



Research & Innovation Actions

5G PPP Research and Validation of critical technologies and systems: Enabling Smart Energy as a Service via 5G Mobile Network advances.

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Enabling Smart Energy as a Service via 5G Mobile Network advances

Deliverable 6.1
Project Web site

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Abstract:

This document describes the NRG-5 web site and social media.

The idea of Deliverable D6.1 is to be a dynamic deliverable, which will be periodically or on demand updated to reflect the necessary information that need to be public (given that no project sensitive information is released).

Moreover, this deliverable describes the project factsheet, which is a quick summary of the project objectives. The factsheet will be available on the website, but we will also prepare a printed version.

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Participant number	Participant organisation name	Short name	Country
01	Engineering-Ingegneria Informatica SPA	ENG	Italy
02	THALES Communications & Security	TCS	France
03	SingularLogic S.A.	SiLO	Greece
04	Ineo Energy & Systems	ENGIE	France
05	Romgaz S.A	RGAZ	Romania
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09	Hispasat S.A.	HIS	Spain
10	Power Operations Limited	POPs	UK
11	Visiona Ingenieria De Proyectos SI	VIS	Spain
12	Optimum S.A	OPT	Greece
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16	TEI of Sterea Ellada/Electrical Engineering Dept.	TEISTE	Greece
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Executive Summary

The objective of this deliverable is to present the first version of the project website as well as a first draft of the project factsheet which will be two important dissemination channels throughout the project duration.

The website presented in this deliverable is the first version. The content available on the website will be continuously extended during the next months in order to give visitors a broad overview of the project's objectives and the progress.

The overall objective of the project factsheet is to provide a quick summary of the project objectives. The factsheet will be available on the website, but we will also prepare a printed version.

1 Introduction

The project website is an important factor of project success. It provides visitors a first glance of the project work and is the primary entry point for visitors interested in the project. For the project itself, the website is a main dissemination channel as a broad audience can be reached with relatively minor effort.

Therefore, the website has to be clear and should provide all necessary information in order to give visitors a quick, but also a complete overview of the project progress. In this sense, it is very important to keep the website up-to-date with news related to scientific & technical results, project meetings, new deliverables and other events that are of interest for the intended audience.

As an important factor, we aim to make use of several social media channels in order to attract an even broader audience with news about the NRG-5 project. Especially in terms of user-to-user-driven interaction, social media channels are an important dissemination channel. Therefore, in this deliverable we also describe our planned and ongoing activities on social media channels.

Finally, the project factsheet serves, similar to the website, as a main entry point of information for all project stakeholders. The main objective of the factsheet is to outline the project's rationale and objective, specify its technical baseline and to detail intermediate and final outputs in a single brochure. The factsheet should be online accessible, but besides the website, the factsheet will be also available in a printed form so that it can be given to interested people at related dissemination events.

In this deliverable, we present the first version of the project website, introduce the social media channels, which are planned to be used throughout the project duration and give a brief description of the project factsheet.

2 Project Website

In this section, we present the project website developed within the first month of the project. In section 2.1, we summarize the main objectives for maintaining a project website. Based on these requirements, we built a first version of the NRG-5 project website which is shown in section 2.2. Finally, section 2.3 focuses on future activities planned concerning the project website.

2.1 Objectives

As already stated, the project website is an important dissemination channel, as it is usually the first contact point for people interested in the project. Therefore, it has to be very clear, but yet complete and should not only provide basic information but also up-to-date information about current challenges, recent presentations and other project related information.

In order to ensure the website is updated throughout the whole project duration, we think one main keystone of success is an easy-to-use technical platform which encourages all project partners to keep information on their work packages up-to-date.

