



PUBLIC-PRIVATE PARTNERSHIP

5G INFRASTRUCTURE PPP

TRIALS & PILOTS

SUMMARY BROCHURE

April 2024

[5G-PPP.EU](https://5g-ppp.eu)



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INTRODUCTION

The 5G Infrastructure Public Private Partnership (PPP) Programme comprised 93 projects that were organized in three distinctive phases, namely, specification, development, and realization of trials and pilots (T&P). As of March 2024, nearly all PPP projects have concluded their activities, with only 8 Phase 3 projects still on-going. Projects generated outstanding results and achieved a large impact, as it has been regularly highlighted in the various documents elaborated by the 5G Infrastructure PPP and the 5G-IA (e.g., whitepapers, reports, brochures, roadmaps), as well as in the corresponding project websites. Collectively, 5G Infrastructure PPP projects created a portfolio of advanced European telecommunication solutions. They also ensured a large momentum and dynamism for the actual trials of these solutions, as well as the further development of 5G systems on the road towards 6G networks, including other projects being funded by the 6G Smart Networks and Services (SNS) Joint Undertaking (JU).

Specifically, Phase 2 and Phase 3 projects were aimed to extensively validate and conduct T&Ps of 5G technology in many vertical sectors, this including automotive, industry, media & entertainment, public safety, health, energy, smart cities, transport & Logistics among others. In this respect, a collection of four “5G Infrastructure PPP – Trials & Pilots” brochures were released in September 2019, December 2020, August 2021 and November 2023. They portrayed 40 of the most impactful Phase 2 and Phase 3 T&Ps. Following open calls addressed to 5G Infrastructure PPP projects, a panel of more than 15 experts selected the 10 T&Ps to be included in each brochure. The evaluation criteria included impact on 5G network definition, achieved KPIs, technology and market readiness Levels, societal impact, 5G empowerment, to name a few.

This Trials & Pilots Summary Brochure is aimed to present a synthesis of the vast amount of work carried out by the portfolio of Phase 2 and Phase 3 5G Infrastructure PPP projects. Section 1 presents a high-level view of the achievements of the project portfolio, this including key figures such as the number of use cases addressed per call or year, or their geographical distribution for the whole duration of the programme. This analysis follows from the data gathered in Section 2. The latter includes a number of tables with the names of the T&Ps and use cases, vertical sectors addressed, locations and dates. This information is fully synchronized with that in the PPP Verticals Cartography. It is worth noting that this summary brochure focuses only on large-scale trials and pilots (i.e. TRLs 5-6-7). Hence, it does not include information on the realization of proofs-of-concept, prototypes and demonstrators. Alternatively, the interested reader is referred to the 5G Infrastructure PPP Verticals Cartography for further information on them (<https://verticals-cartography.5g-ppp.eu>).

We are indebted to all PPP projects and their technical managers and deputies (listed in Section 3 ahead) for their achievements and contributions towards the realization of the challenging goals of the 5G Infrastructure PPP programme. We also warmly thank them for their support in the elaboration of this summary brochure.

We sincerely hope that you will enjoy reading this brochure as much as we did while putting it together.

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5G Infrastructure PPP Trials & Pilots
IN NUMBERS

9 VERTICALS TRANSPORT & LOGISTICS INDUSTRY
HEALTH MEDIA & ENTERTAINMENT
SMART CITIES AUTOMOTIVE ENERGY
PUBLIC SAFETY     



23 COUNTRIES
90 CITIES

322 TRIALS & PILOTS

5 BROCHURES
40 CHAMPIONS



PPP PROJECTS TRIALS & PILOTS

OVERALL SUMMARY PERSPECTIVES & ANALYSIS

This Section 1 presents the overall summary perspectives, including key figures, over the complete PPP lifetime, based on the detailed summary of projects T&Ps captured in Section 2.

First, 322 T&Ps were successfully implemented during the full lifetime of the PPP programme (2015-2024), some of which having been organized over multiple locations/countries. The PPP Programme counted 93 projects over 3 consecutive Phases. Phase 1 included 19 projects that did not contribute to T&Ps. Phase 2 included 21 projects and almost all of them contributed to T&Ps, with a total number of 60 T&Ps. Phase 3 included 53 projects and was implemented in two consecutive sub-Phases, including specifically focused Strategic Objectives (SOs) namely:

Phase 3.1

- ICT-17: Infrastructure Projects.
- ICT-18: Automotive Projects.
- ICT-19: Advanced 5G validation trials across multiple vertical industries.

Phase 3.2

- ICT-20: 5G Long Term Evolution.
- ICT-42: 5G Core technologies innovation.
- ICT-53: 5G for Connected and Automated Mobility (CAM).
- ICT-52: Smart Connectivity beyond 5G.
- ICT-41: 5G innovations for verticals with third party services.

Virtually all projects contributed to T&Ps, with a total number of 262 T&Ps (137 in Phase 3.1 and 125 in Phase 3.2), much higher number compared to Phase 2, as expected also considering the PPP phased evolution and the overall maturity of the R&I.

The distribution of T&Ps over the PPP phases and years is depicted in Figure 1. The major contribution was from ICT-19 projects that were clearly focused on verticals T&Ps.

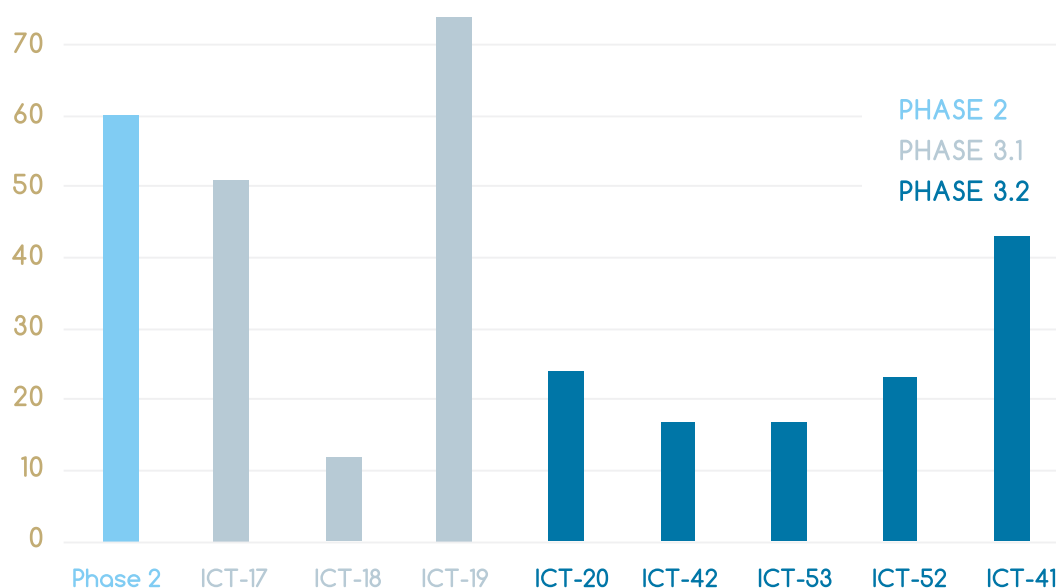


Figure 1: PPP T&Ps over PPP programme phases and years

The distribution of T&Ps over Phases and SOs is depicted in Figure 2.

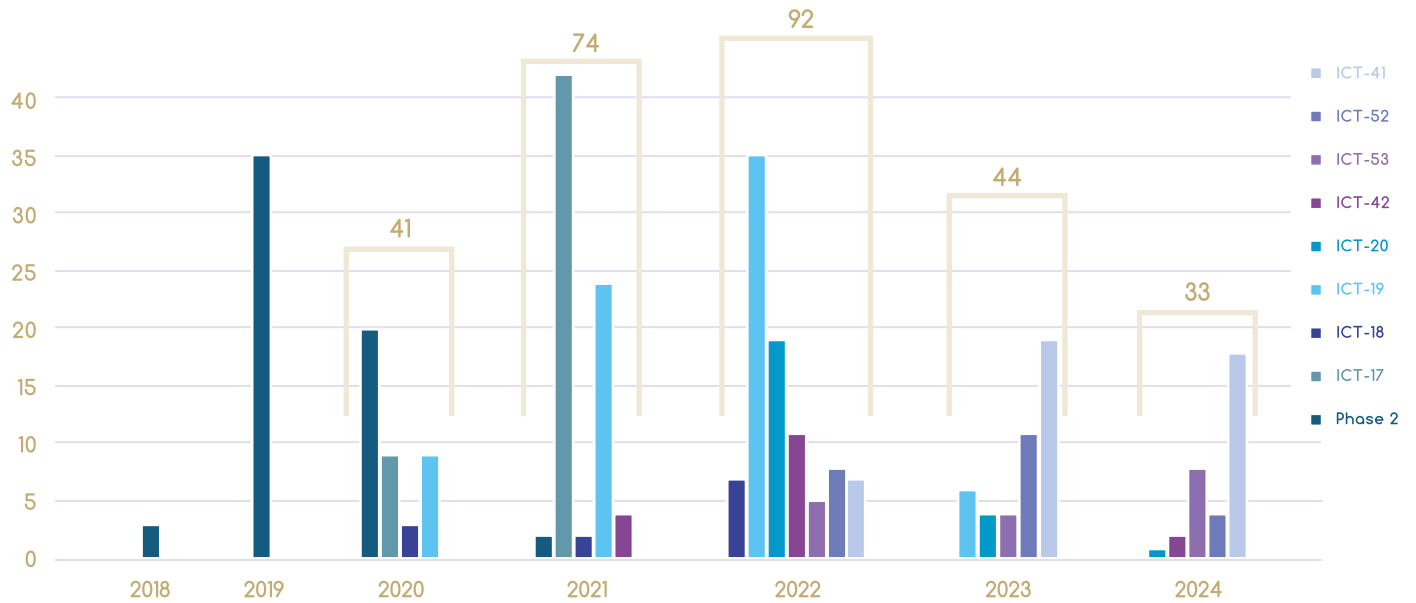


Figure 2: PPP T&Ps over PPP programme Phases/Strategic Objectives

The distribution of T&Ps over EU Countries is depicted in Figure 3. It must be noted that some of the T&Ps listed in Section 2 Tables were run in multiple locations/countries, and, accordingly, the figures in Figure 3. reflect such multi-location T&Ps. Besides, it is worth noting that the figure depicts the locations/countries where the T&Ps took place, but partners from many other countries also contributed to their realization.

