



Euro-5g – Supporting the European 5G Initiative

D1.1: Intermediate report on community building and support

Version: v1.0

Deliverable type	R (Document, report)
Dissemination level	PU (Public)
Due date	30/06/2016
Submission date	29/07/2016
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Work package, Task	WP 1, T1.1
Keywords	Community building, community support, stakeholders engagement, tools, working groups

Abstract

This deliverable reports on the community building and stakeholders' engagement activities performed during the first year of the Euro-5G project, and how individual 5G PPP Call 1 project activities and associated Working Groups have started to achieve synergy in this respect.

Document revision history

Version	Date	Description of change	List of contributor(s)
V0.1	17/05/2016	ToC agreed	Timo Lahnalampi, Giulia Pastor
V0.2	14/06/2016	First draft	Timo Lahnalampi, Giulia Pastor
V0.3	22/06/2016	First revision	Jacques Magen
V0.4	28/06/2016	Draft finalised	Timo Lahnalampi
V0.5	08/07/2016	Contribution from Eurescom added – draft finalised	Uwe Herzog, Timo Lahnalampi , Giulia Pastor
V0.5 reviewed	20/07/2016	Document reviewed	Jean-Sébastien Bedo
V1.0	29/09/2016	Final editing	Anja Köhler

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Executive Summary

The primary objective of the Euro-5g project is to facilitate effective and efficient co-operation and integration between all projects of the 5G PPP, the European Commission, The 5G Infrastructure Association, Networld2020 European Technology Platform (ETP), related projects from EUREKA, and related national initiatives to maximize the European momentum towards, and benefits from, the future 5G integrated, ubiquitous and ultra-high capacity networks.

During the first year of the project, one of the activities designed to address this scope has been to maintain and help the 5G community interact with external actors to the 5G PPP programme, to grow consensus and support for the emerging results while also maintaining the intra-programme community relations in order for the PPP to be coherent and well informed.

This deliverable is, as the title implies, a report on community building and support. It describes the community building and stakeholders' engagement activities performed during the first year of the project.

During this reporting period, the main outcomes in terms of community building and stakeholder's engagement were as follows:

- A target stakeholders diagram, based partly on a survey that engaged all 5G PPP Call 1 projects. The objective was to better understand what stakeholders each project will be targeting; consequently, a list of stakeholders to be engaged at 5G PPP level has been identified, and a related glossary drafted;
- Several "community building" tools have been investigated in order to strengthen the interaction within the 5G community. The "Conference" tool, an "online dialogue tool", was consequently used during the various 5G PPP Phase II Info Days;
- Participation in events has been used not only focused on promotion and communication but also on community building. Booths were structured as a "networking place" to interact within the 5G community and with other communities e.g. vertical sectors and other targeted stakeholders identified by Euro-5G with the 5G PPP Call 1 projects;
- The 5G community has been actively engaged through various PR means;
- Other Euro-5G WPs, namely WP3 (Communications and Public Relations) and WP5 (Support for 5G Working Groups) have been supported by providing input for the published printing material (WP3) and by enhancing community engagement activities towards the NetWorld2020 SME Working Group and interacting with other Working Groups (WP5); and
- The community around NetWorld2020 has been continuously engaged.

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Abbreviations

3G PP	3rd Generation Partnership Project
5G PPP	5G Public Private Partnership
AIOTI	Alliance for Internet of Things Innovation
BDVA	Big Data Value Association
ETSI	European Telecommunication Standards Institute
FSAN	Full Service Access Network
GA	General Assembly
IEEE	Institute of Electrical and Electronic Engineers
IETF	Internet Engineering Task Force
IRTF	Internet Research Task Force
ITU	International Telecommunication Union
MWC	Mobile World Congress
NGMN	Next Generation Mobile Networks
WP	Work Package
Y2	Year two

1 Introduction

D1.1 “Intermediate report on community building and support” is an intermediate report on community building and support activities performed by Euro-5G during the first year of the project.

This document provides detailed information on the activities carried out by the project in terms of community building, engagement strategy and support provided to the 5G PPP programme as a whole, as well as a detailed plan for the second year of the project.

It is composed of four main sections:

- Section 1 presents the introduction;
- Section 2 “Community support” summarises the work performed to coordinate the community building and stakeholders’ engagement activities, to support the 5G PPP community and to help the community grow and best interact with external communities in particular vertical sectors. First results have been achieved thanks to the use of some innovative tools, ad hoc events and dedicated PR activities, and the engagement of other relevant 5G contributors – within NetWorld2020 in particular. This section also provides information on 5G PPP related Working Group activities performed in WP1 to support the work done in WP5.
- Section 3 summarises the conclusions.
- Section 4 “Plan for Y2” presents the planned activities that will be performed during the second year of the project

2 Community Support

2.1 Community building and stakeholders' identification and engagement activities

During the first year of the Euro-5G project, WP1 has ensured the coordination of community building and stakeholders' engagement activities through the following actions:

- Build an initial list of stakeholders to be engaged at 5G PPP level;
- Organise a target stakeholders survey to engage all 5G PPP Call 1 projects, and to better understand what stakeholders each project are targeting;
- Update and refine the target stakeholders diagram with priorities based on the results of the survey;
- Create a glossary of the target stakeholders;
- Support event organization and community engagement with on-line collaborative event tools; and
- Support other WPs, namely WP3 (Communications and Public Relations) and WP5 (Support to 5G Working Groups).

The main objective of the target stakeholders' identification and definition has been to find priority stakeholders at 5G PPP level. Based on this we will be able during the 2nd year of the project:

- To define at 5G PPP level the best practices to approach the identified target stakeholders in priority order;
- To attend or organise the most relevant events and/or workshops at national/regional/local level that will be in line -in terms of coverage- with the programme's strategy, and address the most relevant communities;
- To refine, if needed, the engagement strategy of the 5G PPP as a whole; and
- To plan and to create the most relevant publications to get the best results in terms of communication and dissemination activities.

Of course projects also have their own specific targets, in order to engage specific target stakeholders. Those activities do not always need support at 5G PPP level and therefore projects can take care of specific engagement activities by themselves e.g. in specific thematic workshops whereas the security workshop organized by the 5G-ENSURE project is one example².

After having identified the different target stakeholders' groups, we created a draft "Stakeholders' Diagram" that graphically summarized all the identified stakeholders at that stage. Then this draft "Stakeholders' Diagram" was presented and disseminated to the other Euro-5G project members. After some fine tuning and approval within the Euro-5G project, this draft picture was used as a starting point for an on-line survey to collect feedback from the all on-going 5G PPP Call 1 projects. The stakeholders diagram resulting from this process is depicted in the Figure 1, published on the 5G PPP *white papers* web page³, and the different phases described during the survey in the Appendix A.1.

The stakeholder diagram shows seven main categories which - based on the 5G PPP projects survey - in priority order are: Standardisation organisations, Users, 5G Industry, Business Verticals, 5G-related Organisations (Europe & International), Policy makers and Others. Each main category ("Level 1") target stakeholder group includes more detailed sub-groups ("Level 2"), some even "Level 3" where

² <http://www.5gensure.eu/1st-international-workshop-5g-security-standardisation>

³ <https://5g-ppp.eu/5g-ppp-stakeholders-survey/>

e.g. the Business Verticals is one example. More details are given in the following sub-section.

2.1.1 Survey

The objective of the 5G PPP target stakeholders' survey had three objectives:

- 1) To identify priorities for the target stakeholders for external communication and community engagement;
- 2) To engage the 5G PPP projects; and
- 3) To make Euro-5G project work visible for the 5G PPP projects.

The 5G PPP projects participated in the target stakeholders' on-line survey during February-April 2016 showing clearly that all 5G PPP projects are active, are willing to contribute and to work together in a collaborative way. At the same time there were several good comments received how to enhance the target stakeholders' diagram and also dialogues started about the potential next steps after the survey. The 5G PPP projects also identified some additional stakeholders including e.g. national regulators and open source projects, which were added into the stakeholders diagram after analysis in the Euro-5G project and in collaboration with the 5G PPP projects.

In the survey each project gave their "votes" for the individual "Level 2" target stakeholders and then all votes were counted together within each "Level 1" main category. Out of the analysed survey results we were able to identify the priority stakeholders for the 5G PPP projects. Each target stakeholder group includes more detailed sub-groups, which are listed below in a priority order with their main category "votes":

1. Standardisation organisations (67):
 - 3GPP, ETSI, ITU, IETF/IRTF, IEEE
2. Users (64):
 - Developers, Research institutes / organisations, End users, Technology providers, Smart Cities, SMEs
3. 5G Industry (60):
 - Connectivity providers, Technology providers, SMEs, Start-ups
4. Business Verticals (55):
 - Automotive, Factories of the Future, Media & Entertainment, Energy, eHealth
5. 5G-related Organisations (44):
 - 5G Forum, IMT2020, NGMN, 5GMF, 5G(4G)Americas, FSAN, AIOTI, BDVA, Photonics21, BBF
6. Policy makers (37):
 - European Commission, Regulators, Smart Cities, Local governments
7. Others (37):
 - Other international projects, Open Source projects, Other national projects, Investors (Venture Capitalists)

The results of the survey –i.e. priorities towards Standardisation Organisations, Users, 5G Industry, and Business verticals – showed quite a natural tendency to link a new technology under development to a working business environment including:

- Open global standards (target stakeholder: Standardisation organisations);
- Developers and technology providers (Users);
- Industry cooperation (5G Industry); and
- Business models and use cases (Business Verticals).

The seven main (level 1) target stakeholders' groups, as well as their sub-groups (level 2) are depicted

in the Figure 1 below and published on the 5G PPP *white papers* web page⁴. The online survey results in details are available in the Google data sheet⁵ and the graphical view in the appendix A.1.

