The 5G EVE End-to-End Facility
Webinar for ICT-19 Proposers

20 September 2018

Twitter hashtag: #5Gwebinar

Website: www.5g-eve.eu

This Project has received funding from the EU H2020 research and innovation programme under Grant Agreement No 815074

Manuel Lorenzo – 5G EVE Technical Manager

5G EVE

5G EVE Technical Overview
Outline

- Let's now cover the key technical aspects of 5G EVE:
  - First, we will review why E2E 5G Validation platforms are instrumental for growing the 5G ecosystem, and how5G EVE project translates that motivation into a technical set-up for fruitful collaboration with Verticals
  - Next, we will introduce the basics on what 5G EVE services -based on both core 5G technologies and differential 5G EVE innovations- are planned to be accessible to Verticals.
  - Then, we will share how our current technical collaboration model with 5G EVE participant verticals is, and how we propose to extrapolate it to new collaborations with ICT-19 partners

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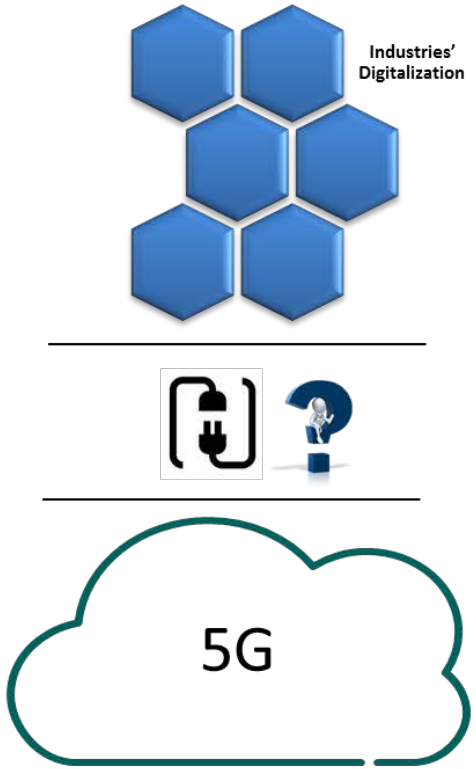
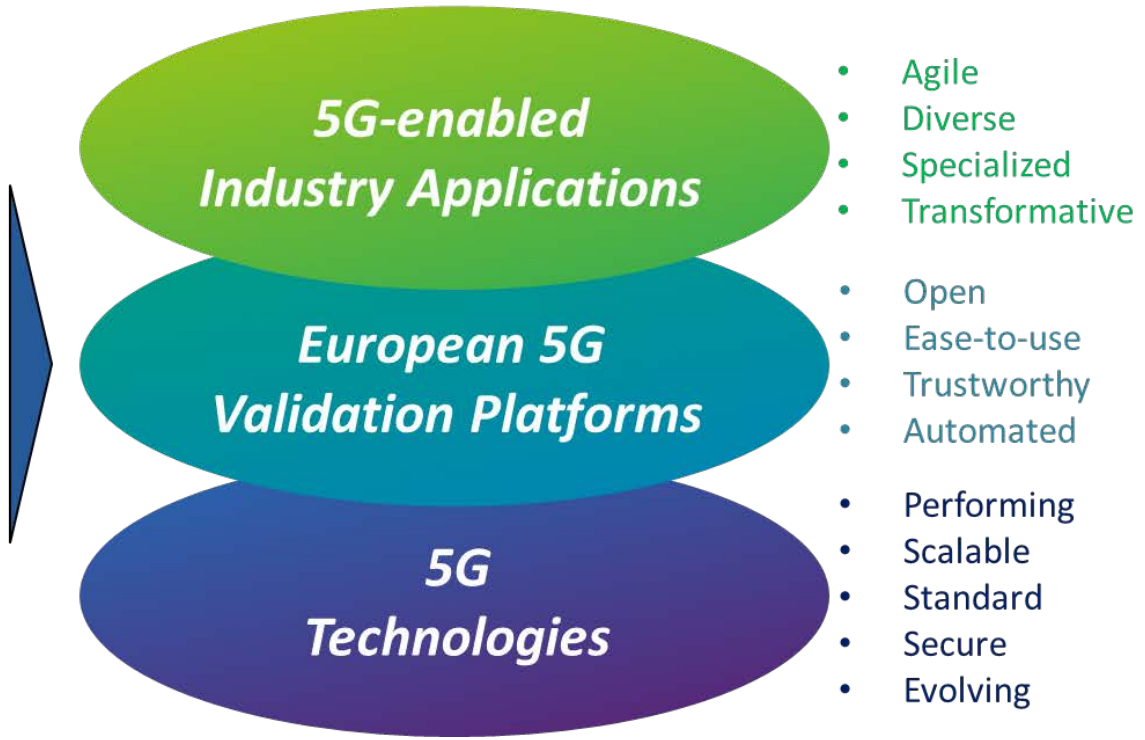
5G EVE