Consequently, we decided to use a well-known content management system which allows for quick generation of project-related news without having technical knowledge and a build-in user management so that all project partners are able to submit news related to their project tasks. Other technical requirements include the ability to extend the system with 3rd party-plugins. This is especially important in terms of user interaction, e.g., we aim to provide a regular newsletter to interested people. Subscription to the newsletter should be seamlessly integrated in the technical platform. As a third requirement, we looked into the integration of content management systems with social media channels. As we aim to distribute project news via several social media channels, it is important to have a two-way connection of the website and related social media sources: On the one hand, external documents should be integrated in the news section of the web page as well, whereas on the other hand we aim to spread information about website updates to all connected social media channels.

Based on these requirements, we decided to use Wordpress¹ as a technical platform of the project website. Wordpress fulfills all requirements mentioned above:

- An intuitive user interface for website administrators and other users who want to create new blog posts.
- Advanced user management with fine-grained access rights.
- Many available plugins in order to extend the platform with 3rd party-plugins.
- Connection to the most popular social networks.
- Advanced analytics of website visitors.

2.2 First Version

A screenshot of the first version of the NRG-5 website is illustrated in Figure 1. The homepage provides a quick summary of the project and accommodates key information (project objectives, labs, trials, use cases), as well as, useful utilities for the users (eg., news, subscribe area). The website's homepage is gently separated in 3 sections.

In the first section, we briefly describe the main pillars of the project content, which should attract users to get more information. More specifically, we give a short description of the project objectives, that emphasize the strategic objective of the NRG-5 project which is to contribute to the 5G PPP/5G Initiative research and development activities with concepts, requirements, innovative open-source prototypes, state of the art laboratory experiments, heterogeneous real-life trials and recommendations towards the realization of a Smart Energy as a Service use case that will stress 5G current results and co-develop a new 5G communication infrastructure focusing mainly in the areas of security, privacy, trust and high availability.

The second part of the page depicts the use cases, the labs and the trials that will validate and demonstrate how and to what extent the NRG-5 framework will enable the deployment, operation and management of existing and new communications and energy infrastructures(in the context of the Smart Energy-as-a-Service). A short description of each pilot is being presented to the user and a link to a dedicated page for each pilot is set at the bottom of each sub-section.

The third Area of the NRG-5 website, which is the footer, consists of 4 columns that include only necessary information. In the first column we present the partners of the project, the second column is about navigation and also includes the sub-section of the social networks that are supported by the project. Next to this column is the part that shows the Latest news headings and the last column is the subscription one. The idea to place this type of information to the footer is to make this information available for the user to access them on every webpage of the website.

The navigation of the website is structured as follows:

- “About” links to the about section, where users can find more information about the NRG-5 project, its description, its uniqueness and the vision that NRG-5 follows.
- “Validation” links to a web page containing general information about the use cases the labs and the pilots that will validate the effectiveness of the project. Furthermore, it navigates to three sub-pages, one for use cases, that offer additional information about a particular use case, one for the labs and one for the pilots.
- “Consortium” links to a webpage presenting the partners and gives a few additional information about each partner and their respective logos.
- "Deliverables" serves as a central repository that holds all the deliverables that were submitted for the NRG-5 project.
- "News" links to the news section, where users can find recent information of project meetings, articles and other NRG-5 specific events.
- "Contact us" provides contact details of the project coordinator, so that visitors have a direct and personal contact if the demand for further information. It also provides a link to the project leaflet that the interested visitor may download.



NRG-5 project aims to contribute to the 5G PPP/5G initiative research and development activities with copyright requirements, innovative open source production, pilots of the 5G use cases, and validation of 5G use cases in real world scenarios. The main focus of the project is to develop and demonstrate 5G use cases in real world scenarios.

- CONTRIBUTE TO THE 5G-PPP INFRASTRUCTURE**
Highlighting the importance of 5G-PPP infrastructure and the need for a centralized, trusted, scalable and secure 5G core.
- SOFTWARE STACK FOR 5G PROTOTYPES AND TRACKABLE VNFs**
Developing 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.
- MICRO-CLOUD EXTENDED MOBILE EDGE COMPUTING**
5G-PPP core network, 5G-PPP core network, 5G-PPP core network, 5G-PPP core network, 5G-PPP core network.
- EXTENDED 5G ETSI-MANO FRAMEWORK**
Highlighting the importance of 5G-PPP infrastructure and the need for a centralized, trusted, scalable and secure 5G core.
- STATE OF THE ART 5G VALIDATION MECHANISM**
State of the art 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.
- SCALABILITY, RESILIENCE AND HIGH AVAILABILITY**
Recommendations to address 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.

