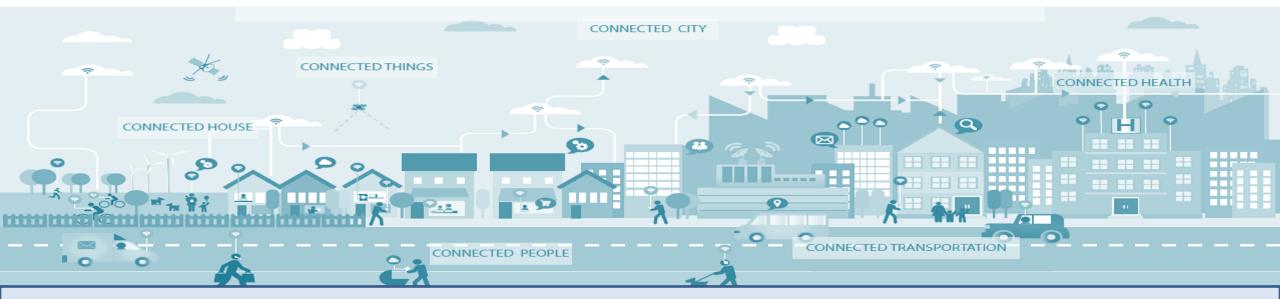




5 PPP Technology Board: Current Status and future activities



5G Experimentation Facilities and Vertical Trials Current Status and Future Perspective

Dr. Alex Kaloxylos
TB chairman

Phase III projects – Reference Figure



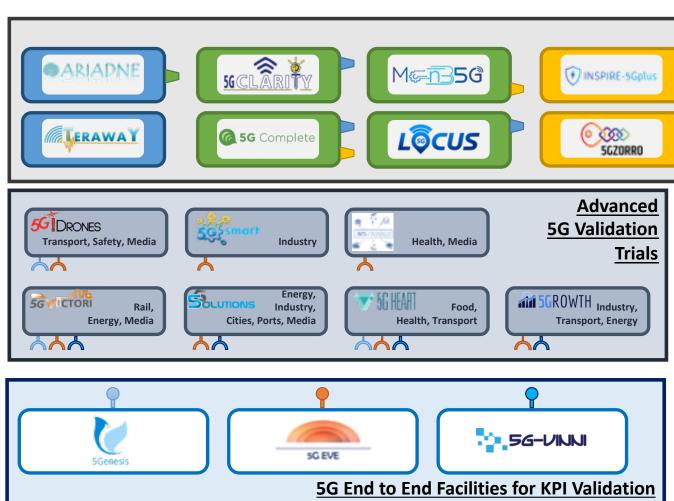


analysis & stakeholder engagement in 5G

Global vision, impact

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Long Term Evolution of 5G

Security

Phase III projects - ICT20 Topics



5G EDGE/MEC

Unikernels-based MEC nodes

[5G-COMPLETE] NFV & MEC Orchestrator for



ADVANCED NETWORK MANAGEMENT [5GZORRO] DLT-Based Spectrum Marketplace

[5GZORRO] Operational Data Lakes For 5G AlOps

[ARIADNE] AI/ML-based radio resources assignment and reconfiguration

[5G-CLARITY] Intent-based mgmt and intelligent control for non-public networks

[MonB5G] Management of massively deployed network slices

[MonB5G] Distributed ML algorithms for novel Analytics in 5G Net mgmt

[LOCUS] Location-aware smart network management

LOCALIZATION

[LOCUS] Location as a network-native service [LOCUS] Location Analytics & behavioural patterns [5G-CLARITY] Ubiquitous cm-level localization [TERAWAY] Positioning of 5G moving nodes

EVOLVED RAN

[ARIADNE] D-Band frequency range

[ARIADNE] Connectivity based on metasurfaces

[TERAWAY] Photonic ultra-high bandwidth transceivers

[TERAWAY] Transceivers in W, D and THz bands (up to 322 GHz)

[5G-CLARITY] Service-based disaggregated RAN (LiFi/WiFi/5GNR)

[5G-COMPLETE] Self-organized mmWave P2MP mesh networks

SECURITY

[Inspire-5Gplus] Architecture for Zero-touch security management in 5G

[Inspire-5Gplus] Intelligent Software-defined security (SD-SEC) orchestration and mgmt