Why an E2E Validation Platform like 5G EVE?

From: Two Worlds



To: One Innovation Ecosystem



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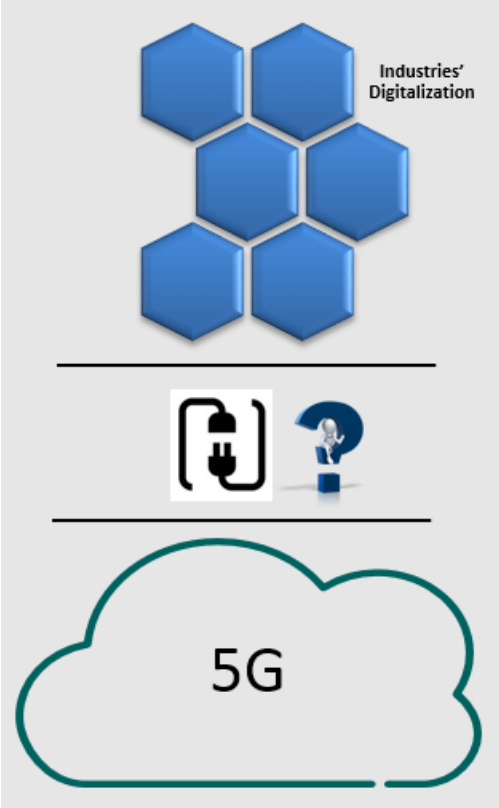
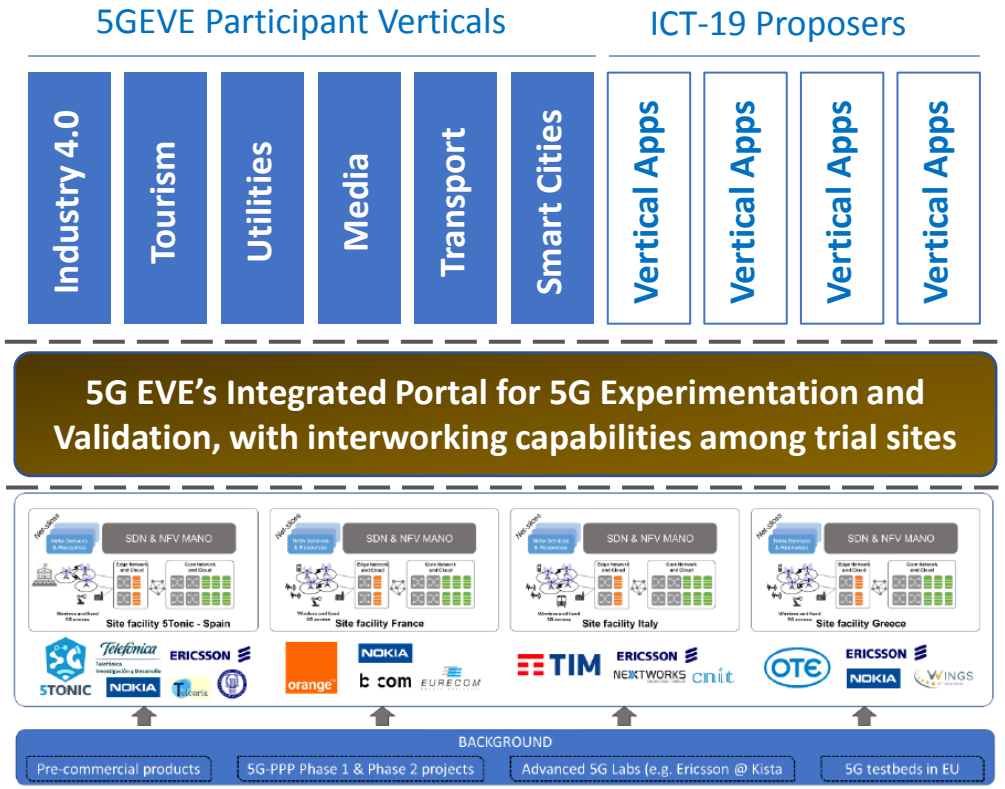
5G EVE