NRG-5 Validation, Use cases and Trials

NRG-5 results will be validated at a series of 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.



Use cases:

 <p>Use Case #1: Realizing decentralized, trust-based in-tree 'Plug & Play' vision</p> <p>Use Case #1 addresses the need for a centralized, trusted, scalable and secure 5G core.</p> <p>READY</p>	 <p>Use Case #2: Aerial Predictive Maintenance for utility infrastructures</p> <p>Use Case #2 addresses AMR communications for the utility sector for video streaming from the drone and analysis to the AMR and the wireless control center, as well as 5G-PPP and 5G-PPP core network.</p> <p>READY</p>	 <p>Use Case #3: Resilience and High availability via Dispatchable Demand Response (DDR)</p> <p>Use Case #3 addresses AMR communications via the high number of 5G-PPP and 5G-PPP core network, as well as 5G-PPP and 5G-PPP core network.</p> <p>READY</p>
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Labs:

 <p>Lab #1: 5G-PPP SDN multi-Deliverable</p> <p>Lab #1 will test the 5G-PPP SDN multi-Deliverable repository, automatic build and laboratory testing targeting 5G-PPP and 5G-PPP core network.</p> <p>READY</p>	 <p>Lab #2: Rutgers/VeriLab ORBIT Lab</p> <p>Lab #2 is centered around the 'fog' and 'cloud' computing facilities for reproducible networking experiments with large number of 5G-PPP and 5G-PPP core network.</p> <p>READY</p>	 <p>Lab #3: UPAC FIT NITOS Lab</p> <p>Lab #3 UPAC FIT NITOS Lab is part of the 5G-PPP and 5G-PPP core network.</p> <p>READY</p>	 <p>Lab #4: RWTH 5G Smart Grid Lab</p> <p>Lab #4 will validate 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.</p> <p>READY</p>
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Pilots:

 <p>Pilot #1: Natural Gas network/LNG Terminal (Pilot)</p> <p>Pilot #1 will be provided by ENGIE and target natural gas network and LNG terminal. Pilot is aimed to provide 5G-PPP and 5G-PPP core network, and 5G-PPP and 5G-PPP core network.</p> <p>READY</p>	 <p>Pilot #2: Optimized Energy Network Management and Control (Pilot)</p> <p>Pilot #2 will be implemented by ABB, the Swiss manufacturer of high voltage gas insulated switchgear and E.ON Energy Research Center (ERC) in Texas and will validate all 5G-PPP and 5G-PPP core network.</p> <p>READY</p>
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<p>Partners</p> 	<p>Navigation</p> <ul style="list-style-type: none"> Home About NRG-5 Validation Consortium Deliverables News Contact Us 	<p>Latest News</p> <p>NRG-5 in the IEEE 5G Summit JULY 13, 2017</p>	<p>Subscribe</p> <input type="text"/>
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Figure 2 shows a screenshot of the about section. It is divided into four parts. Starting from the top, there is a brief introduction about the project, and afterwards, some information regarding NRG-5 uniqueness and a brief summary of the overall NRG-5 vision. The textual descriptions are accompanied with relevant pictures to promote visitors' understanding.

