5G Infrastructure PPP Overview

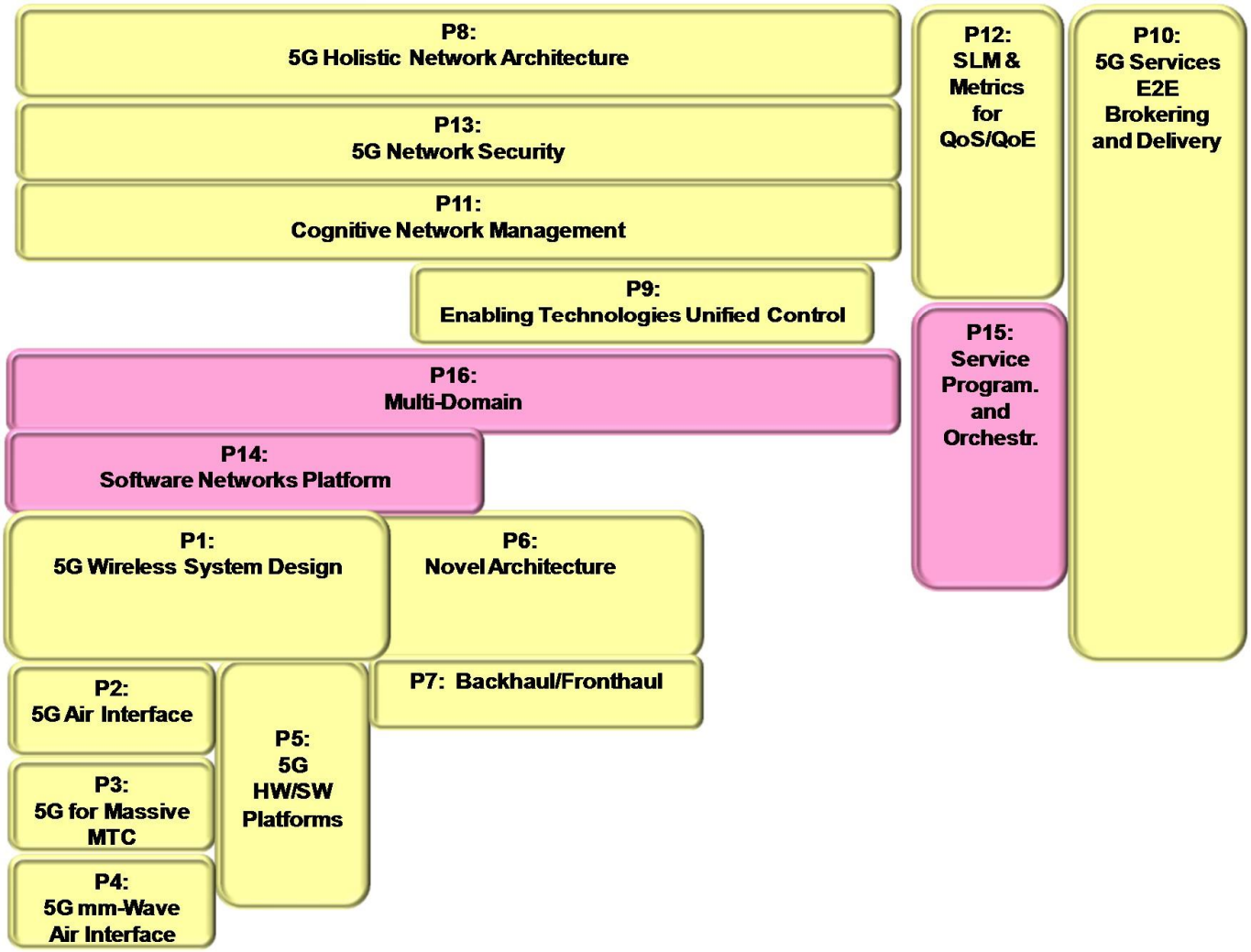
Antonio de la Oliva

(aoliva@it.uc3m.es)