How 5G EVE frames that concept





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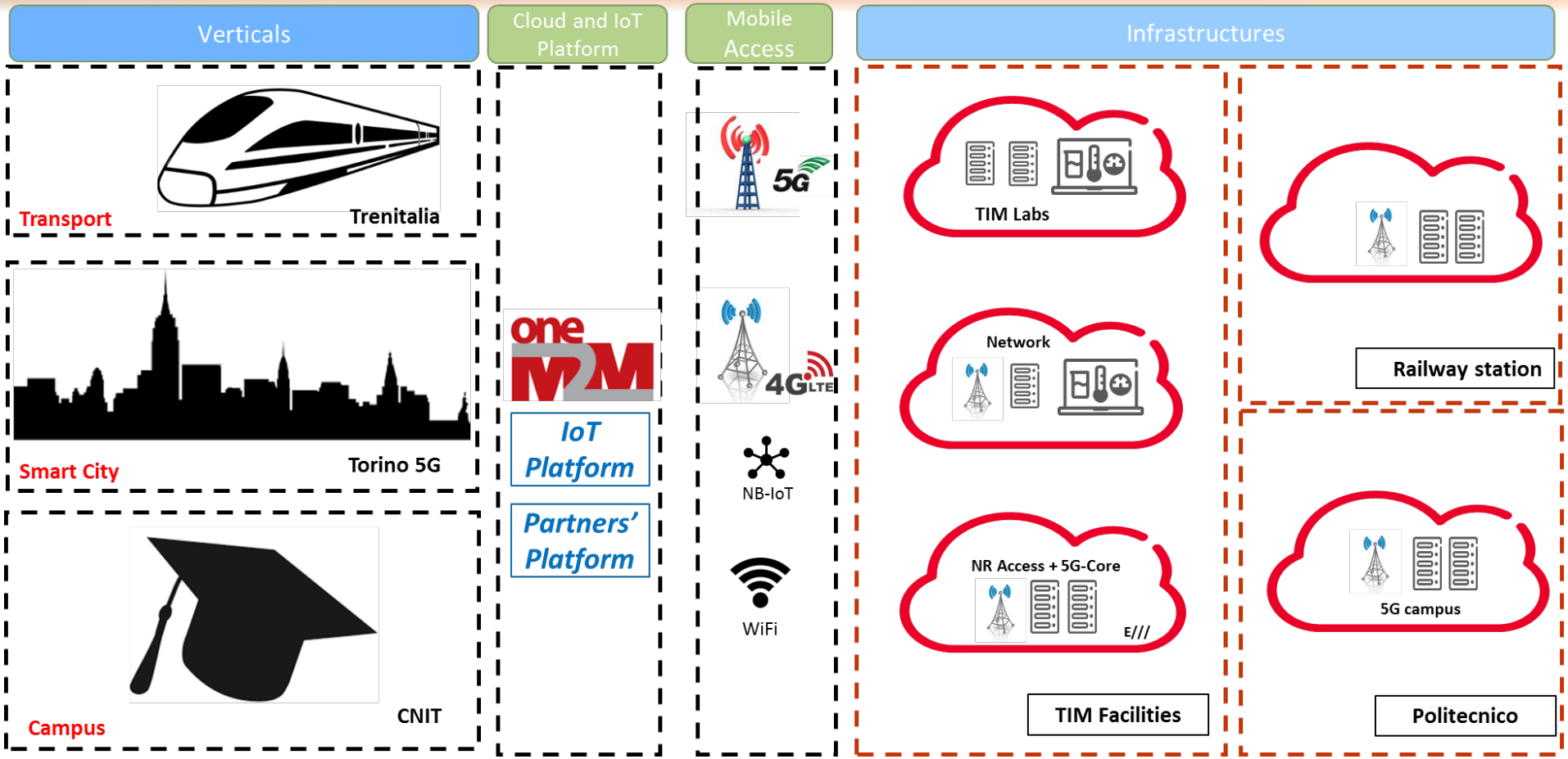
5G EVE