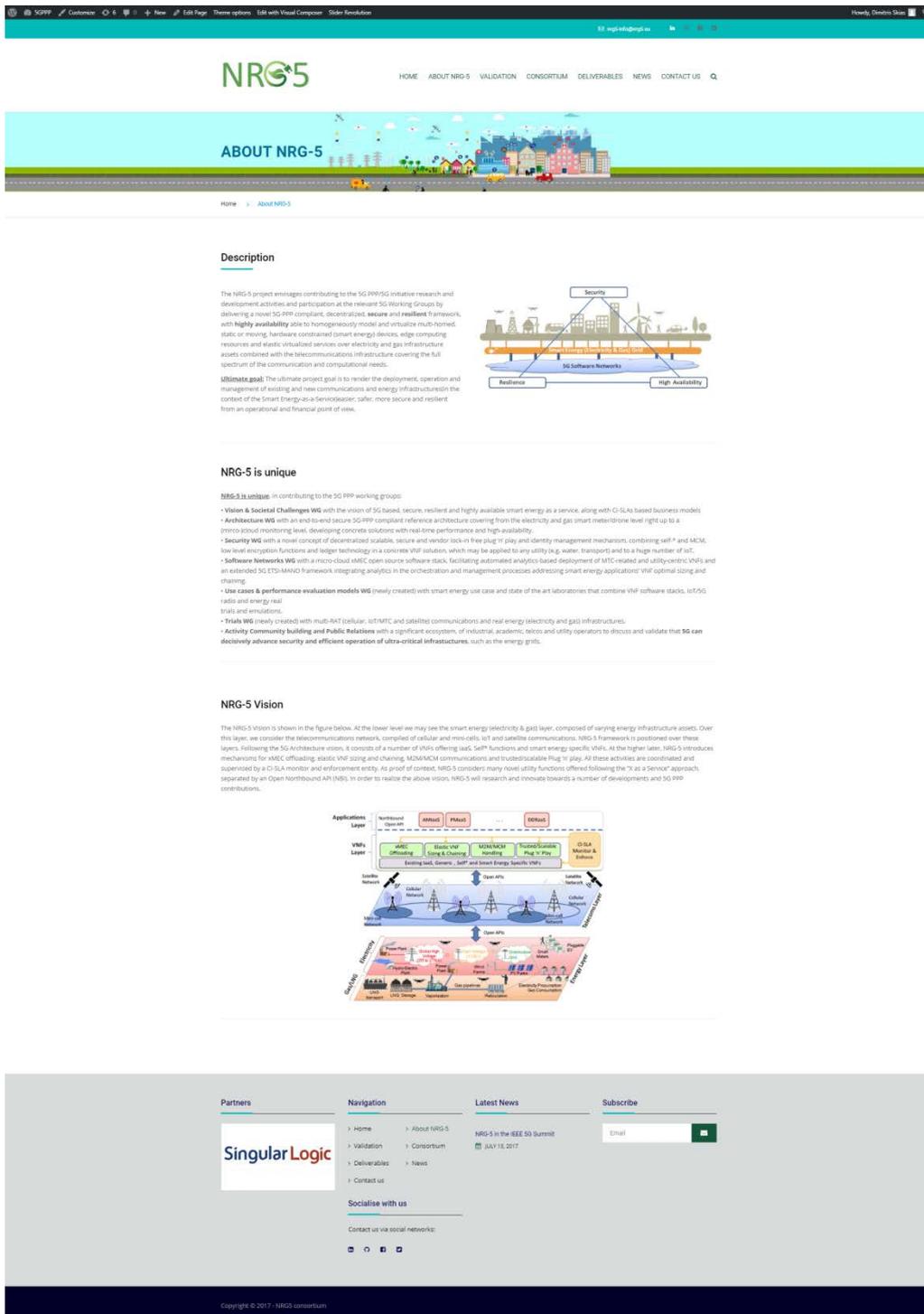
