



Euro-5g – Supporting the European 5G Initiative

D3.1: Communication Hub

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Lead editors	Anja Köhler, Uwe Herzog (Eurescom)
Authors	Frédéric Pujol (IDATE), Jacques Magen (InterInnov), Uwe Herzog (Eurescom)
Reviewers	Frédéric Pujol (IDATE), David Kennedy (Eurescom)
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Abstract	This deliverable provides a description of the 5G Infrastructure PPP website (5g-ppp.eu). It details the website's structure and statistics and informs about further web channels, e.g. a video channel and the 5G PPP twitter account. It also contains a description of the information flows maintained between the 5G projects and relevant communities and stakeholders.

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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 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.

Deliverable D3.1: Communication Hub details how this communication is managed by EURO-5G project. It focuses on the 5G Infrastructure Public Private Partnership Website including the 5G PPP video channel and the 5G PPP twitter account. Further it provides information on the maintenance of information flow between the 5G European R&D projects and other 5G communities and stakeholders. Finally, a number of further tools and services related to communication – internal and external – that have been setup and are currently used in 5G PPP are briefly described.

There has been a smooth transition of the existing 5G PPP communication structures initiated by the NetSoc and 5-Alive projects to EURO-5G. The 5G PPP website and the 5G PPP video channel have been enhanced and continuously updated. The 5G PPP website had more than 21,000 hits in the period from 1 July – 31 October 2015 and the twitter account had more than 900 followers at the end of October 2015. The information flow between the European 5G R&D projects, the EU, the 5G Infrastructure Association and other relevant communities and stakeholders is well maintained.

The 5G website is now serving as a “one stop shop” for 5G activities under the 5G PPP including economic, spectrum and regulatory aspects.

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Abbreviations

5G PPP	The 5G Public Private Partnership
cPPP	Contractual Public Private Partnership
EC	European Commission
ETP	European Technology Platform
EuCNC	European Conference on Networks and Communications
FP7	Seventh EU Framework Programme for Research and Technological Development
H2020	Horizon 2020 (EU Research and Innovation Programme)
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
KPIs	Key Performance Indicators
MCARD	Model Consortium Agreement for Research, Development and Innovation
MWC	Mobile World Congress
RAN	Radio Access Network
SME	Small and Medium-sized Enterprise
TCP	Transmission Control Protocol
WP	Work Package

1 Introduction

This document provides an overview of the Communication hub setup by EURO-5G in its first three months of the project activity and the established information flows. A focal point of that was the setup of the website of the 5G Infrastructure Public Private Partnership (<https://5g-ppp.eu>). This webpage had already been setup by the 5-Alive project prior to the start of EURO-5G, but further enhanced and maintained by EURO-5G from 1 July 2015.

This Deliverable provides details of the website's structure, the support given by EURO-5G, and website statistics. Further it informs about the 5G PPP YouTube channel and the 5G PPP twitter account. It also contains a description of the information flow maintained between the 5G European R&D projects, the EC, the 5G Initiative, and relevant wide communities and stakeholders. Finally, a number of further tools and services related to communication – internal and external – that have been setup and are currently used in 5G PPP are briefly described.

2 The 5G Infrastructure PPP Website

As stated in the introduction section, the 5G PPP website <https://5g-ppp.eu/> has been setup under the 5-Alive project. Starting from July 2015 and in close interaction with the 5-Alive Project, the Euro-5G project took over the maintenance and further enhanced the website. This section provides an overview of the website content and structure and gives some statistical information on usage and page visits.

2.1 Website Structure and Content

A snapshot of 5G PPP website is presented in Figure 1 below. The figure also shows the structure as indicated in the menu bar at the top.