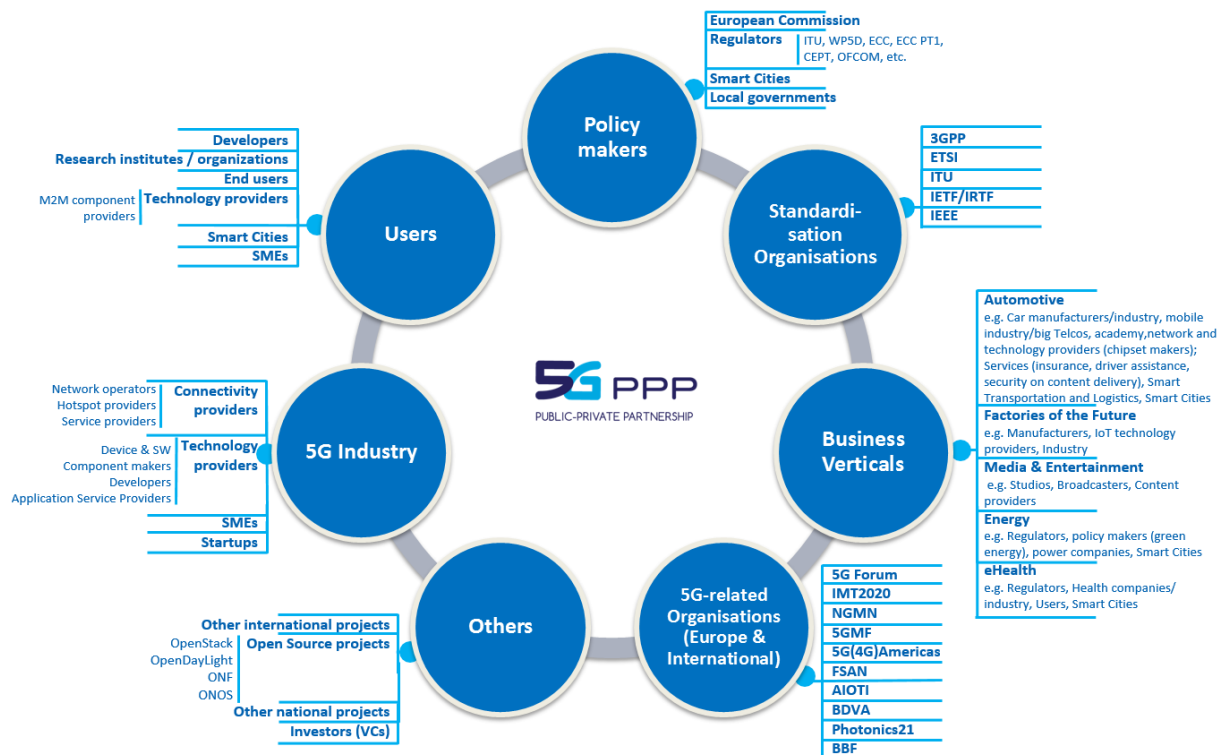


Figure 1 - Target stakeholders

A related glossary of the stakeholders has been created to ensure that the same term would mean the same thing in all 5G PPP documents and that way would create better consistency and understanding across all the 5G PPP projects. The glossary has been published together with the stakeholders' diagram on the 5G PPP website⁶.

Note: this version of the stakeholders' diagram and the glossary may need to be updated in the future in case e.g. new stakeholders are identified or priorities are refined.

2.1.2 Next steps

Initial discussions in the Vision working group indicates that the Vision & Societal Challenges WG addresses already quite well the "Business verticals" sectors. Regulators (Policy makers) from those sectors could be involved more e.g. in future events. A general information sharing for the "Users" category needs to be emphasized more in the future, affecting also future communication material e.g. brochures and videos. The other target stakeholders' categories, e.g. Standardisation organisations, are closer to other (the 5G Pre-standards and the 5G Spectrum) Working Groups in the 5G PPP programme.

The next steps during the 2nd year in the Euro-5G project together with the WP3 and the WP5 will be to continue already started, and open new discussions in the different 5G PPP working groups and/or in relevant 5G PPP board(s). The target is to find the best means to approach the identified priority target stakeholders, namely Standardisation Organisations, Users, 5G Industry, and Business verticals,

⁴ <https://5g-ppp.eu/5g-ppp-stakeholders-survey/>

⁵ https://docs.google.com/spreadsheets/d/1BYGQZVlr_MKZNadFdtOLfO4PBKNJpemTeIaZX1vIcFE/edit#gid=264226009

⁶ <https://5g-ppp.eu/5g-ppp-stakeholders-survey/>

and to define e.g. what kind of events/workshops and publications needs to be organized/produced to get the best results.

2.2 Identification and analysis of tools for community support

At proposal stage, Euro-5G identified an innovative approach to ensure significant community feedback and involvement, called “collective intelligence”. To invoke this, Euro-5G planned to establish new discussion groups, using an innovative tool called Assembl (www.assembl.org), owned by a company called Bluenove (www.bluenove.com).

Since the project kick-off meeting, two conference calls and one *in-person* meeting in Paris were organized with Bluenove in order to assess the tool and to see how Assembl could help us reach our community building objectives in a more efficient and less time-consuming manner when compared to more traditional tools.

Even if at a first glance the tool seemed in line with our purposes, through this discussion with the Bluenove team it became clear that we had to change our strategy and find some alternate means. The reasons behind this decision are as follow:

- The “terms of use” are very tight: each community involved in a specific debate should exist and work together for 2-3 months maximum and should be a large community i.e. at least 100 participants. This clearly does not apply to all our requirements, as we were thinking of using the tool within the 5G PPP community to strengthen the interaction between the projects and within the Working Groups.
- The commitment required from the 5G PPP projects is significant: for each debate hosted by Assembl, at least 3 people should be trained for 2 to 3 days to act as *Orchestrators, Harvesters and Wrappers* (the Assembl methodology is structured around these roles). These key users should be experts on the topic discussed. This means that for each debate, we need to train 3 experts who will spend, in addition to the time dedicated to the discussion, one day per week (or more depending on the complexity of the discussion) to animate the discussion, identify and extract the key ideas from each discussion thread and to create summaries of the key ideas and submit the syntheses to the group.
- It seems that the platform is not suitable for high-level technical discussions: the complexity of the tool (identification of the 3 key user roles, training period, additional work required by the experts etc.) could slow down the process instead of streamlining it. In addition to this, the Bluenove team did not provide us with concrete examples of technical debates hosted by the platform. In our opinion, this tool is more indicated for less complex discussions.
- The cost of the tool compared to the commitment required is high: for a 2 months debate the cost of the services associated to the training and support, the tool itself being free of charge, is estimated around 10-15k euro.

In conclusion, the high cost associated to the services around the tool along with the high investment needed from the 5G PPP community, as well as the lack of proof in terms of return of investment in the short and long term, leads us to the conclusion that it is not worth taking the risk to invest into this tool.

Therefore, we made a decision to concentrate more on tools that could be used to supporting community building during events. To this end, we decided to use the Conference web-app (<https://conference.com/>) that is an interactive web-app facilitating more direct interaction between **speakers** and their **audience** for events such as: lectures, presentations, conferences, polling, training courses, seminars, focus groups, research & (executive) meetings. During the first year of the project, Euro-5G decided to use it during the 2nd, 3rd and 4th 5G PPP Call 2 Info Days. More information about this tool is reported in section 2.3 below.

Additionally, Euro-5G investigated some alternate instruments for community building activities to try and strengthen 5G PPP internal communication that is already taking place in different 5G PPP working groups with communication methods already established. The following tools have been taken into consideration. During the 2nd year of the project we will check their potential need and use

e.g. in selected 5G PPP working groups, keeping also in mind their future use in the 5G PPP after the Euro-5G project:

TalkSpirit

(<https://www.talkspirit.com/>): a collaborative digital platform that eases information sharing and communication by linking several social media tools (e.g. Twitter, Facebook, LinkedIn) together to make it easier to find and share information on a daily basis. The features are still more or less in a beta test phase creating sometimes unexpected problems and e.g. collection of the news stream (rss-feed) would become an expensive feature in case there are several of them collected together.

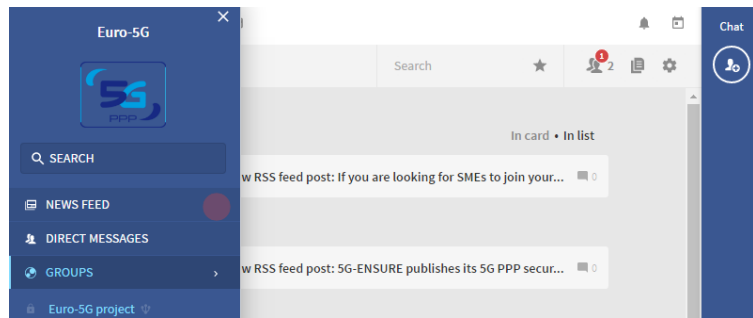


Figure 2 - Talkspirit

Basecamp

(<https://basecamp.com/>): Basecamp provides a messaging system to share e.g. different kind of announcements, news and ideas. Additionally the SW includes team and personal chat possibilities, to-do lists, wiki-style web-based text documents, milestone management, file sharing and time tracking functions. The SW costs per month are below 100 USD but the service configuration, hosting and maintenance would require additional investments and resources making its setup in the middle of the Euro 5G –project questionable. On the other hand similar type of features (as used e.g. in the FI-PPP in the past) can be organized via LinkedIn group(s).

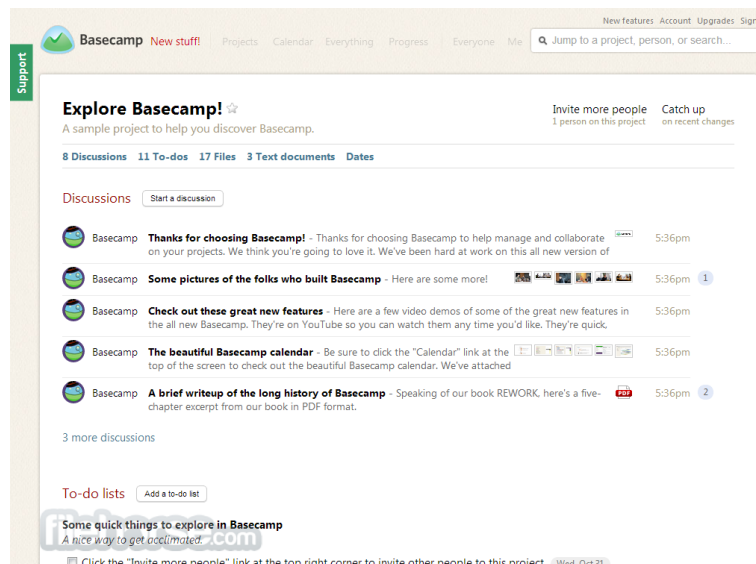


Figure 3 - Basecamp

LinkedIn groups

(<https://www.linkedin.com/>): LinkedIn is a business-oriented social networking service to share news and information and it is mainly used for professional networking. The LinkedIn groups can provide similar type of functionalities (free of charge) - as the Basecamp but concentrating more on conventional discussion, idea and information sharing.

