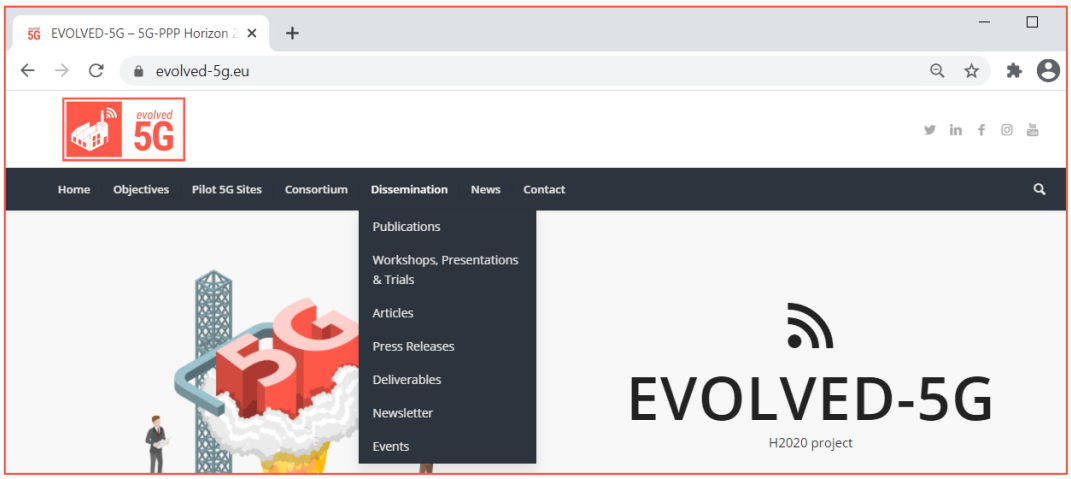


Figure 22. EVOLVED-5G Website Dissemination Page Options.

When a user chooses to enter the main Dissemination Page, he/she comes across a list of hyperlinked image-based sections. Each section refers to each one of the options listed under dissemination menu while it also provides a quick overview of its subject. For indicative purposes, in Figure 23, one can see two of the 8 options available in this page.

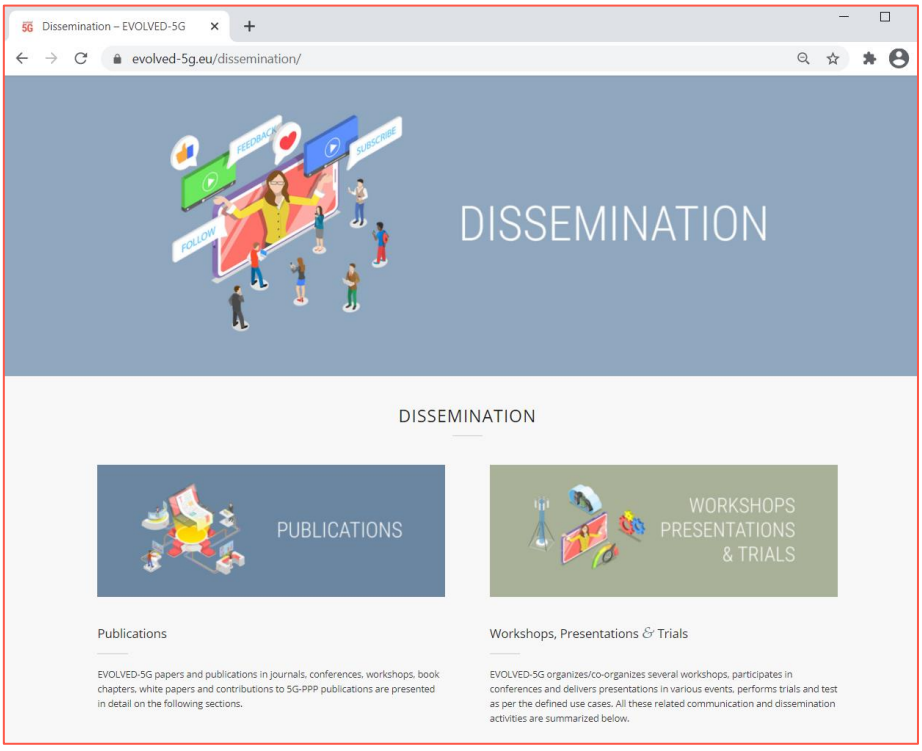


Figure 23. EVOLVED-5G Website Dissemination Page.

The following sections provide detailed information about each of the Dissemination Page submenu and corresponding webpages:

- **Publications:** (https://evolved-5g.eu/dissemination/publications/) A list of all the EVOLVED-5G papers and publications in journals, conferences, workshops, book chapters, white papers and contributions to 5G-PPP publications is presented in detail in this page. As the project progresses, this webpage will host all the information about the specific type of performed dissemination activities (along with online access to the public/open access publication).

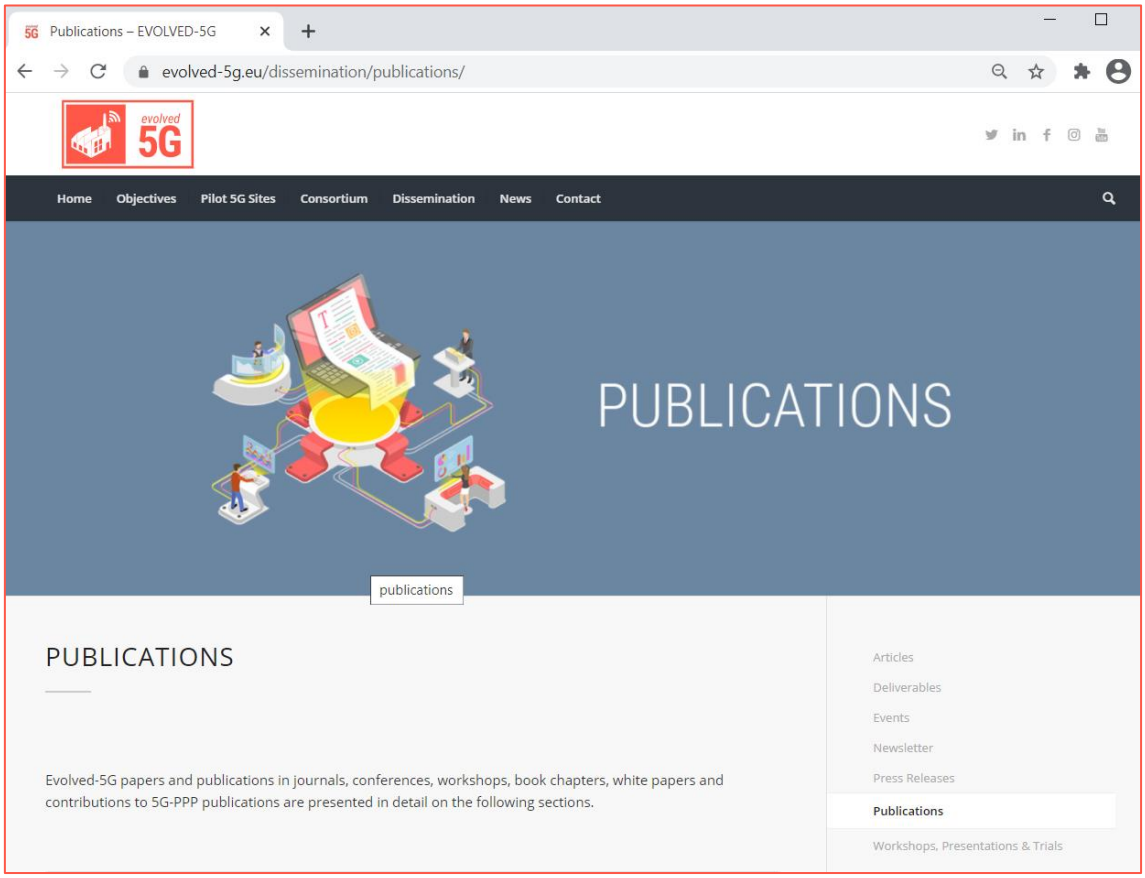
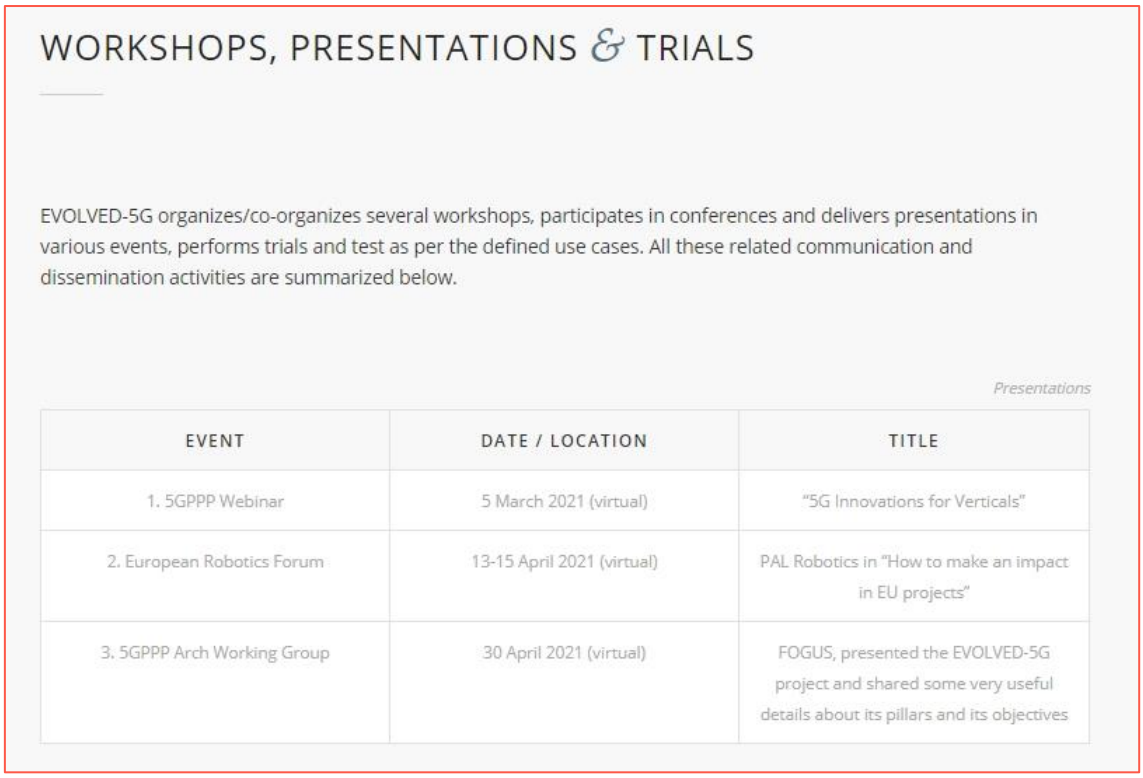


Figure 24. EVOLVED-5G Website Publications Page.

- **Workshops, Presentations & Trials:** (https://evolved-5g.eu/dissemination/workshops-presentations-and-trials/) As EVOLVED-5G is expected to participate/organize/co-organize workshops, attend conferences, give presentations at various events and conduct trials and tests in accordance with the defined uses cases, it is necessary to keep track of all these activities at the same time. As a result, a dedicated web page has been created that will summarise all the above-mentioned communication and dissemination activities.



WORKSHOPS, PRESENTATIONS & TRIALS

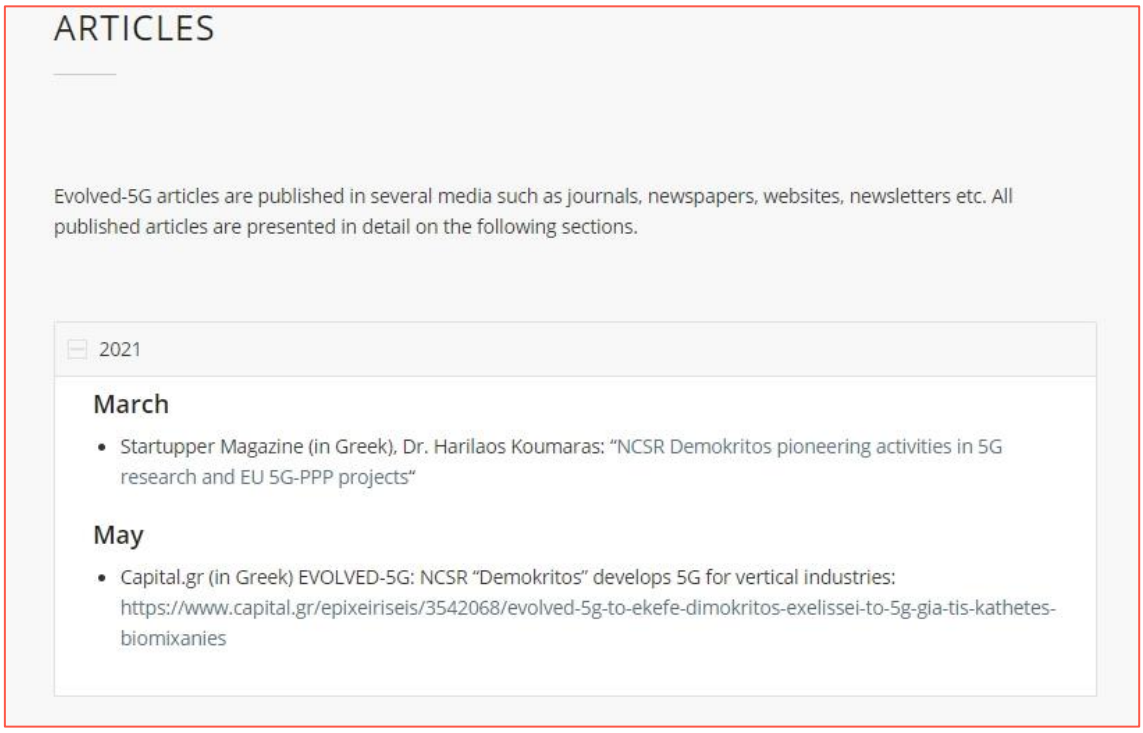
EVOLVED-5G organizes/co-organizes several workshops, participates in conferences and delivers presentations in various events, performs trials and test as per the defined use cases. All these related communication and dissemination activities are summarized below.

Presentations

EVENT	DATE / LOCATION	TITLE
1. 5GPPP Webinar	5 March 2021 (virtual)	"5G Innovations for Verticals"
2. European Robotics Forum	13-15 April 2021 (virtual)	PAL Robotics in "How to make an impact in EU projects"
3. 5GPPP Arch Working Group	30 April 2021 (virtual)	FOGUS, presented the EVOLVED-5G project and shared some very useful details about its pillars and its objectives

Figure 25. EVOLVED-5G Website Workshops, Presentations & Trials Page.

- **Articles:** (https://evolved-5g.eu/dissemination/articles/) All EVOLVED-5G related articles published in magazines, websites, newsletters, newspapers, and other media are available on this page.



ARTICLES

Evolved-5G articles are published in several media such as journals, newspapers, websites, newsletters etc. All published articles are presented in detail on the following sections.

2021

March

- Startupper Magazine (in Greek), Dr. Harilaos Koumaras: "NCSR Demokritos pioneering activities in 5G research and EU 5G-PPP projects"

May

- Capital.gr (in Greek) EVOLVED-5G: NCSR "Demokritos" develops 5G for vertical industries: https://www.capital.gr/epixeiriseis/3542068/evolved-5g-to-ekefe-dimokritos-exelissei-to-5g-gia-tis-kathetes-biomixanies

Figure 26. EVOLVED-5G Website Articles Page.

- **Press Releases:** (https://evolved-5g.eu/dissemination/press-releases/) This page provides the visitor with all the Press Releases that are available in public and concern EVOLVED-5G project. Press releases will have either the form of News-Announcements released on partners' websites, or they will be formally communicated to target audience/stakeholders and mass media (via email) using the EVOLVED-5G project press release template. Both types of actions are presented on this page.

Figure 27. EVOLVED-5G Website Press Releases Page.

- **Deliverables:** (https://evolved-5g.eu/dissemination/deliverables/) The Deliverables page is dedicated in listing all the deliverables of the project. More specifically, all the public deliverables will be also available for downloading shortly after their submission to the EC portal. Besides the deliverables available for downloading, the visitor may also see the whole list and timetable of all EVOLVED-5G deliverables.

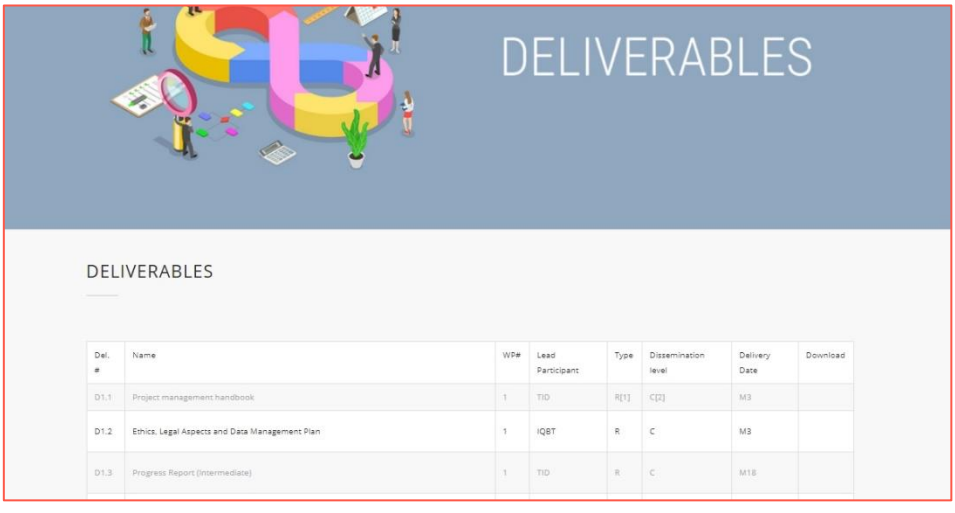


Figure 28. EVOLVED-5G Website Deliverables Page.

- **Newsletters:** (https://evolved-5g.eu/dissemination/newsletter/) All EVOLVED-5G newsletters, which will be issued quarterly, summarizing the project's activities and achievements of the reporting period, will be available for downloading in this dedicated Newsletters page.

Figure 29. EVOLVED-5G Website Newsletter Page.

- **Events:** (https://evolved-5g.eu/dissemination/events/) The Events page summarizes all EVOLVED-5G activities, such as conferences, workshops, special sessions, invited talks and presentations, which partners attended or plan to attend representing the project (Figure 30). In specific, the presented events are divided into two lists: the Upcoming events list and the Past events list. Both lists are constantly updated with new events, depicting the active participation of partners to dissemination opportunities.