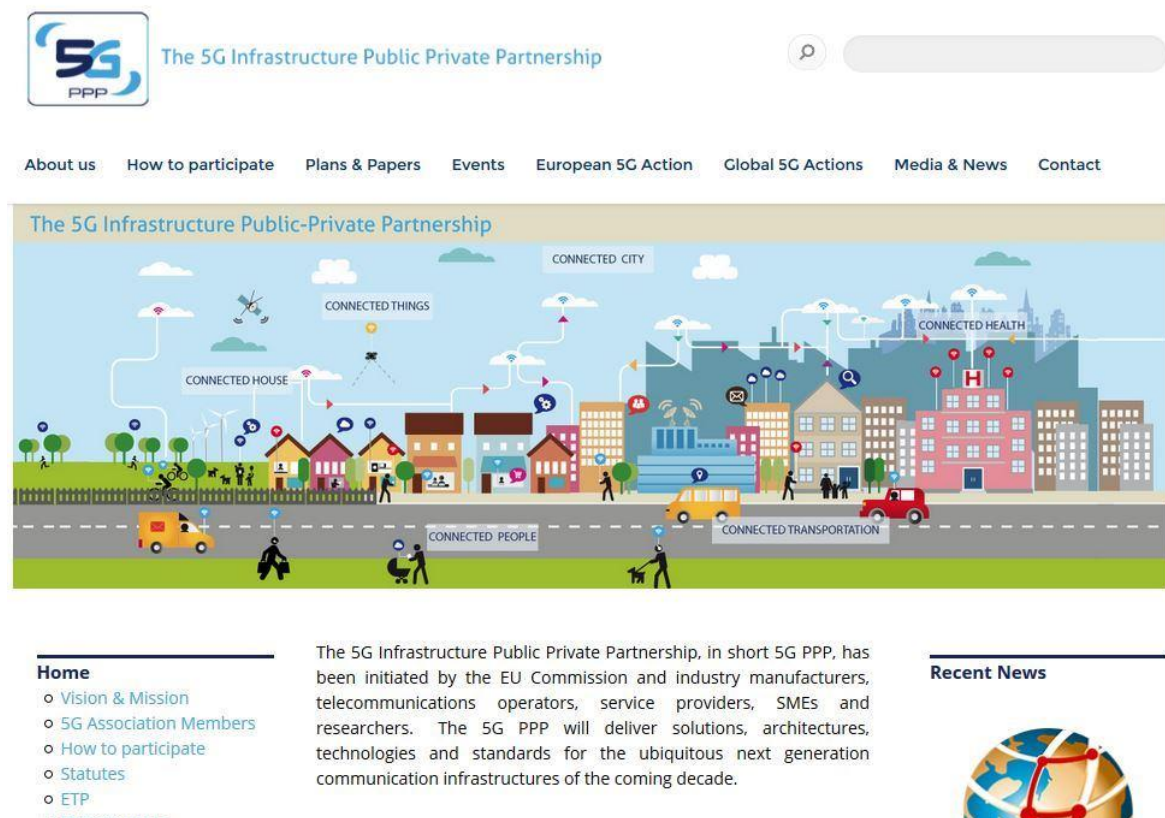


Figure 1: 5G Infrastructure Public Private Partnership website

The **home page** contains general information about the 5G Infrastructure Public Private Partnership including a video clip, news, a list of upcoming events, video and tweets as well as information on the Support Actions that support the website maintenance. Visitors may subscribe to News by entering their email address.

The first menu item '**About us**' includes general information about the 5G Infrastructure Public Private Partnership such as descriptions of the 19 5G PPP Phase 1 projects, the history, the vision and mission of the 5G Infrastructure PPP, info about the 5G PPP Association members, some info on NetWorld2020 ETP, the statutes of 5G PPP, the PPP structure, contract and the PPP Key Performance Indicators (KPIs). The website of the Phase 1 projects is linked to the individual project websites where descriptions of the projects and links to the actual project websites are provided. The submenu item 'PPP Contract' that provides details about the instrument Contractual PPP (cPPP) which is new in Horizon 2020.