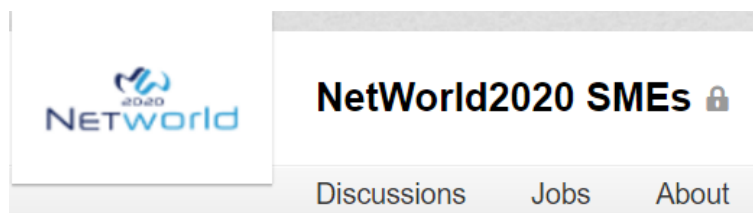


Figure 4 - NetWorld2020 SMEs LinkedIn group

Eurestools file repository: The Euro-5G project is using the BSCW file repository. Similar way the service is offered to the all 5G PPP working groups which are able to use Eurescom's maintained centralised file repository.

2.2.1 Community building tools - Next steps

After seeing that the originally planned tool – Assembl – did not suit the needs, we have concentrated community building activities on engagement with the participants in events (cf. section 2.3 Support

on community events). Although events are typically used for promotion and communication they shall also be used for community building and engagement activities. When there is a booth it can be structured as a “networking place” to interact with other communities e.g. vertical sectors and other targeted stakeholders as identified by Euro-5G and the 5G PPP projects. At the events a booth/booths - “networking place” – can be structured as a “community building place” where all stakeholders can gather to interact with the 5G PPP and better understand what the 5G vision of the 5G PPP is about. In the events the use of the Conference Online Dialogue Tool has proven successful to further activate interactions between the audience and the speakers. We are planning to continue using this tool in upcoming events.

For the Euro-5G project’s internal testing purposes the NetWorld2020 SMEs LinkedIn group has been created and plan is to check if there is interest among the NetWorld2020 SME Working Group members to use it for internal communication and information sharing. If it will be seen useful in the NetWorld2020 SME Working Group its interest for the other working groups will also be analysed during the 2nd year of the Euro-5G project.

2.3 Support for community events

Events have been used not only for promotion and communication but also for community building. When there was a booth it was structured as a “networking place” to interact with other communities e.g. vertical sectors and other targeted stakeholders as identified by Euro-5G and the 5G PPP Call 1 projects.

During the first year of the project, several booths and events/workshops have been structured as a “community building place”. The more relevant events are the following:

ICT Event 2015: At the ICT event 2015 in Lisbon, on 20-22 October 2015, the European 5G Initiative and PPP were represented by a number of activities supported by Euro-5G project.

The session “**5G-PPP: European Leadership in 5G – How to participate in phase 2**”: the booth and the Brokerage service – which has been set up to further facilitate access to the 5G community and potential project partners – provided a positive networking place during this major event.

The **Internet of Things conference**, in Athens on 17 December 2015: Jacques Magen gave a presentation “Is 5G a necessity for IoT implementations?” Beside the 5G information sharing objective the other objective was to start a dialogue between the 5G PPP and the IoT communities (the event was organised with AIOTI).

5G: Serving Verticals Industries – the 2nd 5G Verticals Workshop: The workshop – held November 9th, 2015 - was important milestone to continue 5G PPP information sharing and community building efforts towards business verticals (activities had started in the 1st 5G Verticals Workshop). Based on the workshop findings the stakeholder diagram was updated to include the 2nd and the 3rd level subcategories of the each business verticals.

5G PPP Special Sessions @MWC 2016 – February 2016: the EC booth was structured as a “community building place” where all stakeholders had the possibility to interact with the 5G PPP and better understand what the 5G vision of the 5G PPP is about. 5G PPP presented an overview of the PPP and its activities three times during the week (Monday, February 22, 2016 @ 11:00-11:30; Tuesday, February 23, 2016 @ 9:30-10:00; Thursday, February 25, 2016 @ 11:30-12:00)

EuCNC 2016 – June 2016: the “5G PPP – The 5G Public Private Partnership” booth was structured as a networking place. Information on the 5G PPP programme as a whole were provided during the 3 days of conference, the PR material (brochures and videos) were shown and distributed at the stand.

5G PPP Phase 2 Info Days: to facilitate interaction between the speakers and the audience, the Conference tool was used during the 2nd (17/03/ 2016 - Bologna), 3rd (18/05/2016 -Warsaw) and 4th (30/06/2016 - Athens) 5G PPP Phase 2 Info days.

In Bologna, the audience was able to ask questions directly via the tool, and also to access the agenda and provide feedback on each presentation.



Figure 5 - Conference features available in Bologna

78 devices (108 people checked in and requested Internet connection in Bologna) were connected to the tool. The tool was very useful, especially for creating interactivity and asking questions in an event with a very tight timeline. The response from the audience was positive:

- 52 questions were asked via the tool providing a good basis for the Q&A part of the session
- The “like” feature in the questions made possible to identify the most important questions to speed up the Q&A session.

Thanks to this first experience, the project decided to use the tool also in Warsaw, modifying the features available.

In Warsaw, the audience was able to directly ask the questions via the tool, download the presentations during the event and provide feedback.

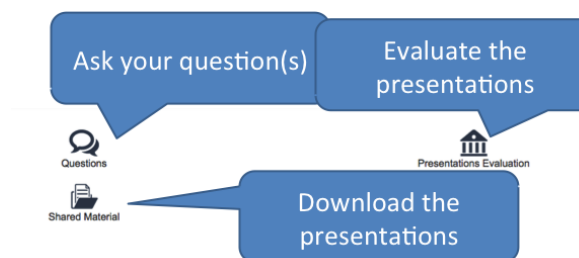


Figure 6 - Conference features available in Warsaw

115 devices were connected to the tool. The event went well but the audience was not as active as in Bologna, there were 20 questions. This depends of course on how active the audience is.

In Athens, the following features were available:



Figure 7 - Conference features available in Athens

80 devices were connected to Conference during the Info Day:

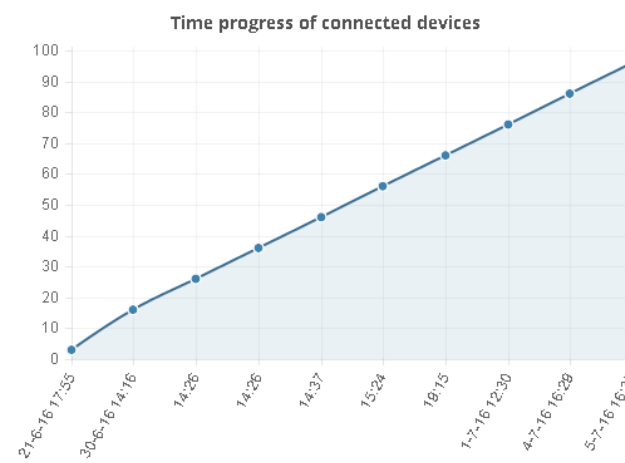


Figure 8 - Time progress of connected devices

The audience in Athens was less active compared to Bologna and Warsaw. A detailed report will be provided in the next deliverable.

2.4 PR Channels for community support

During the first year of the project, the 5G community has been actively engaged through various PR means including but not limited to social networking. This activity targeted the community as a whole, as well as more specific communities whenever needed, e.g. SMEs. More information about these PR channels is available in D3.3.

In the framework of community building activities, the following PR channels have been continuously updated in order to better engage and inform the various stakeholders:

5G PPP Website: the 5G PPP website could be considered as the main entry point for the entire community. It is regularly updated with the latest news, events, PR material, papers and it provides information on how to get involved. General information about the 5G PPP such as the Phase 1 projects, the history, the vision and mission and the association members can be found.

Information on how to join the PPP, propose a project, or receive NetWorld 2020 support is also available. In addition, coverage plans, visions and roadmaps, white papers, programme participation hints, upcoming and past events, and the available PR material are at the internal and external communities' disposal.

Twitter channels @5GPPP and @NetWorld2020: the twitter channels @5GPPP and @NetWorld2020 are continuously updated with news, information, and “live” twitting during events. These Twitter accounts allow the 5G Community - i.e. in particular the 5G PPP projects - as a whole, as well as the “external” communities, to be constantly updated about the event and news. Twitter also acts as a powerful community building tool while directing new web visitors to the 5G PPP web portal, and “re-tweets” and “likes” in both directions between the 5G PPP and e.g. AIOTI / BDVA communities activate existing and new stakeholders to realize 5G PPP opportunities. In addition, there is also a dedicated Twitter channel dedicated to SMEs i.e. @NetWorld2020SME, that is used to promote activities and to engage the SMEs via the SME Working Group in particular.

LinkedIn group: a LinkedIn group dedicated to the NetWorld2020 SMEs has been created in WP5 for internal testing purposes. It will be taken in use during the 2nd year of the Euro-5G project if there is interest among the SME WG participants.

Mailing lists: WP1 has regularly contributed and that way enhanced 5G PPP internal (via COMMS and SME WG mailing lists) and 5G PPP external communities (via Euro-5G news mailing list) by providing inputs to the 5G PPP newsletters, news and events.

5G PPP Video channel: an additional PR channel for sharing information about the programme and the projects is the 5G PPP Video channel (<https://5g-ppp.eu/video/>). Besides the general explanatory video, a set of videos interviews from the different projects is also available (i.e. the interviews filmed during EuCNC) and also some videos produced by the single projects.

PR Material: as reported in the D3.3, several brochures, flyers, posters and videos have been produced during the first year of the project. The PR material helps the 5G PPP program to inform and reach external communities.