What 5G EVE can support you with
Site Facilities - Turin



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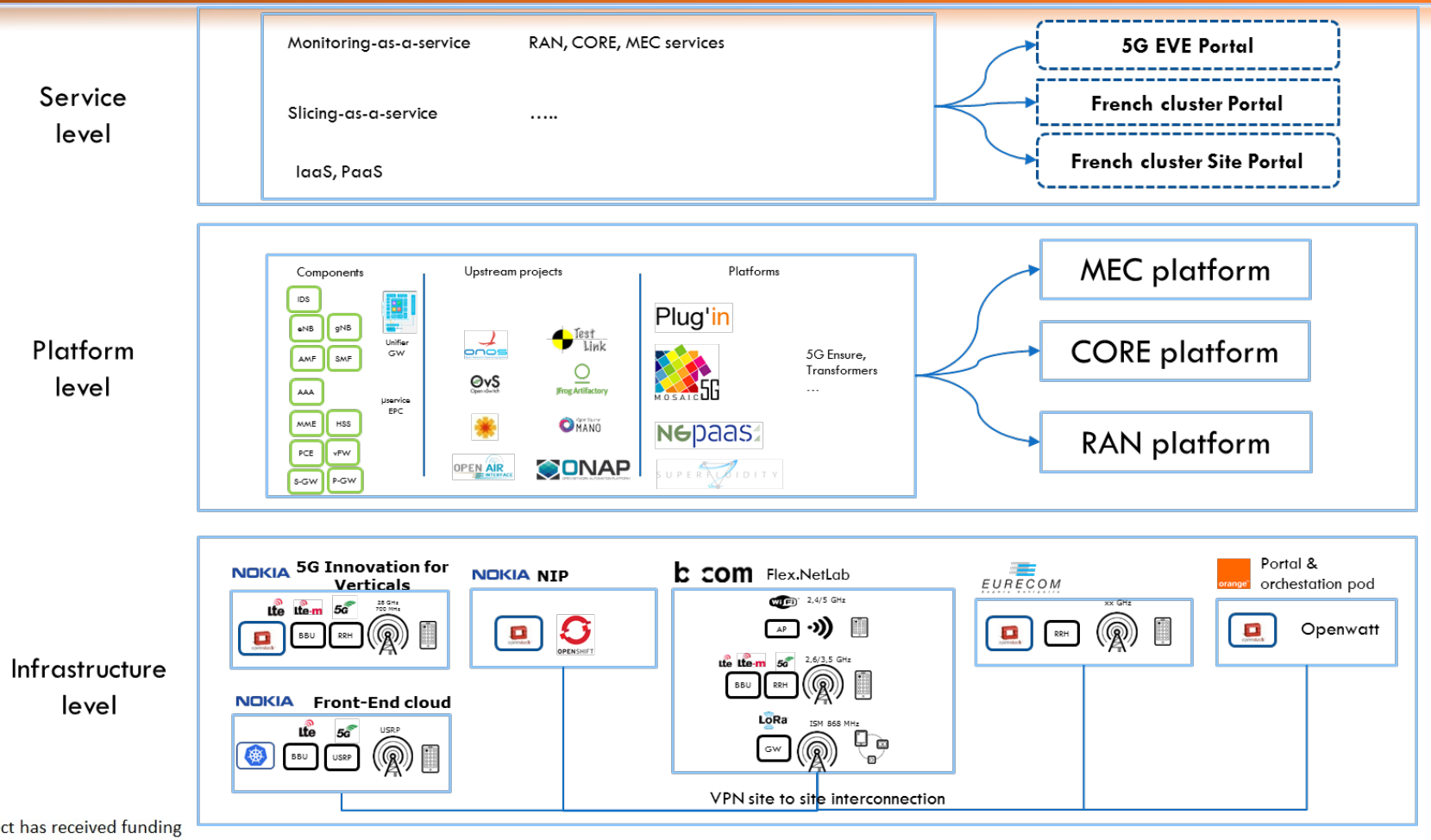
5G EVE

