



Euro-5g – Supporting the European 5G Initiative

The 5G PPP Stakeholders Glossary

Introductory notes:

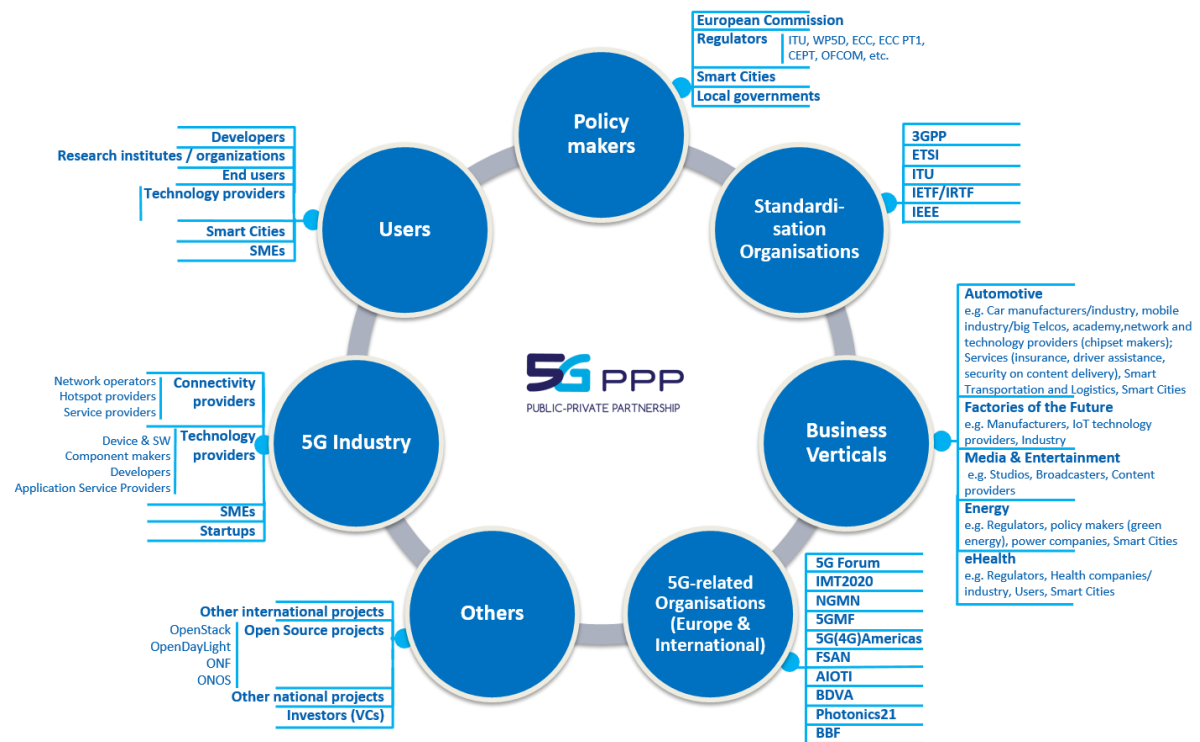
The purpose of this document is to classify and define the different stakeholder groups targeted by the 5G PPP projects.

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.

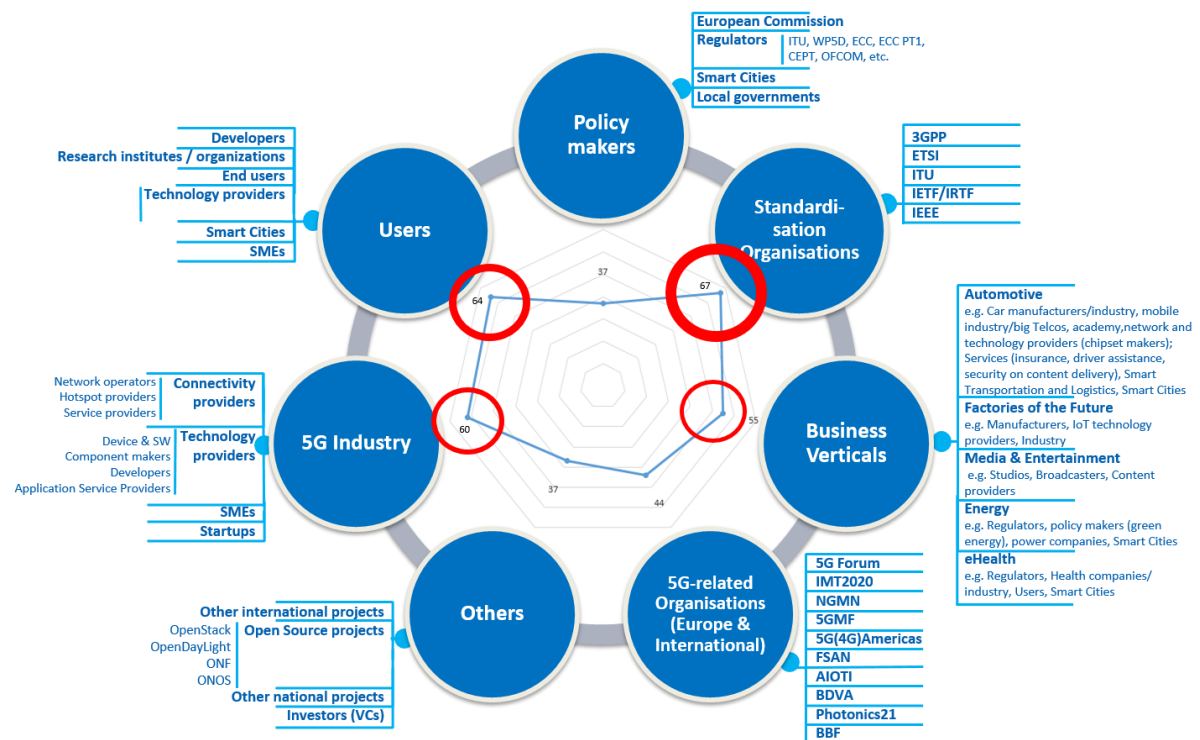
Please note that the asterisk (*) after a word in *italics* indicates a definition elsewhere in the document.

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/
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

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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
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

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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.	
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	

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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
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

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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
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.	

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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
Policy makers	Regulators: ITU	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. The ITU consists of three sectors: - 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/

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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/
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

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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
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

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Standardization organisations	IETF/IRTF	<p>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.</p> <p>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.</p>	https://www.ietf.org
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

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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> .	
Users	SMEs	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> . 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.	
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