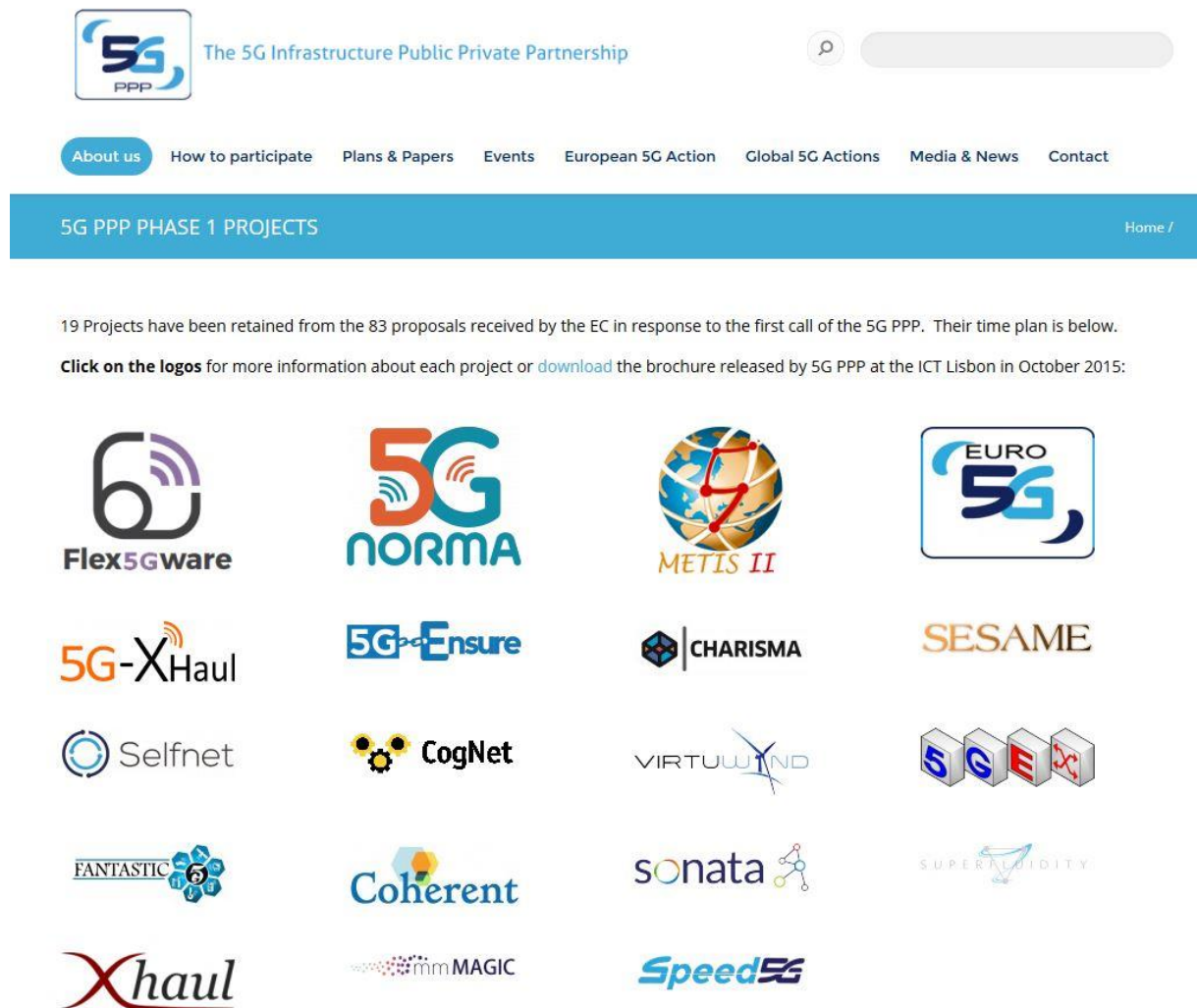


Figure 2: Page listing the 5G PPP Phase 1 Projects

The next menu item ‘**How to participate**’ informs about options on how to follow the 5G PPP activities and how to join the NetWorld2020 ETP. Moreover, there are recommendations on how to propose a 5G PPP project. Finally, as strong participation by SMEs in Horizon2020 is very important, some info about the support offered to SMEs by the NetWorld2020 SME Working Group is provided.

The section ‘**Plans & Papers**’ contains coverage plans, visions and roadmaps, white papers, programme participation hints, and the recommended consortium agreement.

The submenu item ‘Coverage plans’ addresses a pre-structuring proposal based on the H2020 Work Programme.



The 'Visions & Roadmaps' page offers downloads of documents from the 5G PPP and the NetWorld2020 ETP such as the 5G Infrastructure PPP Vision Document or various NetWorld2020 Strategy Papers.

The 'White Paper' webpage provides documents for download as e.g. White Papers from the 5G Infrastructure Association and the Net!Works ETP.

The submenu item 'Programme Participation Hints' explains some of the major changes in H2020 participation compared to FP7, and provides recommendations on 5G PPP proposals.

The webpage 'Recommended Consortium Agreement' offers a download of the MCARD consortium agreement of DigitalEurope which is recommended by the 5G-Infrastructure Association for use by projects of the 5G-Initiative.