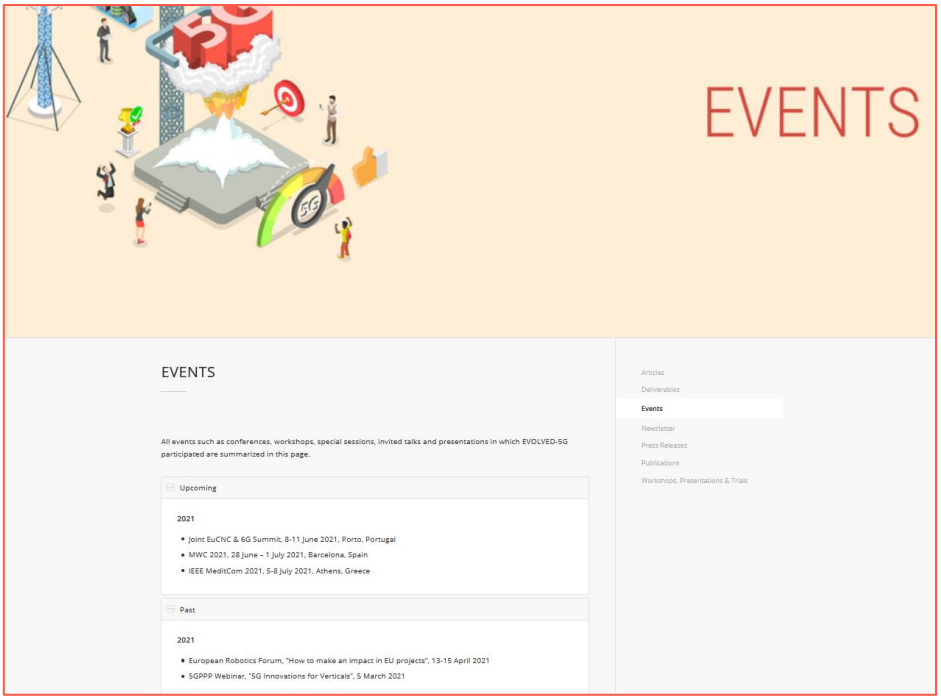


Figure 30. EVOLVED-5G Website Events Page.

- **News:** (https://evolved-5g.eu/news/) This page is regularly updated on a weekly basis with short descriptions accompanied with hyperlinks for all the dissemination activities, news, trials and other impact-generating dissemination material concerning EVOLVED-5G project and 5G ecosystem overall (e.g., 5G-PPP, other 5G projects). In that way, users can have a quick overview of the project's activities and learn more details about them in the form of online News.

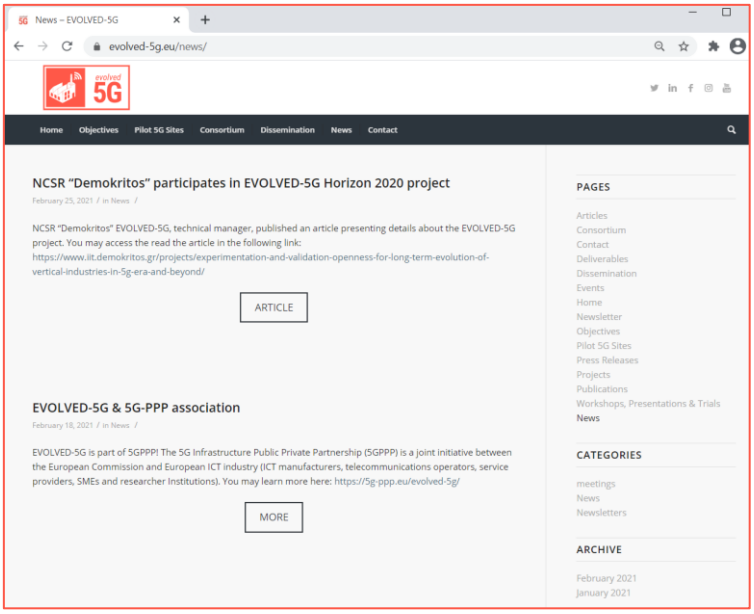


Figure 31. EVOLVED-5G Website News Page.

- **Contact:** (https://evolved-5g.eu/contact/) In the Contact page a contact form is provided addressing the Project Coordinator, Technical manager and T7.1 leader. This contact form serves a bidirectional purpose as it connects both stakeholders and potential users to the project leading team. It is also particularly important to have available and easy-to-access an online contact form since emerging issues and/or questions, that may arise, can be addressed and solved quickly by the project team.

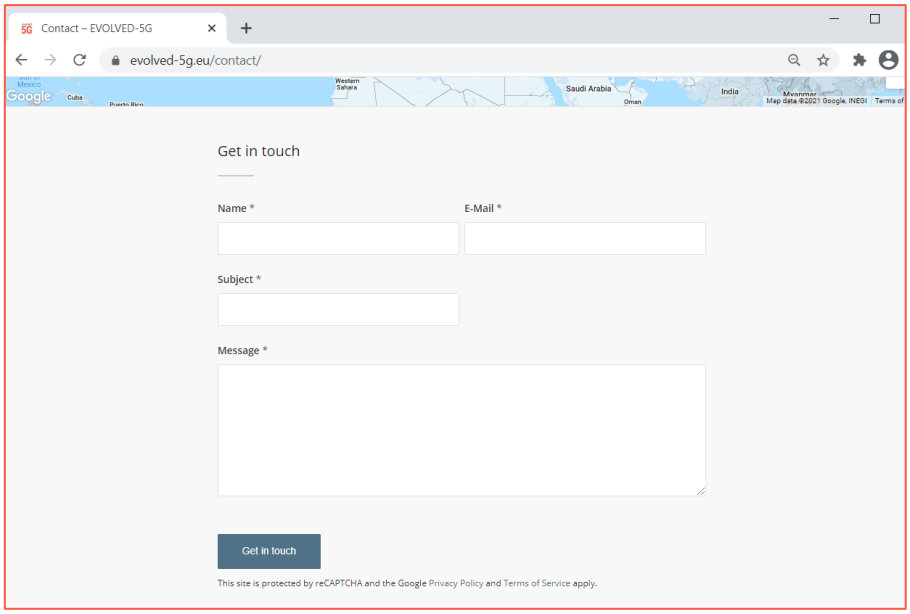


Figure 32. EVOLVED-5G Website Contact Form.

2.2.3 EVOLVED-5G Social Media Channels

Social media channels, along with the project website, also contribute to the effective communication of the EVOLVED-5G activities increasing awareness to the broader public. The project's presence in a wide range of social media channels leads to the wider exposure to diverse audiences in a cost-effective and efficient way increasing the project's outreach and social impact.

Specifically, the following social media channels were created and running since early January of 2021: Twitter, LinkedIn, Facebook, Instagram, and YouTube. The links of all the EVOLVED-5G social media channels are provided below:

Twitter	https://twitter.com/evolved5g
LinkedIn	https://www.linkedin.com/in/evolved-5g-project/
Facebook	https://www.facebook.com/evolved5g
Instagram	https://www.instagram.com/evolved5g/
YouTube	https://www.youtube.com/channel/UClGygB1TMxeZlWMOl3vajlA

Table 2 EVOLVED-5G Social media channels

The different channels, aiming to address various target audiences, are presented in the following list:

- **Twitter: @evolved5g (https://twitter.com/evolved5g)**

Twitter is one of the world's most popular social media platform and it can be used to promote EVOLVED-5G content to the public while increasing its global presence and impact to various audiences.

Figure 33. EVOLVED-5G Twitter Account

- **LinkedIn: @evolved-5g-project (https://www.linkedin.com/in/evolved-5g-project/)**

LinkedIn is considered the largest professional and business-oriented networking website. It is a powerful social network which will enable the consortium to communicate sufficiently the accomplishments and impact of the project to the relevant industries and professionals.

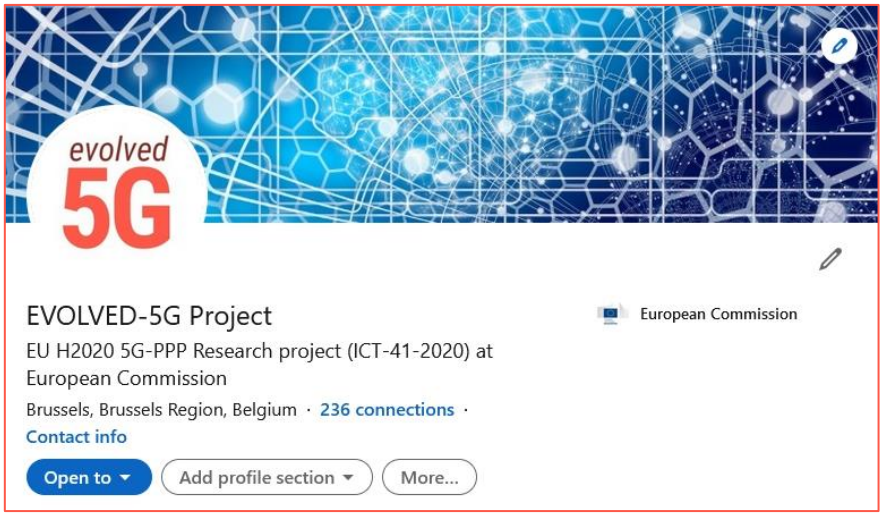


Figure 34. EVOLVED-5G LinkedIn Account

- **Facebook: @evolved5g (https://www.facebook.com/evolved5g)**

Facebook is one of the most popular social media platforms of the general public as well as the best media choice to help increase project's social media presence while addressing a wide audience of general interest. The high popularity of this platform can significantly lead to the successful interaction between the stakeholders and the EVOLVED-5G Project following a less technical approach and content communication.

Figure 35. EVOLVED-5G Facebook Account

- **Instagram: @evolved5g (https://www.instagram.com/evolved5g/)**

Instagram is the most popular image-video sharing social media platform. By posting images featuring the project's work and achievements among other relevant material, the EVOLVED-5G can reach new audiences and enhance a more visual dissemination and communication impact.

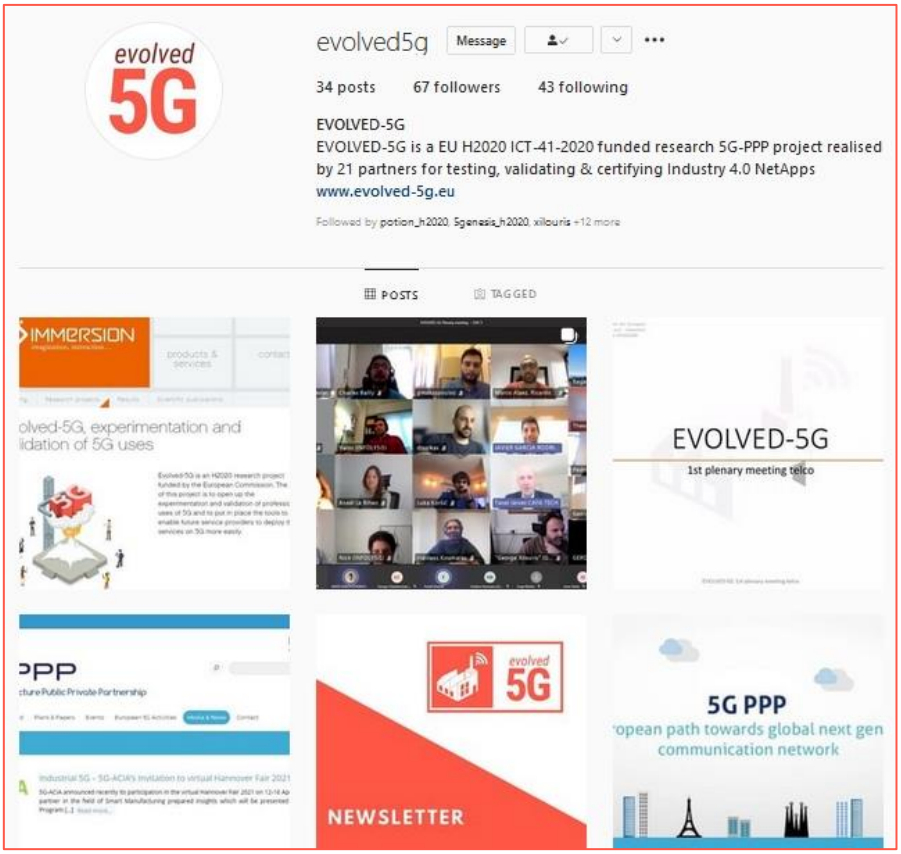


Figure 36. EVOLVED-5G Instagram Account

- **YouTube: @EVOLVED-5G Project** (https://www.youtube.com/channel/UClGygB1TMxeZlWMOl3vajlA)

YouTube is one of the most significant and popular platforms for video distribution content. The regular and consistent creation of video content will lead EVOLVED-5G to reach a worldwide audience and appear higher in Google search engine for a successful audio visual promotion of the project.

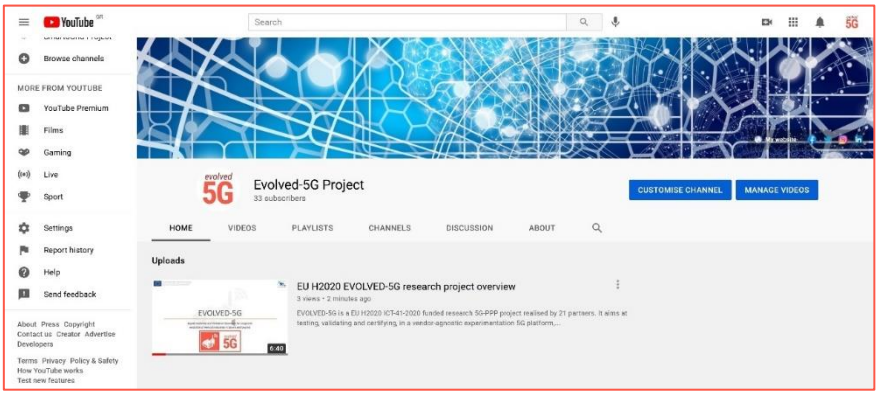


Figure 37. EVOLVED-5G YouTube Account

2.2.4 EVOLVED-5G Newsletter

The Newsletter is an integral part of the communication activities and it is used to communicate at frequent intervals the most recent news, announcements and achievements of EVOLVED-5G project. The objective of the EVOLVED-5G newsletter is to keep the community informed and engaged with the project while also increasing visibility and credibility. Newsletter will be issued on a quarterly basis.

The 1st issue of EVOVLED-5G newsletter, referring to the quarter January-March 2021, is available online for downloading at the Newsletter page of the EVOLVED-5G website: https://evolved-5g.eu/dissemination/newsletter/. Figure 38 and Figure 39 present the cover and last pages of the first newsletter issue.

Figure 38. EVOLVED-5G Newsletter front page

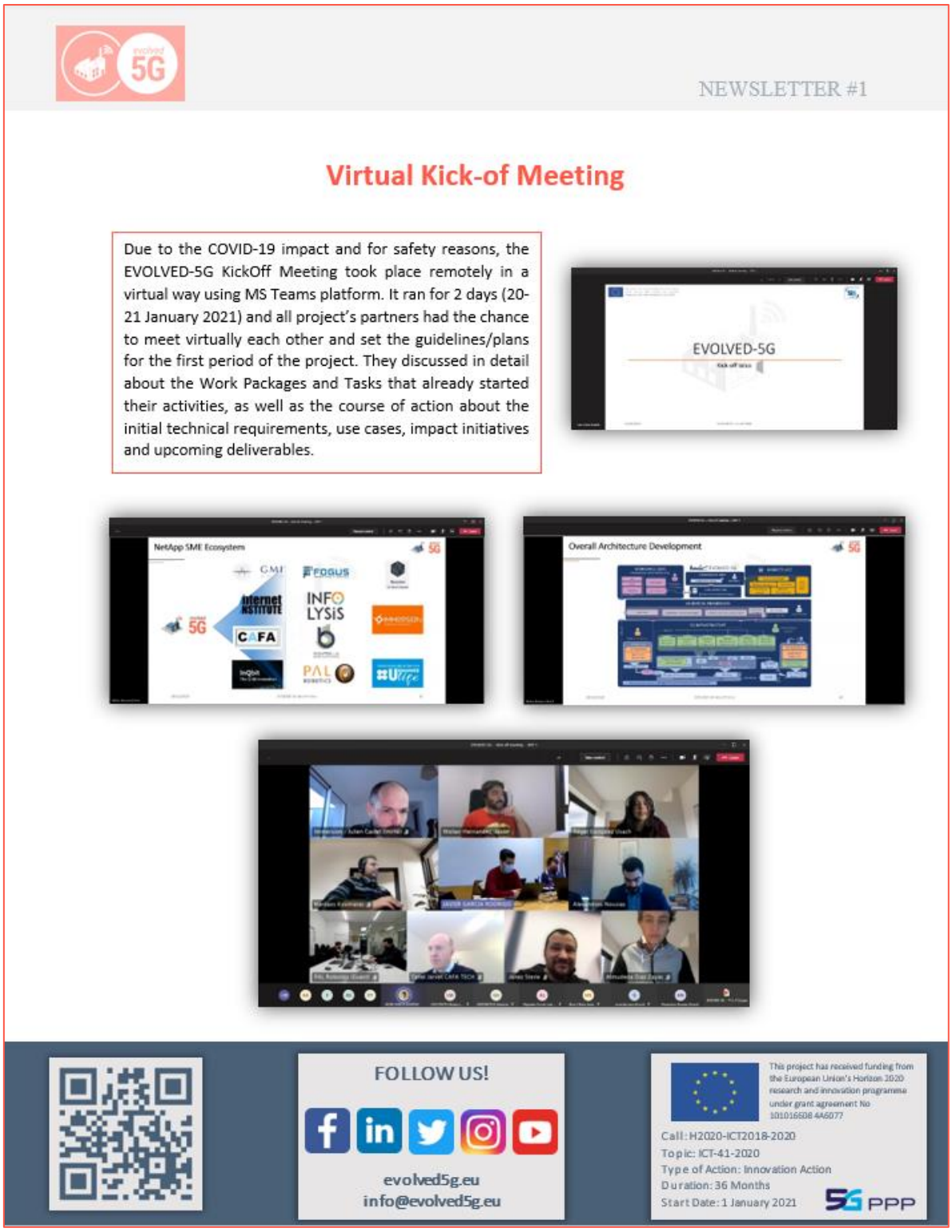


Figure 39. EVOLVED-5G Newsletter back page

2.2.5 EVOLVED-5G Leaflet

EVOLVED-5G partners have created and use a project-specific leaflet as an additional mean of communication. Leaflets engage the reader by providing a quick yet concise overview of the project's goals and objectives.

The EVOLVED-5G two-folded leaflet can be used either in printed or in a digital format to serve/support project's needs in different dissemination occasions. On the first side, one can find the project's logo and title along with its website URL and QR-Code followed by a brief introduction to the EVOLVED-5G partners and all the necessary contact information and social media links.