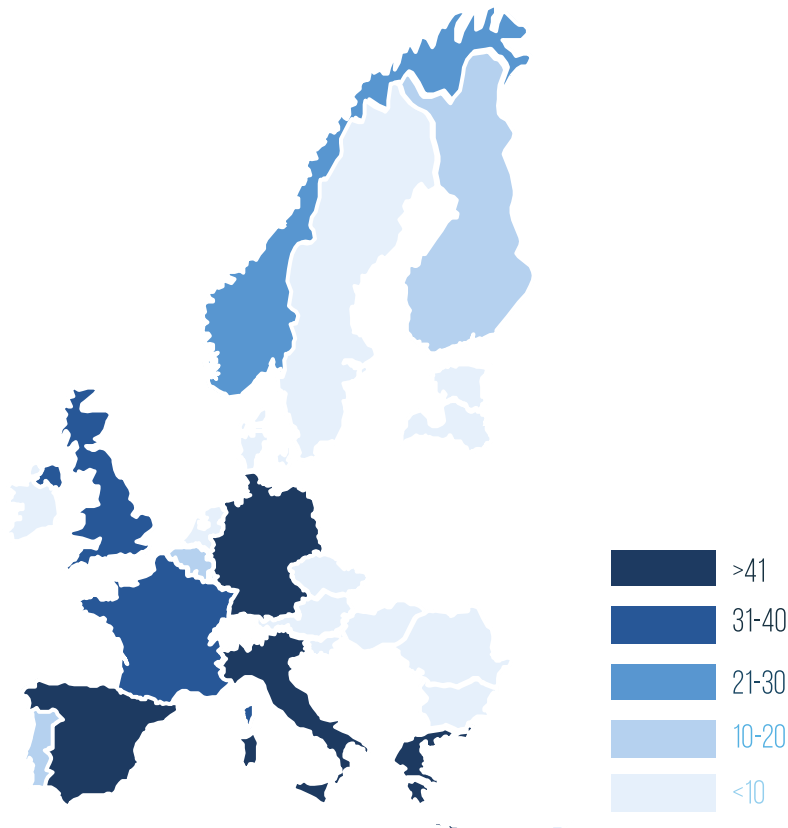


Figure 3: PPP T&Ps over EU Countries

The T&Ps cities cartography is depicted in Figure 4. The city names included correspond to locations with more than 5 T&Ps run or with the highest number of T&Ps in a given country. In this case, one single city name for the related country is included, or potentially two, if equal numbers.



Figure 4: T&Ps Cities Cartography

During the development of the PPP programme and projects, the following specific Verticals categorization was converged and defined over the complete programme:

AUTOMOTIVE

including Connected car – V2X, Autonomous driving, Remote assisted driving, Telematics...

INDUSTRY

Including Manufacturing & Automation (Factory & process automation, In-factory tracking of goods and resources, Telemetry & Monitoring, Zero Defect Manufacturing (ZDM)...), Agriculture & farming technologies, Aquaculture / Aquafarming, Financial Services...

MEDIA & ENTERTAINMENT

Including Broadcast services (B2C, B2B2C, Home production), Immersive & integrated Media and Gaming, (Mass) Media production, generation and consumption, Fixed (Home and SOHO) services, Education (MOOCs)...

PUBLIC SAFETY

Including Emergency communication, Daily first response, Rapid disaster response, Public event management, Critical assets protection and surveillance, Border protection and remote area coverage...

HEALTH

Including Smart health, Smart pharmaceuticals, Medical emergency management, Hospital administration, Telemedicine...

ENERGY

Including (Residential/industry) energy management and provisioning, Energy Distribution, Energy Management, Electric vehicles smart charging, Advanced monitoring and maintenance support, Smart metering...

SMART CITIES

Including Public administration, Tourism, Assisted living, People mobility, Smart Building, I2X (traffic lights, sensors...), Education – Smart Campus...

TRANSPORT & LOGISTICS

Including Rail, maritime and aviation, Efficient mobility of people and goods, Mobility as a Service, Smart Ports (incl. Autonomous assets & Logistics and Safety), Smart Roads, Smart Railways Tracks, Smart Airports...

The distribution of T&Ps over the verticals sectors is depicted in Figure 5. Specific T&Ps targeted multiple verticals sectors (related category in the Figure). As experienced during the PPP lifetime, the major focus for T&Ps was on industry 4.0, transportation and logistics; media and entertainment and automotive, followed then by public safety, smart cities, health and energy. Several Phase 2 and Phase 3.2 projects also served multiple verticals.

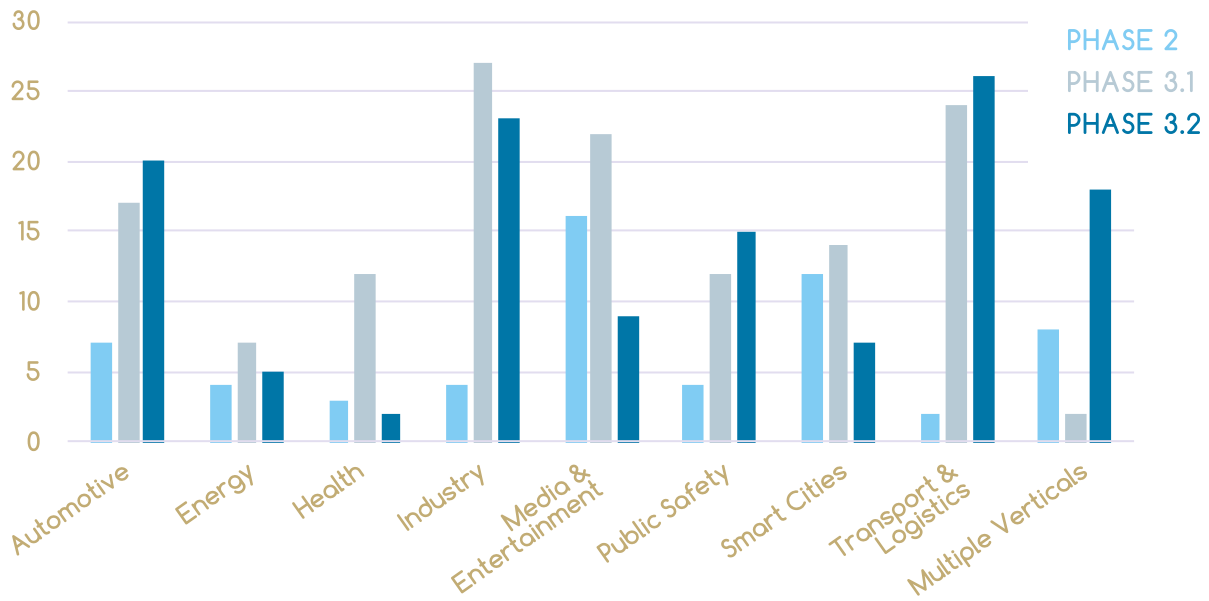


Figure 5: PPP T&Ps over Verticals Sectors

Last but not least, the distribution of T&Ps per Vertical Sectors per Phase and SO is depicted in Figure 6. Complementing the previous analysis, the major contribution to T&Ps was from ICT-19 projects, mainly on Industry, Transports and Logistic and Media and Entertainment.