The next main menu item, 'Events', provides a list of upcoming and past events related to 5G.

[About us](#)
[How to participate](#)
[Plans & Papers](#)
[Events](#)
[European 5G Action](#)
[Global 5G Actions](#)
[Media & News](#)
[Contact](#)

EVENTS FROM

Date

SEARCH

Search

FIND EVENTS

VIEW AS

List

Upcoming Events

November 2015

DigiWorld Summit 2015

November 17 - **November 19**

Le Corum, Esplanade Charles de Gaulle
Montpellier, 34000 France [+ Google Map](#)

DigiWorld Summit: 'Digital First' 17th-19th November 2015, The Corum - Montpellier (France) IDATE, think tank pioneers of digital economy, is organising its 37th edition of the DigiWorld Summit conference, debating digital innovation which, with increasingly...

[Find out more »](#)

2nd EAI International Conference on 5G for Ubiquitous Connectivity

November 25 - **November 27**

5G Innovation Centre, University of Surrey in Guildford, Guildford, United Kingdom [+ Google Map](#)

Figure 3: Page with Upcoming Events

There are individual submenu items for a number of relevant past events. Currently these are:

- 2nd 5G Vertical Workshop, Brussels, 9 November 2015
- EC-ITRI Workshop, EU ICT Lisbon Conference, 21 October 2015
- 5G Workshop between Regional Initiatives, EU ICT Lisbon Conference, 21 October 2015
- 5G for Vertical Sectors: 5G for vertical industries – 6th Usage Areas Workshop at EuCNC 2015, Paris, 1 July 2015
- 5G PPP @ EuCNC, Paris, 1-2 July 2015
- 5G for Vertical Sectors: 5G Workshop with Verticals, Brussels, 18 June 2015
- 5G-PPP @ MWC, Barcelona, 2-5 March 2015

Most event webpages contain presentations or other information for download.

The next main menu item **‘European 5G Action’** provides information about 5G related research in Europe, e.g. in Horizon 2020, EU FP7 projects, National Initiatives and other European Initiatives.

Menu **‘Global 5G Actions’** informs about global 5G-related activities.

The menu **‘Media & News’** links to various channels that provide news related to the 5G PPP but also any 5G activity beyond the PPP. Dedicated pages were setup for 5G PPP press releases, the 5G PPP video channel, a call of the IEEE Magazine on 5G RAN, and a page offering 5G PPP brochures for download.

Figure 4: 5G PPP video channel

A number of videos were published which show in a short and comprehensible manner what 5G and the 5G PPP are about:

- 5G NORMA demo video, published on 28 October 2015
- 5G PPP – What is 5G? Some of the main challenges of 5G, published on 10 September 2015
- 5G PPP - The 5G Infrastructure Public-Private Partnership, published on 10 September 2015
- 5G PPP - The Contribution of the 5G PPP projects to 5G, published on 10 September 2015

Finally, the menu item **‘Contact’** contains the imprint and the disclaimer of the 5G PPP website.

2.2 Website Statistics

2.2.1 Statistics for the recent period (July – October 2015)

Below table and chart give some information on the webpage statistics. The period in scope is from the start date of EURO-5G (1 July) until end of October 2015.

Table 1 presents statistics of the 5G PPP website for the period of 1 July – 31 October 2015.

Parameter	5G PPP Website
Visits	21,203
Average visit duration	3 minutes, 28 seconds
Average actions (page views, downloads, outlinks and internal site searches) per visit	3
Page views	57,413
Unique page views	44,326
Total searches on the website	551
Unique keywords	304
Downloads	3,071
Unique downloads	2,819

Table 1: 5G PPP website statistics (1 July – 31 October 2015)

Figure 5 below shows the top 10 pages of the 5G PPP website with the most page views in the period from 1 July – 31 October 2015. The chart provides information on both total and unique page views.

