5 PPP Technology Board: Current Status and future activities

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

Dr. Alex Kaloxyllos
TB chairman

14-10-2020
Phase III projects – Reference Figure

Long Term Evolution of 5G

Advanced 5G Validation Trials

5G End to End Facilities for KPI Validation

5G for CCAM / Cross Border 5G Corridors
Phase III projects – ICT20 Topics

ADVANCED NETWORK MANAGEMENT
- 5GZORRO: DLT-Based Spectrum Marketplace
- 5GZORRO: Operational Data Lakes For 5G AIOps
- 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

EVLDED 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/WI FI/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: AI-driven identification and mitigation of malicious threats
- 5GZORRO: Smart Contracts for Multi-Operator Ubiquitous Computing
- 5G-COMPLETE: Quantum-resistant optical transport

5G EDGE/MEC
- 5G-COMPLETE: NFV & MEC Orchestrator for Unikernels-based MEC nodes
New Projects coming on board

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

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<tr>
<th>5GLOGINNOV</th>
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**ICT-53-2020 call: 5G-PPP 5G for Connected and Automated Mobility (CAM)**

| 5G BLUEPRINT | 5GMED | 5G ROUTES |
SNS PROGRAMME PROPOSAL

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

Produced results in the context of TB

Key achievements v3.0
https://5g-ppp.eu/key-achievements-v3/

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 analysts
5. 5G PPP Architecture White Paper: Consolidated version 3.0
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/
Produced results in the context of TB

Work on cartographies
https://5g-ppp.eu/5g-ppp-platforms-cartography/
1. 5G Trials for Cooperative, Connected and Automated Mobility (CCAM) along European Cross-Border Corridors (October 2020)
2. 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
### Verticals White Paper: Demonstrated and planned 5G functionalities in verticals

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• 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.
Upcoming white papers & TB eWorkshop

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

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