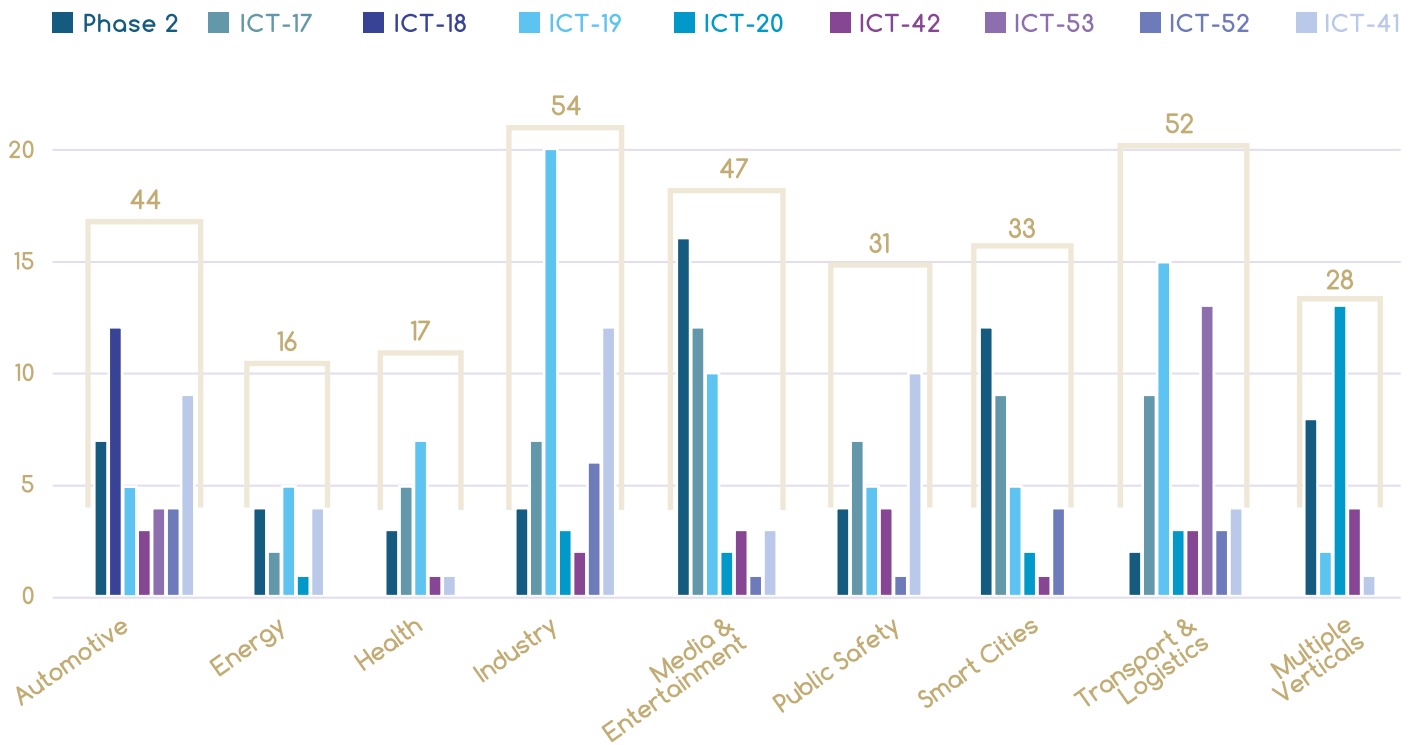


Figure 6: PPP T&Ps over Verticals Sectors per Strategic Objective



TRIALS & PILOTS SUMMARY



5GCAR

5th Generation Communication Automotive Research & Innovation

Lane Merge

Automotive Linas/Montlhery Q2 2019

1 See Through and Sensor Sharing

Automotive Linas/Montlhery Q2 2019

Cooperative Safety

Automotive Linas/Montlhery Q2 2019

1 VRU Protection

Automotive Linas/Montlhery Q2 2019

LEGEND

Trials & Pilots Champions

1 T&P Brochure 1 - 2019

2 T&P Brochure 2 - 2020

3 T&P Brochure 3 - 2021

4 T&P Brochure 4 - 2023

5GCITY

A Distributed Cloud & Radio Platform For 5G Neutral Hosts

3 Neutral host pilot (Telecom pilot)

Smart Cities Lucca, Barcelona, Bristol Q1 2020

Unauthorised Waste Dumping Prevention

Smart Cities Lucca Q1 2020

Mobile backpack media unit (media pilot)

Smart Cities, Media & Entertainment Barcelona Q1 2020

UHD video distribution (media pilot)

Smart Cities, Media & Entertainment Lucca, Bristol Q1 2020

Video acquisition and edge/cloud production (media pilot)

Smart Cities, Media & Entertainment Barcelona, Bristol Q1 2020

Cooperative, Connected and Automated Mobility (V2X pilot services)

 Smart Cities, Automotive  Barcelona  Q1 2020

MEC Orchestrator & VIM IoT

 Smart City  Wien  Q2 2018

Mock-up Lamp post

 Smart City  Wien, Barcelona, Valencia  Q2 2018

5G ESSENCE

Embedded Network Services For 5G Experiences

Next-Generation integrated in-flight Connectivity and Entertainment Systems

 Media & Entertainment  Munich  Q4 2019

E2E Slicing for Mission Critical Applications

 Public Safety  Newcastle  Q4 2019

5G Edge Network Acceleration for Stadium

 Media & Entertainment  Egaleo, Athens  Q4 2019

5G-MEDIA

Programmable Edge-To-Cloud Virtualization Fabric For The 5G Media Industry

Remote Production

 Media & Entertainment  Madrid  Q2 and Q4 2019

Immersive media and Virtual Reality

 Media & Entertainment  Thessaloniki, Valencia  Q2 and Q4 2019

UHD over vCDN

 Media & Entertainment  Barcelona, Amsterdam  Q1 and Q4 2019

5G-MONARCH

5G Mobile Network Architecture For Diverse Services, Use Cases, And Applications In 5G And Beyond



Smart Sea Port



Logistic, Transport



Hamburg



Q2 2019



5G Touristic City



Smart Cities, Tourism



Turin



Q2 2019

5G-PHOS

5G Integrated Fiber-Wireless Networks Exploiting Existing Photonic Technologies For High-Density SdN-Programmable Network Architectures

PON-overlaid analog Fronthaul



Telecom



Turin



Q1 2020

Analog Backhaul/Fronthaul in Hotspot Area



Telecom



Thessaloniki



Q2 2021

Analog Fronthaul in Dense Area



Telecom



Athens



Q4 2021

5G-PICTURE

5G Programmable Infrastructure Converging Disaggregated Network And Compute Resources



Railway



Transport & Logistics



Barcelona



Q4 2019

Mega-event in Stadium



Media & Entertainment



Bristol



Q1 2020

2 Smart City



Smart Cities



Bristol



Q1 2020

5GTANGO

5G Development And Validation Platform For Global Industry – Specific Network Services And Apps

Smart Manufacturing



Industry



Detmold



Q2 2019

Immersive Media



Media & Entertainment



Cologne, Madrid



Q2 2019

Communication Suite



Telecom



Vigo



Q2 2019

5G TRANSFORMER

5G Mobile Transport Platform For Verticals

Extended Virtual Sensing



Automotive



Torino



Q4 2019

On-site live experience



Media & Entertainment



Spanish Golf open 2019



Q4 2019

Ultra High-Definition (UHD)



Media & Entertainment



Madrid



Q4 2019

2 Heart-attack Emergency



eHealth



Madrid



Q4 2019

Cloud robotics

 E-Industry  Madrid  Q4 2019

4G/5G Network as a Service (NaaS)

 Telecom  Madrid  Q4 2019

5G-XCAST

Broadcast and Multicast Communication Enablers For The Fifth Generation Of Wireless Systems

Hybrid Broadcast Service

 Media & Entertainment  Munich  Q3 2018

Multimedia Public Warning

 Public Safety  Turku  Q2 2019

Object-based broadcast

 Media & Entertainment  Guildford  Q3 2019

 Media Content Distribution at Scale

 Media & Entertainment  Munich  Q3 2019

BLUESPACE

Building On The Use Of Spatial Multiplexing 5G Networks Infrastructures And Showcasing Advanced Technologies And Networking Capabilities

High-capacity mm-wave 5G for Smart Office

 Media & Entertainment  Eindhoven  Q2 2020

IORL

Internet Of Radio Light

Building Research Establishment



Media & Entertainment



Watford



Q3 2023

MATILDA

A Holistic, Innovative Framework For The Design, Development, And Orchestration Of 5G-Ready Applications And Network Services Over Sliced Programmable Infrastructure



PPDR - 5G Emergency Infrastructure with SLA Enforcement



Public Safety, Disaster Recovery



Ljubljana



Q3 2019

High Resolution Media on Demand



Media & Entertainment



Genoa, Athens



Q4 2019

Smart Factory – Inter and Intra Enterprise Integration



Industry 4.0



Bremen, Athens



Q4 2020



Smart City Intelligent Lighting System



IoT Smart Cities



Bucharest



Q4 2020

Distributed System Testing (Remote control of automobile testing systems)



Testing 4.0



Bremen



Q4 2020

METRO-HAUL

METRO High bandwidth, 5G Application-aware Optical Network, with Edge Storage, Compute and Low Latency

2 Network Slicing for Improving Public Safety

 Large scale event sites (concerts, sports stadiums)  Berlin  Q2 2020

Crowdsourced Video Broadcast

 MultiMedia  Bristol, Ipswich  Q3 2020

NRG-5

NRG-5 Enabling Smart Energy As A Service Via 5G Mobile Network Advances

Advanced metering as a service (AMIsaaS)