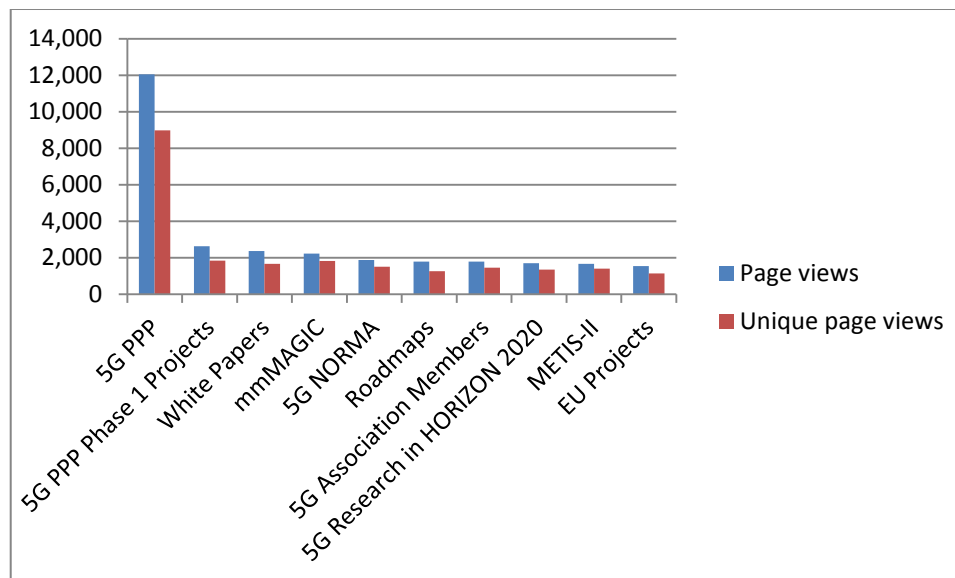


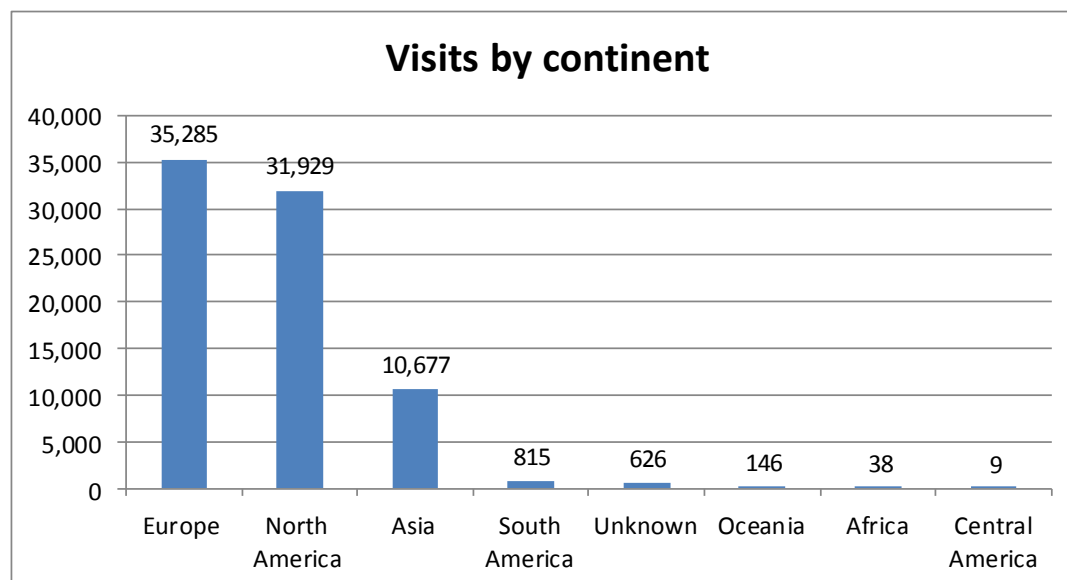
Figure 5: Page views and unique page views of individual 5G PPP web pages

2.2.2 Statistics for the period since the launch of the 5G PPP web

Below some information on web visitors and statistics is given for the whole period since the page has been launched in March 2014.

Report (17/03/2014 – 15/11/2015)

79,525 visits
3 min 27s average visit duration
52% visits have bounced (left the website after one page)
3.1 actions (page views, downloads, outlinks and internal site searches) per visit
225,134 page views, 176,252 unique page views
1,607 total searches on your website, 948 unique keywords
10,023 downloads, 9,278 unique downloads
7,031 outlinks ² , 6,457 unique outlinks



Country

COUNTRY	▼ VISITS
United States	31,760
United Kingdom	6,099
France	5,794
Spain	5,396
Germany	4,799

² “Outlink” shows the list of external URLs that were clicked by your visitors from your website pages. All clicks on URLs that are not the same domain as the website being tracked are counted as “outlinks”.