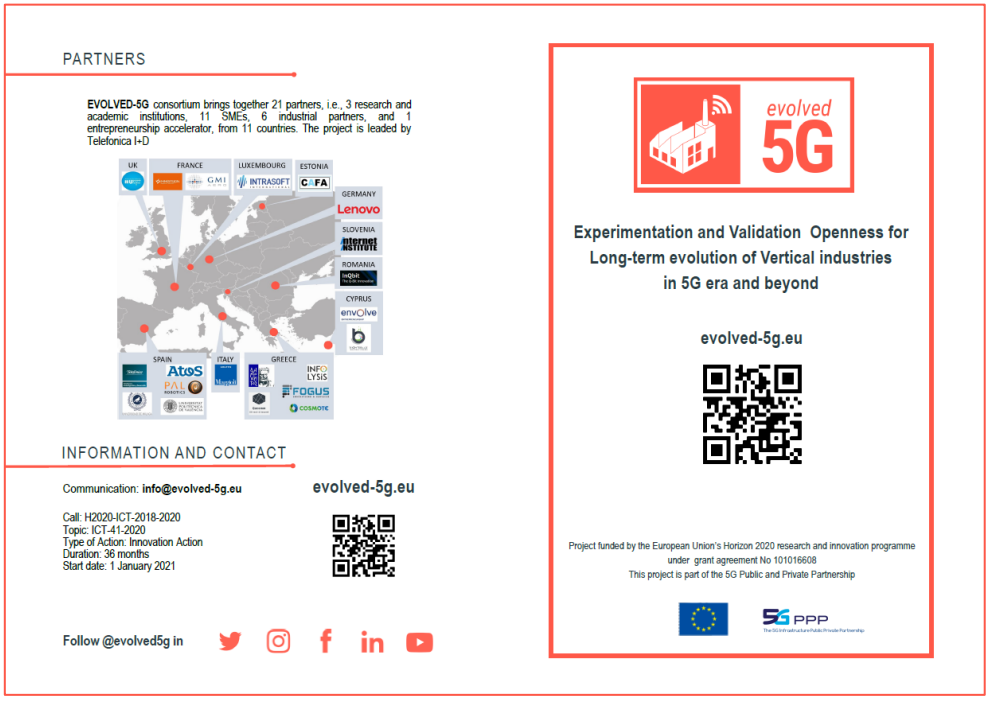


Figure 40. EVOLVED-5G Leaflet – 1st Page

The inner side of the leaflet includes a short overview of the project's pilots, a list of all its NetApps and the motivation and scope of the project.

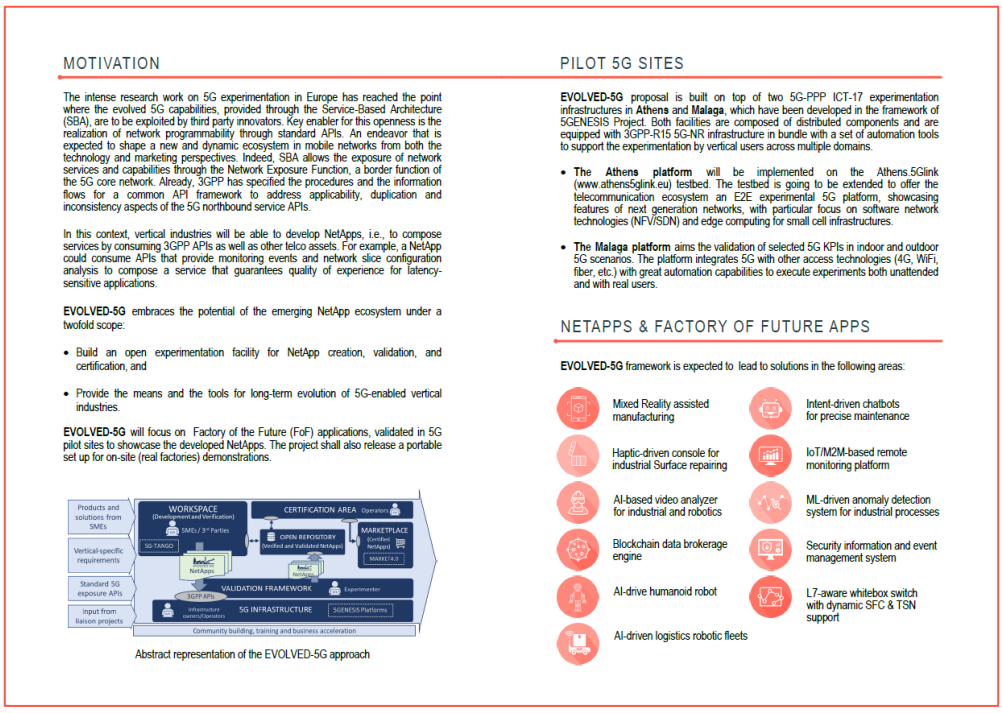


Figure 41. EVOLVED-5G Leaflet – 2nd Page

The latest leaflet version is available online for downloading at the Dissemination page of the EVOLVED-5G website (Dissemination main menu -> Communication material section: https://evolved-5g.eu/wp-content/uploads/2021/03/leaflet_v1.1.pdf)

2.2.6 EVOLVED-5G Poster

A dedicated EVOLVED-5G Poster has also been created by the project's partners to be used and support EVOLVED-5G communication and dissemination activities such as workshops, booths, presentations, webinars, seminars, trainings, and trials. The poster is created in a compact and comprehensive way to efficiently communicate the main idea of the project, to raise awareness and increase engagement. It can either be used in printed (both in A1 or A2 size) or in a digital format and it includes brief details about the project's structure, scope and proposed NetApps.

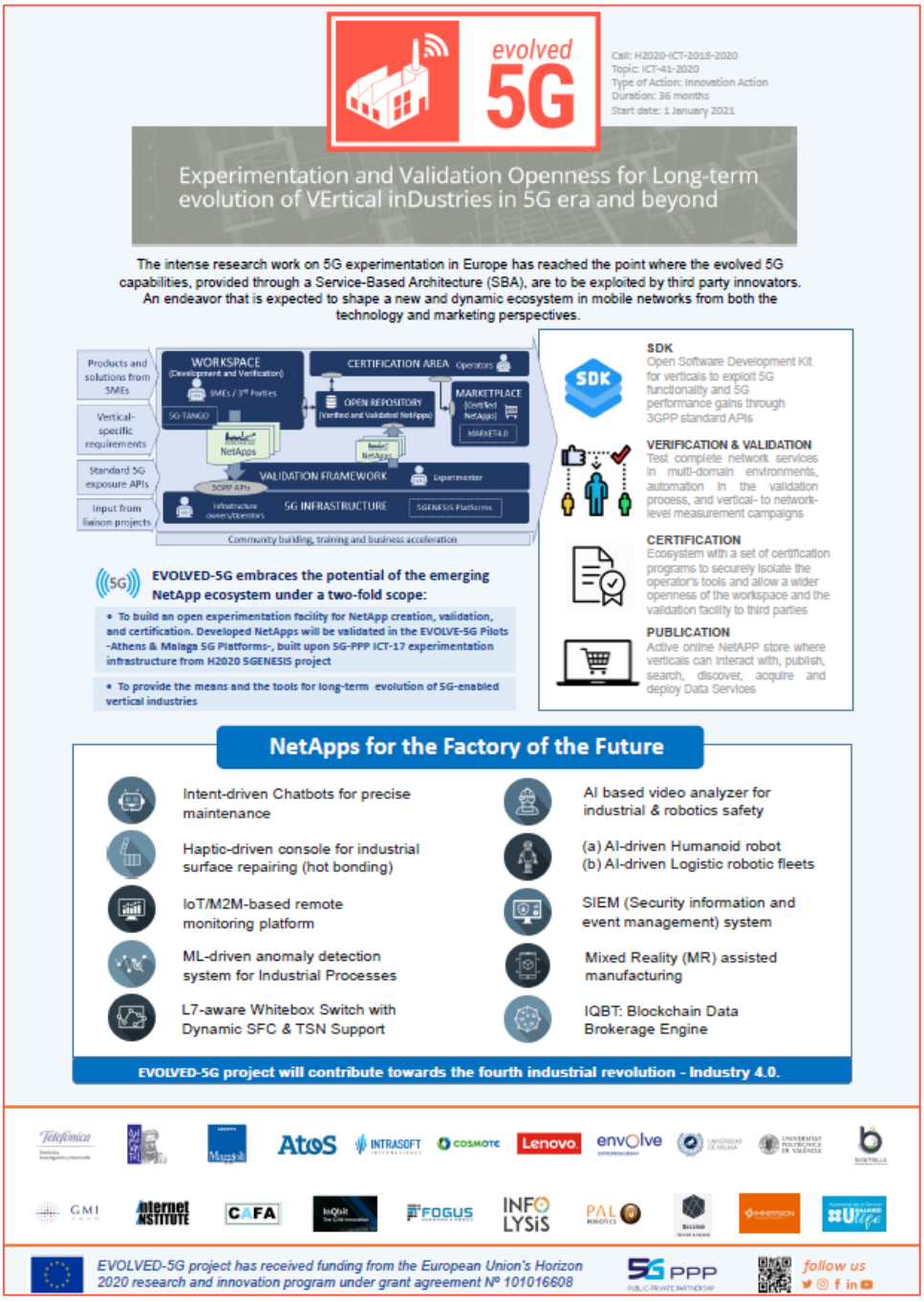


Figure 42. EVOLVED-5G Poster

The latest A1 poster version is available online for downloading at the Dissemination page of the EVOLVED-5G website (Dissemination main menu -> Communication material section: (https://evolved-5g.eu/wp-content/uploads/2021/03/EVOLVED-5G-POSTER-final-A1.pdf).

2.2.7 EVOLVED-5G Press Releases

EVOLVED-5G Press Release is an important and formal mean of communication which diffuses significant project's news, when is considered essential, and helps considerably to reach the broader audience through the Press, to drive traffic to the website and the Social Media. Figure 43 presents the EVOLVED-5G press release template.

PRESS RELEASE

City, Country, Day Month Year

EXPERIMENTATION AND VALIDATION OPENNESS FOR LONG-TERM EVOLUTION OF VERTICAL INDUSTRIES IN 5G ERA AND BEYOND

[H2020 – Grant Agreement No. 101016608]

<Press release Title and Text to be typed here>

Further information:
Firstname Lastname, Title, Department
Email: firstname.lastname@domain.xxx or phone: +123 45 678 9012

This press release is also available at EVOLVED-5G website
https://evolved-5g.eu/ **under Press Releases section**

EVOLVED-5G is a EU H2020 ICT-41-2020 funded research project which embraces the potential of the emerging NetApp ecosystem under a twofold scope: i) to build an open experimentation facility for NetApp creation, validation, and certification, and ii) to provide the means and the tools for long term evolution of 5G-enabled vertical industries.

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016608".

Figure 43. EVOLVED-5G Press Release template

2.3 MEANS OF DISSEMINATION

In this sub-section, the Means of Dissemination are presented briefly, justifying their selection and use. The detailed EVOLVED-5G Communication and Dissemination approach is described in the next sections.

2.3.1 Publications in journals

Publications in peer-reviewed journals with a high impact factor, is one of the most vital mean for disseminating scientific findings. Publishing in the right journals will boost EVOLVED-5G project's visibility among other 5G projects and will make the work more discoverable inside the scientific and academic community and accessible in sophisticated distribution networks like libraries, organizations and institutes etc.

2.3.2 Publications in workshops and conferences

Research and Academia partners are expected to demonstrate scientific excellence not only by an outstanding number of papers in journals but also with publications in prestigious international conferences (with acknowledgment to the EVOLVED-5G project).

Coordination, publication, and presentation of EVOLVED-5G contributions to reputable international conferences, as well as peer reviewed journals and magazines will be realized. Considering the focus of 5G and security, the consortium will provide publications in the high-impact conferences and journals. Indicative but not restrictive examples of these include IEEE Security and Privacy Magazine, IEEE Transactions on Vehicular technology, IEEE Journal on Selected Areas in Communications, IEEE Network Magazine, IEEE Transactions on Dependable and Secure Computing, IEEE Communications Magazine, IEEE Internet of Things Journal, ACM CCS, Usenix Security, IEEE GLOBECOM and IEEE ICC.

2.3.3 Presentations in scientific events, conferences and forums

Presentations at scientific events and fora are a great opportunity for gaining valuable feedback from the targeted research and industry community and increasing the credibility of the project.

2.3.4 Trials and Showcases

Trials and Showcases organized by the different EVOLVED-5G partners are crucial in order to attract potential users and customers, to get useful feedback and facilitate the dialogue among the researchers and the market.

2.3.5 Exhibitions in industrial and scientific events

An important focus point of the project is the demonstration of its Use Cases to the wider community, including experts from industry, SMEs, academia as well as audience with technical interests. This will be attained by EVOLVED-5G presence in major industrial and scientific events. Reaching out telecom operators, technology providers, content providers, service providers, energy providers, and device manufacturers from various verticals, will increase EVOLVED-5G's visibility and will have the chance to showcase its achievements by demonstrating its results and assessing EVOLVED-5G Use Cases.

2.3.6 Organization of events (workshops/seminars/webinars)

Educational events like workshops, seminars and webinars, are crucial in order to guide all the relevant stakeholders through the Use Cases and the results of the project and provide training about the experimentation EVOLVED-5G platforms and the developed NetApps Repository.

2.3.7 Active participation in 5G-PPP activities

EVOLVED-5G partners are aware of the contractual commitment of the 5G-PPP as well as the organisational structure as described in the GA and its technical annex. They acknowledge the roles and commitments of the European Commission, the 5G-PPP partnership board, the 5G Infrastructure Association, and the 5G for Europe and all project partners commit to constructive interactions with these bodies as part of EVOLVED-5G research and impact activities. More details provided in Section 3 of this deliverable.

2.3.8 Organisation of EVOLVED-5G training events

The EVOLVED-5G consortium will organize workshops and training events primarily targeting stakeholders, end users, SMEs and industrial organisations. In this way, the introduction of EVOLVED-5G results to other organisations will be accelerated, and potential business end users will be properly informed on all aspects relating to EVOLVED-5G. Independent experts both from industry and academia will also be invited. These events will aim to be associated to a major event to maximize attendance and impact.

2.3.9 Participation in business days and fairs

A high level of visibility will be achieved for the project by organizing/participating in public/open business days and industry/operator fairs contributing demonstrations of project achievements to approach business stakeholders.

2.3.10 Academic and research community focused dissemination

EVOLVED-5G will disseminate its key findings and solutions to the academic community in order to be used by research and teaching programs. Results and know-how from the project will be included as part of future graduate and postgraduate courses, facilitating the enrichment of the curricula offered at the partner universities. Furthermore, this activity will have considerable impact particularly for M.Sc. and Ph.D. students promoting the education of the new generation of European researchers/engineers working on the fields addressed by EVOLVED-5G, affecting a manifold emerging market.

2.4 COMMUNICATION AND DISSEMINATION APPROACH

The main objective of this section is to describe and provide information about the communication and dissemination action plan and strategy to be applied through the lifetime of the project.

2.4.1 Communication & Dissemination Framework and Target Audience.

A comprehensive set of dedicated communication, dissemination, and community building activities will contribute to the overall success of EVOLVED-5G, with the clear ambition to directly help the growth and consolidation of the 5G PPP program as a crucial initiative for conducting trials with advanced 5G services and applications in INDUSTRY 4.0 vertical market segments. The main goal of EVOLVED-5G communication and dissemination strategy is to create

and spread the awareness of the project and its results to the broadest possible audience and to attract potential users and customers.

To reach this goal, EVOLVED-5G will differentiate between two major strands of communication: The general communication activities, which will be focused mainly on the first months of the project, targeting the wide public audience, and a set of more dedicated dissemination activities, designed to present EVOLVED-5G advances and outcomes to the scientific communities, academia, vertical business players, relevant 5G industries, and global marketplace of Industry 4.0. This type of communication will become more important as the project evolves, and concrete results will become the focus of the dissemination plan.
Within this framework, two types of actions will be followed by the EVOLVED-5G 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 and Microsoft Teams online repository.
- **Offline actions**: based on on-site and face-to-face actions such as workshops, presentations, trials, and seminars. These offline actions will take place when the COVID-19 situation allows the face-to-face meetings and events to 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.

EVOLVED-5G has identified dissemination target groups of different categories and interests such as:

- **ICT Industry:** All groups with a Mobile Communication background, as well as Software Houses and Mobile App/Software developers, such as suppliers, vendors, and SMEs (e.g. application developers and third-party providers of 5G related services) that will be impacted by the Network programmability and the NetApp market.
- **Vertical business players (including SMEs and industrial actors):** Factories, Industry 4.0 system vendors, technology providers, SMEs and other relevant institutions that are involved in smart manufacturing, which will be impacted by the Non-Public Network (NPN)-5G with TSN integration advances.
- **SMEs:** SMEs will be a key target stakeholder in EVOLVED-5G and will be continuously addressed with the aim of ensuring the uptake of the project results, ensuring NetApp development and its impact in the Industry 4.0. SMEs will be not only addressed through the industry and project-oriented actions, but also through the EVOLVED-5G community building supporters, such as partner IEA (EVOLVE Global) and supporting organizations: Code.Hub, MIT Enterprise Forum, Lefkippos Technology Park, Eurada, will provide advice and support to the establishment and sustainability of the SME business in Europe. (Refer to Appendix A of Section 4-5 of the proposal/GA for respective support letters).

- **Researchers** both in academia and industry will be devoted to diffusing the benefits of the EVOLVED-5G use cases, platforms and NetApps repository 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 beyond.
- **5G-PPP and related Projects** will be contacted as the reference research and innovation community to coordinate strategic and operational efforts, helping to validate and sustain the EVOLVED-5G outcomes and ensure more effective uptake of 5G technologies in the target verticals, with the ambition of contributing to the excellence and leadership of the European industry on a global perspective.
- **Broadest possible audience** comprises a wide group of stakeholders including citizens, students, and agencies that could benefit from the adoption of the new 5G services and enhanced industrial capabilities offered via the EVOLVED-5G outcomes.
- **Traditional Media** includes dedicated press and media agencies, online and offline channels to amplify the communication efforts of the EVOLVED-5G and thereby increasing impact of the planned dissemination and communication activities.

2.4.2 Community Building Approach

EVOLVED-5G impact is highly dependent on the successful build of a community, which will sustain and further develop the project results after the project completion. The EVOLVED-5G community will be primarily SMEs and third-party developers and secondly network operators, service providers, researchers and policy makers.

EVOLVED-5G, as part of its impact strategy, will design and deploy a comprehensive and well-structured community building plan to ensure a broad promotion of the developed concepts, technologies and results. The consortium will follow a phased approach to defining, planning, organizing and exploiting a rich set of activities and instruments in the most effective way. While this plan and specific actions will be refined in the first months of the project, the basic structure is described in Figure 44. It is well aligned with the communication and dissemination approach, as well as the overall project plan and key project milestones to amplify the impact potential of the stakeholder engagement activities.

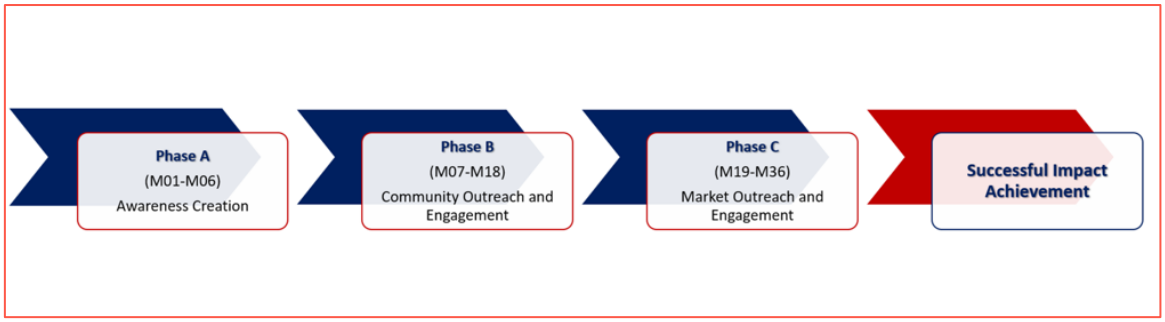


Figure 44. EVOLVED-5G Community Building Phases

EVOLVED-5G's awareness and community building plan phases are detailed below:

- **Phase A**: EVOLVED-5G network establishment through the supporting organizations in order to start creating awareness regarding the EVOLVED-5G community scope and objectives. The consortium in this phase will be primary targeting key interested or interesting previous research/5G-PPP related projects such as ICT17 projects (5G platforms' scenarios), ICT18 (vertical scenarios on cooperative, connected and automated mobility) and ICT19 (general verticals' scenarios) to promote the engagement of more SMEs and stakeholders. This effort aims to raise awareness on the

benefits that the EVOLVED-5G assets and approach will bring in terms of NetApp development and Network programmability to advanced 5G communication systems and solutions. These awareness actions will be taken during the design of the facility and the definition of the requirements.