2.5 Community building towards working groups

The WP1 has supported in particular WP5 community engagement activities towards the NetWorld2020 SME Working Group. Activities included the organisation of the “SME 5G Cartography” and value chain surveys to find out SMEs position in the “5G pre-structuring model” in the phase 2 and in the value chain. The WP1 has also interacted with the pre-standards WG and the 5G Vision and Societal Challenges WG to identify target stakeholders and to define practical community engagement activities on the 5G PPP level. These activities are described more in details in the D5.2.

2.6 Engaging the community around the NetWorld2020 ETP

Various activities were performed in order to support and promote the activities of the NetWorld2020 community. Below an overview of the main activities is given:

2.6.1 Organisation of NetWorld2020 General Assembly

A NetWorld2020 General Assembly (GA) has been organised in Brussels on 19 April 2016 to which all members were invited. The goal of the GA was to report about the activities, but also to explain future plans and the rationale behind. There will be changes regarding the Governance Structure and the link between NetWorld2020 and the 5G Infrastructure Association, resulting from the experience in the last 2 years, which should further optimise the effectiveness and efficiency of operations and improve on the opportunity for organisations and stakeholders to get involved in the activities.

EURO-5G was organising the event and has taken care of many of the related work. This included e.g. to organise the venue and logistics, prepare the invitation to the community and the agenda, prepare a webpage, organise the registration process, handle invoices and financial flows, organise a special session on 5G PPP projects, on-site support, and also to collect slides and make them available on the

web. The event was very successful and attracted about 100 participants. As always it has also been a good opportunity for meeting and networking.

2.6.2 Support to NetWorld2020 Steering Board (SB)

Euro-5G has provided support towards the organisation of NetWorld2020 SB meetings. Meetings were organised on 23/10/15 in Lisbon and 01/02/16 and 09/06/16 in Brussels. Activities included the organisation of venue and logistics. Meetings were chaired by Werner Mohr and Uwe Herzog took draft minutes, collected comments and prepared the revised and final version.

In their meetings the SB reviewed reports from events and discussed participation at future events, e.g. MWC-16 and the Global 5Gevent, discussed proposals for Whitepapers, reviewed their status, discussed on plans and status of Working Group activities and also discussed with the EC representatives on contributions from NetWorld2020 to the preparation of the Horizon 2020 Work Program 2018/19. A main discussion item has been the relation between Networld2020 and the 5G Infrastructure Association / 5G PPP projects, to optimise the effectiveness and efficiency of operations and improve on the opportunity for organisations and stakeholders to get involved.

2.6.3 Organise joint Expert-/Vision Working Group Workshop

Euro-5G has provided organisational support to the joint Expert-/Vision Working Group (WG) Workshop that was held in Bologna 16 March 2016. The workshop objective was to promote a lively debate on technologies, innovative ideas and cutting-edge research and innovation directions within or beyond the phase 1 of 5G approaches. In order to have a very dynamic workshop with good discussions on the technical topics, each presenter had 10 minutes to present her/his contribution and be prepared for a 5 minutes discussion. More than 80 registered researchers attended, so it was a great opportunity to shape the future of communications.

While the drafting of the agenda and the technical content was prepared by the Working Groups themselves, Euro-5G supported the event by organising the venue and logistics, has setup the registration process and portal, handled contracts, invoices and financial flows and made the workshop slides online available after the event.



Figure 9 - Arturo Azcorra opens the Workshop

2.6.4 New NetWorld2020 membership management

NetWorld2020 has more than 1,000 members and managing the membership and keeping the list up to date requires a significant effort. In addition, about 30-50 new applications have been received per quarter in the last year. Euro-5G processed all new applications and prepared a presentation which was

given to the NetWorld2020 SB at their next meeting. Applicants were informed of the decision and entered in the membership database and lists in the web and charts. The task also included support to members and handling of member requests.

2.6.5 Update of NetWorld2020 web

EURO-5G has also taken care of keeping the NetWorld2020 web up to date. This includes adding information related to events, both organised by NetWorld2020 or within the sector, adding information about public consultations with the NetWorld2020 community, updates from the NetWorld2020 Working Groups e.g. adding a page that highlights competences of a number of SMEs of the NetWorld2020 membership, updating information on the membership, event reports and various kinds of documents.



Figure 10 - Snapshot of NetWorld2020 webpage (accessed on 08/07/16)

2.6.6 Organise Public Consultations with the Community

NetWorld2020 is in close connection with its members. This is important in order to ensure we tap on the potential of the wide and diversified member organisations and to have their comments and input on the important outputs of the ETP before they get released. In the last year four public consultations were organised. These were for the:

- Pre-structuring Model (4Q15)
- Beyond-5G Whitepaper (4Q15) – see screenshot below
- 5G Experimental Facilities in Europe (1Q16)
- Service Level Awareness Whitepaper (2Q16)



Figure 11 - Screenshot of NetWorld2020 Web with info on a public consultation

For each consultation, respective information has been added on the NetWorld2020 web and the community was informed by email. A web form was setup through which feedback could be submitted. All comments were captured and handed over to the respective person in charge e.g. in the NetWorld2020 Expert Advisory Group.

2.6.7 Organise electronic Voting

Whenever there is the need to collect the opinion of a larger group in a controlled, systematic and verifiable way the EuresTools eVoting tool is available for use. In the last months it has been used at three opportunities:

- Approval of the revised NetWorld2020 Governance Model and extension of the SB mandate (1Q16)
- election of SatCom WG Chairperson (2Q16)
- Approval of the contribution from the private side to the scoping paper for Phase 3 of the PPP

Approval of revised NetWorld2020 Governance Model

Please state whether you approve the changes of the NetWorld2020 Governance Model and the extension of the SB mandate

Note: Please make your choice!

Options

☐ Approved

☐ Rejected

☐ Abstain

[Submit your vote](#)

Figure 12 - Screenshot of the eVoting tool menu for the Approval of the revised Governance Model

All voters receive a unique voting code that expires after its use to ensure each person or organisation can vote only once. Individual votes are kept by the system and are not visible even to the voting organiser – only the aggregated result is shown. This takes place in a fully automated process.

2.6.8 Organise Call for new experts for the Experts Advisory Group

In November 2015 and May 2016 the NetWorld2020 Expert Advisory Group has issued a call for new experts. This was done in response to the frequent requests of persons who want to contribute to become member of the Expert Group, and in order to include additional complementary expertise in the Expert Group. EURO-5G supports the process by collecting all applications, processing them (i.e. checking the competence and academic degree of the applicants, verifying their NetWorld2020

membership etc.), and preparing an overview list for decision by the Expert Group Chairperson. Once the new members are approved, the new members are integrated in the system and lists.

2.6.9 Maintenance of tools

Finally and last but not least, a non-neglectable effort is being spent for maintenance and continuous improvement of the NetWorld2020 tools which are all hosted on Eurescom servers. Tools include the NetWorld2020 webserver, mailing lists with several thousand subscribers, ftp server, the eVoting tool and teleconference bridge.

3 Conclusions

During the first year, the Euro-5G project contributed heavily into initiating and supporting many activities related to the 5G Public Private Partnership and to the NetWorld2020 European Technology Platform, and more generally to assemble and to strengthen the European 5G community and beyond.

Some of the main activities that have been performed in relation with the 5G community building and support were designed to maintain and to help the 5G PPP projects to interact with each other and with external actors to/from the 5G PPP programme (i.e. support on community events and PR material, tools for community building which helped to increase the interaction among the speakers and the audience in events).

Several activities were performed in order to support and promote the activities of the NetWorld2020 community including organisation of the NetWorld2020 meetings, membership management/support, public consultations and electronic votings.

In addition, as explained in Section 2.1, Euro-5G has ensured the coordination of community building and target stakeholders' identification, priority-setting and engagement activities together with all 5G PPP projects.

At the time that the first year of the project is ending, we can say that the community building strategy has produced its first effects. As mentioned in the deliverable, a set of activities was carried out to better engage the 5G PPP as a whole. However, more work is needed during the second year of the project that needs support from all 5G PPP projects as it took place during the first year of the Euro-5G project. A detailed plan for the activities to be performed during the second year of the project is presented in Section 4 below.

