



# The 5G Infrastructure Public-Private Partnership

Phase 2 Pre-structuring Model  
EC Info Day - 30.06.16 - Athens

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# Outline



- Model Approach
- Model Scope & Coverage
- Model Specificities
- Model Roadmap
- Model TAs Portfolio
- Phase 2 Pre-definition Plan Up-dates

 <https://5g-ppp.eu/5g-ppp-phase-2-pre-structuring-model/>



# Phase 2 Pre-structuring Model Model Approach



- PPP is an ambitious programme with ambitious KPIs
- More than a group of standalone projects working together through Concertation & Clusters meetings and activities
- Pre-structuring Model
  - Ensuring that the right set of projects (portfolio) will work together
    - Intra-phase and through phases (70+ projects in the full programme)
    - Model presenting features to guarantee smooth integration of new projects in existing coordinated programme
  - Model focused on PPP Phase 2 projects portfolio and related projects, not on proposals
  - Model defining Targeted Actions (TAs)
    - Rationale, Objective, Scope and Expected Impact
  - Model specific (added value) but not prescriptive
- Model to be widely accepted by the Community and to be recommended by Association and EC as « reference » platform and guidelines for the further development of proposals
- Evaluation of proposals to consider the model as input to the evaluation process
  - Avoiding duplication (“hype effect”) and coverage gaps issues in the portfolio

# Phase 2 Pre-structuring Model

## Model Scope & Coverage



- Model addressing EC WP2016-17 5G Infrastructure PPP Strategic Objectives ([http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016\\_2017/main/h2020-wp1617-leit-ict\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-leit-ict_en.pdf))
- ICT-07-2017: 5G PPP Research and Validation of critical technologies and systems
  - RIA Strand 1: Wireless Access and Radio Network Architectures/Technologies
  - RIA Strand 2: High Capacity Elastic – Optical Networks
  - RIA Strand 3: Software Networks
  - CSA
- ICT-08-2017: 5G PPP Convergent Technologies
  - IA Strand 1: Ubiquitous 5G Access Leveraging Optical Technologies
  - IA Strand 2: Flexible Network Applications
  - RIA: Cooperations in Access Convergence
- EUJ-01-2016: RIA 5G - Next Generation Communication Networks
- EUK-01-2016: RIA 5G - Next Generation Communication Networks

# Phase 2 Pre-structuring Model Model Specificities (1/2)

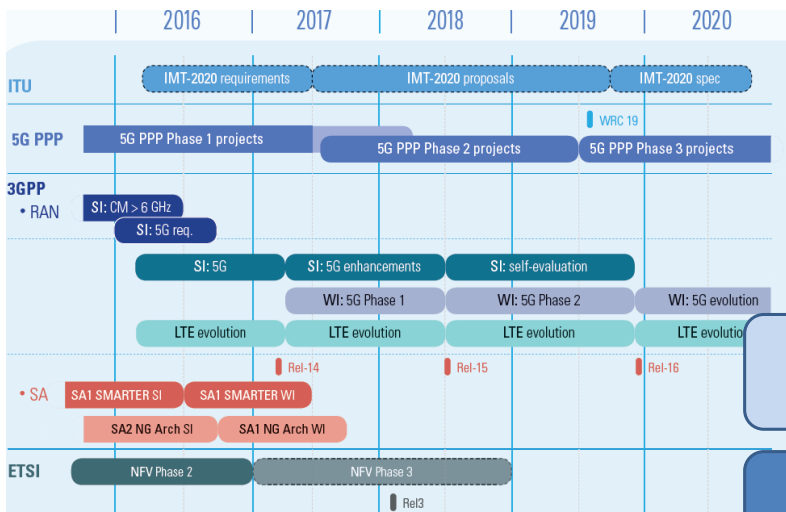


- Model fully capturing the PPP Phase 2 specificities
  - 5G requirements and targets from Verticals markets and stakeholders
  - Experimentation and validation of 5G technologies and developments
  - Cross-projects interworking (/Clause 41.4)
- Model considering PPP Phase 2 impact / outcomes at programme level
  - Coordinated standardisation contribution
  - Projects contributions to WGs to reach the programme KPIs
  - Participation to a demonstration of 5G Infrastructure PPP project functionalities, potentially inside a large EC booth in MWC 2019 (EU flagship PPP Phase 2 demonstration)
- Model considering dedicated open “Blue” TAs that would clearly reinforce the Model, as identified from Evaluators / EC Officers perspectives
  - Inclusion of outstanding / disruptive TA not identified in the Model
  - Inclusion of a second instance of a defined TA in the Model
  - Not creating gap(s) in the Portfolio
- Model capitalising on PPP Phase 1 experience (incl. Phase 1 preparation survey feedbacks)