 Energy  Terni (Italy)  Q4 2019

2 Enabling aerial Predictive Maintenance for utility infrastructures (PMaaS)

 Energy  Stublach (UK)  Q4 2019

Enabling resilience and high availability via Dispatchable Demand Response (DDRaas)

 Energy  Terni (Italy)  Q4 2019

ONE5G

E2E-aware Optimizations And Advancements For The Network Edge Of 5G New Radio

1 Serving MegaCities Areas Through 5G Technologies

 MegaCities  Malaga, Athens  Q2 2019

1 Serving Industrial Areas Through 5G Technologies

 Industry  Aalborg  Q2 2019

SAT5G

Satellite And Terrestrial Network For 5G

Satellite backhaul to moving platform

 Airline infotainment  Munich  Q4 2019

Satellite multicast to network edge (MEC)

 Cellular broadband  Surrey  Q4 2019

Satellite multi-linking for video and Internet

 Fixed broadband  Surrey  Q4 2019

SLICENET

End-to-End Cognitive Network Slicing and Slice Management Framework In Virtualised Multi-Domain, Multi-Tenant 5G Networks

1 5G Smart Health (Connected Ambulance)

 eHealth  Cork  Q2 2020

5G Self-Healing Smart Grid

 Energy  Aveiro  Q2 2020

5G Smart City Lighting (SmaLI-5G)

 Smart City  Bucharest  Q4 2019, Q2 2020

2 Wearable eHealth Headset – (Blue Eye)

 eHealth  Cork  Q2 2020

5G-EVE

5G European Validation Platform For Extensive Trials

Media content in high-speed trains

 Transport  Turin  Q1-Q2 2021

5G-EVE

5G European Validation Platform For Extensive Trials

Urban mobility flow management

 Smart city, Transport  Turin  Q3 2020 - Q2 2021

3 Smart Turin: Safety and environment

 Smart city  Turin  Q1-Q2 2021

Smart tourism: Augmented fair experience

 Smart tourism  Turin  Q1-Q2 2021

2 Experiential Tourism through 360° video and VR over 5G

 Smart tourism  Madrid  2019-2020

UHF Media, On-site Live Event Experience and Immersive and Integrated Media

 Media and Entertainment  Madrid  Q3 2020 - Q2 2021

3 Autonomous vehicles in manufacturing environments

 Industry 4.0  Madrid  Q3 2020 - Q2 2021

High-quality multi-site Gaming Experience

 Media and Entertainment  Madrid; Athens  Q1-Q2 2021

Video 360° 5G virtual Visit

 Media and Entertainment  France  Q1-Q2 2021

Fault Management for distributed Energy Generation in Smart Grids

 Smart energy  Paris  Q1-Q2 2021

Resolving Outages and Ensuring the Stability of Smart Grids by means of 5G

 Utilities (smart energy)  Athens  Q1-Q2 2021

Autonomous vehicles in manufacturing environments

 Industry 4.0  Athens  Q3 2020 - Q2 2021

Connected Ambulance; Patient metrics; 4k Video from site

 Healthcare  Athens  Q3 2020 - Q2 2021

Safety and Environment: Health Monitoring and Forecasting

 Smart City  Athens  Q1-Q2 2021

5G-VINNI

5G Verticals Innovation Infrastructure

Neurorehabilitation Therapies Over 5G (W/ Altran)

 eHealth  Leganés  Q1 2021

OSM Orchestration of Edge Deployment using the OpenNess platform

 Media & Entertainment, Smart Cities (Tourism)  Leganés  Q4 2020

OpenQKD Quantum Cryptography for B2B and 5G networks

 eHealth, Industry 4.0, Smart cities  Spain  Q2-Q4 2021

5G Cellular Backhauling via Satellite

 PPDR  Luxembourg  Q3 2020 - Q2 2021

QoS Management for Media Broadcast

 Media & Entertainment  Martlesham  Q1 2020 – Q3 2021

2 Remote robotic control with 360° VR based telepresence – Phase 1

 Industry4.0  Martlesham  Q2 2019 - Q1 2020

Remote robotic control with 360° VR based telepresence – Phase 2

 Industry 4.0  UK  Q4 2019 – Q4 2020

Not-spots in 5G & beyond: Reflectors as a potential remedy

 Undergrounds, Tunnels, Railway Tracks & dense urban cities  UK  Q2 2020 – Q1 2021

Assisted Living equipment test

 Assisted living  Martlesham  Q4 2019 - Q1 2020

5G robotic arm with VR telepresence

 Industry 4.0  Martlesham  Q2 2020

NRG-5 Use case 1: AI-based Object Recognition over 5G

 Transport, Campus, Industry 4.0, Healthcare and public protection  UK  Q4 2020

Augmented Reality Application on Smartphones

 Media  UK  Q4 2021

3 Dedicated slice for Norwegian Defence

 Public Safety  Oslo  Q2 2020

Drone Control

 Public Safety  Oslo  Q2 2021

5G remote robotic ultrasound examination

 Health Care  Oslo  Q4 2020 – Q2 2021

Push to talk for Public Safety Application

 Public safety  Norway  Q3 2021

Remote interventional support for emergency care application - mobile ultrasound

 eHealth  Munich  Q1-Q2 2021

Nomadic Multimedia Acquisition and Delivery

 Media  Berlin  2019-2021

Factory Deployment

 Industry 4.0  Berlin  2019-2021

Ultra-High-Fidelity media

 Media  Greece  2019-2021

User and Machine Generated Content

 Media entertainment, eHealth
  Greece
  2019-2021

Cooperative Media Production

 Media
  Greece
  2019-2021

5GENESIS

5th Generation End-to-end Network, Experimentation, System Integration, And Showcasing

3GPP MCS & Video for Surveillance

 PPDR
  Malaga
  Q2 2021 - Q4 2021

AR/VR to support Teaching at UMA

 Education
  Malaga
  Q3 2021

Mobile Video for Public Safety

 PPDR
  Malaga Port
  Q4 2021

Festival of Lights

 Media and Entertainment
  Berlin
  Q4 2021

5G-enabled UAV Control and Communication

 Transport
  Athens
  Q4 2020

5G-enabled UAV Surveillance (Eye in the Sky)

 Transport /Media and Entertainment
  Athens
  Q4 2021

UAV-enabled Connectivity for Underserved Areas

 Transport & Logistic
  Athens
  Q4 2021

Immersive Applications for Sport Events

 Media and Entertainment
  Athens
  Q4 2021

Security as a Service (Sec-aaS)

 Industry 4.0  Athens  Q4 2021

Satellite-terrestrial (5G) integrated Maritime Communications

 Transport & Logistic  Limassol  Q4 2021

5G-enabled UAV Surveillance (Edge-enabled Agriculture Applications)

 Transport & Logistic  Limassol  Q2 2021

Massive IoT services

 Smart City  Surrey  Q4 2021

Multi-RAT Integration for 5G-enabled Smart-City Applications

 Smart City  Surrey  Q4 2021

5G-CARMEN

5G For Connected And Automated Road Mobility In The European Union

AD I4 Lane-Change Maneuvers Centralized (MEC-based)

 Automotive (cross-border)  Munich, Kufstein, Trento  Q1 2021- Q2 2022




4 5G assisted cooperative and automated manoeuvres in cross-border scenarios

 Automotive (cross-border)  Kufstein, Brennerpass, Trento  Q1 2021- Q2 2022

Edge-Orchestrated ad-hoc Emergency Vehicle Clearance

 Automotive (cross-border)  Brennerpass, Trento  Q1 2021- Q2 2022

AD I4 In-Lane Situation Awareness-based Manoeuvres

 Automotive (cross-border)  Trento, Kufstein, Brennerpass  Q1 2021- Q2 2022

5GCROCO

5G Cross-Border Control

3 4 **Tele-operated Driving (ToD)**

 Automotive (cross-border)  Munich  Q3 2020, Q3 2021

3 **HD maps for enabling autonomous driving**

 Automotive (cross-border)  A9 Germany, AstaZero  Q3 2020, Q3 2021

3 **Anticipated Cooperative Collision Avoidance**

 Automotive (cross-border)  Monthléry, Barcelona  Q3 2020, Q3 2021

5G-MOBIX

5G For Cooperative & Connected Automated Mobility On X-Border Corridors

Advanced Driving (lane merge, overtaking, collision avoidance, assisted advanced driving)

 Automotive (cross-border)  Spain - Portugal + FR, NL, CN  Q1 2021 - Q2 2022

4 **Vehicles Platooning (see-what-i-see, L4 platooning)**

 Automotive (cross-border)  Greece - Turkey + DE, CN  Q1 2021 - Q2 2022

Extended sensors (assisted border crossing, cooperative perception / HD maps)

 Automotive (cross-border)  Brennerpass, Trento  Q1 - Q2 2021

4 **Remote Driving (automated shuttle, tele-operation, remote manoeuvre)**

 Automotive (cross-border)  Spain - Portugal + FI, NL, CN, KR  Q1 - Q2 2021

Vehicle QoS support (public transport scenarios, tethering via vehicle)

 Automotive (cross-border)  Spain - Portugal + KR  Q1 - Q2 2021

5G!DRONES

Unmanned Aerial Vehicle Vertical Applications' Trials Leveraging Advanced 5G Facilities