4 Plan for Year 2 (Y2)

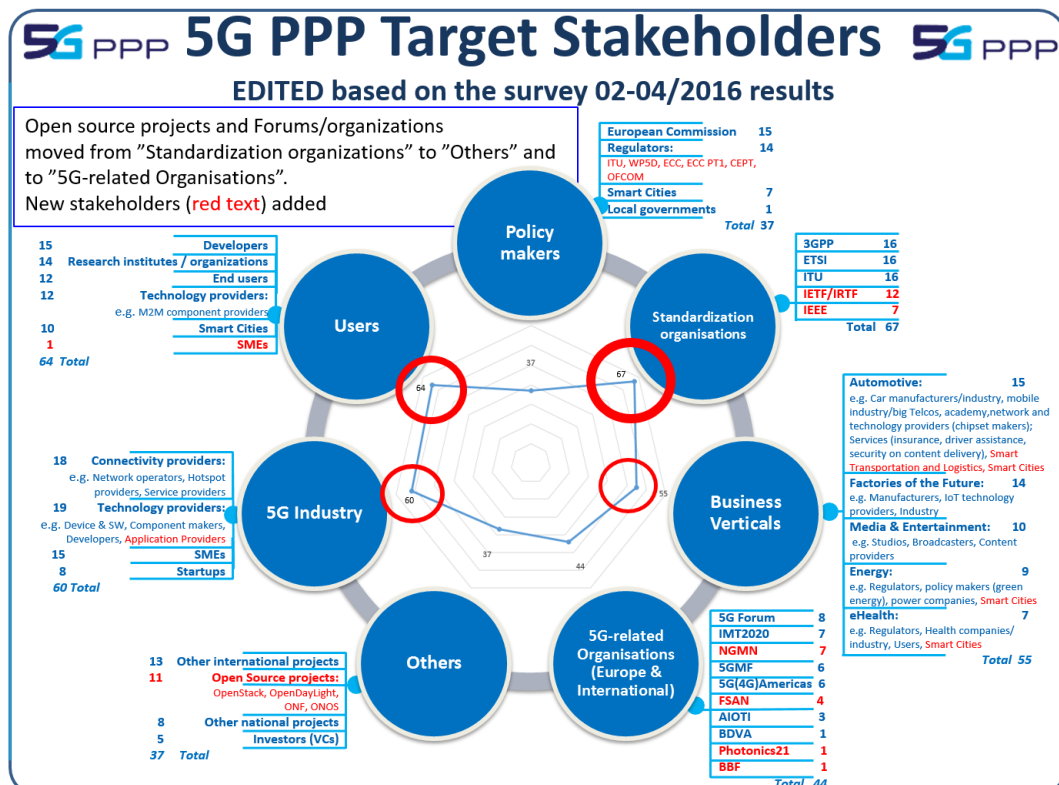
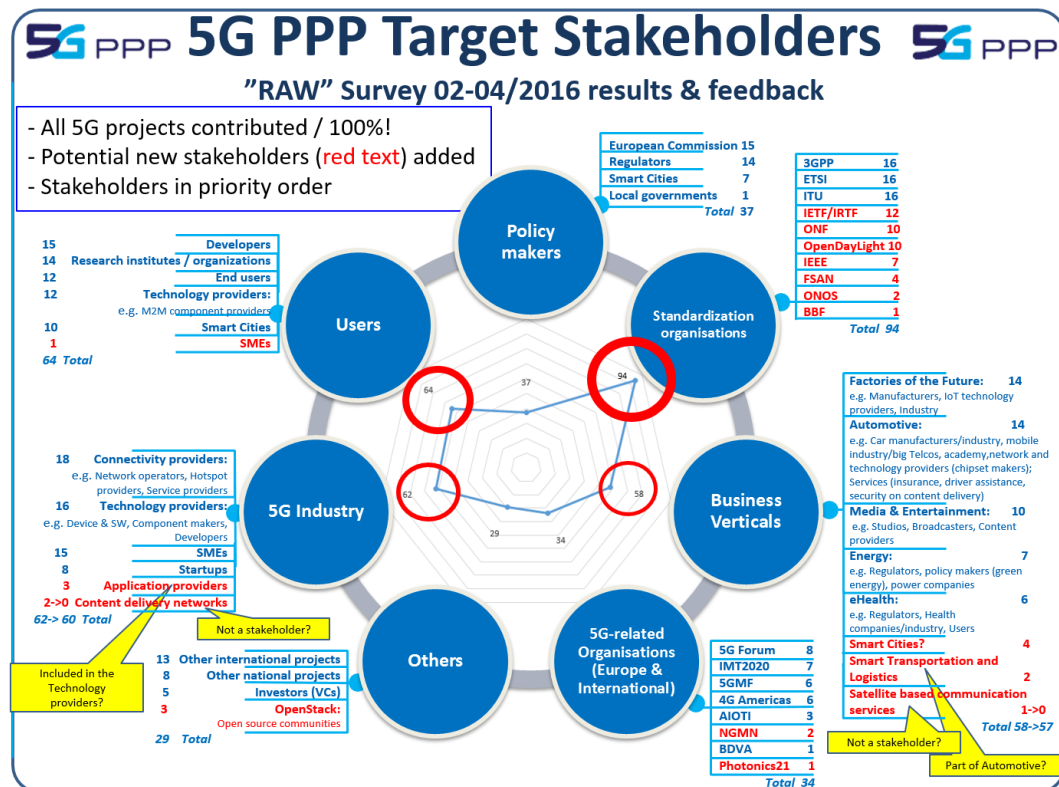
During the 2nd year in the Euro-5G project WP1, together with WP3 and WP5, will open discussions in the different 5G PPP related Working Groups and/or in relevant 5G PPP instances (e.g. the 5G IA Board and General Assembly) to see how we can best approach the identified priority target stakeholders, namely Standardisation Organisations, Users, 5G Industry, and Business verticals, and to define e.g. what kind of events/workshops and publications need to be organized/attended to get the best results out of the engagement activities.

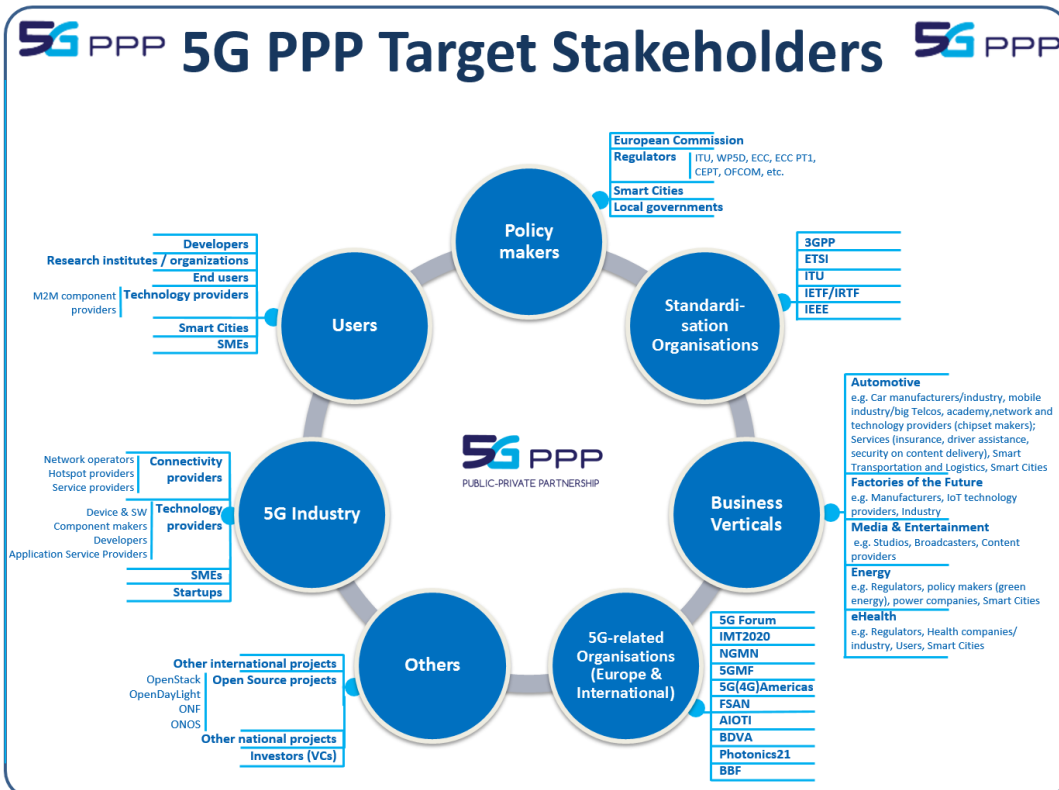
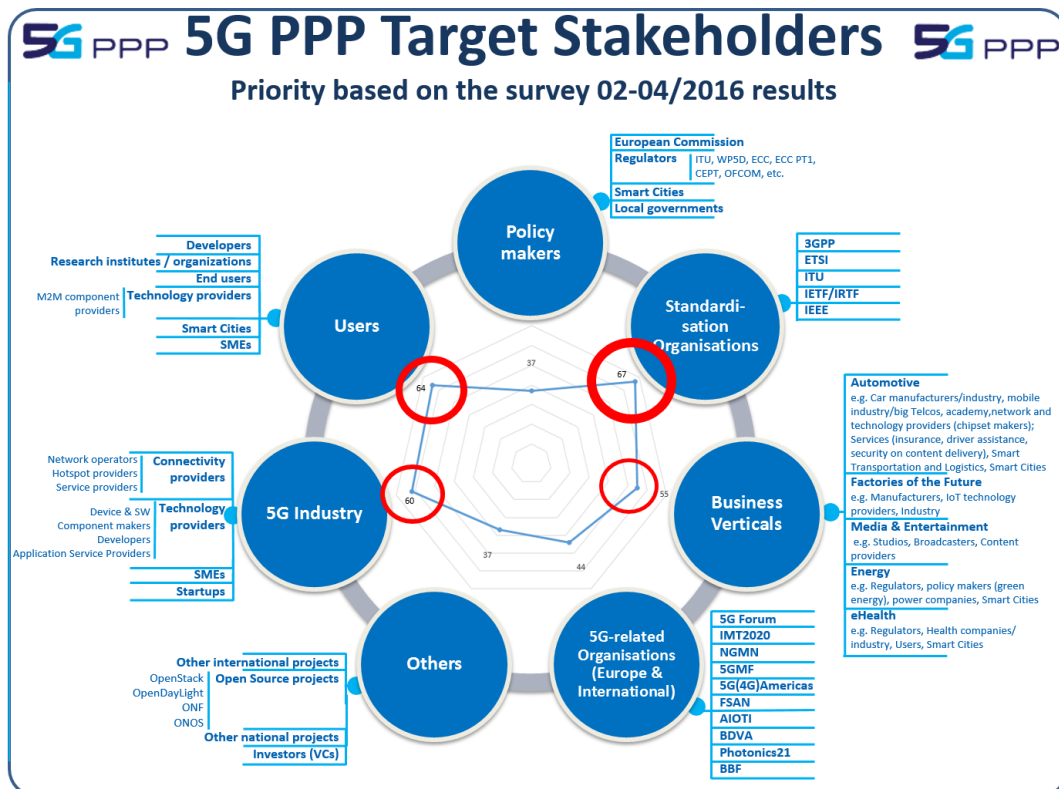
At future events, booths - “networking place” – will continue to be structured as a “community building place” where all stakeholders can gather to interact with the 5G PPP and better understand what the 5G vision of the 5G PPP is about. Also we will continue to use the Conference Online Dialogue tool in 5G community events, and others whenever relevant. Euro-5G shall participate in more events related to the priority target stakeholders’ communities e.g. with AIOTI, BDVA, FIRE, business verticals, etc. in order to better work together with those communities and at the same time engage them more efficiently and achieve the required level of interaction and cooperation.