What is the 5G Infrastructure PPP

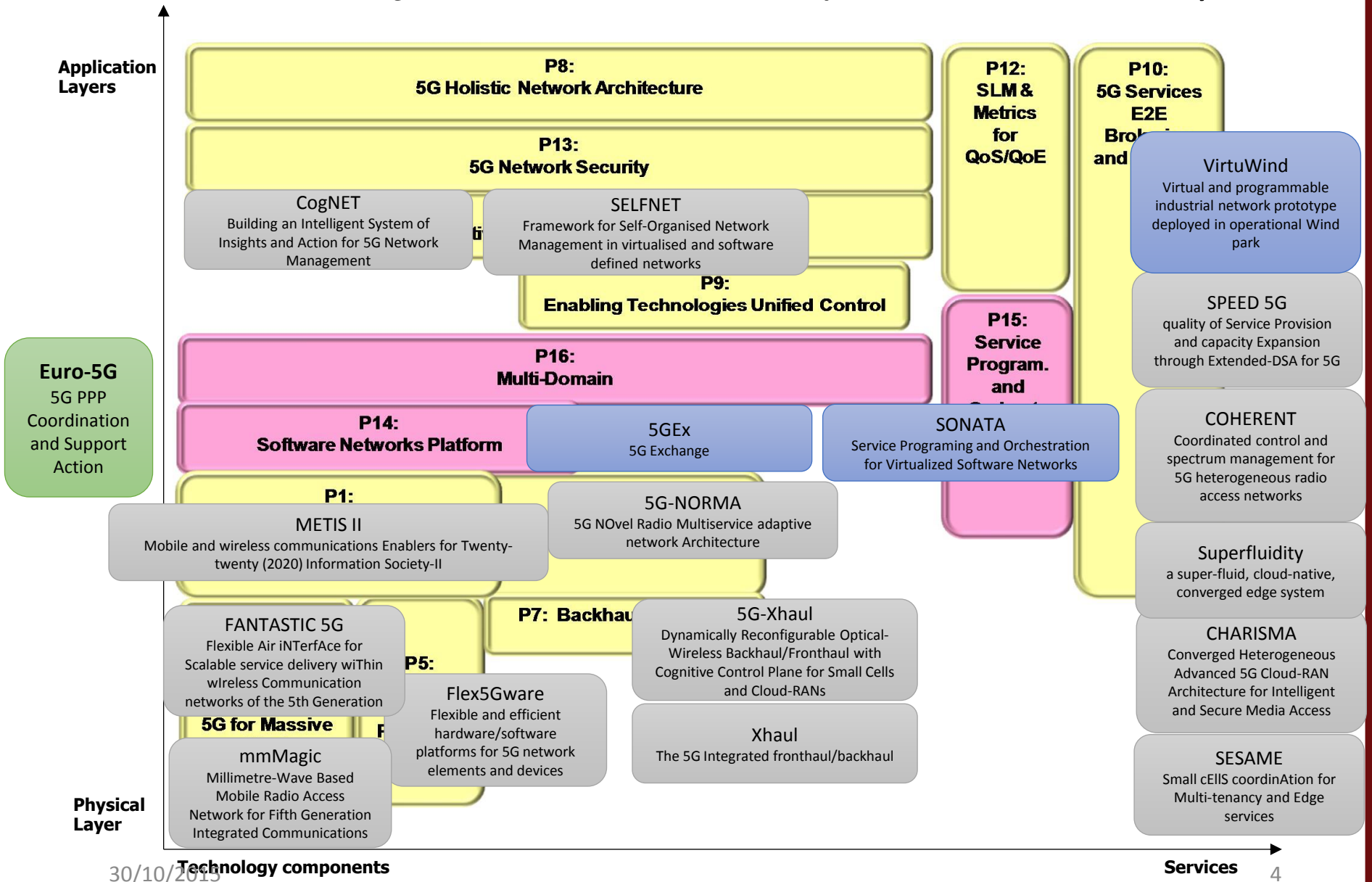
- The 5G-Infrastructure-PPP is a 1.4 Billion Euro joint initiative between the European ICT industry and the European Commission to rethink the infrastructure and to create the Next generation of communication networks and services that will provide ubiquitous super-fast connectivity and seamless service delivery in all circumstances.
- Provides several KPIs to be met for 5G:
  - Providing 1000 times higher wireless area capacity and more varied service capabilities compared to 2010.
  - Saving up to 90% of energy per service provided. The main focus will be in mobile
  - Communication networks where the dominating energy consumption comes from the radio access network.
  - Reducing the average service creation time cycle from 90 hours to 90 minutes.
  - Creating a secure, reliable and dependable Internet with a “zero perceived” downtime for services provision.
  - Facilitating very dense deployments of wireless communication links to connect over 7 trillion wireless devices serving over 7 billion people.
  - Enabling advanced user controlled privacy.
- More information can be found in http://5g-ppp.eu/

Pre-structuring model



More information on the pre-structuring model can be found at http://5g-ppp.eu/wp-content/uploads/2014/03/March-2014-_5G-Infra-PPP_Pre-structuringModel_v1-0.pdf

Phase-I Projects (to start by 07/01/2015)



This slide is based on public information and input from the Euro-5G CSA

Common Standardization aspects of interest

- Adaptability, customization
  - Expose APIs to applications for configuring the network
- Functional decomposition and optimal placement of network functions. Includes flexible functional split of base station/small cells. Radio over X.
  - Integration of multiple technologies in the transport
  - Cloud small cell concept
- SDN control, multi-tenancy. SDN+NFV+C-RAN combo.
  - Novel network management architectures based on SDN+NFV+Orchestration
- Converged optical/wireless architectures
- Top Technologies: mmWave (up to 100GHz), FSO, optical, Small Cells, reconfigurable SW architectures