- **Phase B**: To actively reach out the main target stakeholders for EVOLVED-5G community so as to generate interest in EVOLVED-5G, activities and outcomes to build a base of interest and support for the project via the supporting organizations communicating the first results of the project available for initial feedback. This phase will be aligned with the first release of the facility in M12 and will feed provide vital feedback prior the final release.
- **Phase C**: To actively engage and support all target stakeholders in the community building, adopting and deploying the concepts, technologies and tools offered by EVOLVED-5G through dedicated training and hands-on seminars via the supporting organizations EVOLVED-5G will make use of the facilities developed at the 5G-PPP program level and offered by interested projects (e.g., 5GENESIS, MARKET4.0). This phase will run on the second half of the project and it is expected to last and evolve through the SME community and the business incubators that support the project.

The EVOLVED-5G Community Building approach will be realized with close collaboration of the consortium with the Supporting Organizations as presented in Section 2.4.3.

2.4.3 Supporting Organizations for EVOLVED-5G Community Building

For the successful implementation of the previous mentioned action point (EVOLVED-5G community), the consortium has already got in touch and has received the support of organizations that are involved in different innovation shaking communities. In specific:

- **Developers Community**: EVOLVED-5G has received the support of Code.Hub, an innovation hub for connecting the Software Development skills with the market. Code.Hub organizes regularly hands-on software engineering seminars for new tools and programming suites that are delivered exclusively from developers to developers. EVOLVED-5G via Code.Hub will get in touch with third party developers and software-engineers in order to engage them in the EVOLVED-5G community by training them with co-organized sessions and hands-on seminars in order to actively contribute to the sustainability and further development of the Open Sources NetApps that the project will develop with the collaboration of the 11 participating SMEs in consortium.
- **Startup Accelerator**: EVOLVED-5G has received the support of LEFKIPPOS – ATTICA TECHNOLOGY PARK, which offers an exciting and dynamic environment that facilitates the growth of all kinds of businesses – from small startups to large established companies with complex needs, emphasizing on the knowledge entrepreneurship, providing consultancy in the creation of spin-offs and spin-outs companies. EVOLVED-5G via LEFKIPPOS will get in touch with highly innovative spin-off and spin-outs companies, informing them on the new business opportunity that EVOLVED-5G realizes and engaging them to the EVOLVED-5G community in order to realise new business opportunities and expand the EVOLVED-5G Marketplace NetApp availability with the creation of additional NetApps outside from the project consortium, based on highly innovative services and Apps that these spin-offs are trending.
- **Startup Incubator**: Partner ENVOLVE Entrepreneurship (IEA) is a non-profit startup incubator that provides funding, mentorship and business support services to small

groups that have a specific innovative business idea and assist them to transform them into a successful company. IEA for the community building of EVOLVED-5G will run a program that will adopt a "learn by doing" approach to a) upskill the innovation agencies in the roll out of the Evolved Acceleration programs, b) evolve the larger scale training and immersion blueprint for venture development using the tools and c) finalise program evaluation, feedback and improvement process (iteration) to be undertaken to create the final version of the tools for wider dissemination across the EU via the dissemination and exploitation (WP7) activities of the project. Although still tentative, this will take place at a 3-day workshop in Brussels. The agencies will co-deliver the program and support the entrepreneurs, in collaboration with IEA team over a 6-month period following a blended approach of in person and online learning supported by a virtual mentorship program. Each of entrepreneurs that will participate, will develop a new venture development plan relying on NetApps offered by the project and pitch to investors and venture capitalist that support EVOLVED-5G. A learn-by-doing approach will be taken. For the selection of the participants, a competitive call will be run in collaboration with the innovation agencies, targeting entrepreneurs across the full spectrum of EVOLVED-5G in the participating regions. All participants will have to engage in an interview process and meet specific selection criteria to ensure that the highest potential opportunities from across the regions are selected. In a next stage, the selected Innovation Agencies will be skilled in the EVOLVED-5G tools and methods for enterprise support and development, via a train the trainer.

- **Innovation Coaching and Mentoring Organization**: MIT Enterprise Forum (MITEF) is a non-profit association by a group of experienced entrepreneurs and business professionals with strong engineering backgrounds. MITEF Greece informs, connects, and coaches technology entrepreneurs enabling them to rapidly transform ideas into world-changing companies. MITEF regularly organizes seminars with blended learning syllabi in order to contribute to the development of the skills of the participants to new technologies and tools. In that direction, EVOLVED-5G consortium will jointly organize with MITEF Greece hands-on seminars in NCSRD 5GENESIS/Athens platform, inviting several of the SMEs that have participated in the annual MITEF Contest event since 2015.
- **Business Think Tank**: EVOLVED-5G has received the support of the European Association of Development Agencies (EURADA) for the community building activities of the project. EURADA gathers people working on economic development through a large network of 66 members throughout 21 countries in the European Union and beyond. Regional development agencies are a designated meeting place between local actors, where they carry out an economic development mission characterised by the search of the collective or overall interest of an area. In order to carry out this mission, they gather highly skilled professionals and are able to answer the specific needs of firms willing to develop their activities, which will be also followed for the case of EVOLVED-5G community building, where consortium members will be invited to present EVOLVED-5G and answers questions to different actors that are participating to EURADA events. EVOLVED-5G expectation through the collaboration with EURADA is to engage more mature companies, as well as other actors of the ecosystem, such as regulators and policy makers.
- **Venture Capital**: EVOLVED-5G has contacted and has already the support of VentureFriends, a venture capital of entrepreneurial investors who provide private equity to support startups and help them become impactful companies with a

worldwide presence. VentureFriends has a strong operating background stemming from extensive startup experience and within EVOLVED-5G collaboration, VentureFriends will utilize their broad network to enable synergies and introduce business opportunities related to the adoption of EVOLVED-5G workspace and further evolution of EVOLVED-5G NetApps. Moreover, dedicated EVOLVED-5G pitching events will be organized inviting teams with innovative business ideas originating from their engagement with EVOLVED-5G communities and exploring the opportunity of investing to spin-out companies originated from EVOLVED-5G community.

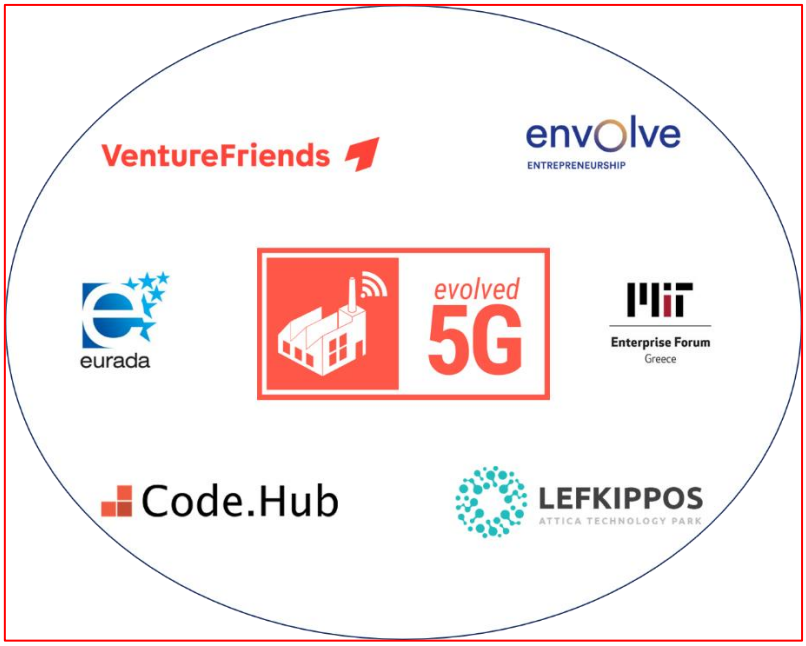


Figure 45. EVOLVED-5G Community Building Partners

Please note that for the community building actions there are separate tasks (T6.1-Developers-oriented Events and Related Training Material and T6.2-SMEs and Startup Acceleration Program) which coordinate these activities and events under WP6, but their actions will be in close cooperation with WP7 activities for efficient impact creation.

2.4.4 Communication Plan and Strategy

EVOLVED-5G's communication plan shall promote EVOLVED-5G project activities and results by providing targeted information to multiple audiences (including the media and the public), in a strategic and effective manner, allowing a two-way exchange through social media channels and other communication means (in contrast to the dissemination activities, which focus mainly to a one-way feed of the project achievements, mainly at scientific level). In order to maximize the communication impact, EVOLVED-5G communication strategy establishes the project identity/branding, defines clear objectives (adapted to various relevant target audiences) and sets out a description and timing for each activity.

All actions that contribute to the diffusion of the project's results beyond the project's own community, including the media and the public and reaching out the society, are considered as communication activities. The main objective of those is promoting the project itself and its results understood by non-specialist (e.g., the media and the public). In this direction, the communication strategy of the project will:

- Define measurable objectives for communication activities and link them with appropriate target groups.
- Implement a solid, modern, and inclusive communication strategy, accompanied by a realistic plan.
- Set up different channels and tools used to implement the communication plan and reach the targeted audiences.
- Define the guidelines of communication actions (e.g., project identity, messages to convey, reporting rules, etc.).
- Put into action an iterative learning process, which shall interpret the corresponding insights.
- Closely monitor the impact of the communication activities and apply corrective actions whenever necessary.
- Identify opportunities that can maximize EVOLVED-5G visibility.

The communication plan guidelines derive from the following communication objectives (CO) (Table 3) which are directly linked with the different phases of the project and the corresponding targeted audiences:

Phase A (M1-M6)	CO1: To create awareness of the project among the full range of general public and media. CO2: To provide a clear view of the project's concept, goals and expected results.
Phase B (M7-M18)	CO3: To create an active community of general public audience/followers and collect feedback to be taken into account by the project's activities. CO4: To raise awareness and visibility of the project's results.
Phase C (M19-M36)	CO5: To prepare the ground for the exploitation of project's results by creating market demand for provided innovation. CO6: To help raise funds for follow-up projects (e.g. spin-out, spin-offs and startup companies) by ensuring sufficient communication of exploitation results even after the end of the project.

Table 3 EVOLVED-5G Phases and Communication Objectives

As it can be clearly spotted from the Table 3 EVOLVED-5G communication plan is separated in three different phases. Each phase has its own communication objectives which provide us the context and the guidelines of each specific phase. Analytically:

Phase A (M1-M6): The initial communication objectives clearly state the need of creating an ID of the project. During the first 6 months of the project the main goals are the creation of awareness around the project and the communication of the project's basic characteristics, goals and expected outcomes. To facilitate these initial objectives, consortium partners established the project's website and social media channels. Website and social media channels form the key attributes of the communication plan and approach. These two means will help to communicate the initial activities, the nature of the project and attract the possible audience. Social media channels also help to redirect audience to the website.

Phase B (M7-M18): The second phase of the project communication approach set as main objectives the creation of a community around the project and to raise awareness and visibility about the results. As the project progresses to a more mature level it makes sense to create a stable and loyal audience around it. Social media activities along with the first dissemination activities will play the decisive role for achieving this objective. Social media will be used for communicating activities and events to targeted technical and non-technical audiences, while the first dissemination activities will give a clearer picture about the project's nature. In the same pace as the project evolves some premature data about the project's outcomes will come to

surface, as a result from the first trials and demos. These data will be communicated and will create anticipation about the final outcomes of the project's experimental activities. A condition that will boost the engagement in the digital means of communications.

Phase C (M19-M36): The third and the final phase of the projects' duration sets two additional communication objectives. The first one is to create a connection between the project's outcomes and the exploitable elements with any potential market involvement; and the second communication objective is responsible for the preparation of the ground for future projects by sharing any results in terms of exploitation. Concerning the first CO of phase C, is to provide the feasibility extensions of the project's outcomes to a market level in order to be utilized in a business level and boost the entrepreneurship and market of the whole society. This may happen by posting in the EVOLVED-5G social media channels, articles related to the research actions of the project. The second CO of this phase would happen by communicating in an extensive way the EVOLVED-5G project so that can be utilizes and be the baseline for future research ventures.

The following figure (Figure 46) summarizes the progress of the Communication objectives throughout the project's lifetime.

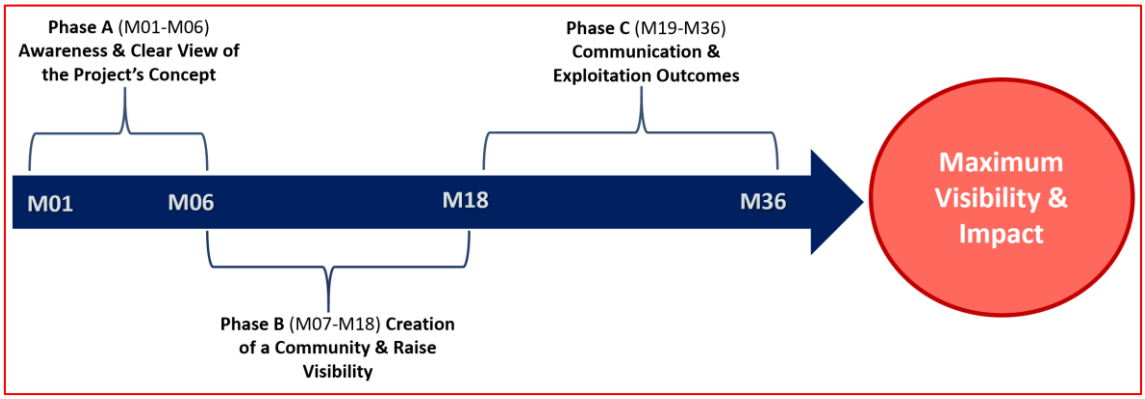


Figure 46. EVOLVED-5G Communication Objectives time plan

The figure below summarises the communication means and tools that will be used at different audience levels as the project progresses through its communication time plan and phases.

Audience Levels	Communication Means and Tools
Project Level	Branding/Logo, Email project list, Collaborative tool/repository, Report templates, Presentation templates, Project Coordination Manuals, Project Workshops.
National Level	Branding/Logo, Brochures/Leaflets, Press releases, Articles and Newsletters in local press, Demos/Showcases in local events, Local Workshops, and Info Days.
International Level	Branding/Logo, Social Media Channels (Twitter/LinkedIn/Facebook/Instagram/YouTube), Brochures, Leaflets, Stationary material, Stickers, Posters, Project Website, Press releases, Magazine articles, Field Trials/Showcases, General Public Conferences, trainings/hands-on tutorials, business/info days.

Table 4 EVOLVED-5G Communication means and tools in an audience level

In specific, as part of the project's communication strategy and time plan, EVOLVED-5G has develop **a website and social media strategy** in order to increase outreach and social impact, which can be illustrated as follows:

1. Identify target audience and key stakeholders,
2. Update regularly social media content and spark engagement in social media,
3. Adapt the content of posts based on the social channel used and the targeted audience (e.g., LinkedIn and Twitter aiming at informing technical/scientific audience),
4. Constant rate of weekly posts (at least an average of two weekly posts per channel),
5. Publish easily recognizable posts exclusively on project's achievements and initiatives,
6. Aggregate news and circulate them to the public on a quarterly basis through the project's digital newsletter,
7. Evaluate and assess website and social impact and reassess social media strategy as required.

The core communications channels that will be used by the project through its lifetime as part of its communication plan and strategy are the following ones (for each channel, a specific plan, scope and strategy is briefly presented):

Project Website: It will contain all relevant project information such as the global vision and objectives, use cases, deliverables, relation/interaction to EC, 5G-PPP, H2020 and other projects, flyers and posters, as well as the EVOLVED-5G Consortium and partner details. The website will be continuously updated with material produced through the project's lifetime. Especially the News and the Dissemination webpages will be updated on a weekly basis with community news, dissemination activities and accumulated project results. Finally, a Google Analytics account will be associated with the project website, in order to provide useful insight on how to improve its impact. This is a continuous communication activity from M1 to M36 plus three years after project end.

Social media channels: EVOLVED-5G uses social media channels to enhance the digital existence of the project and for communication and dissemination purposes. EVOLVED-5G is present in the most popular and important social media channels of our era. Especially for the purposes of EVOLVED-5G Twitter, LinkedIn, Facebook, Instagram and YouTube will be used to along with the website to facilitate the digital part of the project's communication. Through these networks, EVOLVED-5G will advertise its results, informing and reaching out the society and general public for the benefits of the project research, announce events, inform about the recent results and provide a platform for discussion. The dedicated EVOLVED-5G YouTube channel that will periodically include related recordings/videos from trials, events, webinars and presentations. This is a continuous communication activity from M1 to M36.
T7.1 leader is responsible for managing the social media accounts. As a general rule, EVOLVED-5G will post at least twice a week (2 posts on average on a weekly basis). On specific occasions for instance for special events the social media would be more intensively used in order to create the appropriate sound around the special event. At this initial period of the project, it is fundamental to communicate the basic characteristics, the objectives and the pilots of the project in order to crate its id to the digital world. Also, during the first months of the project one of the main goals of the social media channels is to accumulate followers. For that reason, social media channels are used in a more intensive way to attract the attention of potential followers. The basic communicative material for this purpose are insights of the project, the website, the initial activities (KoM, articles and partners press releases) and articles of general interest related to the project's nature (articles about NetApps or Industry 4.0). However, EVOLVED-5G project attracts and addresses different audiences such as the industry, academic and research communities, vertical businesses, SMEs and the general public and society. As a result, T7.1 leader plans to differentiate the social media strategy from June 2021 (M6 of the project) respecting each social media different background and the different audiences. In other

words, LinkedIn and Twitter will be used for more technical and academic posting activity addressing to research, business and industrial audience, while Facebook and Instagram will be used for more general public related purposes. The only exception of the previous mentioned approach is the EVOLVED-5G YouTube channel. In this channel the posting activity will be upon availability of related content.
Indicatively:

- **LinkedIn/Twitter:** Initially general content but from M6 and on more technical and project-focused posts aiming at technical and scientific diffusion of EVOLVED-5G results.
- **Facebook/Instagram:** General content addressing mainly non-technical audience - posts on EVOLVED-5G topics of general interest and communication of all dissemination and showcasing activities.
- **YouTube:** Addressing all types of audiences (technical and general) with videos focused on presentations, conferences, events, trials tutorials etc.