If the NetWorld2020 SME LinkedIn group is proven useful and active participation from the SMEs will be seen, the other 5G PPP working groups and their need for the LinkedIn group(s) will be checked during the 2nd year of the Euro-5G project. Additionally to support the WP5, especially the NetWorld2020 SME WG, activities will continue in topics like matchmaking and value chain analysis to help SMEs to easier find collaboration possibilities. Concerning the dissemination material, the WP1 will contribute to the work in the WP3 to be able to plan specific flyers or videos in order to address in the most efficient manner each target stakeholders’ community.

Appendix A Additional information

A.1 The target stakeholder diagrams





A.2 The 5G PPP target stakeholders glossary



Euro-5g – Supporting the European 5G Initiative

The 5G PPP Stakeholders Glossary

Introductory notes:

The purpose of this document is to classify and define the different stakeholder groups targeted by the 5G PPP projects.

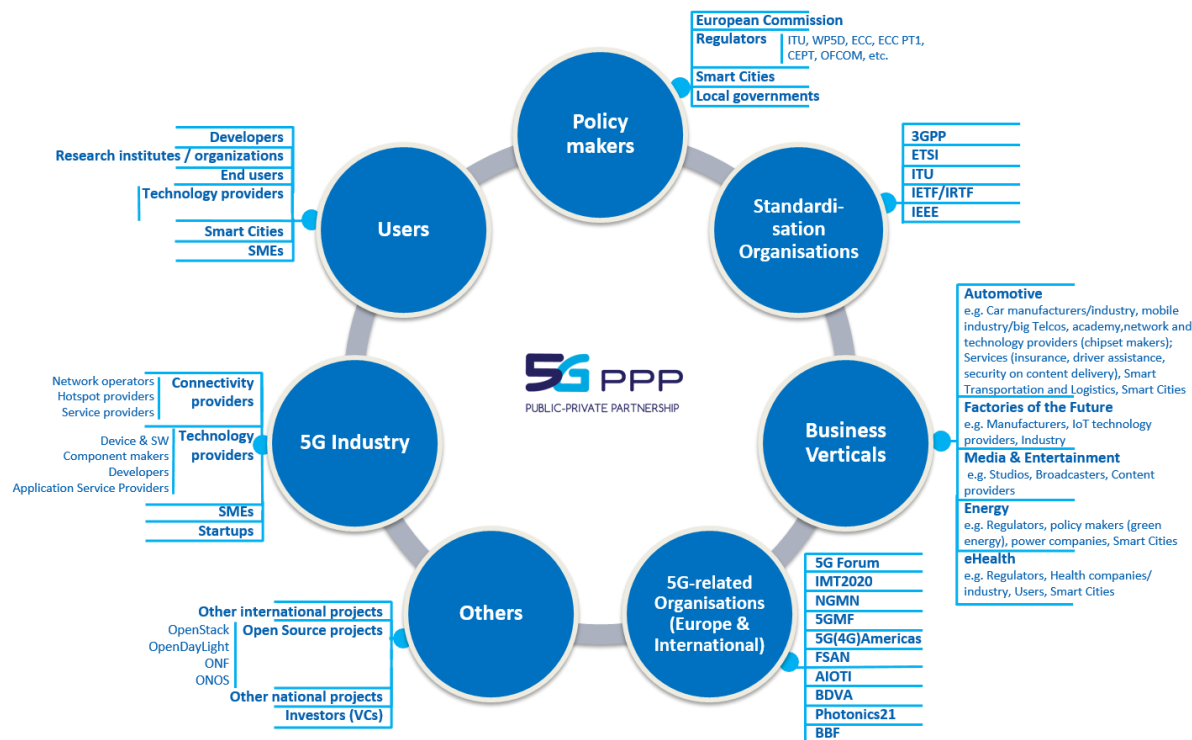
The first part of this document (i.e. “General diagram”) shows graphically the different categories of the 5G PPP targeted stakeholders and the “General diagram 2” shows the priority of them based on the 5G PPP projects survey in February-April 2016.

The second part of this document (i.e. “Glossary”) has the definitions of the different stakeholders identified in the General diagram. The alphabetical order is based on the “level 1 – L1” main category.

Please note that the asterisk (*) after a word in *italics* indicates a definition elsewhere in the document.

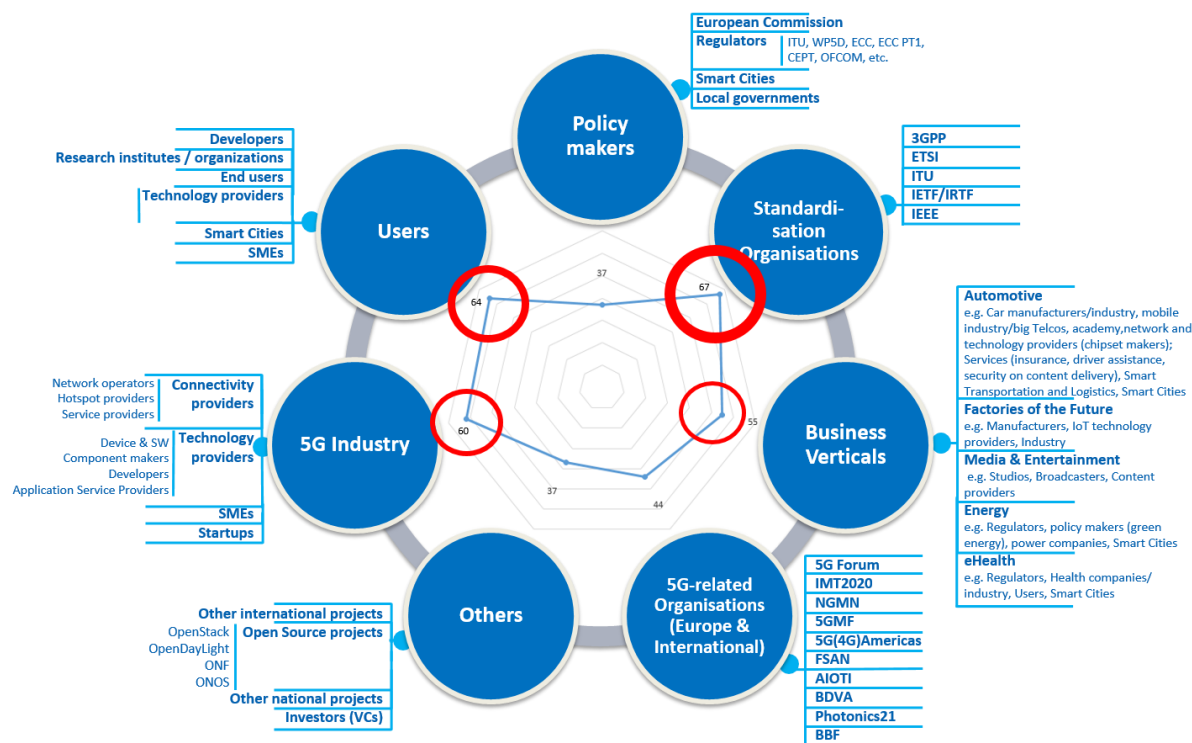
Authors of this document: Jacques Magen (InterInnov), Timo Lahnalampi (InterInnov), Giulia Pastor (InterInnov)

General Diagram - The 5G PPP Target stakeholders



The 5G PPP Target stakeholders

General Diagram - THE 5G PPP STAKEHOLDERS priority



Target stakeholder priority based on the 5G PPP projects survey in February-April 2016

Glossary

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G Industry	Application Providers	An Application Service Provider (ASP) is a business providing computer-based services to customers over a network; such as access to a particular software application (such as customer relationship management) using a standard protocol (such as HTTP).	https://en.wikipedia.org/wiki/Application_service_provider
5G Industry	Connectivity providers	Connectivity providers perform day-to-day operational activities to provide network connection via wired/wireless networks.	
5G Industry	Connectivity providers: Hotspot providers	Hotspot providers arrange the Internet access, typically using Wi-Fi technology, via a wireless local area network (WLAN) using a router connected to an internet service provider. Coffee shops, airports and hotels are typical examples of the hotspot providers.	https://en.wikipedia.org/wiki/Hotspot_(Wi-Fi)
5G Industry	Connectivity providers: Network operators	Network providers are companies that provide customers with access to a telecommunications network (especially mobile phone networks) or to the internet.	http://www.collinsdictionary.com/dictionary/english/network-provider
5G Industry	Connectivity providers: Service providers	Service providers in telecommunication area are companies that provide its subscribers access to the Internet or other value added services, e.g. Cloud computing, storage and e-learning. Service providers are more generally used to refer to third party or outsourced suppliers, including telecommunications service providers (TSPs), application service providers (ASPs), storage service providers (SSPs), and Internet service providers (ISPs).	https://en.wikipedia.org/wiki/Service_provider
5G Industry	SMEs	a) SME stands for Small and Medium enterprises , as defined in EU law. The main factors determining whether a company is an SME are: number of employees and either turnover or balance sheet total. (cf. http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm). An SME could use some services and Infrastructures provided by the 5G PPP projects, make these services available to the Developers* and thus be an <i>End-user*</i> . b) An SME is a <i>developer*</i> which can make its own test using the 5G PPP projects' services and Infrastructures in order to develop its product, solution, system, etc.	