UAV Traffic Management

 SCI: UTM Command and Control  France/5G-EVE  Q3 2020 – Q2 2022

Situation awareness

 Monitoring a wildfire  France/5G-EVE  Q3 2020 – Q2 2022

Public safety

 Disaster recovery  France/5G-EVE  Q3 2020 – Q2 2022

UAV Traffic Management

 Location and aviation restriction map  Aalto, Oulu  Q3 2020 – Q2 2022

UAV Traffic Management

 UAV Logistics  Aalto  Q3 2020 – Q2 2022

IoT

 Enhanced IoT data collection  Aalto  Q3 2020 – Q2 2022

UAV Traffic Management

 Map & supporting visualization/analysis software  Oulu  Q3 2020 – Q2 2022

Public safety

 Police Including counter-UAS  Oulu  Q3 2020 – Q2 2022

Situation awareness

 Long range power inspection/
SAR Operation on lake  Oulu  Q3 2020 – Q2 2022

Situation awareness

 Location in non-GPS environments  Oulu  Q3 2020 – Q2 2022

Connectivity Extension

 Improve connectivity in highly
crowded environments  Athens / 5GENESIS  Q3 2020 – Q2 2022

5G HEART

5G Health Aquaculture And Transport Validation Trials

4

5G empowers ambulance services



Healthcare



Oslo, Oulu, Groningen



Q3 2021 - Q3 2022

Automatic Polyp Detection



Healthcare



Oslo



Q3 2021 - Q3 2022

Vital-sign patches with advanced geo-localization



Healthcare



Eindhoven, Grenoble



Q3 2021 - Q3 2022

Smart junctions



Automotive



Groningen



Q3 2021 - Q3 2022

Human tachograph



Automotive



Oulu



Q3 2021 - Q3 2022

Remote driving



Automotive



Surrey



Q3 2021 - Q3 2022

Vehicle sourced HD mapping



Automotive



Surrey



Q3 2021 - Q3 2022

Remote monitoring of water and fish quality



Aquaculture



Athens, Oslo



Q3 2021 - Q3 2022

Concurrent testing



Automotive and
Healthcare

Aquaculture
and Healthcare



Surrey, Athens



Q1 2021 - Q3 2022

5GROWTH

5G-enabled Growth In Vertical Industries

3 Connected Worker Remote Operation of Quality Equipment

 Industry 4.0  Bilbao  Q2 2021 - Q4 2021

Connected Worker Augmented Zero Defect Manufacturing (ZDM) Decision Support System (DSS)

 Industry 4.0  Bilbao  Q2 2021 - Q4 2021

2 Digital Twin Apps

 Industry 4.0  Torino  Q2 2021 - Q4 2021

2 Telemetry/Monitoring Apps

 Industry 4.0  Torino  Q2 2021 - Q4 2021


2 3 Digital tutorials and remote support

 Industry 4.0  Torino  Q2 2021 - Q4 2021

Safety Critical Communications

 Transportation  Porto de Aveiro  Q2 2021 - Q4 2021

Non-safety Critical Communications

 Transportation  Porto de Aveiro  Q2 2021 - Q4 2021

4 Advanced monitoring and maintenance support of secondary substation - Medium Voltage/Low Voltage (MV/LV) distribution substation

 Energy  Technological Campus of the University of Aveiro  Q2 2021 - Q4 2021

4 Advanced critical signal and data exchange across wide smart metering and measurement infrastructures

 Energy  Technological Campus of the University of Aveiro  Q2 2021 - Q4 2021

5GSMART

5G For Smart Manufacturing

5G-Enhanced Industrial Robots

 Industry 4.0  Kista  Q4 2021

5G for Enhanced Industrial Manufacturing Processes

 Industry 4.0  Aachen  Q4 2021

5G in Semiconductor Factory

 Industry 4.0  Reutlingen  Q4 2021

5G-SOLUTIONS

5G Solutions For European Citizens

Time-critical process optimization inside digital factories

 Factory of the Future  Brussels  Q2-2021 - Q3-2022

Non-time-critical communication inside the factory

 Factory of the Future  Brussels, Ireland, Trondheim  Q2-2021 - Q3-2022

Remotely controlling digital factories

 Factory of the Future  Brussels, Trondheim  Q2-2021 - Q3-2022

Connected goods

 Factory of the Future  Brussels  Q2-2021 - Q3-2022

Rapid deployment, auto/re-configuration, testing of new robots

 Factory of the Future  Trondheim  Q2-2021 - Q3-2022

Industrial Demand Side Management

 Smart Energy  Turin  Q3-2020 - Q3-2022

Electrical Vehicle (EV) Smart Charging

 Smart Energy  Turin  Q3-2020 - Q3-2022


Electricity network frequency stability

 Smart Energy  Turin  Q3-2020 - Q3-2022




Smart city co-creation

 Smart Cities  Trondheim  Q4-2021 - Q3-2022




Smart buildings / Smart campus

 Smart buildings  Dublin  Q3-2020 - Q3 2022

Autonomous assets and logistics for smart harbour/port

 Smart Ports  Herøya (Norway)  Q1-2021 - Q3-2022

Port Safety: monitor & detect irregular sounds

 Smart Ports  Herøya (Norway)  Q3-2021 - Q3-2022

Ultra High-Fidelity Media

 Media & Entertainment  Patras  Q3-2020 - Q2-2022

Multi CDN selection

 Media & Entertainment  Patras  Q4-2021 - Q2-2022

On-site Live Event Experience

 Media & Entertainment  Patras, Norway  Q3-2021 - Q2-2022

User & Machine Generated Content

 Media & Entertainment  Patras  Q3-2020 - Q2-2022

Immersive and Integrated Media and Gaming

 Media & Entertainment  Patras  Q3-2020 - Q2-2022

3 Cooperative Media Production

 Media & Entertainment  Patras  Q3-2020 - Q2-2022


Multi-vertical concurrent usage of 5G slices

 Many  Norway, Turin and Patras  Q3-2021 - Q4-2022

5G-TOURS

Smart Mobility, Media And E-Health For Tourists And Citizens

Augmented tourism experience

 Smart Cities (Tourism)  Turin  Q2 2020

Telepresence

 Smart Cities (Tourism)  Turin  Q2 2020

Robot-assisted museum guide and monitoring

 Enhanced Tourism  Turin  Q4-2020 Q3-2021 Q3-2022

High quality video services distribution

 Media  Turin  Q3-2020 - Q2-2022

Remote and distributed video production

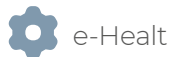
 Media  Turin  Q2 2020 - Q2 2021

Remote health monitoring and emergency situation notification

 e-Health  Rennes  Q3-2020 - Q2-2022

Teleguidance for diagnostics and intervention support

 e-Health  Rennes  Q3-2020 - Q2-2022

Wireless operating room

e-Health



Rennes



Q3-2020 - Q2-2022

Optimal ambulance routing

e-Health



Rennes



Q3-2020 - Q2-2022

Smart Airport parking management

Transport & Logistics



Athens



Q3-2020 - Q1-2022

Video-enhanced ground-based moving vehicles

Transport & Logistics



Athens



Q3-2020 - Q1-2022

Emergency airport evacuation

Transport & Logistics



Athens



Q3-2020 - Q1-2022

Excursion on an AR/VR-enhanced bus

Transport & Logistics



Athens



Q3-2020 - Q1-2022

5G-VICTORI

Vertical Demos Over Common Large Scale Field Trials for Rail, Energy And Media Industries

eMBB under high speed mobility in Rail environments

Transport & Logistics



Patras



2022

3 Digital Mobility

Transport & Logistics

Bristol, Berlin,
Alba Iulia MunicipalityQ4 2022 - Q2 2023
- Q2 2022**Critical services for railway systems**

Transport & Logistics



Berlin



Q2 2023

Factories of the Future: Digital Utilities

 Industry  Patras  Q2 2023

CDN services in dense static and mobile environments

 Media & Entertainment  Berlin, Patras  Q2 2023

Energy metering for HV and LV

 Industry  Patras, Alba Iulia Municipality  Q2 2023 - Q2 2022

5G CLARITY

Beyond 5G Multi-Tenant Private Networks Integrating Cellular, Wi-Fi, And LiFi, Powered By Artificial Intelligence And Intent Based Policy

Wireless multi-service support in Industry 4.0

 Industry Logistics , Industry 4.0  Madrid  Q4 2022

Enhanced positioning for AGV in intralogistics process

 Industry Logistics , Industry 4.0  Madrid  Q4 2022

Enabling enhanced human-robot interaction

 Smart City, Tourism  Bristol  Q1 2022

5G COMPLETE

A Unified Network, Computational And Storage Resource Management Framework Targeting End-To-End Performance Optimization For Secure 5G Multi-Technology And Multi-Tenancy Environments

5G-COMPLETE Infrastructure Slices in Support of Smart Energy Metering Services

 Smart Energy, Smart Cities  Athens  Q2 2022

5G System over Multi-domain Transport Infrastructure for UHD videos streaming and mobile robots



Vertical-agnostic
(enabler)



Lannion



Q2 2023

5G Wireless Transport services with MEC capability for NOs and Advanced Surveillance/ Physical Security Service