In addition, to boost the visibility of the posts and attract specific communities is of utmost importance to use **hashtags (#)**. Hashtags such as #research #innovation #project, etc. can provide connection to different research, academic and technological activities. On the other hand, certain hashtags like #5G, #Industry40, #Europe or #NetApps are expected to be highly 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 project and its call type. 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. Furthermore, due to the fact the project is still in its initial stages the use of #new and #project hashtags, are very useful for stating current status and for highlighting the fact that is a part of the EC research project' community, especially in the field of 5G. INFOLYSiS partner plans to launch a dedicated hashtag from June 2021 (M6) for exclusively EVOLVED-5G material. This hashtag would be the ***#LearnAboutEVOLVED5G***.

EVOLVED-5G social media strategy also includes the **monitoring and mentioning (@) of associations related to the project's vision**. Such related association is, for example, the 5G Public Private Partnership (5G-PPP). EVOLVED-5G has already followed all 5G-PPP related social media accounts and started to communicate material from its website (https://5g-ppp.eu/), such as, articles newsflashes and newsletters.

Figure 47. 5GPPP related poster

Furthermore, a special hashtag "**#5GPPP"** is used and will be used to promote the community and boost the awareness of this organization, along with the appropriate mention **(@5GPPP**) whenever applicable (depending on the social media channel used). Utilizing the 5GPP association in social media channels will help the project to reach the widest possible audience (technical and non-technical) in the 5G field and reinforce its links and cooperation with other 5G projects of the ICT-41 call.

One additional means to achieve higher visibility and attract the wider possible audience is **following and mentioning the different social media channels of European Union**. European Union sustain several social media accounts in all popular and useful social media channels (Twitter, Facebook, LinkedIn, YouTube and Instagram) serving different purposes. Some of these accounts are dedicated to research and innovation, others are responsible for the digital management of the unions affairs and others focus on the knowledge diffusion of research outcomes. Some tentative related social media accounts are:

- the EU Research & Innovation magazine – HORIZON (https://www.facebook.com/horizon.magazine.eu),
- the Digital EU (https://twitter.com/DigitalEU),
- EU Research & Innovation - H2020 (https://twitter.com/EU_H2020),
- the EU Science, Research and Innovation account (https://www.linkedin.com/showcase/european-commission-joint-research-centre),
- the EU Science profile (https://www.instagram.com/eu_science/).

Any interested stakeholder may access and search all different EU profiles related to research project in the dedicated union's website: https://europa.eu/european-union/contact/social-networks_en#n:+i:4+e:+t:34+s. EVOLVED-5G through these accounts and profiles will try to attract more audience. This will happen **using mentions (@)** of these accounts, using hashtags (#) and also resharing content by these accounts. By using mentions and hashtags EVOLVED-5G will attract their attention and they will share the project's content making it more accessible to a broader audience. Moreover, there is additional way to utilize some of them. As you may noticed, between the mentioned account is the official EU digital magazine of research projects, the HORIZON (https://horizon-magazine.eu/). Members of the consortium may use this magazine to present and circulate some of project's objectives and outcomes to a broader research audience. These magazines may be used and in terms of dissemination for the prompt diffusion of the projects insights.

Printed material: The Consortium will prepare printed promotional material such as flyers, leaflets, stationary material and stickers. Printed material will be provided in face-to-face events and to meetings participants (e.g. workshops, conferences), where the project will have a booth and/or demo. This is a communication activity planned from M1 to M36 and as soon as COVID-19 conditions allow physical interaction/events to resume.

Newsletters: will be issued (Newsletter issue #1 has already been issued and issue #2 is under editing) quarterly to keep informed the relevant stakeholders about the various activities and the outcomes of the project in this specific period. The consortium will be engaged to the frequent utilization of the newsletter for the efficient communication of project information/activities to the general public. EVOLVED-5G Newsletter 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 utilization of the newsletter for the efficient communication of project information/activities to the general public. Newsletter issues will be used for communicating, in a summarized 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 EVOLVED-5G Newsletter will be compact and 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://evolved-5g.eu/dissemination/newsletter/) of the EVOLVED-5G official website.

Leaflet/Poster: were created to give a brief overview of the project objectives of all external and internal stakeholders and to engage the reader to have a closer look and provide him with the most essential expected project's innovations. The main use of the EVOLVED-5G leaflet and poster are 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. Furthermore, EVOLVED-5G leaflet and poster latest versions are available on the project's website for online circulation in digital format to potential stakeholders.

Contact Email: A project specific contact email info@evolved-5g.eu as well as a contact form through the website have been launched and made public through which the interested users and communities will have the opportunity to communicate with the project coordination team. This is a continuous communication activity planned from M1 to M36 plus three years after project end.

Press releases, interviews and videos: will be published on regular intervals and usually in parallel/following major dissemination events. This is a continuous communication activity planned from M1 to M36.

5G-PPP Web Page and email: EVOLVED-5G, as a 5G-PPP project, has launch also its own dedicated page at 5G-PPP web site (https://5g-ppp.eu/evolved-5g/) together with the project dedicated email (evolved-5G-Contact@5g-ppp.eu), as a common practice for all the 5G-PPP project. The 5G-PPP web page will be used as a starting point for advertising the project's social media channels, as well as promoting communication within the 5G-PPP ecosystem. This is a continuous communication activity from M1 to M36 and after project's end.

Physical and Hands-on events: Events like business days, info days and hands-on seminars/trainings will be organized to help the EVOLVED-5G project to promote engagement, community building and raise general awareness about the project itself. This is a communication activity planned from M18 to M36.

Traditional mass media: To increase the potential audience of EVOLVED-5G, public media like newspapers, radio, popular magazines and relevant third-party websites might also be used. These sources will be chosen based on findings during the project that point out which media optimally reaches the relevant target groups per use case. Those channels will be targeted specifically for the trials and demo events. This activity is planned M18 to M36.
Additionally, to the previous described actions and activities for all channels, INFOLYSiS partner in order to facilitate the visual communication impact and make the projects' image more recognizable, has designed specific photos/images, following a specific EVOLVED-5G visual template, to be used for supplement certain types of activities/posts. These images have two distinguished parts. These images have two parts. They are separated diagonally. The upper

right part let us say, has a white background and is consisted by the project's logo. On the other hand, the lowest left part of the image there is written in white font color the purpose of the image (e.g., Newsletter) in a red background. The red color used in this part is the same that has been used in logo. Some of these images have already been 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 EVOLVED-5G communicated news. The images presented in Figure 48 and Figure 49 should be considered as indicative examples.

Figure 48. EVOLVED-5G supplementary activities images

Figure 49. Supplementary image in LinkedIn post

The table below summarizes the EVOVLED-5G communication targets and KPIs.

Activity	KPIs/Targets
EVOLVED-5G website	Total Number of visitors >5000
	~ 2 min average duration of visits (average engagement time)
	>5000 views
EVOLVED-5G social media: LinkedIn, Twitter, Facebook, Instagram, YouTube	Number of total followers >1000
	>750 posts in total
EVOLVED-5G News	Number of News posted on the website >75
Press releases	Number of press releases >10
Branding through leaflets, posters, brochures etc.	Number of project's factsheets, leaflets and posters >6
Number of Newsletters issue	12 quarterly issues
Number of videos, webinars, events etc.	Videos and various communication events >15

Table 5 EVOLVED-5G Communication KPIs and Targets

2.4.5 Dissemination Plan and Strategy

The EVOLVED-5G dissemination action plan aims to ensure that the project's technical innovations have a positive effect on community and society level and in parallel to improve European innovation. The core objective of dissemination activities is to make the scientific and technological knowledge developed on the project available to a broadest possible equivalent audience as well as to the targeted stakeholders, and to clarify how the findings can be used to encourage potential to engage in the 5G field, the Industry 4.0 and the NetApps environment and the markets arise from these fields.

Activities Focus: Dissemination activities will be performed by all partners, but they will differ according to the nature of the partners. The industrial partners will approach relevant industry-sectors, as well as their distributors and client networks, the academic and research partners will focus on disseminating the project results towards research institutes and universities across the enlarged Europe, and the SMEs will target in the market where they address their services/products and their clients.

Activities Timing: The dissemination activities will also vary in intensity based on the evolution of the project. The dissemination activities will be carried out in three main phases, spanning throughout the project duration and extending beyond it, with increasing level of intensity, starting from the creation of general awareness and concluding with attracting potential supporters and customers/users of the project results

The EVOLVED-5G dissemination plan is focused on disseminating project results, targeting audiences that may use the EVOLVED-5G results in their own work, e.g. peers (scientific or the project's own community of third party developers and SMEs), industry and other commercial actors, stakeholders, professional organisations and policy makers. Therefore, dissemination main objective is to enable the use and uptake of EVOLVED-5G innovation and results, facilitating exploitation of the project's outcomes and promoting the development of innovative solutions based on the EVOLVED-5G technologies and NetApps. Further objectives of the dissemination plan are:

- Reach, stimulate and engage a critical mass of relevant stakeholders to ensure that the results of the project are effectively displayed, leading to validation, improvement and possibly further adoption of the developed technologies and concepts, especially towards target vertical sectors.
- Foster impactful contribution to relevant standardization bodies as appropriate and relevant to planned exploitation plans and the project's outcomes.
- Ensure close coordination with relevant 5G-PPP program, working groups and bodies, while establishing liaisons with related initiatives in research and innovation domains.
- Actively engage and support community building by industry, SMEs and all target stakeholders/shareholders in the adoption and deployment of the technologies and tools developed by EVOLVED-5G.

Target audience	Target Activities
Industry	Liaison with industrial associations (e.g. 5G ACIA, GSMA, XR4ALL, PTCRB). Publication of articles in trade press. Participation in relevant conferences/workshops with large audience among industrial organizations. Organization of workshops and demo events. Individual presentations / discussions with key organizations.
Vertical business players (including SMEs and industrial actors)	Liaison with vertical business players (e.g., XR4ALL 5GAA). Publication of articles. Participation in relevant conferences/workshops. Organization of workshops and demo events at vertical business sites.
5G-PPP Community	Promotion of the 5G-PPP at programme level. Direct liaisons with the 5G Infrastructure Association (5GIA), other existing 5G PPP governance bodies and working groups (e.g. 5G Security WG, 5G Trials WG, 5G Architecture WG, 5G Network Mgt and QoS).
5G Research & Innovation Actors	Liaison and collaboration with researchers and academics from universities. Peer reviewed publications in scientific journals. Participation in conferences/workshops with large audience among the scientific community Demos and exhibitions, for instance at 5G PPP venues like EuCNC, or Global 5G events, targeted communications, webinars, and online and offline presence and materials. Through MoU signed between 5G PPP and Cybersecurity PPP (ECSO) liaison through 5G Security WG with ECSO SRIA WG (i.e. WG6) and Sectorial demand WG (i.e. WG3).
SDOs and open-source communities	EVOLVED-5G will collaborate with several standardization. These bodies will be informed of any relevant project outcome that can be of interest for their activities. Stakeholder contributions will also be encouraged through targeted communications and participation to events, as well as via alignment of efforts with 5G PPP Standardization WG.
Regulatory, policy makers and Certification bodies	Targeted communications and direct liaisons participation in relevant events promo material.

Table 6. Dissemination per selected target audience

EVOLVED-5G dissemination activities will differ in intensity based on the progress of the project. In order to better monitor the intensity and set the corresponding goals per time period, the dissemination activities will be divided and carried out in two main time periods:

- First Time Period: M01 – M18
- Second Time Period: M19 – M36

The intensity will differ per phase and the initially set goals should reflect this differentiation. As a result, a split ratio percentage of 30/70 approximately will be used for setting the minimum planned goals per phase. Potential deviations between phases will be acceptable given the progress and achievements of the project, as well as the potential COVID-19 impact, but the final targets are to be met.
In Table 7 are depicted the proposed dissemination activities along with metric targets and timeline per period. Please note that these targets are considered tentative and might be updated as the project progresses and conditions change.

Planned Dissemination Activities	Metrics	Target (as per DoA)	Timeline (in Months)	1st Period Target M01-M18	2nd Period Target M19-M36
Publications in journals, workshops and conferences, articles	**Number of publications**	**>20**	M06-M36	>5	>15
Presentations in scientific events/conferences	**Number of presentations**	**>20**	M01-M36	>6	>14
Trials/Showcases	**Number of showcases**	**>5**	M19-M36	-	>5
Exhibitions in industrial and scientific events - Booths	**Number of exhibitions/ booths**	**>5**	M12-M36	>1	>4
Organization of events (workshops/special sessions/seminars/training/poster sessions etc.)	**Number of events**	**>10**	M06-M36	>2	>8

Table 7 EVOLVED-5G Dissemination Metrics, Targets and Timeline

2.5 MONITORING, CONTROL AND EVALUATION OF COMMUNICATION/ DISSEMINATION ACTIVITIES

EVOLVED-5G WP7 members (within the scope of T7.1) have enabled several monitoring mechanisms in order to constantly monitor and evaluate the effectiveness of EVOLVED-5G communication activities, throughout the project's lifetime, for corrective actions to be applied whenever necessary. Such monitoring mechanisms are of vital importance since the project needs to meet its objectives and targets without deviations or underperformance. Additionally, these tools also guarantee smooth collaboration between the consortium members. The following sections provide elaborative information regarding those mechanisms.

2.5.1 Collaborative and file sharing Platform

Microsoft Teams platform is being used by the EVOLVED-5G partners as the main online tool for sharing material and content. This platform plays an important role in the successful collaboration and alignment of the consortium members.

More specifically, the Files section of Microsoft Teams is organized in sub-sections (folders and sub-folders) for the better organization and smooth distribution of the project's material among the partners. Those sub-sections are dedicated per Work Package and Task and are constantly updated by the consortium members (Figure 50). The option for online editing files is also available, and it is a feature particularly useful in documenting communication and dissemination activities.

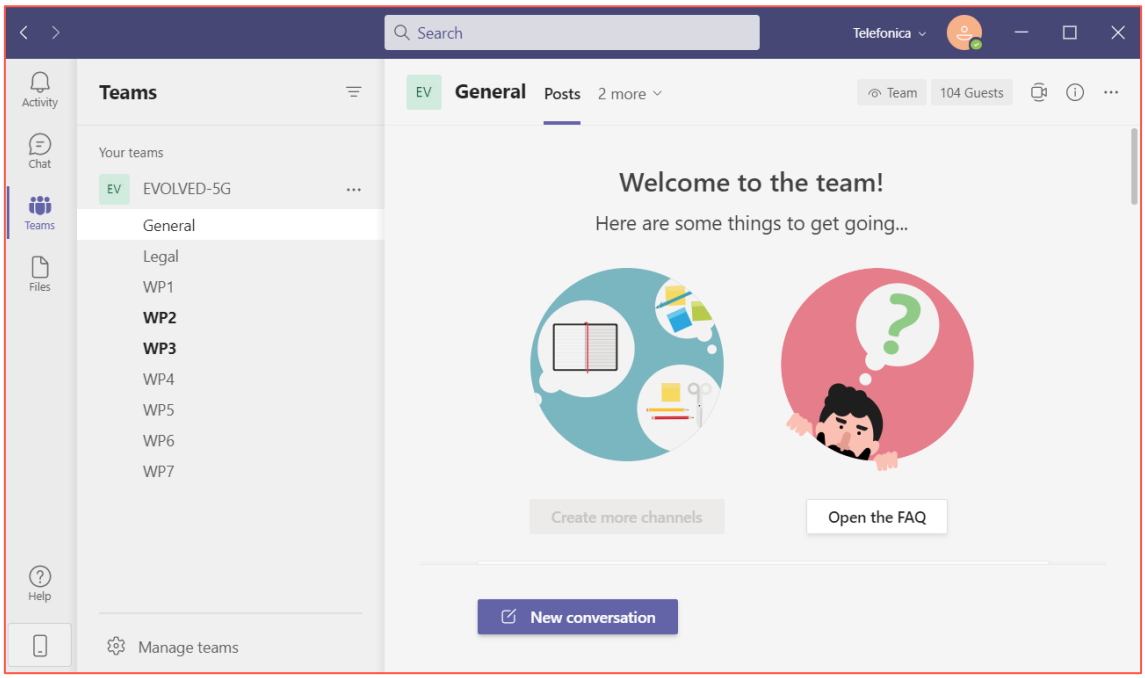


Figure 50. EVOLVED-5G Microsoft Teams Online Repository

T7.1 leader established a special process that relies on the use of two distinct Excel Files, stored in MS Teams dedicated WP7 Files section, for the efficient recording and validation of the performed communication and dissemination activities (Figure 51):

- The first excel file is called "WP7 Activities Reporting" and is completed after a partner performed a communication/dissemination activity related to the project.
- The second excel file is called "Posts for Social Media" and gives the partners the initiative to suggest content for upcoming posts at the project's communication channels and/or news for the News page of the website.

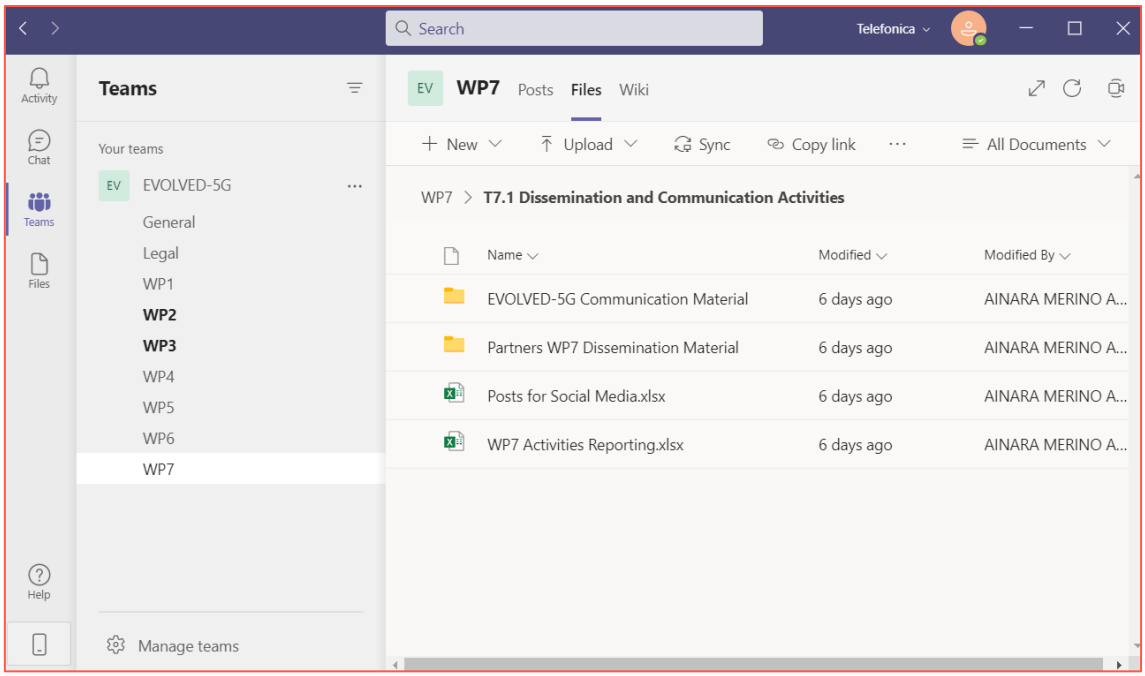


Figure 51. Communication/Dissemination Excel Files location in MS Teams.