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G Industry	Startups	<p>a) A Startup is a company, a partnership or temporary organization designed to search for a repeatable and scalable business model. These companies, generally newly created, are in phase of development and research for markets. (cf. Steve Blank and Bob Dorf "The Startup owner's manual: the step-by-step Guide for Building a great company. http://steveblank.com/2010/01/25/whats-a-startup-first-principles/). A startup could use some services and Infrastructures provided by the 5G PPP projects, make these services available to the <i>developers</i>* and thus be an <i>end-user</i>*.</p> <p>b) A Startup is a <i>developer</i>* which can make its own test using the 5G PPP projects' services and Infrastructures in order to develop its product, solution, system, etc.</p>	
5G Industry	Technology providers	A Technology Provider is a provider that develops and provides technology solution(s) which can be used by the 5G PPP projects, SMEs*, Startups*,	
5G Industry	Technology providers: Application Service Providers	An Application Service Provider (ASP) is a company that offers individuals or enterprises access over the Internet to applications and related services that would otherwise have to be located in their own personal or enterprise computers.	http://searchsoa.techtarget.com/definition/application-service-provider
5G Industry	Technology providers: Component makers	A Component maker buys raw materials from its suppliers, assembles these into components and passes the results to other manufacturers.	
5G Industry	Technology providers: Developers	A Developer is an individual that builds and create software and applications; writes, debugs and executes the source code of a software application.	https://www.techopedia.com/definition/17095/developer
5G Industry	Technology providers: Device & SW	A Device is an object or machine - a piece of mechanical or electronic equipment - that has been invented to fulfill a particular purpose. A device typically includes a HardWare (HW) and SoftWare (SW) parts to make it independently functioning.	http://dictionary.cambridge.org/us/dictionary/english/device
5G Industry	5G Industry	5G Industry contains any general business activity or commercial enterprise that is using or related to the fifth generation (5G) technology. The 5G Industry includes Connectivity providers, Service providers, Technology providers, SMEs, and Startups.	http://www.businessdictionary.com/definition/industry.html

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G-related Organisations (Europe & International)	4G Americas5G Americas	4G Americas (Americas) is a wireless industry trade association representing the 3GPP family of technologies. The organization was established in January 2002 under the name 3G Americas. On September 28, 2010, 3G Americas announced the organization's name change to 4G Americas and a realignment of its mission and objectives. 4G Americas works throughout the Western hemisphere to inform government agencies, other businesses and the public about the 3GPP wireless technologies. The 4G Americas association changed its name to 5G Americas in February 2016.	http://www.5gamericas.org
5G-related Organisations (Europe & International)	5G Forum	5G Forum (Korea) aims to become the leading force in the development of next-generation communications technology and contribute to the momentum of economic growth through the development of ICT industry in efforts to actualize the new administration's agenda of creative economy. 5G Forum seeks innovation through mutual collaboration among all interested parties of the new mobile communications infrastructure, including those in the IoT/Cloud/Big Data/Mobile fields, industry-academic-research institutions, as well as the manufacturers and service providers.	http://www.5gforum.org/
5G-related Organisations (Europe & International)	5GMF	The Fifth Generation Mobile Communications Promotion Forum (5GMF, Japan) was created to conduct research & development concerning the fifth Generation Mobile Communications Systems and research and study pertaining to standardization thereof, along with liaison and coordination with related organizations, the collection of information, and dissemination and enlightenment activities aimed at the early realization of the Fifth Generation Mobile Communications Systems, all with the aim of thereby contributing to the sound development of the use of telecommunications.	http://5gmf.jp/en/

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G-related Organisations (Europe & International)	AIOTI	The Alliance for Internet of Things Innovation (AIOTI) was initiated by the European Commission in order to develop and support the dialogue and interaction among the Internet of Things (IoT) various players in Europe. The overall goal of the AIOTI is the creation of a dynamic European IoT ecosystem to unleash the potentials of the IoT. This ecosystem is going to build on the work of the IoT Research Cluster (IERC) and spill over innovation across industries and business sectors of IoT transforming ideas into solutions and business models. The Alliance will also assist the European Commission in the preparation of future IoT research as well as innovation and standardisation policies.	http://www.aioti.eu
5G-related Organisations (Europe & International)	BBF	The BroadBand Forum (BBF) is a non-profit industry consortium dedicated to developing broadband network specifications. Members include telecommunications networking and service provider companies, broadband device and equipment vendors, consultants and independent testing labs (ITLs). Service provider members are primarily wire-line service providers (non-mobile) telephone companies.	https://www.broadband-forum.org
5G-related Organisations (Europe & International)	BDVA	The Big Data Value Association (BDVA) is a fully self-financed non-for-profit organisation under Belgian law. Currently there are 24 founding members from large and SME industry and research. The BDVA shall present an industry-led contractual counterpart to the European Commission for the implementation of the Big Data Value PPP cPPP. A basic principle is openness, transparency and inclusiveness.	http://www.bdva.eu/
5G-related Organisations (Europe & International)	FSAN	The Full Service Access Network (FSAN) Group is a forum for the world's leading telecommunications services providers, independent test labs, and equipment suppliers to work towards a common goal of truly broadband fibre access networks. FSAN has more than 70 member organisations, including more than 20 Network Operators, that represent the leading experts in Broadband Passive Optical Network (BPON), Gigabit Passive Optical Network (GPON), 10 Gigabit Passive Optical Network (XG-PON), 10 Gigabit Symmetrical Passive Optical Network (XGS-PON) and Next Generation Passive Optical Network 2 (NG-PON2) technologies.	https://www.fsan.org

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G-related Organisations (Europe & International)	IMT2020	IMT-2020 (5G, China) is a promotion association that was jointly established by three ministries of China (including MIIT, NDRC and MOST) based on the original IMT-Advanced promotion group in February 2013. The members include the main operators, vendors, universities and research institutes in China. The promotion association is the major platform to promote 5G technology research in China and to facilitate international communication and cooperation.	http://www.imt-2020.cn/en
5G-related Organisations (Europe & International)	NGMN	The Next Generation Mobile Networks (NGMN) Alliance is a mobile telecommunications association of mobile operators, vendors, manufacturers and research institutes. It was founded by major mobile operators in 2006 as an open forum to evaluate candidate technologies to develop a common view of solutions for the next evolution of wireless networks. Its objective is to ensure the successful commercial launch of future mobile broadband networks through a roadmap for technology and friendly user trials.	https://www.ngmn.org
5G-related Organisations (Europe & International)	ONF	The Open Networking Foundation (ONF) is a user-driven organization dedicated to the promotion and adoption of Software-Defined Networking (SDN) through open standards development. The ONF aims at improving networking through software-defined networking (SDN) and standardizing the OpenFlow protocol and related technologies. The standards-setting and SDN-promotion group was formed out of recognition that cloud computing will blur the distinctions between computers and networks. The initiative is meant to speed innovation through simple software changes in telecommunications networks, wireless networks, data centers and other networking areas.	https://www.opennetworking.org
5G-related Organisations (Europe & International)	OpenDayLight	The OpenDaylight foundation promotes and advances the global development, distribution and adoption of the OpenDaylight (ODL) open source SDN platform. Founded in 2013, the OpenDaylight foundation maintains an independent governance and infrastructure to help ensure ODL's development can occur in a neutral environment. The aim is to facilitate the growth of a strong OpenDaylight and Open SDN ecosystem by collaborating with developers, end users and ODL's members to produce the most relevant programs, events, and resources.	

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
5G-related Organisations (Europe & International)	Photonics21	The Photonics21 is a European Technology Platform as described in the Report EUR 21265 by the Commission Inter-Service Group on Technology Platforms of the European Commission. It is a voluntary informal association of stakeholders in the field of photonics in Europe, primarily industrial enterprises and research institutions working at the industrial-scientific interface.	http://www.photonics21.org
5G-related Organisations (Europe & International)	5G-related Organisations (Europe & International)	The 5G-related Organisations and Forums in Europe and on international scope include 5G Forum (Korea), IMT2020 (China), NGMN, 5GMF (Japan), 5G(4G) Americas (Americas), FSAN, AIOTI, BDVA, Photonics21, BBF	
Business Verticals	Automotive: Car manufacturers/industry, mobile industry/big Telcos, academy, network and technology providers (chipset makers); Services (insurance, driver assistance, security on content delivery), Smart Transportation and Logistics, Smart Cities	The Automotive business verticals include e.g. Car manufacturers/industry, mobile industry/big Telcos, academy, network and technology providers (chipset makers); Services (insurance, driver assistance, security on content delivery), Smart Transportation and Logistics, and Smart Cities. The main use cases identified on automotive industry are: Automated driving, Share My View, Bird's Eye View, Digitalization of Transport and Logistics, and Information Society on the road.	https://5g-ppp.eu/wp-content/uploads/2014/02/5G-PPP-White-Paper-on-Automotive-Vertical-Sectors.pdf
Business Verticals	eHealth e.g. Regulators, Health companies/ industry, Users, Smart Cities	The eHealth business verticals include e.g. Regulators, Health companies/Health industry, Users, and Smart Cities. The main use cases identified on eHealth are: Assets and interventions management in Hospital, Robotics, Remote monitoring and Smarter medication.	https://5g-ppp.eu/wp-content/uploads/2016/02/5G-PPP-White-Paper-on-eHealth-Vertical-Sector.pdf

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
Business Verticals	Energy e.g. Regulators, policy makers (green energy), power companies, Smart Cities	The Energy business verticals include e.g. Regulators, policy makers (green energy), power companies, and Smart Cities. The physical infrastructure will need to support a two-way energy flow originating from the distributed energy resources, which in turn implies new needs for communication technologies, intelligence, business models and market structure. In order to manage these needs, new “Smart Grids” are required and 5G will play a fundamental role to achieve this goal. The main use cases identified for the energy sector are: Grid access, Grid backhaul and Grid backbone.	https://5g-ppp.eu/wp-content/uploads/2014/02/5G-PPP-White-Paper-on-Energy-Vertical-Sector.pdf
Business Verticals	Factories of the Future e.g. Manufacturers, IoT technology providers, Industry	The Factories of the Future business verticals include e.g. Manufacturers, IoT technology providers, and Industry. The main use cases identified on the Factory of the Future are: Timecritical process control, Non time-critical factory automation, Remote control, Intra/Inter-enterprise communication and connected goods.	https://5g-ppp.eu/wp-content/uploads/2014/02/5G-PPP-White-Paper-on-Factories-of-the-Future-Vertical-Sector.pdf
Business Verticals	Media & Entertainment e.g. Studios, Broadcasters, Content providers	The Media & Entertainment business verticals include e.g. Studios, Broadcasters, and Content providers. The main use cases identified on the Media & Entertainment are: Ultra High Fidelity Media, On-site Live Event Experience, User/Machine Generated Content, Immersive and Integrated Media, Cooperative Media Production and Collaborative Gaming.	https://5g-ppp.eu/wp-content/uploads/2016/02/5G-PPP-White-Paper-on-Media-Entertainment-Vertical-Sector.pdf
Business Verticals	Business Verticals	Business verticals is a group of companies or industry players that serve each other's specialized needs and that do not serve a broader market. Business verticals are tightly focused on meeting the needs of one specific industry, e.g. Automotive, eHealth, Energy, Factories of the Future, and Media & Entertainment.	http://www.investopedia.com/terms/v/verticalmarket.asp
Others	Investors (VCs)	A Venture capitalist (VC) is a sponsor and/or <i>investor</i> * who provides the funding and guidance — and by assuming the risks — necessary for building high-growth companies capable of bringing innovations to the marketplace.	http://www.nvca.org