Vertical-agnostic
(enabler)



Athens



Q1 2024

Service Slices Deployment in 5GUK Test Network



Media and Entertainment,
Smart Cities, Gaming



Bristol



Q4 2023

INSPIRE-5GPLUS

Intelligent Security And Pervasive Trust For 5G And Beyond

Secured Anticipated Cooperative Collision Avoidance



Transportation



Barcelona



Q4 2022

Definition and assessment of Security and Service Level Agreements and automated remediation



Vertical-agnostic



Paris



Q4 2022

Network attack detection over encrypted traffic in SBA



Vertical-agnostic



Madrid, Paris



Q4 2022

E2E Encryption TEE secured SECaaS



Vertical-agnostic



Murcia



Q4 2022

End-to-End Slice Protection based on Moving Target Defense and Anomaly Detection



Vertical-agnostic



Athens



Q4 2022

GDPR aware counterparts for cross-border movement

 Vertical-agnostic  Murcia  Q3-2020 - Q2-2022

Intelligent and Secure Management of Shared Resources to Prevent (D)DoS

 Vertical-agnostic  Paris  Q3-2020 - Q2-2022

Security posture assessment and threat visualization of 5G networks

 Vertical-agnostic  Athens  Q3-2020 – Q1-2022



Secure and privacy enabled local 5G infrastructure

 Vertical-agnostic  Oulu  Q3-2020 – Q1-2022




LOCUS

Localization And Analytics On-Demand Embedded In The 5G Ecosystem For Ubiquitous Vertical Applications


Smart Network Management

 Smart Cities - multiple verticals  Malaga  Q4 2022

Self-driving Objects

 Transportation, Factory of the future, Ports - Airports  Livorno Interport  Q4 2022

People Mobility

 Transportation, Smart City, Airports, Tourism  Athens  Q4 2022

MONB5G

Distributed management of Network Slices in beyond 5G

Zero-Touch Network and service management with end-to-end SLAs

 Augmented Reality (AR), Tactile Internet  Barcelona  Q2 2022

AI-assisted policy-driven security monitoring & enforcement

 Application-agnostic  Sophia-Antipolis  Q2 2022

TERAWAY

Terahertz Technology For Ultra-Broadband And Ultra-Wideband Operation Of Backhaul And Fronthaul Links In Systems With SDN Management Of Network And Radio Resources

Establishment of Photonics-based THz Links

 Application-agnostic  Athens  Q4 2023

Demonstration of the feasibility of THz-based Localization Process

 Industry 4.0, Application agnostic  Athens  Q4 2023

Backhaul/Fronthaul cellular Connectivity / PtP x-Haul Wireless Links in W/D and THz Bands, integrated in a 5G core network

 Application-agnostic  Athens  Q4 2023

5G-LOGINNOV


5G Technologies To Innovate Logistics And Ports For A Sustainable Future

Floating Truck & Emission Data, GLOSA & Automated Truck Platooning, Dynamic control loop for environment sensitive traffic management

 Industry 4.0 & Automotive  Hamburg Port area  Q3 2022-Q2 2023

Optimal selection of yard trucks, Optimal surveillance cameras and video analytics, Predictive Maintenance

 Industry 4.0, Transport & Logistics

 Athens-Pireus Port area

 Q3 2022-Q2 2023

Port control, logistics and remote automation, Business critical and mission critical communications

 Industry 4.0, Transport & Logistics

 Luka Koper Port area

 Q3 2022-Q3 2023

5G META

Monetizing Car & Mobility Data For New Entrants, Technologies And Actors

R&D Live Training Loop-5G

 Automotive

 San Sebastian

 Q3 2022-Q4 2023

Networking Parking

 Smart Cities

 Satory

 Q3 2022-Q4 2023

Driving Safety & Awareness

 Automotive

 Turin and Modena


 Q3 2022-Q4 2023

5G-RECORDS

5G Key Technology Enablers For Emerging Media Content Production Services

Live Audio Production, Multiple Wireless Cameras, Live Immersive Media Production

 Professional Content Production

 Sophia Antipolis, Aachen, Segovia, Madrid

 Q3 2022, Q3 2022, Q2 - Q3 2022

AFFORDABLE5G

High-tech and affordable 5G network roll-out to every corner

Emergency Communications: critical services system. Service Capacity. Increasing Latency. Main Core Outage



PPDR



Malaga, Barcelona



Q1 - Q2 2022

Smart City Edge Deployment: Detection and Triggering of Emergency Situations. Tracking of Targets



Smart Cities, Public Safety



Malaga, Barcelona



Q1 - Q2 2022

FUDGE-5G

Fully Disintegrated Private Networks For 5G Verticals

Concurrent Media Delivery comprising of Remote Production and Media Showroom



Media and Entertainment



Oslo



Q4 2021 - Q2 2022

Deployable 5G Network for Public Protection and Disaster



PPDR



Rygge



Q4 2021 - Q2 2022

5G Virtual Office for Hospitals



e-Health



Oslo



Q4 2021 - Q2 2022

Industry 4.0 Campus Network



Industry 4.0



Oslo



Q4 2021 - Q2 2022

Interconnected NPNs



Eduroam, Industry4.0, inter-connecting Football Stadiums



Oslo, Valencia, Berlin



Q3 2022, Q4 2022

INT5GENT

Integrating 5G Enabling Technologies In A Holistic Service

Monitoring, Maintenance and Security Services for Critical Infrastructures, (in the presence of other Telecom Operator Services)

 Railway Infrastructure Monitoring Services
  Barcelona
  Q4 2022 - Q4 2023

High-capacity Connectivity to FWA Terminals and Self-organising Nodes, with enhanced Baseband Signal Processing and Data Processing at the Edge

 Video Processing Services
  Athens
  Q1 2024 – Q2 2024

Portable 5G Mobile System with Cloud native Capabilities and AI-based Edge Analytics

 PPDR with Drone-based Video Streaming and Monitoring
  Athens
  Q1 2024 – Q2 2024

5G-BLUEPRINT

Next Generation Connectivity For Enhanced, Safe & Efficient Transport & Logistics




Automated barge control

 Transport & Logistics
  Antwerp, Zelzate
  Q3-Q4 2022, Q1-Q3 2023




Automated docking

 Transport & Logistics
  Vlissingen
  Q2-Q4 2022, Q1-Q4 2023

CACC-based platooning

 Automotive across borders
  Antwerp, Vlissingen, Zelzate
  Q2-Q4 2022, Q1-Q4 2023

Remote takeover

 Transport & Logistics
  Antwerp, Vlissingen, Zelzate
  Q2-Q4 2022, Q1-Q4 2023

5GMED

Sustainable 5G Deployment Model For Future Mobility In The Mediterranean Cross-Border Corridor

Small-scale trials: Remote Driving UC, Road Infrastructure, Digitalisation UC, Follow-ME Infotainment UC

Automotive
Cross-border scenarios

Castellolí, París-Satory, E-15
highway in cross-border

Q3 - Q4 2023

Small-scale trials: Future Railway Mobile Communications UC

Railways
Cross-border scenarios

Rail track in cross-
border area using LFP
maintenance train

Q3 - Q4 2023

Large-scale trials: Remote Driving UC, Road Infrastructure Digitalisation UC, Follow-ME Infotainment UC

Automotive
Cross-border scenarios

E-15 highway in cross-border

Q2 2024

Large-scale trials: Future Railway Mobile Communications UC

Railways
Cross-border scenarios

Rail track in cross-border
area using TGV train (SNCF)

Q2 2024

5G-ROUTES

5th Generation Connected And Automated Mobility Cross-Border EU Trials

See-Through Platooning

Terrestrial Ecosystem,
Automated Driving,
URLCC + eMBB

Latvian Estonian
border, Valka/Valga

Q2 2024

Sharing perception and road hazard at the border for connected and automated driving

Terrestrial Ecosystem,
Awareness Driving, URLCC

Latvian Estonian
border, Valka/Valga

Q2 2024

3D Real-time Virtual Collaboration on the Go, Railway Passengers



Terrestrial Ecosystem, Uninterrupted Infotainment Passenger Service on the Go, eMBB + URLCC



Latvian Estonian border, Valka/Valga



Q2 2024

360 Immersive Multiuser Gaming on the Go



Terrestrial & Maritime Ecosystem, Uninterrupted Infotainment Passenger Service, URLCC



Latvian-Estonian border, Valka/Valga, Gulf of Finland (Helsinki-Tallinn)



Terrestrial: Q2 2024
Maritime: Q3/24

Connected logistics



Maritime Ecosystem, Multimodal Services, mMTC



Gulf of Finland (Helsinki-Tallinn)



Q3 2024

Live video streaming between ferries and between ferry and harbour at cross-border



Maritime Ecosystem, eMBB



Gulf of Finland (Helsinki-Tallinn)



Q3 2024

5GRAIL

5G For Future Railway Mobile Communication System

ETCS, ATO ,Operational voice and Railway Emergency Communication (REC) (optional, with MCX over the top solution) PIS



Railways



Laboratory tests / Montigny (Ile-de-France)- France



Q1 2022-Q1 2023

ETCS, Operational voice and Railway Emergency Communication (REC), TCMS, Critical video, Non critical video