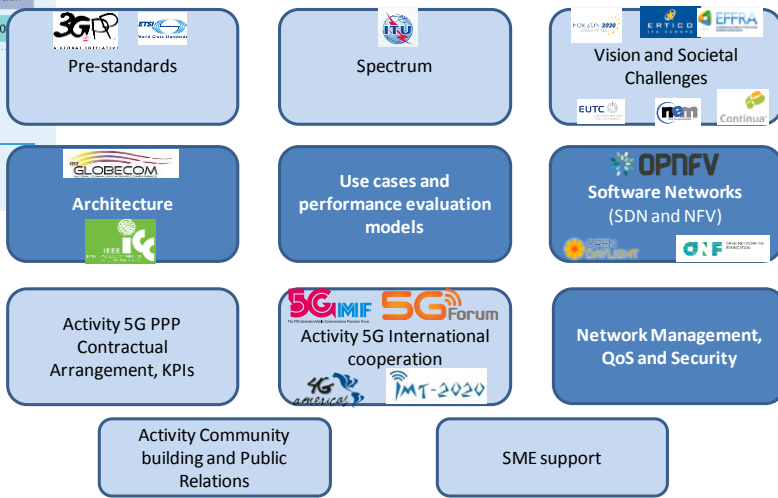
# Phase 2 Pre-structuring Model Model Specificities (2/2)



- Model considering PPP Phase 1 experience and running projects start-of-the-art
- Model considering 5G global standardisation roadmap
- Model considering PPP Phase 1 program experience and running Working Groups



EC 5G Infrastructure PPP – MWC 2016 White Paper “5G Empowering Vertical Industries”  
([https://5g-ppp.eu/wp-content/uploads/2016/02/BROCHURE\\_5PPP\\_BAT2\\_PL.pdf](https://5g-ppp.eu/wp-content/uploads/2016/02/BROCHURE_5PPP_BAT2_PL.pdf))