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
Others	ONOS	The Open Network Operating System (ONOS) project is an open source community hosted by The Linux Foundation. The goal of the project is to create a Software-Defined Networking (SDN) operating system for communications service providers that is designed for scalability, high performance and high availability.	http://onosproject.org
Others	Other international projects	International projects are 5G (or related) projects outside of the 5G PPP programme on international level. Examples of the EU-Japan projects include STRAUSS, MiWEBA, NECOMA, GreenICN, ClouT and FELIX projects.	http://europa.eu/rapid/press-release_IP-13-646_en.htm
Others	Other national projects	National projects are 5G (or related) projects which may be funded by the national funding agencies. The 5thGear is an example of the national project in Finland (http://5gtnf.fi), and the 5G Lab Germany at TU Dresden in Germany (http://5glab.de).	http://5gtnf.fi http://5glab.de
Others	Others	Others represent all the potential stakeholders that are not included in the <i>Policy makers*</i> , <i>Users*</i> , <i>Standardization organisations*</i> , <i>Business Verticals*</i> , <i>5G-related Organisations (Europe & International)*</i> and <i>5G Industry*</i> categories.	
Policy makers	European Commission	The European Commission (EC) is the EU's executive body. It represents the interests of the European Union as a whole (not the interests of individual countries). The term 'Commission' refers to both the College of Commissioners and to the institution itself.	http://ec.europa.eu/about/index_en.htm
Policy makers	Local governments	Local government is an administrative body for a small geographic area, such as a city, town, county, or state.	http://www.businessdictionary.com/definition/local-government.html

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
Policy makers	Regulators: ITU	<p>The International Telecommunication Union (ITU) is an agency of the United Nations (UN) whose purpose is to coordinate telecommunication operations and services throughout the world. Originally founded in 1865, as the International Telegraph Union, the ITU is the oldest existing international organization. ITU headquarters are in Geneva, Switzerland.</p> <p>The ITU consists of three sectors:</p> <ul style="list-style-type: none"> - Radiocommunication (ITU-R) -- ensures optimal, fair and rational use of the radio frequency (RF) spectrum - Telecommunication Standardization (ITU-T) -- formulates recommendations for standardizing telecommunication operations worldwide - Telecommunication Development (ITU-D) -- assists countries in developing and maintaining internal communication operations 	http://www.itu.int/en/about/Pages/default.aspx
Policy makers	Regulators	A Regulator is a person or a body that supervises a particular industry or business activity.	
Policy makers	Regulators: ITU-R / WP 5D	The Working Party 5D (WP 5D) is responsible for the overall radio system aspects of International Mobile Telecommunications (IMT) systems, comprising the IMT-2000, IMT-Advanced and IMT for 2020 and beyond.	http://www.itu.int/dms_pub/itu-r/opb/gen/R-GEN-SGB-2013-PDF-E.pdf#page=39&pagemode=none
Policy makers	Regulators: ECC	The Electronic Communications Committee (ECC) is a body of national regulators operating at the European level to identify and realise the benefits of harmonised approaches to spectrum management across the CEPT* countries.	http://www.cept.org/ecc/who-we-are/participation-in-ecc-work/
Policy makers	Regulators: ECC PT1	The Electronic Communications Committee Project Team 1 (ECC PT1) is responsible for implementing the Wireless Access Policy for Electronic Communications Services (WAPECS) concept (the new European flexible approach based on technology and service neutral regulation) for mobile and fixed communications networks (MFCN).	http://www.cept.org/ecc/groups/ecc-pt1/client/introduction/

Target Stakeholder Main category	Target Stakeholder 2 nd / 3 rd category	Definition	Web-link
Policy makers	Regulators: CEPT	The European Conference of Postal and Telecommunications Administrations (CEPT) activities include co-operation on commercial, operational, regulatory and technical standardisation issues. The CEPT was established in 1959 by 19 countries, which expanded to 26 during its first ten years. Original members were the monopoly-holding postal and telecommunications administrations. Today 48 countries are members of the CEPT.	http://www.cept.org/cept
Policy makers	Regulators: OFCOM	OFCOM is the communications regulator in the UK to regulate the TV, radio and video on demand sectors, fixed line telecoms, mobiles, postal services, plus the airwaves over which wireless devices operate.	http://www.ofcom.org.uk/about/what-is-ofcom/
Policy makers	Smart Cities	Smart city is a city well performing in 6 characteristics, built on the “smart” combination of endowments and activities of self-decisive, independent and aware citizens. The 6 characteristics are the following: Smart Economy; Smart Mobility; Smart Governance; Smart Living; Smart People; Smart Environment (cf. <i>Giffinger, et.al, 2007</i>). A Smart city could use some services and Infrastructures provided by the 5G PPP projects, make these services available to the developers* and thus be an <i>end-user*</i> . A Smart City is also a <i>Policy maker*</i> .	
Policy makers	Policy makers	A Policy Maker is a member of a government department, legislature, or other organization who is responsible for making new rules, laws, etc.	http://dictionary.cambridge.org/us/dictionary/english/policy-maker
Standardization organisations	3GPP	The 3rd Generation Partnership Project (3GPP) unites seven telecommunications Standard Development Organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “Organizational Partners” and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies. The 3GPP project covers cellular telecommunications network technologies, including radio access, the core transport network, and service capabilities - including work on codecs, security, quality of service - and thus provides complete system specifications. The specifications also provide hooks for non-radio access to the core network, and for interworking with Wi-Fi networks.	http://www.3gpp.org

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Standardization organisations	ETSI	The European Telecommunications Standards Institute (ETSI) , a non-profit organization, produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and Internet technologies. The standards enable the technologies on which business and society rely. For example, standards for GSM™, DECT™, Smart Cards and electronic signatures have helped to revolutionize modern life all over the world. More than 800 member organizations worldwide, drawn from 66 countries and five continents. Members include the world's leading companies and innovative R&D organizations.	http://www.etsi.org
Standardization organisations	IEEE	Institute of Electrical and Electronics Engineers (IEEE) , is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. The IEEE covers technology areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics.	https://www.ieee.org
Standardization organisations	IETF/IRTF	The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual with no formal membership or membership requirements. All participants and managers are volunteers, though their work is usually funded by their employers or sponsors. The Internet Research Task Force (IRTF) focuses on longer term research issues related to the Internet while the parallel organization, the Internet Engineering Task Force (IETF), focuses on the shorter term issues of engineering and standards making. The IRTF promotes research of importance to the evolution of the Internet by creating focused, long-term Research Groups working on topics related to Internet protocols, applications, architecture and technology.	https://www.ietf.org

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Standardization organisations	ITU	The International Telecommunication Union (ITU) is the United Nations (UN) specialized agency for information and communication (ICT) technologies . ITU allocates global radio spectrum and satellite orbits, develop the technical standards that ensure networks and technologies seamlessly interconnect, and strive to improve access to ICTs to underserved communities worldwide.	http://www.itu.int
Standardization organisations	Standardization organisations	A Standardization organization (or standards body, Standards Developing Organization (SDO), or Standards Setting Organization (SSO)) is an organization whose primary activities are developing, coordinating, promulgating, revising, amending, reissuing, interpreting, or otherwise producing technical standards that are intended to address the needs of some relatively wide base of affected adopters.	https://en.wikipedia.org/wiki/Standards_organization
Users	Developers	Developer: A developer is an IT organization, software developer company, or individual (<i>web entrepreneur*</i>) that develops Future Internet applications, products, solutions, systems, etc. A developer will use the 5G PPP projects' services and <i>Infrastructures*</i> in order to make its own test and develop its product, solution, system...	
Users	End users	An End user is a person who uses a product, application, solution, system, network services etc. An end user will use some services and Infrastructures provided by the 5G projects.	
Users	Research institutes / -organizations	A research institute (research organization) is an establishment endowed for doing research. Research institutes may specialize in basic research or may be oriented to applied research.	https://en.wikipedia.org/wiki/Research_institute
Users	Smart Cities	A Smart City is a city well performing in 6 characteristics, built on the "smart" combination of endowments and activities of self-decisive, independent and aware citizens. The 6 characteristics are the following: Smart Economy; Smart Mobility; Smart Governance; Smart Living; Smart People; Smart Environment (cf. <i>Giffinger, et.al, 2007</i>). A Smart city could use some services and Infrastructures provided by the 5G PPP projects, make these services available to the developers* and thus be an <i>end-user*</i> . A Smart City is also a <i>Policy maker*</i> .	

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Users	SMEs	<p>a) An SME stands for Small and Medium enterprises, as defined in EU law. The main factors determining whether a company is an SME are: number of employees and either turnover or balance sheet total. (cf. http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm). An SME could use some services and Infrastructures provided by the 5G PPP projects*, make these services available to the developers* and thus be an <i>end-user</i>*.</p> <p>b) An SME is a <i>developer</i>* which can make its own test using the 5G PPP projects' services and Infrastructures in order to develop its product, solution, system, etc.</p>	
Users	Technology Providers	A technology provider is a provider that develops and provides technology solution which can be used by the 5G PPP projects.	
Users	Technology Providers: M2M component providers	The Machine to machine (M2M) component providers are companies providing components, e.g. sensors, RFID, a Wi-Fi or cellular communications link and autonomic computing software programmed to help a networked device interpret data and make decisions. Machine to machine (M2M) is a broad label that can be used to describe any technology that enables networked devices to exchange information and perform actions without the manual assistance of humans.	http://internetofthingsagenda.techtarget.com/definition/machine-to-machine-M2M
Users	Users	Users is an entity that has authority to use an application, equipment, facility, process, or system, or one who consumes or employs a good or service to obtain a benefit or to solve a problem, and who may or may not be the actual purchaser of the item.	http://www.businessdictionary.com/definition/user.html