Concerning the excel files mentioned above, there is a particular procedure to be followed by all partners. In specific, every partner should update the files with the information that needs to be communicated by the INFOLYSiS partner. Every excel file provides also specific details that should be submitted by the interested partners to achieve the prompt communication of the forementioned activity. For example, for the "WP7 Activities Reporting" file the details are: *# Item, Authors/Partner, Activity Title, Target (Event, Location, Date), Description* (Figure 52).

# Item	Authors/Partners	Activity Title	Target (Event, Location, Date)	Description
1	David Artuñedo/TID	5GPPP Webinar: 5G Innovations for Verticals	5G-PPP webinar March 5, 2021	David Artuñedo from Telefonica EVOLVED-5G, project coordinator will participate in the 5GPPP Webinar: "5G Innovations for Verticals". This webinar will introduce to the 5GPPP community new projects such as EVOLVED-5G. There will be a presentation showcasing the main pilots, the objectives and the goals of our project. More information and registration form available here: https://5g-ppp.eu/event/5g-ppp-webinar-5g-innovations-for-verticals/

Figure 52. WP7 Activities Reporting Excel File.

Besides the excel files for reporting the communication and dissemination activities and the suggested social media posts, there is another sheet in the WP7 Activities Reporting Excel file. This additional tab is available for recording dissemination opportunities. As it is displayed in Figure 53 specific details are provided for each dissemination opportunities. Such details are the time and the place, the activity title, each type (paper, article, workshop etc.) the submission deadline and a dedicated URL link with additional information about each activity. This dedicated sheet would be particularly useful and helpful during the projects' lifetime as many opportunities will come to surface. By noting them down EVOLVED-5G will have a more efficient dissemination policy as these opportunities would be prioritized and evaluated.

Year	Date	Location	Title	Track	Submission deadline	Link
2021	31 Aug - 3 Sept	Dublin	GIoTS 2021 Call for papers	Papers	18-May	https://iotweek.org/giots-2021-call-for-papers/
2021	13-15 Oct	Montreal + Virtual	IEEE 5G World Forum	Paper, Workshops, Special sessions	15/7/2021	https://ieee-wf-5g.org/
2021	10-12 Dic	Madrid	IEEE Global Communications Conference	Paper, Workshops, Industrial booth	30/4/2021 (regular pap	IEEE Global Communications Conference: https://globecom2021.ieee-globecom.org/
2021	6-8 Oct	Coimbra	IEEE 12th Conference of Networks of the Future	Paper, Workshops, Demos	23-Apr-21	https://nof2021.dnac.org/call-for-papers/
2021	4-6 May	Virtual	5G FORUM	Presentations, Workshops		https://www.5gforum.es

Figure 53. WP7 Dissemination Opportunities sheet.

Similarly, on the "Posts for Social Media" excel file, a partner may provide content and material, in the format of a social media post, for a performed activity that he wants to be communicated over EVOLVED-5G social media. In this file, the requested details are: *# Item, Partners, Activity Type, Text for Posting, Social Media Channel* (Figure 54).

Item #	Partners	Activity Type	Text For Posting	Social Media Channel
1	NCSRD	Online Article/Press Release	NCSR "Demokritos" EVOLVED-5G, technical manager, published an article presenting details about EVOLVED-5G project. You may access and read the article in the following link: https://www.iit.demokritos.gr/projects/experimentation-and-validation-openness-for-long-term-evolution-of-vertical-industries-in-5g-era-and-beyond/?fbclid=IwAR3qysUHBe-kVfdpRjls3xW69aP-kVhJLLUuGgJKcijXf8IpCfGRK8xoZN8	ALL
2	TID	5G PPP Webinar: 5G Innovations for Verticals	Last chance to reserve your seat in 5GPPP Webinar: "5G Innovations for Verticals". EVOLVED-5G will be represented by David Artuñedo from Telefónica (EVOLVED-5G project coordinator). More information and registration form available here: https://5g-ppp.eu/event/5g-ppp-webinar-5g-innovations-for-verticals/?fbclid=IwAR3RoZ2fOqYRo5s0hpNOLh0R-hKKb8wL_XP2EtSevs809FGHRZfMi-B6H2U	ALL
3	INF	Online article about 5G & Industry	5G is here to provide the floor for a transformation in industrial environments. You may read how 5G will facilitate this new industrial era in the following link: https://www.techrepublic.com/article/industry-4-0-5-ways-in-which-private-5g-will-drive-the-next-manufacturing-revolution/?fbclid=IwAR2wHRKvZy3RHIz6V7vVYBY4s12MIxmmWIAXqydwQVVn-nhRZKLz9rsfmrM	ALL

Figure 54. WP7 Social Media Reporting Excel File.

The information provided in the excel files is extremely helpful as it gives the communication team an overall idea about the event and the activity performed by a partner resulting to its sufficient communication.

Microsoft Teams Tool will also be used by all the stakeholders for the organization of online calls/telcos per WP or GA meetings. Dedicated channels have been created for the GA meetings and for the internal meetings of each WP. Microsoft Teams environment gives the chance for organizing online meetings and creating separate links for different WPs and Tasks.

2.5.2 Performance Evaluation Tools

INFOLYSiS team as part of its communication responsibilities as T7.1 leader, also collects, processes, and analyses statistics derived from the communication channels. For such purposes, control and monitoring mechanisms have been established and will continuously monitor and quantify the impact of the project's website and social media channels. These monitoring mechanisms are of vital importance as they provide feedback, keep track of the impact effectiveness, and depict the project's progress.

The main two monitoring tools used for the described scope are Google Analytics and Google Data Studio. While Google Analytics is an independent tool used specifically for the website evaluation, the Google Data Studio is to be used as a supporting tool for the generation of custom-made dashboards both for the website and the social media channels. These tools are described more thoroughly in the following 2.5.2.1 and 2.5.2.2 sections. Additionally, specific statistics and dashboards deriving form Google Analytics and Google Data Studio are also presented in sections 2.5.3, 2.5.4, 2.5.5, 2.5.6, and 2.5.7.

2.5.2.1 Google Analytics

Google Analytics is an irreplaceable tool as it can provide with in-depth and advanced data analytics, representing the websites performance and impact. However, it depends on the administrator to choose those data which are related to the website targets and communication plan. User's activity such as which specific page of the website they were more interested in or

the average time the spent on each page are only a small indicative sample of the many information that Google Analytics Tool can provide.

Within the framework of EVOLVED-5G, the communication team plans to use Google Analytics on a monthly basis, for monitoring statistics internally, to analyze the performance and impact of the website. Any deviation or underperformance will be immediately spotted, and corrective actions will be applied.

2.5.2.2 Google Data Studio Dashboards

INFOLYSiS communication team will also use Google Data Studio as the main platform for the evaluation and visualization of the communication channel's performance (EVOLVED-5G website and social media) through the design of tailor-made Google Data Studio Statistical dashboards. Through Google Data Studio the monthly data of each communication channel are processed, analyzed, and internally released in a compact and comprehensive format, to be evaluated by the communication team.

In specific, the EVOLVED-5G Statistical Dashboards will be issued quarterly accessible via links in the dedicated File's Folder in MS Teams Repository per channel and communicated at project level through mailing lists for every partner to be able to access, check and evaluate them. The dashboards, apart from quarterly, can be also created upon request addressing any specific timeframe of the project's duration (6-months, annually, etc.). Every communication channel will have its own Google Data Studio Dashboard with various Key Performance Indicators (KPIs)) aiming to achieve the best analysis and evaluation of results.

By comparing the different dashboards from various timeframes, throughout the project's duration, positive changes, trends, or deviations will be brought to the surface indicating the evolution of the communication plan/strategy and the impact of the project. If a performance decline in numbers (leading to reduce impact) is spotted for a particular communication channel, then it will promptly alert the communication team to proactively revise and change the communication strategy related to that specific channel.

2.5.3 Website Google Analytics and Statistical Dashboards

Regarding the EVOLVED-5G Website activity, it is particularly important that the statistics derived from the website can be visualized and presented in a manner that can be understood by every interested partner. This feedback shows different dimensions of the website's functionality and provides the means for its evaluation and improvement. The main tool used for the continues monitoring of the EVOLVED-5G Website is the Google Analytics platform in which the visualization of data, referring to custom periods, can be performed (Figure 55).

Google Analytics is connected to the EVOLVED-5G Website since 9th of January 2021. Figure 55 presents the main page of the Google Analytics tool for the period of January 2021 – April 2021.

The Google Analytics interface outlines a large amount of information and website statistics. Any interested user can easily spot the different metrics and navigate through the various options provided by the Google Analytics Platform (a small sample of such features is shown in Figure 55). In short, the number of users (458), the average engagement time (2m 07s) are some of the metrics appearing to the home page of Google Analytics for the period M1-M4. Additionally, in this specific Figure 55, one can spot information related to the origin of the EVOLVED-5G Website visitors, regional and demographic data, as well as live information regarding the active users in the website.

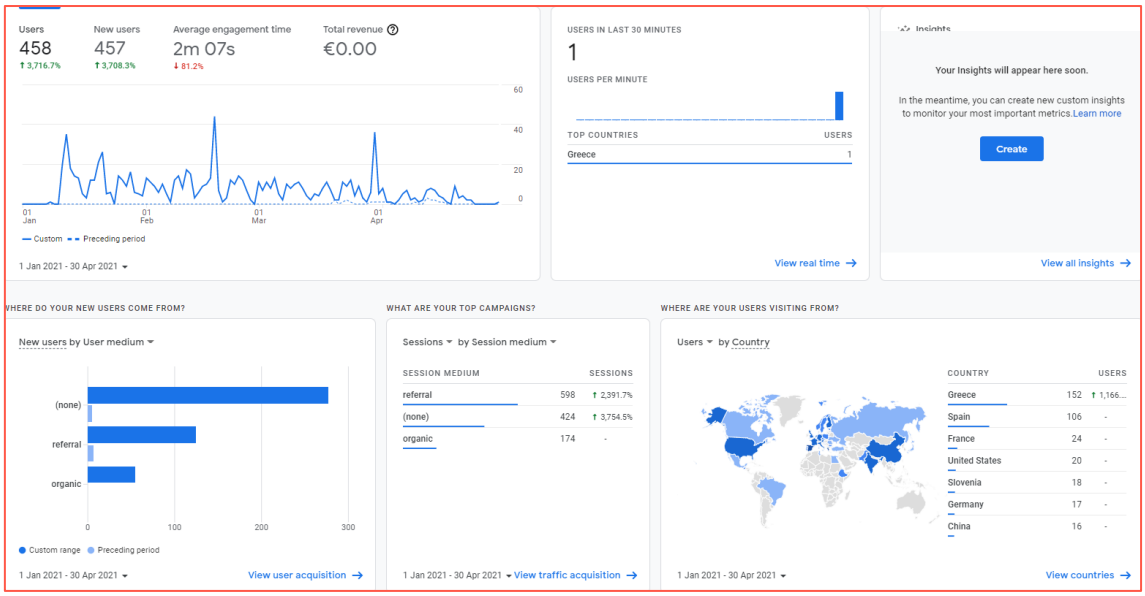


Figure 55. EVOLVED-5G Google Analytics Dashboard.

In addition to using Google Analytics as a platform which provides us with enlightening statistics, Google Analytics Tool will also be used as a data source to Google Data Studio. More specifically, a tailor-made statistical dashboard will be created by INF team, forming a comprehensive visual overview of the website's performance, including all the necessary statistics for someone to evaluate that performance.

Figure 56 displays the Website Statistical Dashboard, created using Google Data Studio, for the period January 2021 – April 2021. This dashboard provides information related to the website users (457 total users) and their engagement (average engagement time of 2m 07s, engagement rate 61.12%) along with information regarding the sessions (number of sessions 1195) during the examined period and a plot diagram showing the daily total and new users. Additionally, it provides the path that the visitors followed to reach the website. For example, we have that 49 users visited the website after a google search while 26 users came via LinkedIn. The bottom half of the website dashboard also provides information the most preferable electronic device used during the examined period and demographic analytics. In specific, for the M1-M4 period we have most users coming from Europe (i.e., Greece – 152, Spain – 106), which is very sensible given that EVOLVED-5G is an EU Project, but we also have visitors from United States (20) and China (16). One may access the Website Statistical Dashboard of the first 4-month period of the project in the following link: https://datastudio.google.com/reporting/712c4229-ac65-4cb6-9126-78867dbc6ef2

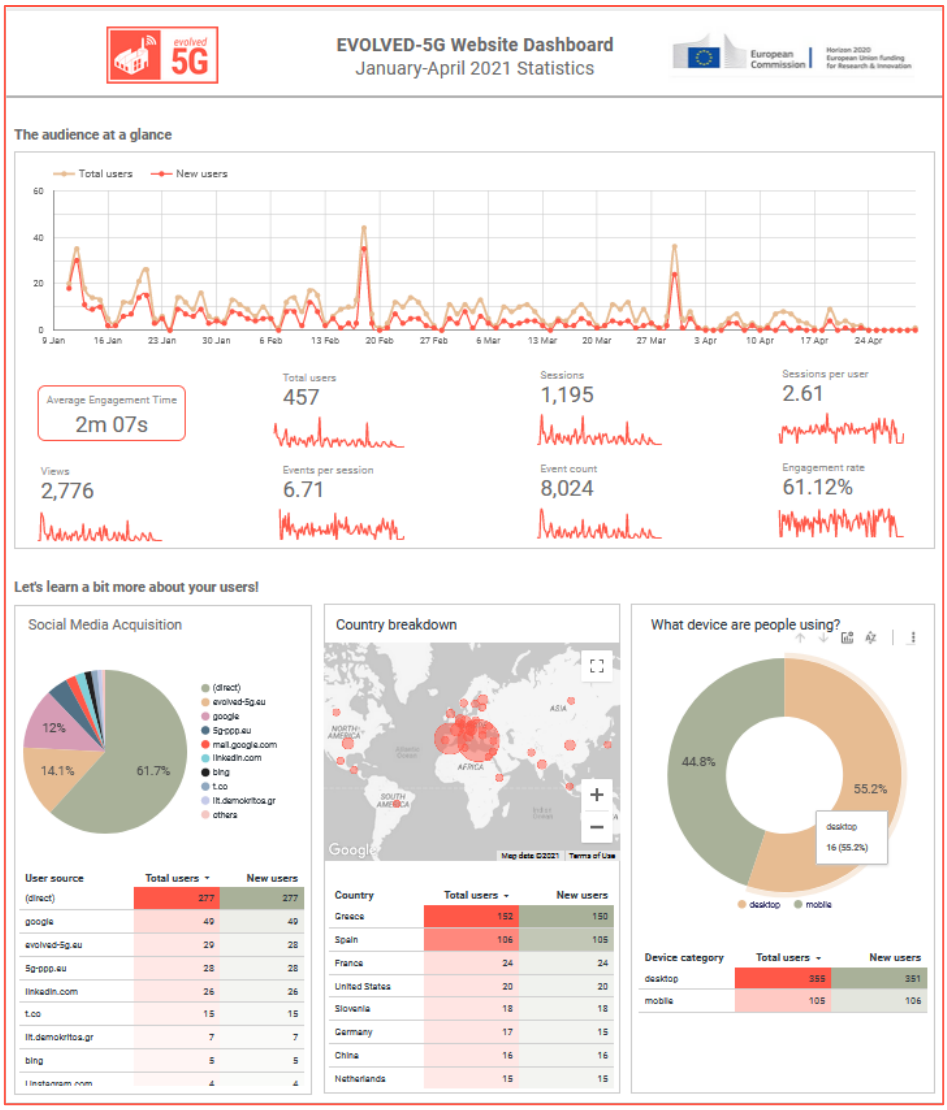


Figure 56. EVOLVED-5G Website Statistical Dashboard.

2.5.4 Twitter Statistical Dashboard

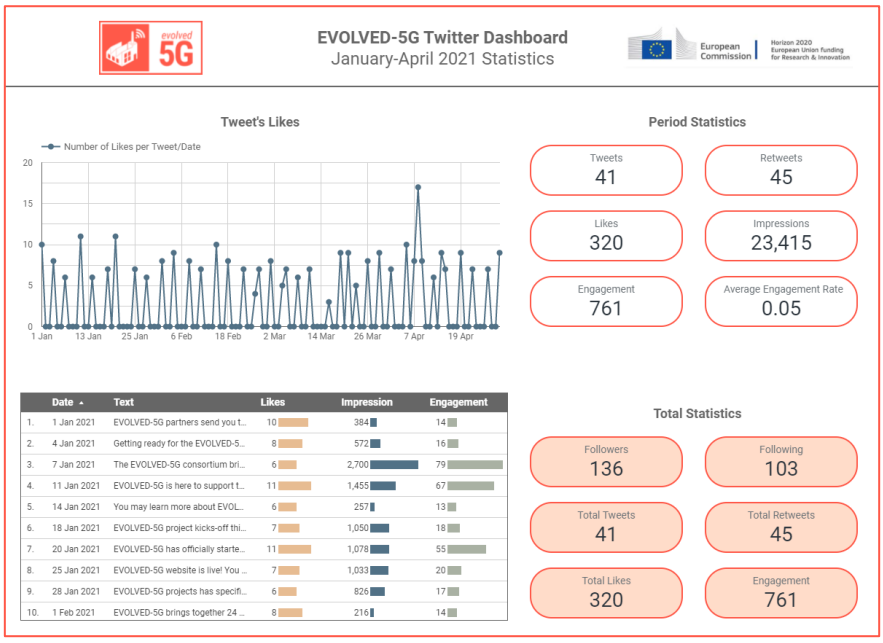
The EVOLVED-5G Twitter Dashboard will provide a progress diagram with likes per tweet date along with a table with information tweet's likes, impression, and user engagement. Period and Total statistics with various KPIs and metrics, such as the number of followers and the number of tweets and retweets, are also included. In specific, Period Statistics refer to the examined period of time while Total Statistics refer to the duration of the project.

In the EVOLVED-5G Twitter account, during the first quarter of the project, 41 tweets were published gaining cumulatively 320 likes. Total engagement achieved was 761 while the average engagement rate was measured at 0.05. While the 0.05 engagement rate is not a significant number it is explainable given that the project is still on an early stage. The following Table 8 summarizes the performance of EVOLVED-5G twitter account.