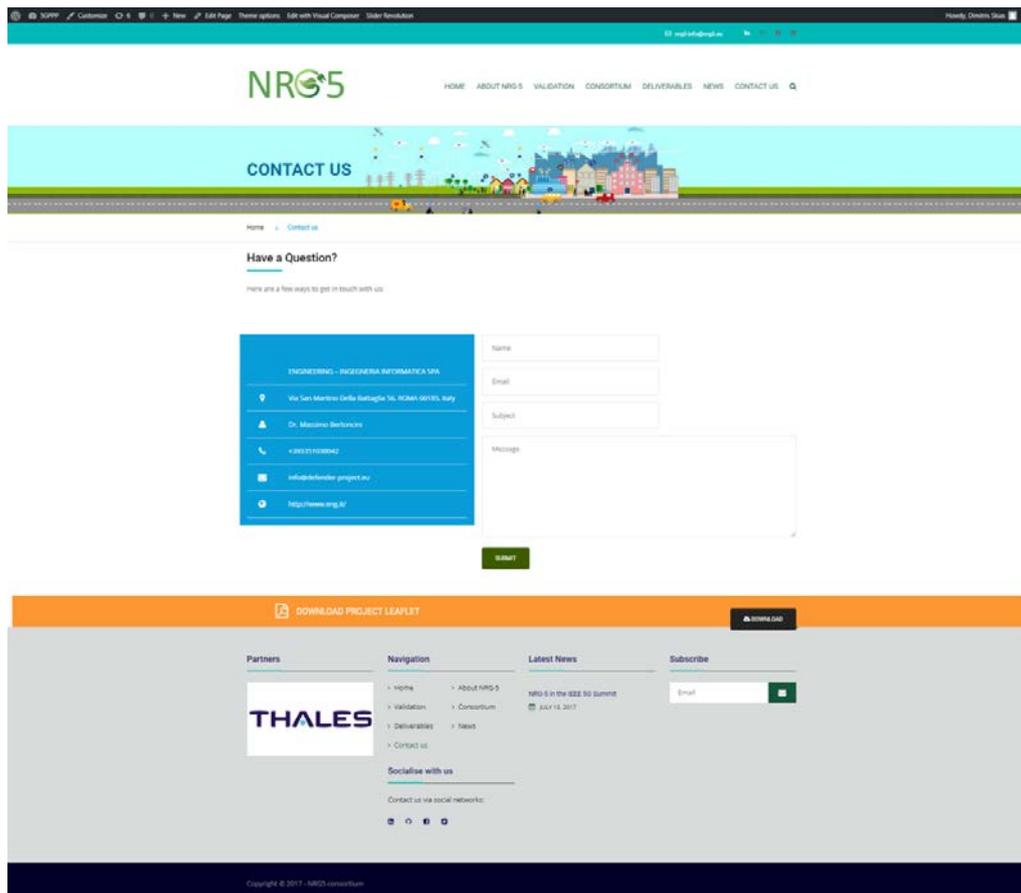