# Phase 2 Pre-structuring Model Model Roadmap

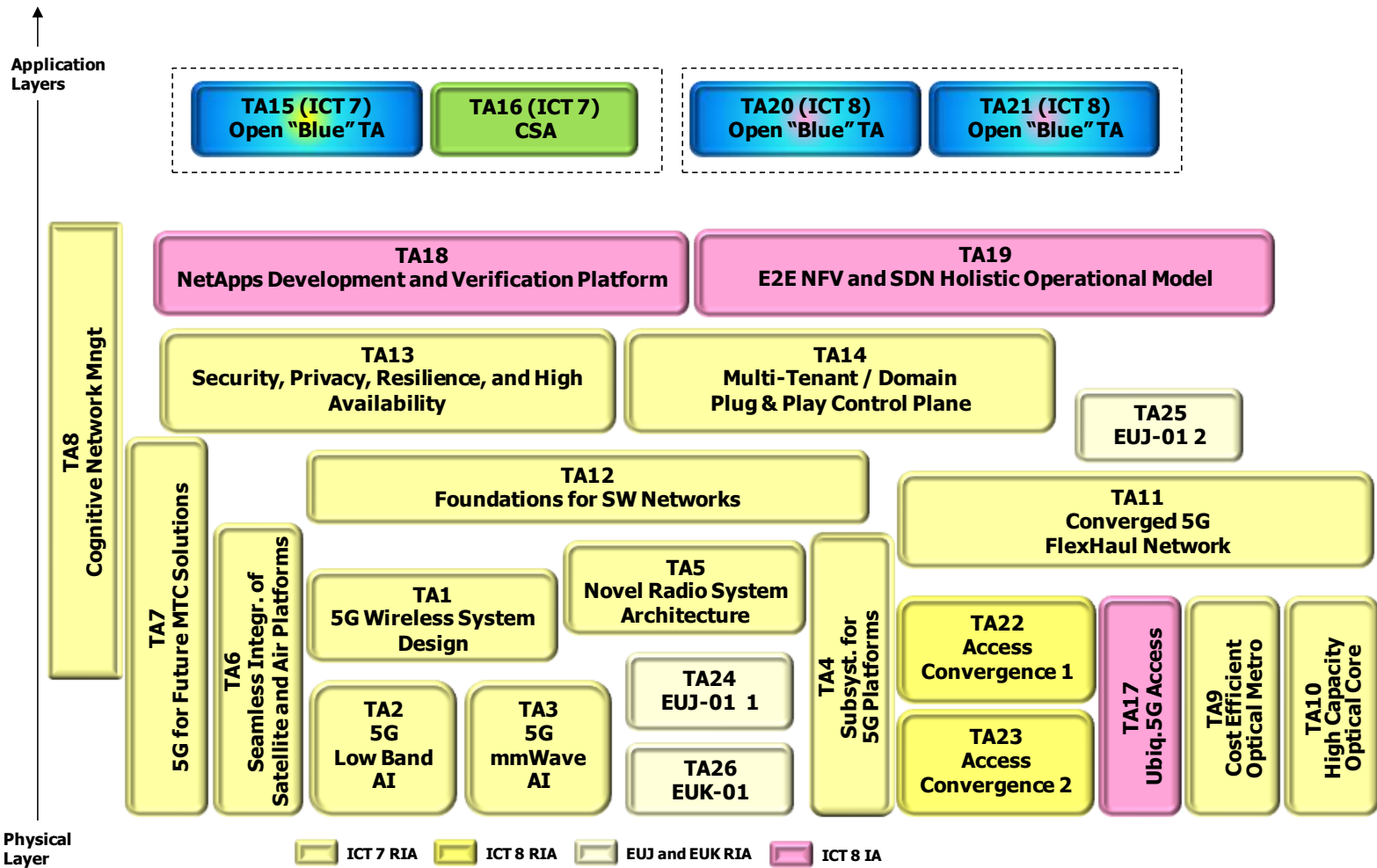


- Model version 1.0 released on 02.11.15
- Open Consultation organised by 5G Infrastructure Association on the basis of Model version 1.0
- PPP Info Days and Awareness events incl. specific discussions on the Model
  - EC Info Days organized on 21.01.16 in Brussels, 17.03.16 in Bologna, 18.05.16 in Warsaw and 30.06.16 in Athens
- Model version 2.0 (final version – 04.03.16) benefiting from the Open Consultation and all interactions organised during the 1<sup>st</sup> EC Info Day
  - Model including 14 TAs defined by Association and 1 « Blue » TA in ICT 7
  - Model including 5 TAs defined by Association and 2 « Blue » TAs in ICT 8
- Brokerage Platform launched on 10.05.16
  - <https://5g-ppp.eu/brokerage-platform-new/>
- Phase 2 Call opening on 10.05.16 (20.10.15 for EUJ and EUK)
  - <https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5064-ict-07-2017.html>
  - <https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5062-ict-08-2017.html>
- Phase 2 Call deadline on 08.11.16 (19.01.16 for EUJ and EUK)

# Phase 2 Pre-structuring Model Model – TAs Portfolio (1/3)



5G Infrastructure PPP  
The European path towards global next generation communication networks



Note: The size and the orientation of the TAs boxes do not indicate the potential size or manpower of future Projects



# Phase 2 Pre-structuring Model Model – TAs Portfolio (2/3)



## TA5: Novel Radio System Architecture

### Rationale

Phase 2 addresses the integration of the 5G architecture building blocks developed in Phase 1 as well as new architecture building blocks needed to meet the requirements of future 5G services into an overall mobile network architecture from an end-to-end perspective. The e2e mobile network architecture for the 5G era shall be validated through prototyping leveraging on building blocks already developed in Phase 1.

### Objective

- Design a flexible reconfigurable E2E mobile network architecture that satisfies all the considered 5G use cases by exploiting flexible function allocation and placement, leveraging centralised (Cloud) and distributed (Edge) computing and networking resources
- Further develop architecture building blocks from 5G-PPP Phase 1 into an overall E2E mobile network architecture
- Implementation of the baseline architecture and evaluation in a large-scale test-bed
- Build consensus on the mobile network architecture design in 5G-PPP
- Enable scalability in proposed 5G architectures to also support the growth beyond 2020
- End-to-End Mobile Network Architecture for the 5G era ensuring longevity of 5G investments

