



NATIONAL & KAPODISTRIAN UNIVERSITY OF ATHENS

JOINT BEYOND 5G RESEARCH INITIATIVE



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Our Profile and Focus

General Profile

- National & Kapodistrian University of Athens (UoA, uoa.gr) – the oldest and with the first ranking among all Greek Universities
- We form a research and innovation unit in Department of Informatics & Telecommunications (DIT, di.uoa.gr): Software Centric & Autonomic Networking Lab (SCAN, scan.di.uoa.gr)
 - 20 **researchers, engineers** and support personnel
 - **More than 20 EU Funded Projects** (since FP6)
 - SCAN-NKUA coordination (both PM and TM) in several of them
 - **More than 10 Industry Contracts**
 - Several **patents** filed in European Patent Office,
 - More than 500 **publications**,
 - More than 4000 **citations**,
 - Support of BSc/MSc/PhD dissertation thesis: ~15 per year.

Focus Areas

- Internet of Things – Smart Cities – Connected Cars - Smart Grids
- Mobile/Wireless Communications (6G, 5G, LTE)
- MEC - Cloud
- Software-Defined Networks (SDN) - Network Function Virtualisation (NFV)
- Big Data (Data Analytics, Predictive Analytics, Data Economy)
- Next Generation Internet



EU & Industry Projects



Joint B5G Initiative

<https://jointb5gresearchinitiative.eu/>

Initiators

Aalborg Univ.

ADLINK

Altice Labs

FIVECOMM

Holo-Light

Huawei

NKUA, SCANLAB

TELENOR

Univ. Bremen

Instituto de Telecomunicações (ITAV)



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Scope

Our Vision

Knowledge and Artificial Intelligence based smart networks for Reliable mObile communications

The initiative covers the full beyond 5G value chain satellite, network, cloud, cloud-edge computing, ML, AI, end-to-end cybersecurity, innovative devices, Industry IoT, cell-less MIMO and Terahertz Communication and address vertical services for automotive and augmented reality for ultra-high data rates



5G promises and limitations

in supporting the verticals



The Problem



The Solution



How to Solve



The Gain

1

Enables the integration of new types of usage

2

Primarily addresses the service needs of telecom operators and is operator-centric

3

Only covers one part of the overall service chain

4

5G specifications lay out norms for the resource sharing on the wireless link

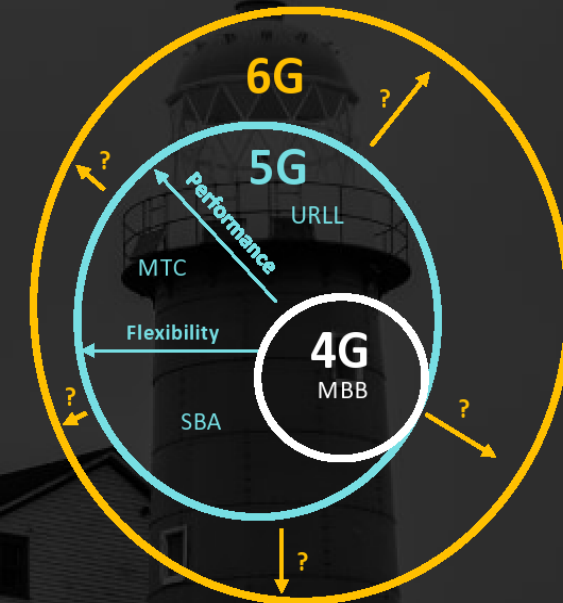
5

Roadmap laid out by 5G is promising and challenging at the same time

6

Novel industrial alliances have been created to better capture such requirements of the verticals

6G Design Principles



Fact in 2020: Nobody knows which exact principles 6G will adhere to



Serving vertical industries:

Towards building a true digital society



The Problem



The Solution



How to Solve



The Gain



Where we are

- “One for all, all for one” - is both a burden and a yoke in this context
- Vertical users have non-negligible infrastructure, experience and skills.

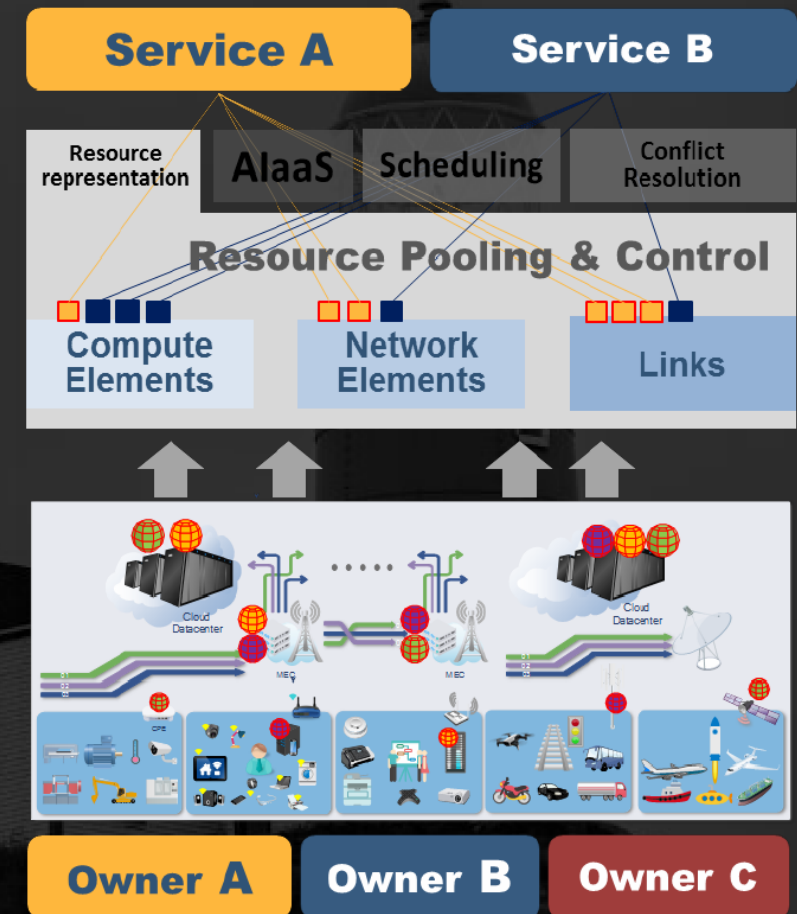


Where we want to go

Change the operator-centric philosophy prevailing in conventional mobile networks

Address and rebalance the positioning of the classical service providers and users

Change from the conventional operator-centric view to an inclusive prosumer-centric view



Thank you!

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