Railways



Laboratory tests / Budapest-Hungary



Q1- Q4 2023

ETCS, ATO, Remote Vision (sub-system of the remote driving system)



Railways

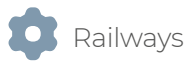


Fields tests / Vigneux -sur-Seine (Ile-de-France) - France



Q1 2023 – Q3 2023

ETCS, TMCS, Operational voice and Railway Emergency Communication (REC) TCMS, Critical video, Non critical video



Railways



Fields tests / Erzgebirge -
Germany



Q1 2023- Q3 2023

5GASP

5G Application & Services Experimentation And Certification Platform

Vehicle Route Optimizer in a Virtual OBU's with Interdomain Support and Privacy Preserving



Automotive



Aveiro, Murcia,
Bucharest



Q2 2023

Autonomous Vehicle Teleoperations / Remote Driving



Automotive
/ PPDR



Murcia, Bristol,
Patras



Q2 2023

5G Network Resilience and Privacy in the International PPDR Operations



PPDR



Patras, Ljubljana, Aveiro,
Bristol



Q2 2023

5G-EPICENTRE

5G Experimentation Infrastructure Hosting Cloud-Native Netapps For Public Protection And Disaster Relief

Multimedia MC Communication and Collaboration Platform



PPDR, Public Safety



Spain, Germany,
Portugal



2023-2024

Multi-agency and multi-deployment mission critical communications and dynamic service scaling



PPDR, Public Safety



Spain, Germany,
Portugal



2023-2024

Ultra-reliable drone navigation and remote control



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

IoT for improving first responders' situational awareness and safety



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

Wearable, mobile, point-of-view, wireless video service delivery



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

Fast situational awareness and near real-time disaster mapping



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

AR and AI wearable electronics for PPDR



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

AR-assisted emergency surgical care



PPDR, Public Safety



Spain, Germany, Portugal



2023-2024

5G-ERA

5G Enhanced Robot Autonomy

5G enhanced robot autonomy



PPDR
Semi-autonomous transport
Healthcare robots
Industrial 4.0



Athens, Valencia
Brno
Valencia
Cambridge, Rende

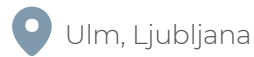


Q3-Q4 2023
Q3-Q4 2023
Q1-Q2 2024
Q1-Q2 2024

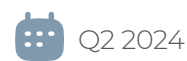
5G-IANA

5G Intelligent Automotive Network Applications

Remote Driving (Remote Assistance)



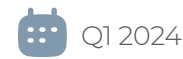
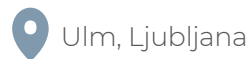
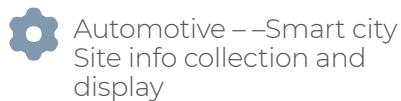
Manoeuvres Coordination for Autonomous Driving



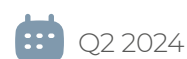
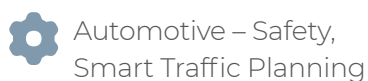
Virtual Bus Tour



AR Content Delivery for Vehicular Networks



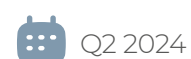
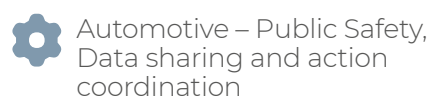
Parking Circulation and High-risk Driving Hotspot Detection



Network Status Monitoring



Situational Awareness in Cross Border Tunnel Accidents



5G-INDUCE

Open Cooperative 5G Experimentation Platforms For The Industrial Sector NetApps

Autonomous Indoor Fleet Management

 Industry 4.0, Indoor logistics - AGV Control  Valencia  Q4 2023

4 Smart Operation based on Human Gesture Recognition

 Industry 4.0, Internal logistics - AGV Control  Valencia  Q4 2023

VR Immersion and AGV Control

 Industry 4.0, Internal logistics - AGV Control  Valencia  Q4 2023

ML-Supported Edge Analytics for Predictive Maintenance

 Industry 4.0, Predictive Maintenance & Faults' management  Genoa, Athens  Q2 2024

Inspection (corrosion detection) and Surveillance Services for Critical Infrastructures

 Industry 4.0, RT drone video processing and alerting  Athens  Q4 2023

AR-based Remote Maintenance, Repairing and Upgrade

 Industry 4.0, Remote Maintenance and guidance  Athens, Genoa  Q2 2023

Smart indoor Logistics and work safety Operations

 Industry 4.0, Indoor Logistics and safety  Genoa  Q1 2024

Drone assisted Network Performance and Coverage Monitoring for Industrial Infrastructures

 Network Monitoring  Genoa  Q1 2024

5GMEDIAHUB

5G Experimentation Environment For 3rd Party Media Services

Immersive AR, VR and XR applications



Media & Entertainment



Barcelona and Norway



Q1 2024

Smart Media Production



Media & Entertainment



Barcelona and Norway



Q1 2024

Smart media content distribution



Media & Entertainment



Barcelona and Norway



Q1 2024

EVOLVED-5G

Experimentation And Validation Openness For Longterm Evolution Of Vertical Industries In 5G Era And Beyond

Innovation in the Interaction of Employees and Machines through AR Features and Remote-Control Capabilities.



Industry



Malaga, Athens



Q2 2022-2023

Efficiency in FoF Operations with Novel Predictive Maintenance applied on Digital Factory Twin



Industry



Malaga, Athens



Q4 2022-2023

Security Guarantees and Risk Analysis for the FoF Communication and Management Systems



Industry



Malaga, Athens



Q4 2022-2023

Agility in the Production Line Infrastructure through Automation and Robotic Parts



Industry



Malaga, Athens






Q4 2022-2023

SMART5GRID

Demonstration Of 5G solutions For Smart Energy Grids Of The Future

IP monitoring tool for supporting advanced grid automation

 Energy  Olbia, Sardinia  Q1 2024

Remote Inspection of Automatically Delimited Working Areas at Distribution Level

 Energy  Barcelona  Q1 2024

Millisecond Level Precise Distribution Generation Monitoring (+Control)

 Energy  Bulgaria  Q1 2024



Real-time Wide Area Monitoring

 Energy  Greece  Q1 2024

VITAL-5G

Vertical Innovations In Transport And Logistics Over 5G Experimentation Facilities

Assisted Vessel Transport

 Transport & Logistics  Port of Antwerp  Q2 2022 – Q2 2024

5G Connectivity and Data-enabled Assisted Navigation using IoT Sensing and Video Cameras

 Transport & Logistics  Galati, Danube river port  Q2 2022 – Q2 2024

Automation & Remote Operation of Freight Logistics (Warehouse Logistics)

 Transport & Logistics  Athens  Q2 2022 – Q2 2024

6G BRAINS

Bringing Reinforcement Learning Into Radio Light Network For Massive Connections

THz Communication in Industry 4.0 Manufacturing

 Industry 4.0  Blaichach  Q4 2022

4 Optical Wireless Communication in Industry 4.0 Manufacturing

 Industry 4.0  Blaichach  Q4 2022

Sub 6GHz Communication in Industry 4.0 for TDoA Uplink Location Estimation

 Industry 4.0  Israel, UK  Q2 2022

Sub 6GHz and mmWave Communication in Industry 4.0 for AoA Beam Steering and TDoA Uplink and OWC Downlink RSS Location Estimation using Data Fusion

 Industry 4.0  Israel, UK  Q3 2023

AI@EDGE

A Secure And Reusable Artificial Intelligence Platform For Edge Computing In Beyond 5G Networks

Virtual Validation of Vehicle Cooperative Perception

 Automotive  Orbassano, Milano  Q4 2023

Secure and Resilient Orchestration of Large (I)IoT Networks

 Industry 4.0  Kaiserslautern  Q4 2023

Edge AI Assisted Monitoring of Linear Infrastructures using Drones in BVLOS Operation

 Drones  Madrid  Q4 2023

Smart Content & Data Curation for in-Flight Entertainment Services Operation

 Aviation  Munich  Q4 2023

DAEMON

Network Intelligence For Adaptive And Self-Learning Mobile Networks

Data-driven resource orchestration

 Telecom
  London
  Q4 2023 – Q1 2024

Proactive anomaly detection for IoT services in a global roaming platform

 Telecom
  Madrid
  Q4 2023 – Q1 2024

DEDICAT 6G

Dynamic Coverage Extension And Distributed Intelligence For Human Centric Applications With Assured Security, Privacy, And Trust: From 5G To 6G

Smart Warehousing: Optimized Automated Real-Time Monitoring, Surveillance and Operations for Smart Warehousing

 Smart warehousing, Logistics, Manufacturing, Telecom
  Athens
  Q4 2022 - 4Q23




Enhanced Experience: Dynamic Video Offloading and Mobile Adaptation for Live Performances at Public Venues (Real or Virtual)

 Media & Entertainment, Telecom
  Oulu, Surrey
  Q4 2022 - 4Q23

Public Safety: Efficient, Reliable End-to-End Disaster Management also addressing Cases of Damaged Network Infrastructure