Top 15 Page Titles

Page Name	Page views	Unique Page views	Bounce Rate ³	Avg. time on page	Exit rate
5G-PPP	53,947	41,699	45%	00:01:27	53%
White Papers < 5G-PPP	7,787	5,833	58%	00:01:26	41%
5G Association Members < 5G-PPP	7,006	5,774	60%	00:01:36	43%
5G RESEARCH IN HORIZON 2020 < 5G-PPP	5,980	4,853	50%	00:01:04	33%
Roadmaps < 5G-PPP	6,220	4,591	56%	00:01:39	44%
EU Projects < 5G-PPP	5,561	3,927	54%	00:02:03	55%
Global 5G Actions < 5G-PPP	4,296	3,420	40%	00:01:04	31%
PPP Structure < 5G-PPP	4,123	3,011	62%	00:01:19	26%
Coverage Plans < 5G-PPP	3,449	2,866	58%	00:01:35	39%
Vision and mission < 5G-PPP	3,045	2,534	68%	00:01:42	45%
History < 5G-PPP	2,944	2,473	65%	00:02:10	44%
5G-PPP Phase 1 Projects < 5G-PPP	3,428	2,335	55%	00:01:46	53%
5G-PPP Brokerage Service 5G-PPP	3,359	2,321	60%	00:01:39	62%
5G-Infrastructure-PPP Information Day, April 28, 2014 – Paris 5G-PPP	2,766	2,210	61%	00:02:56	73%
Vision & Mission < 5G-PPP	2,323	2,018	60%	00:01:31	40%

Top 15 Downloads

Downloaded file	Unique Downloads	Downloads
5G-Vision-Exec-Summary-v1.pdf	594	630
5G-Vision-Brochure-v1.pdf	586	639
5G-Infra-PPP_Pre-structuring-Model_v2.0.pdf	527	563
Specialized-Services-Network-Management-and-5G.pdf	488	521
5G-PPP-Projects.png	269	322
GRAFICO-5PPP-STRUCTURE1.jpg	238	269
5G-PPP-Working-Structure-Proposal-and-Recommendations-Version-2-0.pdf	215	224

³ visits have bounced (left the website after one page)

Downloaded file	Unique Downloads	Downloads
Barani-5G-info-day-28-04-2014.pdf	208	229
5G-PPP-event_Paris_April-28-2014.pdf	197	213
5G-PPP-List-of-Participants.pdf	189	192
March-2014-_5G-Infra-PPP_Pre-structuringModel_v1-0.pdf	176	182
METIS-Concepts-for-5G.pdf	172	178
5G-PPP-LOGO.jpg	155	160
Lefebvre-EC-28-April-2014-Paris.pdf	147	161
Advanced-5G-Network-Infrastructure-PPP-in-H2020_Final_November-2013.pdf	112	122

3 5G PPP Twitter Account

The 5G PPP Twitter account (<https://twitter.com/5gppp>) is used to spread information on the various events and other news (MoUs, conference, press release from H2020 projects, international 5G news...). It currently has 940 followers.

The Twitter account **@5GPPP** had been re-launched via some active promotion in January 2015 in order to better promote the visibility of the 5G PPP and start preparing for the first projects. The number of followers has almost tripled, going from more than 300 to more than 900. The statistics below show also a strong increase in the activities of the account, generating more than 340 tweets in the reported period of time.

@5GPPP	Tweets	Followers	Following	Retweets	Favourite/Like
16/01/15	16	332	31	0	0
20/02/15	32	384	32	28	15
05/03/15	135	456	35	261	78
12/05/15	204	561	37	73	45
26/10/15	332	905	40	182	81
10/11/15	346	940	42	n/a	n/a