[Inspire-5Gplus] Mechanisms to guarantee trustworthiness and liability

[MonB5G] Al-driven identification and mitigation of malicious threats

[5GZORRO] Smart Contracts for Multi-Operator Ubiquitous Computing

[5G-COMPLETE] Quantum-resistant optical transport

14/10/2020

New Projects coming on board



ICT-42-2020: 5G-PPP 5G Core Technologies innovation

















ICT-53-2020 call: 5G-PPP 5G for Connected and Automated Mobility (CAM)







14/10/2020



SNS PROGRAMME PROPOSAL



Draft proposal for a

European Partnership under Horizon Europe

Smart Networks and Services

Version 30 June 2020

Summary

The European communication networking and services sector is proposing the Smart Networks and Services Partnership to secure European leadership in the development and deployment of next generation network technologies and services, while accelerating European industry digitization. It will position Europe as a lead market and positively impact the citizens' quality of life, while boosting the European data economy and contributing to ensure European sovereignty in critical supply chains.

This document is supported by











- Proposal supported by different communities
 - representing significantly more than 1000 organisations from
 - Industry
 - SMEs
 - Research community (R&D centers and Universities)

Proposal is allocated to

- Horizon Europe
 - cluster "Digital, Industry and Space"
 - area of Intervention "Next Generation Internet" as the center of gravity
 - with some links to other areas such as "Key Digital Technologies" and "Artificial Intelligence" in other Areas of Intervention
- CEF Connected Europe Facility, sub-program on 5G deployments at major European transport routes

Source: SNS proposal. June 30, 2020, https://ec.europa.eu/info/sites/info/files/research and innovation/funding/documents/ec rtd he-partnership smart-networks-

services.pdf

The European path towards global next generation communication network

Produced results in the context of TB



Key achievements v3.0

https://5g-ppp.eu/key-achievements-v3/





Phase 3 Key Achievements from the 5G PPP include
Over 80 highlighted results from projects in phase 3 under
20 program level achievements as shown by the symbols here.
Please click on the symbols to see the relevant results.





































Cross 5G PPP Initiative Documents Cross 5G PPP Initiative Documents

1	European Annual Journal 2020
2	5G Pan-EU Trials Roadmap Version 4.0
3	5G PPP Automotive WG Initial Proposal on how 5G Strategic Deployment can support Connected and Automated Mobility (CAM) in Europe
4	5G PPP Software Network White Paper: "Cloud Native and Verticals' Services – 5G PPP projects analysis
5	5G PPP Architecture White Paper Consolidated version 3.0
6	5G PPP Test, Measurement and KPIs Validation Working Group White Paper – June 2019: "Validating 5G Technology Performance – Assessing 5G Architecture and Application Scenarios
7	5G PPP Automotive White Paper: "Business Feasibility Study for 5G V2X Deployment", Version 2.0
8	5G PPP Annual Progress Monitoring Report
9	On-Board procedure to ICT-17 infrastructure projects
10	5G network support of vertical industries in the 5G PPP ecosystem

Top technical documents

https://5g-ppp.eu/top-ten-papers/

5G PPP Project Papers

	Title	Reference Information
5G- CARMEN	"LightEdge: Mapping the Evolution of Multi- access Edge Computing in Cellular Networks"	

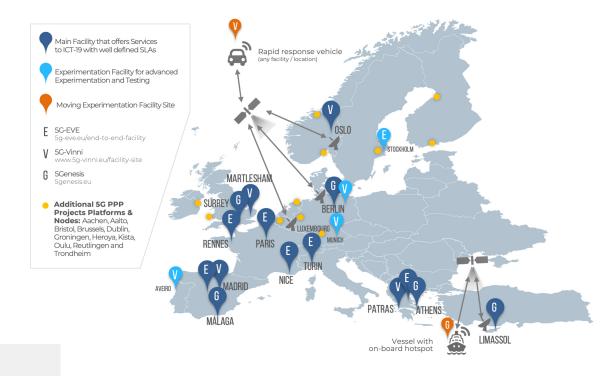
generation towards global next communication network path uropean





Work on cartographies

https://5g-ppp.eu/5g-ppp-platforms-cartography/



Standards Tracker Online Tool

Home » Standards Tracker Online Tool

Standards Tracker - an online collaboration tool for verticals and standards specialists

5G is bringing benefits to a growing number of industry verticals, spanning automotive, broadcasting and media, energy and utilities, healthcare, manufacturing, maritime, mining, public safety, satellite and rural connectivity. Investments in 5G should go hand in hand with inputs to the standards development process to ensure end-user requirements are properly met and that the capabilities, interfaces, and performance characteristics they need are accounted for.