Tweets	41
Followers	136
Retweets	45
Likes	320

Table 8. EVOLVED-5G Twitter Statistics (M1-M4)

The Twitter Dashboard, shown in Figure 57, was created using the Google Data Studio tool and contains not only the forementioned statistics but also many other important KPIs. For instance, a line chart with the number of likes per tweet date is provided while also a table with likes, impressions, and engagement with respect to each published tweet follows. The "Period Statistics" section shows the total number of tweets (41), retweets (45), likes (320), etc. On the other hand, the "Total Statistics" section displays the number of followers (136) and following (103) along with KPIs that are also included in Period Statistics with the difference that these refer to the whole duration of the project. Since the dashboard in Figure 57 corresponds to the first quarter of the project, it is expected that the common KPIs between the two sections will be identical. In the following link you may access the EVOLVED-5G Twitter Dashboard for the period of January 2021 – April 2021: https://datastudio.google.com/reporting/692e8ffa-c7bc-49ed-bb82-f0fe77338fdb



	Date	Text	Likes	Impression	Engagement
1.	1 Jan 2021	EVOLVED-5G partners send you t...	10	384	14
2.	4 Jan 2021	Getting ready for the EVOLVED-5...	8	572	16
3.	7 Jan 2021	The EVOLVED-5G consortium bri...	6	2,700	79
4.	11 Jan 2021	EVOLVED-5G is here to support t...	11	1,455	67
5.	14 Jan 2021	You may learn more about EVOL...	6	257	13
6.	18 Jan 2021	EVOLVED-5G project kicks-off thi...	7	1,050	18
7.	20 Jan 2021	EVOLVED-5G has officially starte...	11	1,078	55
8.	25 Jan 2021	EVOLVED-5G website is live! You ...	7	1,033	20
9.	28 Jan 2021	EVOLVED-5G projects has specifi...	6	826	17
10.	1 Feb 2021	EVOLVED-5G brings together 24 ...	8	216	14

Figure 57. EVOLVED-5G Twitter Dashboard.

2.5.5 LinkedIn Statistical Dashboard

The LinkedIn Dashboard follows similar structure focusing on likes and views in post level, and their evolution through the examined time period. The sections of Period and Total Statistics highlight metrics such as the account's connections and followers. The LinkedIn account of the EVOLVED-5G project has attracted 246 followers and made 139 connections during the first four months. Thus, it is the most attractive social media account for these first months. In this account, 37 posts are measured, gaining 573 likes in total and attracting 21,844 views. The following Table 9 summarizes the performance of the LinkedIn account.

Posts	37
Connections	239
Followers	246
Profile Views	300
Likes	573

Table 9. EVOLVED-5G LinkedIn Statistics (M1-M4)

Using Google Data Studio, INFOLYSiS team has published a LinkedIn Dashboard to be used for the visualization of the statistics needed for the evaluation of the LinkedIn account. This

dashboard is shown in Figure 58 and consists of a line diagram with the total views per post date followed by a table with the likes of each post published until April 2021. The "Period Statistics" section counts 37 Posts, 23 Reshares, 21,844 views and 573 Likes. Respectively, the "Total Statistics" section displays the same metrics with respect to the whole duration of the project along with the number of connections (239) and followers (246).

The link to the respective dashboard is: https://datastudio.google.com/reporting/2146d519-0edc-47b7-982d-480f14305cdd

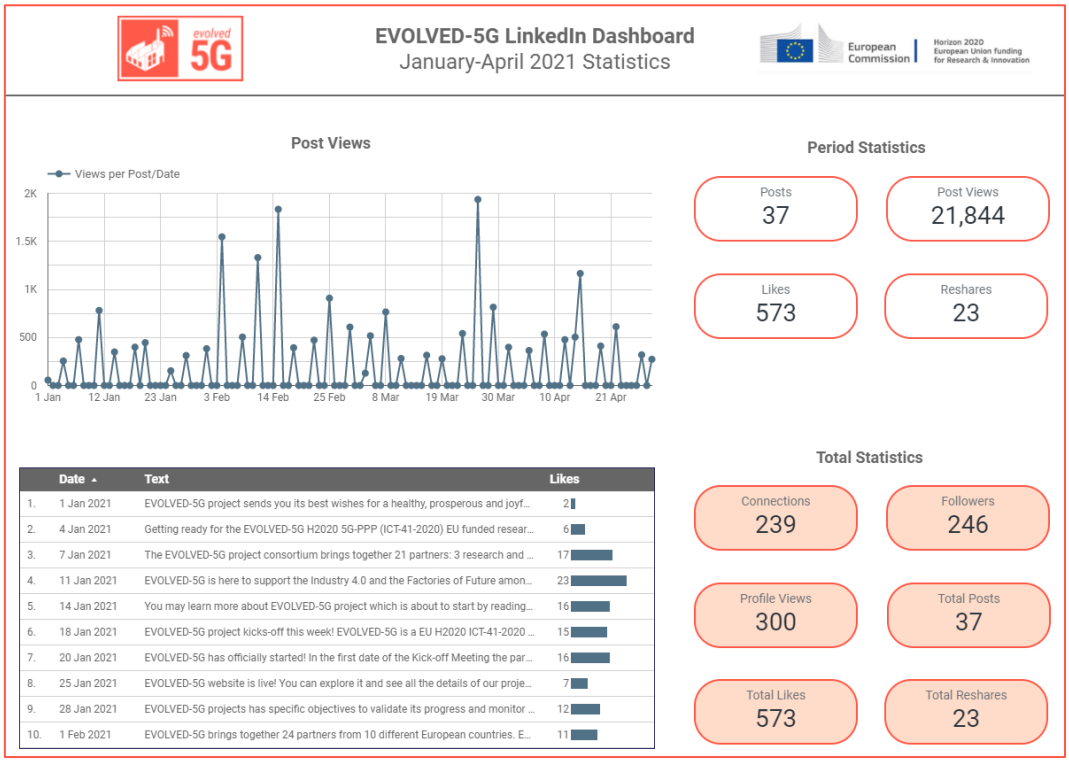


Figure 58. EVOLVED-5G LinkedIn Dashboard.

2.5.6 Facebook Statistical Dashboard

The Facebook Dashboard provides progress diagrams related to page views and engagement and a table with the posts and their reach for the examined timeframe. Period and Total Statistics include the total number of posts, page followers and likes among other important metrics.

During the first 4 months of the project, the EVOLVED-5G Facebook account has communicated 37 posts, gained 85 followers, and had 289 page views. An overview of key KPIs evaluating the performance of the Facebook page is provided in the following Table 13.

Posts	37
Followers	85
Page Likes	80
Page Views	289

Table 10. EVOLVED-5G Facebook Statistics (M1-M4)

The Facebook Statistical Dashboard, shown in Figure 1, is created using Google Data Studio and refers to the M1-M4 period. 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 within the examined period. Period statistics are also provided giving information about several KPIs, such as the number of posts (37), the total reach (1,676), etc. Additionally, the section of Total Statistics adds the number of followers (85), the page likes (80) among other cumulative metrics.

The link to the respective dashboard is as follows:

https://datastudio.google.com/reporting/999615a5-3e10-4bb5-b03f-b98d68944e40

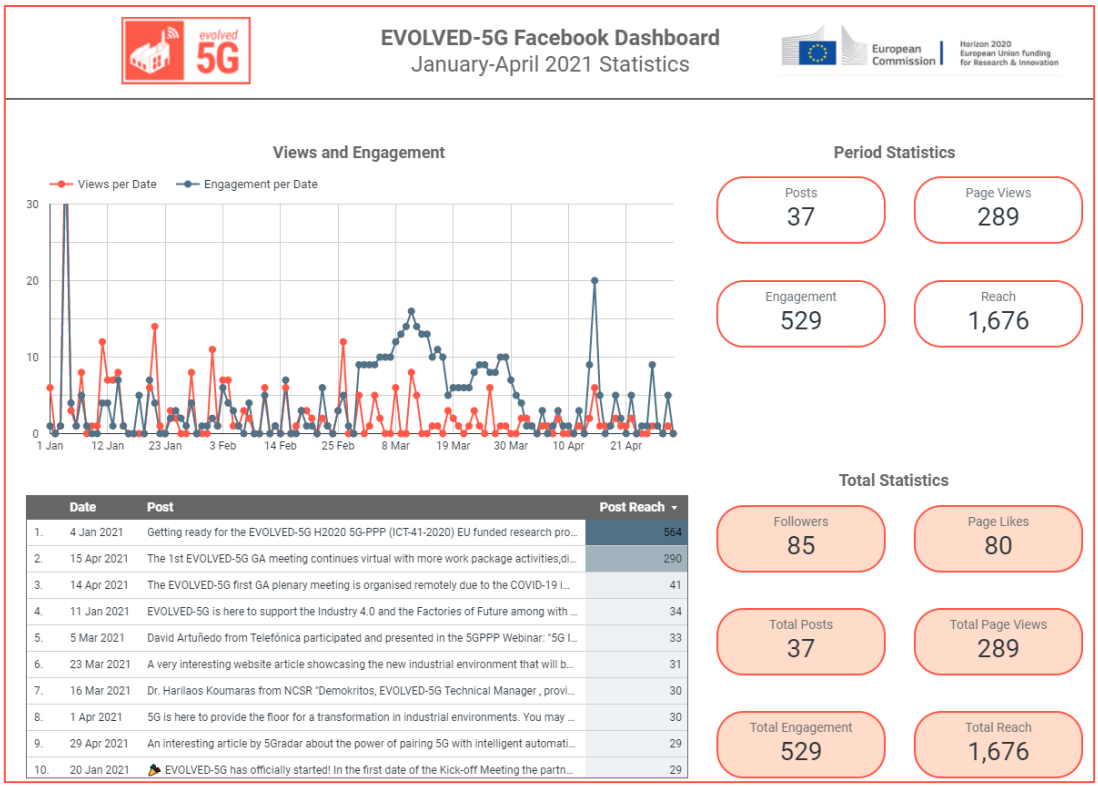


Figure 59. EVOLVED-5G Facebook Dashboard.

2.5.7 Instagram Statistical Dashboard

Instagram Dashboard shares the same concept as the previous ones. The statistics will be provided in a post level, and will show the progress on post impression, reach, and likes. The total number of posts, likes, followers, follows, etc. will be included in the Period and Total Statistics.

During the reporting period (January 2021 – April 2021), the EVOLVED-5G Instagram channel has published 36 posts gaining 331 likes, collected 70 followers, and achieved 167 profile visits. The following Table 11 summarizes the account's performance.

Posts	36
Followers	70
Profile Visits	167
Likes	331

Table 11. EVOLVED-5G Instagram Statistics (M1-M4)

The Instagram Dashboard is generated using Google Data Studio and an overview can be found in Figure 60. This dashboard includes a line chart of impression and reach per post date followed by a table of post text and post likes with respect to each post. The Period and Total Statistics

tabulate the KPIs mentioned in Table 11 and also add information regarding the reach (1,112), impressions (1,562).

The link to the respective dashboard is:

https://datastudio.google.com/reporting/76294129-ca44-4397-97d4-66599bdd5dad

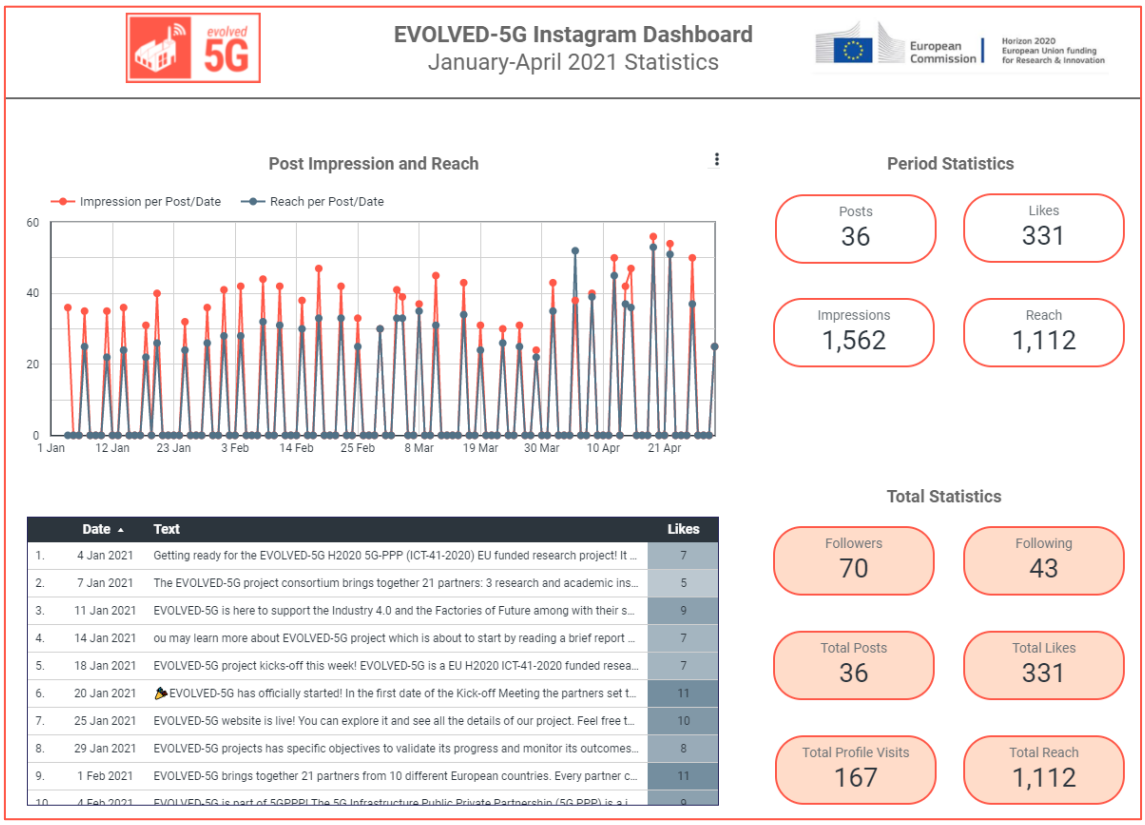


Figure 60. EVOLVED-5G Instagram Dashboard.

2.5.8 Communication and Dissemination Activity Recap (M1-M4)

As illustrated in the previous paragraphs, within the first 4-months of the project, many activities have been conducted for the scope of EVOLVED-5G project. Table 12 summarizes the communication and disseminations activities conducted through EVOLVED-5G communication channels, during the first four months of the project (January - April 2021).

Mean	*Channel - Section*	*URL*	*Activities*
Website	News	https://evolved-5g.eu/news/	>18 news
	Articles	https://evolved-5g.eu/dissemination/articles/	2 articles
	Workshops/Presentations	https://evolved-5g.eu/dissemination/workshops-presentations-and-trials/	3 presentations
	Press Releases	https://evolved-5g.eu/dissemination/press-releases/	10 press releases
	Events attended	https://evolved-5g.eu/dissemination/events/	3 events
Social Media	Facebook	https://www.facebook.com/evolved5g	37 posts 80-page likes
	LinkedIn	https://www.linkedin.com/in/evolved-5g-project/	37 posts 246 followers
	Twitter	https://twitter.com/evolved5g	41 tweets 136 followers
	Instagram	https://www.instagram.com/evolved5g/	36 posts 70 followers
	YouTube	https://www.youtube.com/channel/UClGygB1TMxeZlWMOl3vajlA	32 subscribers 1 video
Leaflets		https://evolved-5g.eu/dissemination/	1 release (A4 size)
Posters		https://evolved-5g.eu/dissemination/	1 release (A1 & A2 size)
Newsletters		https://evolved-5g.eu/dissemination/newsletter/	1 issue released (and 1 under editing)

Table 12 EVOLVED-5G Initial communication & dissemination actions

3 5G-PPP ENGAGEMENT PLAN

This section presents in detail the activities performed by the EVOLVED-5G partners in the context of the 5G-PPP related activities. Those activities include: interaction with the 5G IA (by means of the project coordinator and technical manager in the 5G-PPP Steering and Technical Boards), participation in the different 5G-PPP Working Groups (WGs) and collaboration with other 5G-PPP projects.

3.1 ALIGNMENT WITH 5G-PPP

The overall strategic objective of the 5G-PPP is to support harmonization activities on the 5G requirements, systems and the overall architecture in order to build consensus ahead of future standardization as well as to fulfil the vision of 5G. This includes the following operational objectives:

- Establishment of liaisons with other national and European R&D programs for the inclusion of the topics related to the 5G and foster the creation of synergies.
- Screening of international activities on 5G and at second step to ensure proper positioning of the European 5G-PPP initiative by identifying and tracking collaboration opportunities.
- Establishment as well as maintenance of necessary contacts and cooperation with similar initiatives in other regions and countries (global level).
- The achievement of a maximum impact of the 5G-PPP and its projects through liaison with other relevant R&D programs.
- To support joint events between 5G Infrastructure Association / 5G-PPP projects and activities in other regions and countries with the aim to exchange information and build consensus activities.

The objectives of EVOLVED-5G communication and dissemination activities are fully aligned with the objectives of the 5G-PPP and include the establishment of links within the 5G-PPP programme, with the aim to exploit synergies for enhancing collaboration with 5G-PPP projects that fall under the same scope and objectives, as well as contributing to the 5G architectural framework. For this purpose, EVOLVED-5G will participate to the 5G-PPP steering board and different working groups, presenting the advances of the project and organizing joint dissemination events.

3.2 ALIGNMENT WITH 5G-PPP EU-FUNDED PROJECTS

This section provides an overview of other 5G projects which the EVOLVED-5G Consortium has identified as relevant in terms of common objectives and scope. Therefore, the partners will explore the possibility, that will be evaluated on a step-by-step basis, to establish connections, share information on project progresses and also plan joint activities in the form of joint scientific papers, the organization of joint workshops and technical panels organized in international conferences relevant to the projects (e.g. EuCNC).

The list of the 5G-PPP projects that fall under the same ICT call “5G innovations for verticals with third party services” is presented below:

- **5G-INDUCE**: 5G-INDUCE targets the development of an open, ETSI NFV compatible, 5G orchestration platform for the deployment of advanced 5G NetApps, focusing on the Industry 4.0 vertical sector.
- **5GASP**: 5GASP aims at shortening the idea-to-market process through the creation of a European testbed for SMEs that is fully automated and self-service, in order to foster rapid development and testing of new and innovative NetApps built using the 5G NFV based reference architecture. The Project focuses on the Automotive industry and Public Protection & Disaster Relieaf (PPDR).
- **5G-IANA**: 5G-IAN aims at providing an open 5G experimentation platform, assisting third party experimenters (i.e., SMEs) to develop, deploy and test their Automotive industry related services. An Automotive Open Experimental Platform (AOEP) will be specified, as the whole set of hardware and software resources that provides computing and communication/transport infrastructure as well as the management and orchestration components, coupled with an enhanced NetApp Toolkit tailored to the Automotive sector.
- **Smart5Grid:** Smart5Grid aims to revolutionize the Energy Vertical industry through the successful establishment of four fundamental functions of modern smart grids. To that end Smart5Grid introduces an open 5G experimental facility, supporting integration, testing and validation of existing and new 5G services and NetApps from third parties.
- **5G-EPICENTRE**: 5G-EPICENTRE will deliver an open end-to-end experimentation 5G platform focusing on software solutions that serve the needs of Public Protection and Disaster Relief (PPDR).
- **5G-ERA:** 5G-ERA is oriented towards a user-centric paradigm of integrating vertical knowledge into the existing standardised 5G testing framework to improve Quality of Experience (QoE). The project focuses on multiple vertical sectors (i.e, PPDR, Automotive, Indusrty, Health).
- **5GMediaHUB**: 5GMediaHUB aims to help EU to achieve the goal of becoming a world leader in 5G, by accelerating the testing and validation of innovative 5G-empowered media applications and NetApps from 3rd party experimenters and NetApps developers, through an open, integrated and fully featured Experimentation Facility. The project is vertical agnostic.
- **VITAL-5G**: The VITAL-5G project has the vision to advance the offered Transport & Logistics (T&L) services by engaging significant logistics stakeholders (Sea and River port authorities, road logistics operators, warehouse/hub logistic operators, etc.) as well as innovative SMEs and offering them an open and secure virtualized 5G environment to test, validate and verify their T&L related cutting-edge Network Applications (NetApps). The project focuses on Transport and Logistics vertical.