Table 2: Statistics for the 5GPPP Twitter Account

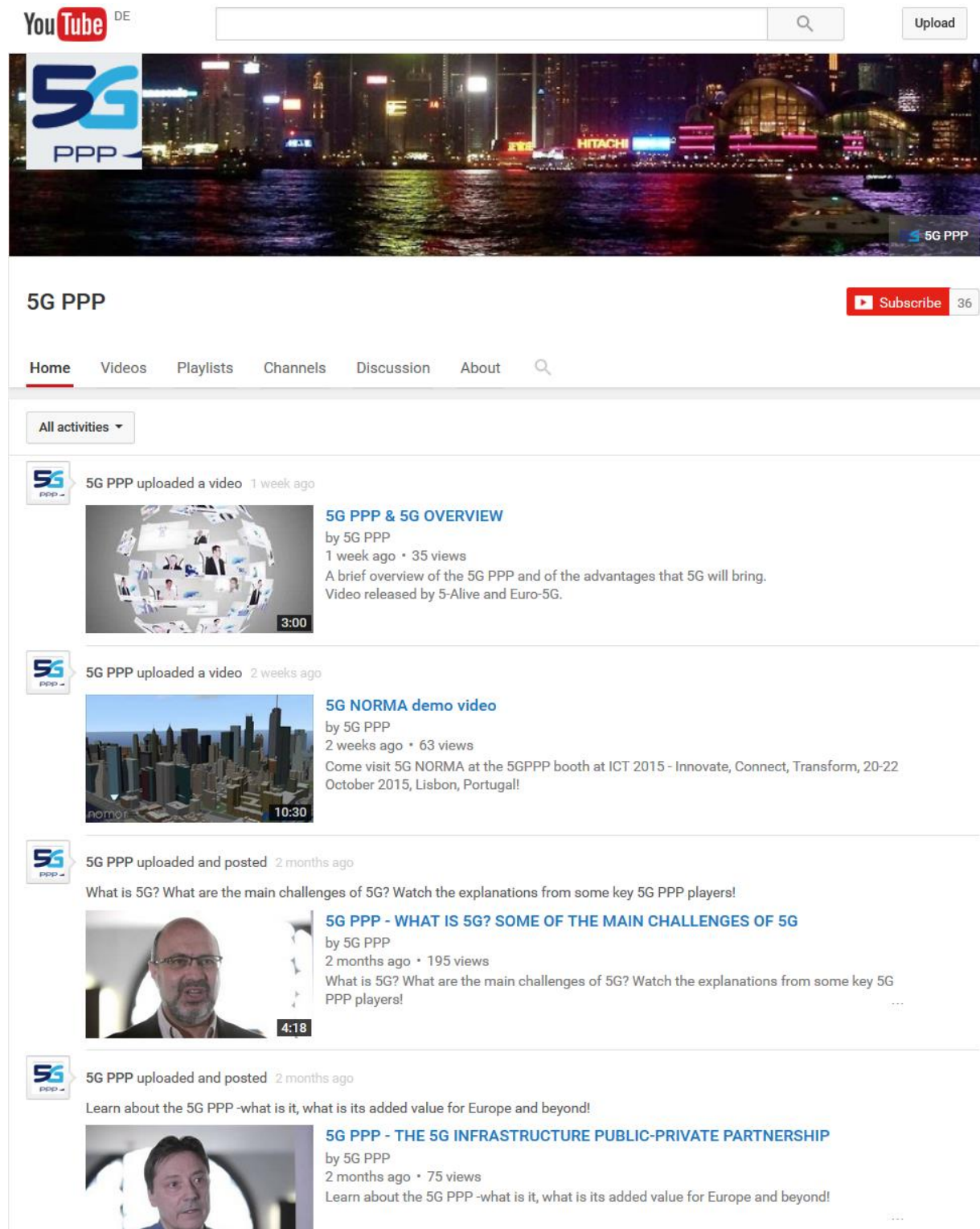
Below two tweets are shown as an example:

<p>Tweet announcing the multi-lateral MoU</p>	
<p>Tweet covering the 5G PPP session during ICT 2015</p>	

Figure 6: 5G PPP twitter account - examples of tweets

4 5G PPP YouTube channel

A dedicated YouTube channel has been set up. There, all 5G PPP projects can post their own videos (<https://www.youtube.com/channel/UCY8mTTwrDoMI35vGkiKq1Eg>). The videos are also relayed on the 5G PPP web site under Menu “Media and News – 5G PPP Video channel” (<https://5g-ppp.eu/video/>).



5G PPP Subscribe 36

Home Videos Playlists Channels Discussion About

All activities ▾

5G PPP uploaded a video 1 week ago

5G PPP & 5G OVERVIEW
by 5G PPP
1 week ago • 35 views
A brief overview of the 5G PPP and of the advantages that 5G will bring.
Video released by 5-Alive and Euro-5G.