### Scope

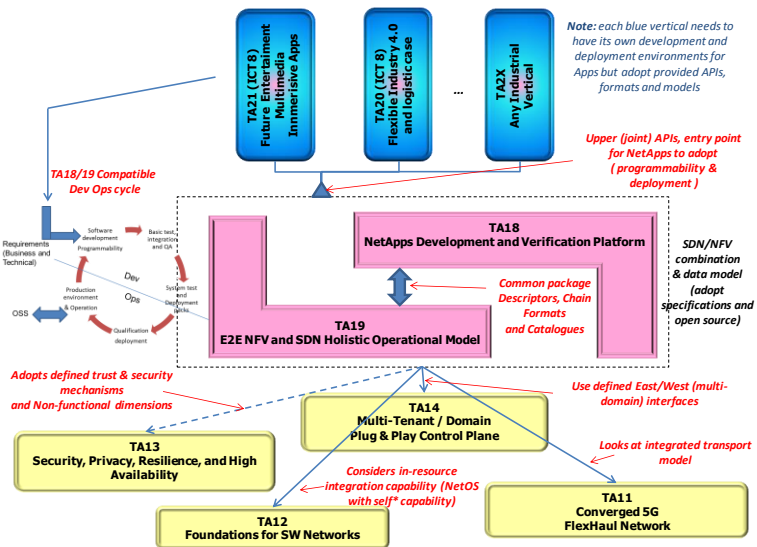
- Analyse user and service requirements for 5G
- Architecture design that supports multi-context awareness, multi-service and multi-tenancy
- Flexible service creation, building on service decomposition and chaining (given a selected/derived function split) through slicing
- Optimal adaptation to the underlying networking and computing infrastructure, taking into account the bandwidth and delays of the topology and leveraging cloud computing techniques and virtualisation. Study of centralisation/distribution trade-off for control functions
- Integration of control and user plane and management functions developed by other architecture projects. Study of centralisation/distribution trade-off for control and management functions
- Dynamic and energy-efficient RAN and CN function deployment, holistic coordination of mixed deployments
- Interaction with transport network including satellite backhauling
- Incremental deployment of the proposed architecture and co-existence with legacy equipment
- Specification of functional, logical and deployment architecture as well as protocols

### Expected Impact

- Influence NGMN and standardisation bodies like 3GPP, ETSI, ITU, IETF. etc.
- Implementation and evaluation of the specified architecture
- Contribution to EU booth at MWC 2019 with demo / testbed showcasing the set of 5G PPP Phase 2 projects results

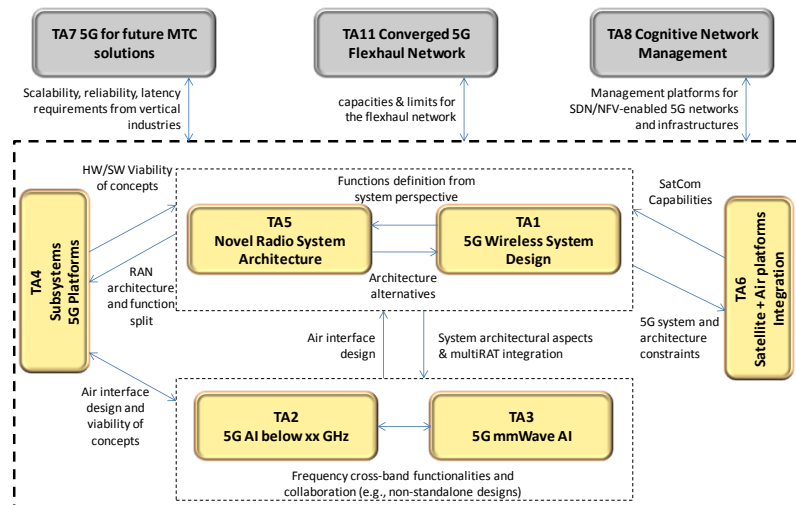
# Phase 2 Pre-structuring Model Model – TAs Portfolio (3/3)

## TAs Interfaces



- Two examples included in Model version 2.0 and to be potentially up-graded
- Additional figures to be potentially developed (e.g. Optic, SN...)

- ICT-8b Centric Example
- ICT-7a Centric Example



# Phase 2 Pre-structuring Model

## Phase 2 Pre-definition Plan Up-dates



### Up-to-date Phase 2 Pre-definition Plan Roadmap

- PPP Info Days and Awareness events incl. specific discussions on the Model
- Model to be widely accepted by the Community and to be recommended by Association and EC as « reference » platform and guidelines for the further development of Proposals
- Model to be provided as input to the Evaluation
- PPP (top-down) Experimentation Strategy to be further progressed and to also feed PPP Phase 3 pre-positioning
- Solid FAQ webpage to be developed and up-dated until the Call 2 deadline so that all Community members have access to the latest information



Stay tuned and join us in implementing a very successful PPP Phase 2 with impact!



<http://5g-ppp.eu>

**Thank you for your attention!**