On the other hand, EVOLVED-5G also emphasizes on the collaboration with other 5G-PPP projects that fall under different scope and applications/use cases. The following table summarizes the projects that have been initially identified by the consortium of EVOLVED 5G for pursuing potential collaboration.

As can been seen from Table 13, there are 4 projects that refer to “5G innovations for verticals with third party services” and are of prime importance for establishing collaborative interactions.

Project	5G-PPP Phase
5G-INDUCE	5G innovations for verticals with third party services
5GASP	5G innovations for verticals with third party services
5G-IANA	5G innovations for verticals with third party services
Smart5Grid	5G innovations for verticals with third party services
5G-CARMEN	Automotive Projects
5GMED	5G for Connected and Automated Mobility (CAM)
5G-LOGINNOV	5G Core Technologies innovation
Int5Gent	5G Core Technologies innovation
AI@EDGE	Smart Connectivity beyond 5G
5GENESIS	Infrastructure Projects
5G!Drones	Advanced 5G validation trials across multiple vertical industries

Table 13 Alignment with other 5G-PPP Projects

3.3 EVOLVED-5G PARTICIPATION IN 5G-PPP BOARDS, WGs AND MEETINGS/ACTIVITIES

EVOLVED-5G consortium participates in joint dissemination activities with the aim to actively contribute to 5G WGs. It is worth mentioning that apart from the Spectrum WG which in general remains outside of the scope of EVOLVED-5G, all other WGs are closely followed by the consortium of the project. Hereinafter, description of the activities undertaken by each group that will be followed by EVOLVED-5G is provided. Even though the goals of the groups and pace of the activities are quite different, a general scope of each WG is the writing of technical whitepapers as well as to federate efforts from the different projects. The description reported hereinafter is expected to be updated and refined in the upcoming months according to the progress of the activities related to each WG.

5G-PPP Steering Board: It consists of mandated representatives of each 5G-PPP project who are persons with the responsibility to decide on common actions and initiatives of the programme.

5G-PPP Technical Board: The technical board addresses the inter-working of the technical solutions developed within the projects and also ensures coherence and consistency across the programme.

Pre- Standardization WG: This WG focuses on developing a roadmap of relevant standardization and regulatory topics for 5G by identifying the standardization and regulatory bodies to align with e.g. ETSI, 3GPP, IEEE and other relevant standards bodies such as ITU-R and WRC, as well as evaluating roadmaps in international level. The activities of this WG will be also monitored in detail by the WP7/T7.3 *Innovation Shaping and Standardization Alignment* and its deliverables.

5G Architecture WG: The goal of this WG is to serve as a common platform that will facilitate the discussion between 5GPPP projects developing architectural concepts and components as well as promote any discussions on the basis of the KPI's as described by 5GPPP.
Software Networks WG: The objective of this WG is to analyze the applicability of research topics towards Software Defined Networks (SDN) and Network Function Virtualization (NFV) and foster the development of related activities by the 5G PPP projects.

Vision and Societal Challenges WG: This specific WG aims to develop a consensus in Europe on 5G systems, infrastructures, and services as well as to identify the societal, economic, environmental, business and technological benefits that can be obtained from the realization of 5G implementation.

Security WG: The purpose of the group is to foster the development of the 5G Security Community through the discussion and progress of 5G Security topics and vision as well as to establish liaisons with other interested/interesting Security communities.

SME WG: The goal of this WG is to, support SMEs to improve their visibility towards their participation in the 5G-PPP and EU R&D projects in general. Moreover, the WG promotes SMEs' contribution in research topics or other documents related to the 5G PPP.

Trials WG: The WG was launched in order to develop the European Trial Roadmap based on the 5G Manifesto. More specifically it fosters activities:

- To facilitate the involvement of verticals in the trials roadmap.
- To discuss and define business principles underpinning the economic viability of trials.
- To consider and coordinate the activity on trials with other relevant initiatives at international level.

5G Automotive WG: The 5G Automotive WG focuses on connected and automated mobility and serves as a common platform between 5G-PPP projects developing V2X and Vehicle-as-Infrastructure concepts and components.

Test, Measurement and KPIs Validation: Since the 5G network is bringing new services and technologies that can evaluate the 5G related KPIs. The purpose of the Group is to bring together the projects that have common interest in topics towards the development of Test &Measurements and validation methods, test cases, and procedures that can support the verification of the KPIs.

5G Comms WG: This is a WG dedicated to impact activities between 5G PPP project and follows guidelines that promote synergies and impact creation opportunities via events, new calls, scientific papers etc.

Table 14 presents the 5G-PPP WGs which EVOLVED-5G partners attend and contribute.

Working Group	Main representative	Company	Second representative	Company
5G-PPP Steering board	Javier Garcia Rodrigo	Telefónica	Dr. Harilaos Koumaras	NCSR Demokritos
5G-PPP Technical Board	Dr. Harilaos Koumaras	NCSR Demokritos	Dr. Dimitris Tsolkas	FOGUS
Pre-Standardization	Dr. Apostolis Salkintzis	Lenovo	David Artuñedo	Telefónica
5G Architecture	Dr. Apostolis Salkintzis	Lenovo	Dr. Dimitris Tsolkas	FOGUS
Software Networks	Dr. Apostolis Salkintzis	Lenovo	Regel G. Usach	UPV
Vision and Societal Challenges	Javier Garcia Rodrigo	Telefónica	-	-
Security	Tanel Jarvet	Cafatech	-	-
SME	Vaios Koumaras	INFOLYSIS	Janez Sterle	INTERNET INSTITUTE
Trials	Pedro Merino	UMA	David Artuñedo	Telefónica
Test, Measurement and KPI Validation (TMV)	Janez Sterle	INTERNET INSTITUTE	Dr. Dimitris Tsolkas	FOGUS
5G Automotive	Tanel Järvet	Cafatech	-	-
5G Comms	George Makropoulos	NCSR Demokritos	Vasileios Mavrikakis	INFOLYSiS

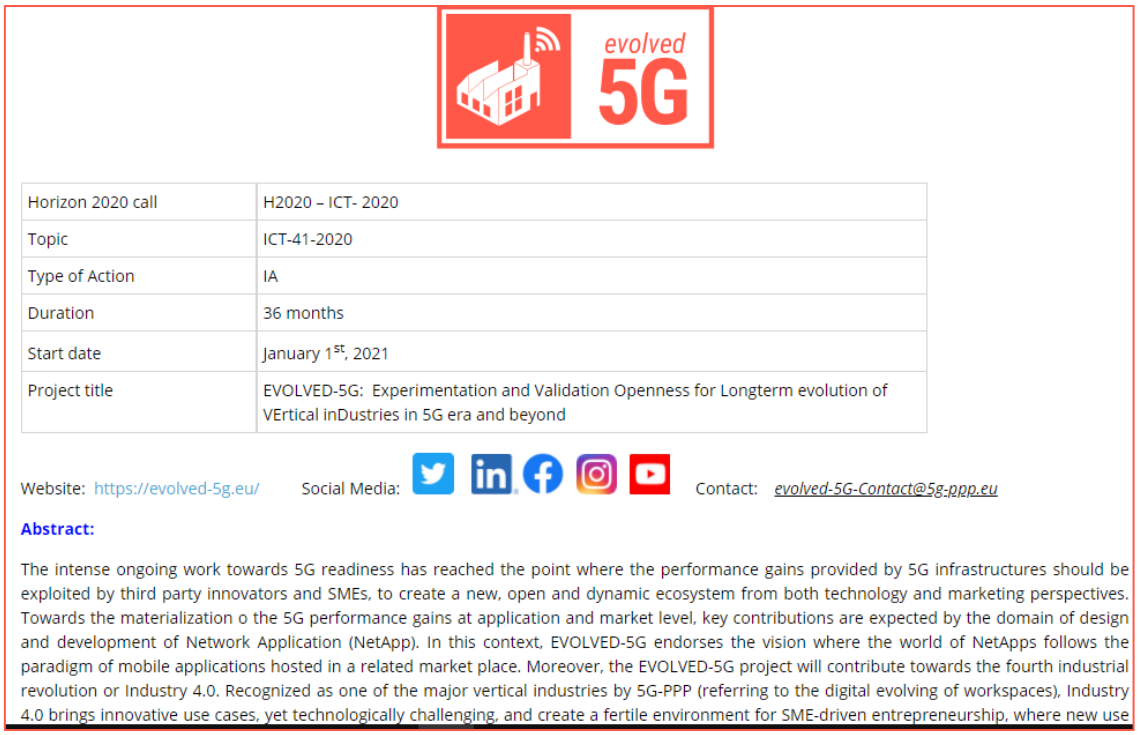
Table 14 EVOLVED-5G 5GPPP WGs and representatives

3.4 EVOLVED-5G PRESENCE AT 5G-PPP CHANNELS

In the following sections, indicative 5G PPP initiatives in which EVOLVED-5G has been involved at this early stage of the project are described.

3.4.1 EVOLVED-5G in 5G-PPP website

EVOLVED-5G is included in the project's page of the 5G PPP website https://5g-ppp.eu/evolved-5g/. Also a dedicated 5G-PPP email has been assigned to the project: evolved-5G-Contact@5g-ppp.eu



Horizon 2020 call	H2020 – ICT- 2020
Topic	ICT-41-2020
Type of Action	IA
Duration	36 months
Start date	January 1st, 2021
Project title	EVOLVED-5G: Experimentation and Validation Openness for Longterm evolution of VErtical inDustries in 5G era and beyond

Website: https://evolved-5g.eu/ Social Media: Contact: evolved-5G-Contact@5g-ppp.eu

Abstract:

The intense ongoing work towards 5G readiness has reached the point where the performance gains provided by 5G infrastructures should be exploited by third party innovators and SMEs, to create a new, open and dynamic ecosystem from both technology and marketing perspectives. Towards the materialization o the 5G performance gains at application and market level, key contributions are expected by the domain of design and development of Network Application (NetApp). In this context, EVOLVED-5G endorses the vision where the world of NetApps follows the paradigm of mobile applications hosted in a related market place. Moreover, the EVOLVED-5G project will contribute towards the fourth industrial revolution or Industry 4.0. Recognized as one of the major vertical industries by 5G-PPP (referring to the digital evolving of workspaces), Industry 4.0 brings innovative use cases, yet technologically challenging, and create a fertile environment for SME-driven entrepreneurship, where new use

Figure 61: EVOLVED-5G project in the 5G PPP website

3.4.2 5G-PPP social media channels

EVOLVED-5G already follows and tags the 5G-PPP social media channels:

- In Twitter the mention @5GPPP will be added to all EVOLVED-5G tweets, which will allow the 5G-PPP to easily spot and retweet EVOLVED-5G posts.
- In LinkedIn group EVOLVED-5G is able to post directly at 5G-PPP page and reach 5G-PPP's over 1,000 LinkedIn members/connections.

3.4.3 Contribution to the European 5G Annual journal

The project has already provided its contribution to the sixth edition of the European 5G Annual journal to be published by the Full-5G project (https://5g-ppp.eu/full-5g/) in Q2-Q3 2021. This issue of the Journal will be produced in collaboration with other H2020 projects. Contribution on 5G innovations and major achievements expected from the projects will be presented for the broad public, but also for wide spectrum of researchers and managers. This represents a significant opportunity to start disseminating the activities of the project. The previous editions are available on the 5G PPP Web site (https://5g-ppp.eu/annual-journal/).

3.4.4 Contribution to the 5G-PPP Webinar "5G Innovations for Verticals"

EVOLVED-5G participated in the 5G PPP Webinar "5G Innovations for Verticals"[4] that took place on March 5, 2021 and was among the 9 projects that were presented as funded projects under the 5G-PPP ICT-41-2020. EVOLVED-5G was represented by David Artuñedo Guillen (TID), who made a presentation showing useful insights of the project.

[4] https://5g-ppp.eu/event/5g-ppp-webinar-5g-innovations-for-verticals/

3.4.5 Contribution to the 5G-PPP phase 3 project Brochure

EVOLVED-5G has also contributed to the 5G-PPP Phase 3 Project Brochure, which will complement the brochures from phases 1 & 2 with basic information about the new projects.

EVOLVED-5G

Project Acronym	EVOLVED-5G
Project Full Title	Experimentation and Validation Openness for Longterm evolution of VErtical inDustries in 5G era and beyond
Coordinator: name, company	Javier Garcia Rodrigo, Telefónica Investigación y Desarrollo S.A.U.
Start Date – End Date	Jan 2021 - Dec 2023
Website	https://evolved-5g.eu/
e- mail	evolved-5G-Contact@5g-ppp.eu
Twitter account	@evolved5g

Figure 62: EVOLVED-5G in 5G-PPP Phase 3 Project Brochure – page 1

Applications & Expected impact *(max 1000 characters spaces included)*

EVOLVED-5G will disrupt the market of MNOs and Industry 4.0 vendors by:
1) Creating the necessary tools and software development workspace needed by third party developers, startups and SMEs in order to start coding NetApps that exploit the 5G Network Programmability features/advances.
2) Launching the NetApp Open Repository and Marketplace for the Industry 4.0 vertical industry, introducing new business models and value chains for MNOs.
3) Reassuring sustainability, since we will build a community of Developers, Entrepreneurs, Spin-Offs, Startups and SMEs across Europe, who will be trained with hands-on seminars on Network Programmability.

The expected impact of EVOLVED is fivefold:

Impact on Smart Manufacturing Vertical Industry (Factories of the Future -- FoF --):

* EVOLVED-5G is poised to help transform the way the manufacturing industry operates by leveraging the unprecedented speed/throughput, low latency, and bandwidth capacity of the 5G technology in conjunction with the process automation introduced by Industry 4.0 services. All manufacturing phases and processes will find support in EVOLVED-5G through the development of NetApp-enabled novel uses-cases around 4 main pillars which, in turn, will target specific target applications in the vertical industry of smart manufacturing as follows:

* Pillar#1 -- Innovation in the interaction of employees and machines though AR features and remote-control capabilities -- : (1) Mixed Reality (MR) assisted manufacturing, (2) Intent-driven Chatbots for precise maintenance, (3) Haptic-driven console for industrial surface repairing (hot bonding).
* PIllar#2 -- Efficiency in FoF operations with novel predictive maintenance applied on digital factory twin -- : (4) IoT/M2M-based remote monitoring platform, (5) AI based video analyzer for industrial and robotics safety, (6) ML-driven anomaly detection system for Industrial Processes.
* Pillar#3 -- Security guarantees and risk analysis for the FoF communication and management systems --: (7) L7-aware Whitebox Switch with Dynamic SFC and TSN Support, (8) SIEM (Security information and event management) system, (9) Blockchain Data Brokerage Engine.
* Pillar#4 -- Agility in the production line infrastructure through automation and robotic parts --: (10) AI-driven Humanoid robot, (11) AI-driven logistics robotic fleets.

Impact on App Market: Network-driven Apps (NetApps)

* EVOLVED-5G promises even more of an upset in programmability, blending the untapped potential of multiple simultaneous network functions with endless combinations and creativity, and promising a new generation of apps, the NetApps, that deliver a new user experience upgraded with the novel features that the tight integration with 5G offers.

Impact on MNOs' Value Chain: A business model for service providers

* There are unforeseen opportunities for service providers in leveraging the variety of addressable business models and the innovation enabled by 5G, through collaboration in innovative services over the low-latency and highbandwidth edge cloud environment: Augmented/virtual reality for Industry 4.0, Secured high-quality video streaming, Optimized big/small data transfer for maintenance tasks or digital twin are some distinctive examples.

Impact on Market and Economy: 5G conquer of ICT market

* By 2025, it is estimated the market value of 5G consumer services will increase moderately to US$ 238 billion, but over the same period the value of 5G industry digital transformation will

Vertical use cases addressed	Please tick the relevant ones
Industry 4.0	x
Agriculture & Agri-Food	

Figure 63: EVOLVED-5G in 5G-PPP Phase 3 Project Brochure – page 2

The 5G-PPP Phase 3 Project Brochure was just released in middle of June and is made available through the 5G-PPP website (EVOLVED-5G project is presented on page 51):

https://5g-ppp.eu/wp-content/uploads/2021/06/5GPPP_Phase3_Brochure_WEB-2.pdf

4 CONCLUSION

This deliverable presented in detail the EVOLVED-5G Communication, Dissemination and 5G-PPP engagement initial plan and overall approach for impact creation. EVOLVED-5G Target Groups, Communication and Dissemination Activities' Timeline and KPIs, 5G-PPP involvement and initial indicative performed EVOLVED-5G impact activities were also presented and analyzed in D7.1.

The ultimate goal of the provided plans is to assist EVOLVED-5G to achieve the highest impact of results by addressing 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 progress of the project and the various opportunities that may arise.

Any potential updates on the mentioned plans and actions will be reported in the upcoming WP7 deliverables. In these deliverables will be also reported the performed communication, dissemination and 5G-PPP related activities for each reporting period of the project respectively.

5 ANNEXES

5.1 STATISTICAL DASHBOARDS - 1ST QUARTER (JANUARY – MARCH 2021)

As per the communication plan and strategy, the performance of the website and the communication channels will be controlled, monitored and evaluated through the use of Statistical Dashboards which will be issued on a quarterly basis. The URLs of the 1st quarter dashboards per channel are:

- **Website:** https://datastudio.google.com/reporting/de249794-e730-4e23-a98d-58867152e10f
- **LinkedIn:** https://datastudio.google.com/reporting/b1944dec-61d5-46de-9bfc-66ddd9733c9f
- **Twitter:** https://datastudio.google.com/reporting/6c3912ad-5d0b-4f62-a4ac-3450428c06d1
- **Facebook:** https://datastudio.google.com/reporting/1d91192a-ca8d-41dc-8d60-8dfcbb837a0c
- **Instagram:** https://datastudio.google.com/reporting/891e0015-22f7-4308-a85f-3971b611ad7f

5.2 STATISTICAL DASHBOARDS - 4 MONTHS (JANUARY – APRIL 2021)

Custom statistical dashboards of a 4-month period were released middle of May exclusively for the scope of this deliverable.

- **Website:** https://datastudio.google.com/reporting/712c4229-ac65-4cb6-9126-78867dbc6ef2
- **LinkedIn:** https://datastudio.google.com/reporting/2146d519-0edc-47b7-982d-480f14305cdd
- **Twitter:** https://datastudio.google.com/reporting/692e8ffa-c7bc-49ed-bb82-f0fe77338fdb
- **Facebook:** https://datastudio.google.com/reporting/999615a5-3e10-4bb5-b03f-b98d68944e40
- **Instagram:** https://datastudio.google.com/reporting/76294129-ca44-4397-97d4-66599bdd5dad

5.3 NEWSLETTER ISSUES

EVOLVED-5G Newsletter is issued quarterly. At the time this deliverable was submitted, newsletter issue #1 has been released (middle of April) while issue #2 was under editing.

- **EVOLVED-5G Newsletter Issue #1:** https://evolved-5g.eu/wp-content/uploads/2021/04/EVOLVED-5G-Newsletter-Issue-1.pdf
- **EVOLVED-5G Newsletter Issue #2:** Under editing – To be released by middle of July 2021