Figure 3 shows the Contact Us page which provides contact details of the project coordinator (left side), so that visitors have a direct and personal contact if the demand for further information. There is also the option for the user to send a direct message using the build in messaging section. (right side). Lastly, on the bottom part of the page on can see the link to the project leaflet that the interested visitor may download.



2.3 Outlook

The content available on the NRG-5 website will be extended within the next months of the project.

2.4 Social Network:

In this section, we briefly describe the social media channels we aim to use in the project in order to spread information to interested users via the social web in the most effective way.

Twitter - We see Twitter as a very important dissemination channel as short messages such as information about new blog posts or software releases can be made available in a very efficient way to a wide group of users. The usage of Hashtags allows for specifically addressing the intended target audience. An account for Twitter has already been set up. link: https://twitter.com/5GPPP_NRG5

Linkedin - Linkedin is an additional very effective dissemination channel. A Linkedin account under the link: <https://www.linkedin.com/groups/13537959>, has already been set up as well.

Facebook - Facebook is another very popular social media channel that will assist NRG5 spread information to interested users. Facebook complements Twitter and efficiently refers to a wide group of users as well. We have set up a Facebook account under the link: https://www.facebook.com/5gppp_nrg5-1620318588042607

Github - Github is a web-based version control repository and internet hosting service. It offers all of the distributed version control and source code management functionality that is necessary for serving the needs of the NRG5 project. A project page and a github repository has been also created under the link: <https://github.com/5GPPP-NRG5>

3 Project Leaflet/factsheet

In this section, we present the draft of the NRG-5 project factsheet. The main target audience of the factsheet are users who are not yet familiar with the project itself, but are interested in the solution NRG-5 aims to offer. Therefore, the factsheet should offer a quick overview of the whole project. The factsheet should attract both technical as well as business-oriented people. The factsheet will be one of the most important dissemination channels within the project, as it can be used as a hands-on leaflet at public dissemination events. In addition, the factsheet is also intended to be used by the European Commission (e.g., on their website) throughout the whole project lifecycle.

During the first project month, we developed a brief structure of the factsheet.

Content and layout of the final factsheet are similar to the newly developed website of the project. In general, the factsheet will cover the following topics:

- Brief description of the project and of the strategic challenge and ambition that are tackled by the NRG-5 consortium.
- Strategic Objectives of the project.
- Validation, brief description of the pilots and the labs that will validate the results of the project on real-world scenario.
- Expected Impact of the NRG-5 project.
- Contact information of the project coordinator and the NRG-5 website, email.

At the bottom of the NRG-5 project factsheet we have the list of the consortium partners with their respective logos.

Figure 4 shows the current draft which is available on the website. For this version, we concentrated on the main objectives of the project as well as some brief facts and the presentation of involved partners. This version is similar to the content currently presented on the web.



Enabling Smart Energy as a Service via 5G Mobile Network advances



STRATEGIC CHALLENGE AND AMBITION

NRG-5 will contribute significantly to the 5G PPP/5G Initiative research and development activities by advancing the state-of-the-art in virtualization-based communication networks technologies, making them suitable to support Smart Energy as a Service at large Scale.

STRATEGIC OBJECTIVES

NRG-5's ultimate goal is to enable the deployment, operation and management of existing and new 5G communications and energy infrastructures (in the context of the Smart Energy-as-a-Service), providing security, resilience and high availability mechanisms, via:

- **Contribution to the 5G-PPP infrastructure**, highlighting the limitations of current network infrastructures and the need for a decentralized, trusted, scalable and lock-in free plug 'n' play mechanism.
- A **software stack** for 5G prototypes and traceable VNFs to demonstrate mMTC, uMTC and xMBB communications, end-to-end security and MCM to enable secure, scalable and energy efficient communications.
- A **micro-cloud extended Mobile Edge Computing** open source software stack, facilitating deployment of MTC-related and utility-centric VNFs.
- An **extended 5G ETSI-MANO framework** integrating analytics to address utility-centric VNFs optimal sizing, chaining and lifecycle management.
- **State of the art 5G** laboratories and real-life trial demonstrators.
- **Recommendations**, on 5G scalability, resilience and high availability to address requirements along with business model to handle Critical Infrastructures service level agreements.

VALIDATION

NRG-5 results will be validated at 4 state of the art 5G laboratories and 2 real life trial demonstrators (both electricity and gas) offering multi-RAT connectivity over electricity distribution, transportation infrastructure. Smart energy proof-of-concept applications will validate the 5G results via smart energy use cases that:

- **Realize decentralized, trusted lock-in free "Plug & Play" vision**.
- **Enable aerial Predictive Maintenance**, for utility infrastructures.
- **Enable resilience and high availability**, via Dispatchable Demand Response.

EXPECTED IMPACT

NRG-5 will balance innovation and development activities, simultaneously exposing concrete communication and standardization plans in close collaboration with 5G PPP Initiative. NRG-5 will deliver:

- **5G proof-of-concept infrastructure demonstrators**, to be used by Telcos, Utilities and service providers.
- Driving **Business innovation** and creating jobs and a **culture of training** in 5G communication and energy networks.
- Accelerating the **growth of European SMEs and stakeholders** and creating a **roadmap** for 5G communication/energy network.

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