 Public Safety, Telecom
  Elancourt
  Q4 2022 - 4Q23

Smart Highway: Enhancing V2X Communication in Smart Highway

 Smart Highway, Automotive, Smart cities, Telecom
  Wommelgem, Annaberg-Bucholz
  Q4 2022 - 4Q23

MARSAL

Machine Learning-Based, Networking And Computing Infrastructure Resource Management Of 5G And Beyond Intelligent Networks

Dense User-Generated Content distribution with mmWave Fronthauling

 Smart cities, Telecom  Leuven  Q2 2024

Ultra-dense video traffic delivery in a converged Fixed-Mobile network

 Smart cities, Media & Entertainment, Telecom  Lannion  Q2 2024

Cognitive Assistance and Smart Connectivity for next-generation sightseeing

 Smart cities, Tourism, Telecom  Barcelona  Q2 2024

Data security and privacy in multi-tenant infrastructures

 Smart cities, Telecom  Barcelona  Q2 2024

RISE-6G

Reconfigurable Intelligent Sustainable Environments For 6G Wireless Networks

Boosting the 5G connectivity via RIS-empowered network in a train station

 Transportation  Rennes  Q4 2023

5G localisation via RIS-based infrastructure in a factory environment

 Industry, Telecom  Turin  Q4 2023

TERAFLOW

Secured Autonomic Traffic Management For A Tera Of SDN Flows

Autonomous Networks Beyond 5G



Telecom



Madrid,



Q2 2023

Flow Management in Multi-domain scenarios



Automotive



Barcelona



Q2 2023

Resilience and Cybersecurity in B5G Networks



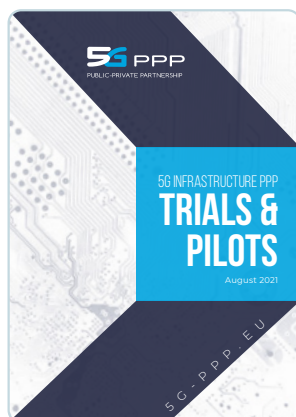
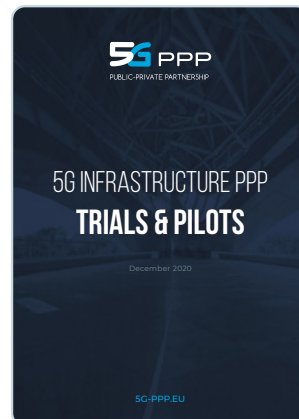
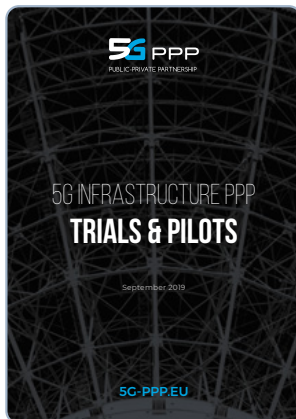
Telecom



Madrid



Q2 2023





EDITORS & CHAMPIONS

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The following Table summarizes the key PPP projects Technical Managers and Deputies who contributed to the overall PPP projects and program achievements and to this PPP projects Trials & Pilots (T&Ps) Brochure. Note that this Brochure included all T&Ps from PPP Phase 2 and Phase 3 projects.

PPP PROJECTS PHASE I	TECHNICAL MANAGERS AND DEPUTIES
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5G-NORMA	Mark Doll and Peter Rost
5G-XHAUL	Daniel Camps and Jesus Gutierrez Teran
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CogNet	Martin Tolan and Diego Lopez
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EURO-5G	Rahim Tafazolli and Giovanni Corazza
FANTASTIC-5G	Salaheddine Elayoubi and Hao Lin
Flex5Gware	Miquel Payaro and Nikolaos Bartzoudis
METIS-II	Hans-Peter Mayer and Michal Maternia
mmMAGIC	Miurel Tercero and Dan Warren
SELFNET	Jose Alcaraz-Calero and Qi Wang
SESAME	Tasos Kourtis and Ioannis Giannoulakis
SONATA	Peer Hasselmeyer and Saverio Niccolini
SPEED5G	Seiamak Vahid and Panagiotis Demestichas
SUPERFLUIDITY	Bessem Sayadi
VirtuWind	Florian Zeiger and Vivek Kulkarni
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5GCity	Felipe Huici and Gino Carrozzo
5G ESSENCE	Ioannis Giannoulakis and Fotis Lazarakis
5G-MEDIA	Stelios Pantelopoulos and Stamatia Rizou
5G-MoNArch	Albert Banchs and Marco Gramaglia

PPP PROJECTS PHASE II	TECHNICAL MANAGERS AND DEPUTIES
5G-PHOS	George Lympelopoulos and Elli Kartsakli
5G-PICTURE	Anna Tzanakaki and Daniel Camps
5GTANGO	Peer Hasselmeyer, Jose Bonnet and Michael Bredel
5G TRANSFORMER	Xavier Costa and Carlos J. Bernardos
5G-XCast	Athul Prasad, Belkacem Mouhouche and David Gomez-Barquero
blueSPACE	Simon Rommel and Dimitrios Klonidis
Global5G.org	Edward Mutafungwa, Stephanie Parker, John Favaro and Laura Baracchi
IoRL	John Cosmas and Adam Kapovits
MATILDA	Anastasios Zafeiropoulos and Panagiotis Gouvas
Metro-Haul	Albert Rafel, Mike Parker and Adrian Farrell
NGPaaS	Kevin Du, Julian Chesterfield, Michail Flouris and Bessem Sayadi
NRG-5	Theodore Zahariadis and Giampaolo Fiorentino
ONE5G	Marie-Helene Hamon
SAT5G	Nicolas Chuberre, Simon Watts and Michael Fitch
SLICENET	Qi Wang, Jose Alcaraz-Calero and Maria Barros
To-Euro-5G	Rahim Tafazolli and Bernard Hunt
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5G-VINNI	Diego Lopez and Kashif Mahmood
5GENESIS	Pedro Merino Gomez and Dimitris Tsolkas
ICT-18	TECHNICAL MANAGERS AND DEPUTIES
5G-CARMEN	Edwin Fischer
5GCroCo	Dirk Hetzer, Edwin Fischer and Maciej Muehleisen
5G-MOBIX	Kostas Trichias and François Fischer
ICT-19	TECHNICAL MANAGERS AND DEPUTIES
5G!Drones	Pascal Bisson, Hicham Khalife and Farid Benbadis
5G HEART	Per H. Lehne, Faouzi Bouali and George Agapiou and Seiamak Vahid
5GROWTH	Xi Li and Manuel Lorenzo
5GSMART	Krister Landernas
5G-SOLUTIONS	Hakon Lonsethagen and Christos Verikoukis and Ioannis Markopoulos
5G-TOURS	Belkacem Mouhouche and Albert Banchs
5G-VICTORI	Anna Tzanakaki and Cristian Patachia
FULL-5G	Bernard Hunt

ICT-20	TECHNICAL MANAGERS AND DEPUTIES
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5G-CLARITY	Daniel Camps and Mir Ghoraishi
5G-COMPLETE	Giannis Giannoulis and Kostas Tokas
5GZORRO	Gino Carrozzo
INSPIRE-5Gplus	Dhouha Ayed and Pascal Bisson
LOCUS	Andrea Conti and Stefania Bartoletti
MonB5G	Adlen Ksentini
TERAWAY	Christos Kouloumentas, Panos Groumas and Maria Massaouti
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5G-RECORDS	Paola Sunna
5GMETA	Angel Martin and Gorka Velez
Affordable5G	Panagiotis Trakadas and Lambros Sarakis
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DRAGON	Vladimir Ermolov and Säily Jussi
FUDGE-5G	Kashif Mahmood and Sebastian Robitzsch
Int5Gent	Dimitrios Klonidis and Giannis Giannoulis
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5G-Blueprint	Johann Marquez-Barja and Seilendria Dima Hadiwardoyo
5G-Routes	Sven Päränd and Priit Roosipuu
5GRAIL	Dan Mandoc and Guillaume Gach
5GMED	Francisco Vazquez and Jad Nasreddine

ICT-52	TECHNICAL MANAGERS AND DEPUTIES
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AI@EDGE	Roberto Riggio
DAEMON	Andres Garcia-Saavedra and Xi Li
DEDICAT 6G	Jukka Mäkelä, Aarne Mämmelä and Vera Stavroulaki
Hexa-X	Patrik Rugeland and Hamed Farhadi
MARSAL	John Vardakas and Ioannis Chochliouros
REINDEER	Liesbet van der Perre and Ove Edfors
RISE-6G	Vincenzo Sciancalepore and George Alexandropoulos
TeraFlow	Victor López and Ricard Vilalta
B5G-OPEN	Filippo Cugini, Oscar González de Dios and Alexandros Stavdas
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5G-EPICENTRE	Kostas Apostolakis
5G-ERA	Renxi Qiu
5G-IANA	Dimitris Klonidis and Konstantinos Katsaros
5G-INDUCE	Dimitris Klonidis
5GMediaHUB	Konstantinos Ramantas and Hakon Lonsethagen
EVOLVED-5G	Harilaos Koumaras and Dimitris Tsolkas
SMART5GRID	Giampaolo Fiorentino and Antonello Corsi
VITAL-5G	Giada Landi

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