This may sound like a daunting task for many verticals with little or no experience of working with a community of telecom industry specialists. This is where this Standards Tracker comes into play as a collaboration platform helping to lower entry barriers for verticals. It is designed to help specialists from industry verticals navigate their way through the various and often complex processes and stages, define technical requirements and maximise impacts with the resources available to them. It also guides standards specialists in embracing newcomers to create a bigger and more diverse community with potentially high impacts through mutual support.

Its focus for now is on 5G standardisation work within 3GPP as a leader in supporting vertical industries and the roles played by associations like the 5G Infrastructure Association, 5G Automotive Association, 5G Alliance for Connected Industry and Automation and Public Safety Communication Europe. As the 5G standards landscape continues to evolve, so will the tool.

If you are interested in joining this work as an industry vertical, association, regulator or policy maker, please get in touch with me: Stephanie Parker, Trust-IT: s.parker@trust-itservices.com.

How to use the tool and join in

□ Latest updates □ Meetings and Events □ Practical Guide □ Working Groups Requirements Tracking □ Automotive □ Healthcare □ Broadcasting and Media □ Energy and Utilities □ Industrial Internet of Things □ Maritime □ Public Safety and Critical Communications

Mapping of Common Requirements

☐ Rail and Mobility

☐ Satellite

3GPP for Vertical Industries

towards global next generation communication network The European path





- 1. 5G Trials for Cooperative, Connected and Automated Mobility (CCAM) along European Cross-Border Corridors (October 2020)
- 5G Strategic Deployment Agenda for Connected and Automated Mobility in Europe (October 2020)
- 3. Empowering Vertical Industries through 5G Networks (September 2020)
- 4. Business Validation in 5G PPP Vertical Use Cases (June 2020)
- 5. On Board Procedure to 5G PPP Infrastructure Projects (April 2020)
- 6. 5G PPP 5G Architecture White Paper Consolidated Version (February 2020)
- 7. 5G-PPP Software Network WG Paper: "Cloud-Native and 5G Verticals' services" February 2020,
- 8. 5G network support of vertical industries in the 5G PPP ecosystem, February 2020









5G Features	Automotive	Transportation	Media	Smart City	Healthcare	Smart Factories	Energy	Public Safety	(Air)Ports	Tourism	Agrifood
Network Slicing	Х	Х	X	Х	X	Х	Х	Х	Х	X	Х
Mobile Edge Computing	Х	Х	Х	Х	Х				Х	X	Х
Functional Split in RAN		Х	Х								
Advanced Security	Х			Х					Х		
Smart network management			Х	Х	Х		Х	Х			
Location services & Context Awareness	Х	Х	X		Х	Х		Х	Х		
5G NR capabilities	Х	Х	X	Х	X	Х	Х	Х	Х	Х	Х
Softwarization	Х		Х		Х				Х		
Service chaining		Х	Х		Х						
Traffic steering			X								
Spectrum and Coverage	Х	Х	Х								
Guaranteed QoS	Х	Х		Х	Х	Х	Х				





planned 5G functionalities in verticals

5G Features	Automotive	Transportation	Media	Smart City	Healthcare	Smart Factories	Energy	Public Safety	(Air)Ports	Tourism	Agrifood
Network Slicing	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Mobile Edge Computing	Х	Х	Х	Х	Х				Χ	X	Х
Functional Split in RAN		Х	Х								
Advanced Security	Х			Х					Х		
Smart network management			Х	Х	Х		Х	Х			
Location services & Context Awareness	Х	Х	Х		Х	X		Х	Х		
5G NR capabilities	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Softwarization	Х		Х		Х				Х		
Service chaining		Х	Х		X						
Traffic steering			Х								
Spectrum and Coverage	Х	Х	Х								
Guaranteed QoS	Х	Х		X	X	Х	Х				

Verticals white paper: Lessons learned



- 5G networks are not only about faster and more reliable networks.
- 5G is bringing on a level of flexibility in the deployment of new services, which have a diverse set of characteristics, for which 4G networks would not be able to support.
- Researchers are enabled to create rather novel services, parts of which can be even implemented over different network slices.
- 5G networks have been designed to be fully modular and allow the dynamic chaining of virtual functions and allocation of resources.
- These characteristics are the catalyst for the creation of an innovation ecosystem that is expected to shape the full digitization of vertical industries.





- 1. Edge computing for 5G networks
- 2. Al & ML in cellular networks
- 3. Indoor 5G networks

The next TB eWorkshop is being planned for the 9th & 10th of December 2020

towards global next generation