5G PPP uploaded a video 2 weeks ago

5G NORMA demo video
by 5G PPP
2 weeks ago • 63 views
Come visit 5G NORMA at the 5GPPP booth at ICT 2015 - Innovate, Connect, Transform, 20-22 October 2015, Lisbon, Portugal!

5G PPP uploaded and posted 2 months ago

What is 5G? What are the main challenges of 5G? Watch the explanations from some key 5G PPP players!

5G PPP - WHAT IS 5G? SOME OF THE MAIN CHALLENGES OF 5G
by 5G PPP
2 months ago • 195 views
What is 5G? What are the main challenges of 5G? Watch the explanations from some key 5G PPP players!

5G PPP uploaded and posted 2 months ago

Learn about the 5G PPP -what is it, what is its added value for Europe and beyond!

5G PPP - THE 5G INFRASTRUCTURE PUBLIC-PRIVATE PARTNERSHIP
by 5G PPP
2 months ago • 75 views
Learn about the 5G PPP -what is it, what is its added value for Europe and beyond!

5 Maintenance of Information Flows

EURO-5G has established direct contacts with the projects of the 5G Initiative in order to facilitate the information exchange. A dedicated team in EURO-5G is tracking activities in the 5G PPP but also beyond the PPP on a day-to-day basis in order to quickly identify important news and to disseminate them through the 5G PPP communication channels.

EURO-5G is in close contact with the people responsible for dissemination in each 5G project. The projects inform EURO-5G about details on forthcoming workshops, seminars, conferences etc. but also about widely visible publications, e.g. press releases. The information is included on the 5G PPP web site. In addition and we also use Twitter for disseminating information related to major events.

In order to be able to quickly inform projects of important news, a dedicated 5G PPP mailing list has been established Comms@5g-ppp..... This is used for any communications and dissemination related exchange. It ensures that the right people both within the 5G projects can be reached, i.e. those in charge of dissemination, but also those within EURO-5G. So far it has already been used for multiple interactions about common presentation materials, brochures, flyers, webs, tweets, etc., and preparations for joint events to work efficiently between the people responsible in the projects. We are confident that this approach will be more efficient than filtering everything through the overworked project leaders.

The communication flow established by EURO-5G also covers the wider community, e.g. by liaison with the Networld2020 ETP and other relevant communities and stakeholders.

6 Further communication-related tools

While the previous sections have focused on the tools most prominently used for external communications, there are a number of further tools and services related to communication – internal and external – that have been setup and are currently used in 5G PPP. They are briefly listed here to give the complete picture:

- Audio conferencing
 - An audio conference bridge is available for telcos e.g. of the 5G Steering Board or Technology Board
- Web conferencing
 - A Web-conferencing tool (WebEx) has been deployed and is available for the same groups as the audio conferencing facilities above.
- WordPress CMS based web site
 - WordPress is used for hosting the 5G PPP web
- Subdomains for projects
 - External administration of two subdomains of 5g-ppp.eu was configured to be available for an external organization (TSSG): `cgnet.5g-ppp.eu` and `netmgmtwg.5g-ppp.eu`. The external organization can set up various hosts and maintain the Domain Name Service (DNS) for these hosts on their own DNS server(s). The name of each host must follow the naming scheme `<ANYTHING>.<SUBDOMAIN NAME>.5g-ppp.eu`, e.g. `www.cognet.5g-ppp.eu`
- 5G PPP/NetWorld2020 ETP consultation forms application on the web site
 - Forms and databases have been setup to enable the community to submit feedback in public consultations e.g. on Whitepapers or the Pre-structuring model
- Mailing lists
 - About 150 mailing lists have been setup for 5G PPP and NetWorld2020 ETP.
- BSCW document management server
 - A BSCW has been setup to provide a document repository for the various bodies and working groups of the 5G PPP
- Personal e-mail accounts for 5G Infrastructure Association Board members
 - All Board members of the 5G Infrastructure Association have been provided with a personal email account `name@5g-ppp.eu`. This enables the Board members to communicate visibly as a member of the 5G Infrastructure Association, instead of using their company- or university email account.
- eVoting tool
 - This tool enables electronic elections, i.e. without the need for a physical meeting. It had already been used for electing the SB and TB Vice-Chairs
- FTP
 - An ftp space has been setup for document storage. It is used e.g. for storing documents that are provided / linked from the 5G PPP web.

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