What 5G EVE can support you with
Site Facilities - France



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5G EVE

What 5G EVE can support you with
Site Facilities - Spain

Verticals

Industry 4.0

AGVs

AUTOMATED FACTORY LOGISTICS

Smart Tourism

AUGMENTED FAIR

Media & Entertainment

ULTRA HIGH-FIDELITY

ON-SITE LIVE EVENT EXPERIENCE

INMERSIVE & INTEGRATED MEDIA

Radio Access

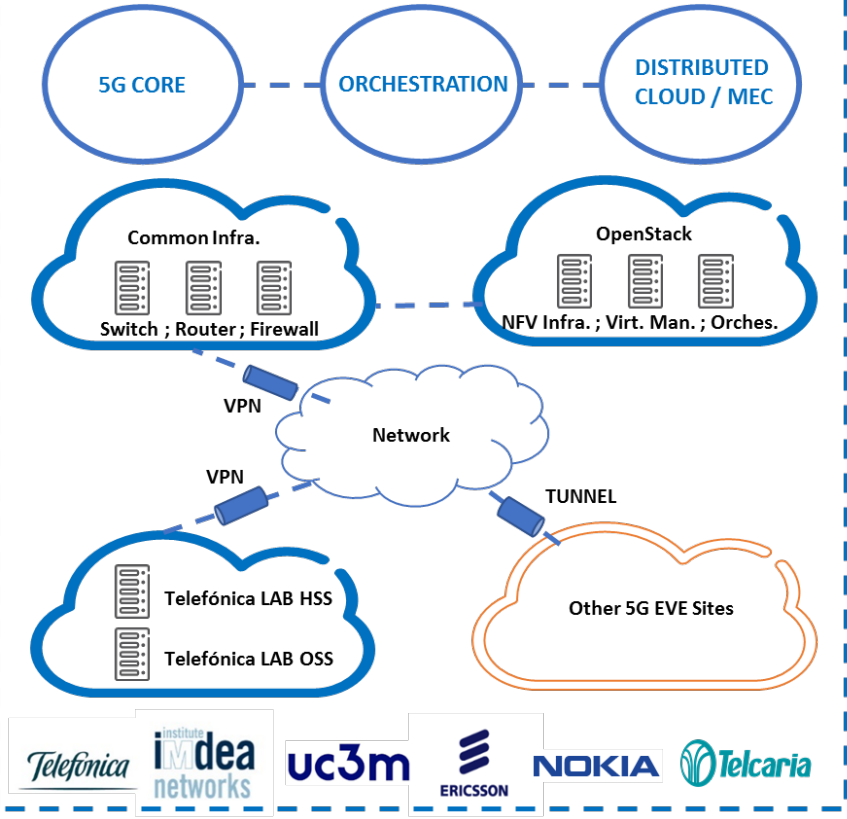
5G

4G LTE

CAT-M

ERICSSON

CORE, Cloud and Orchestration



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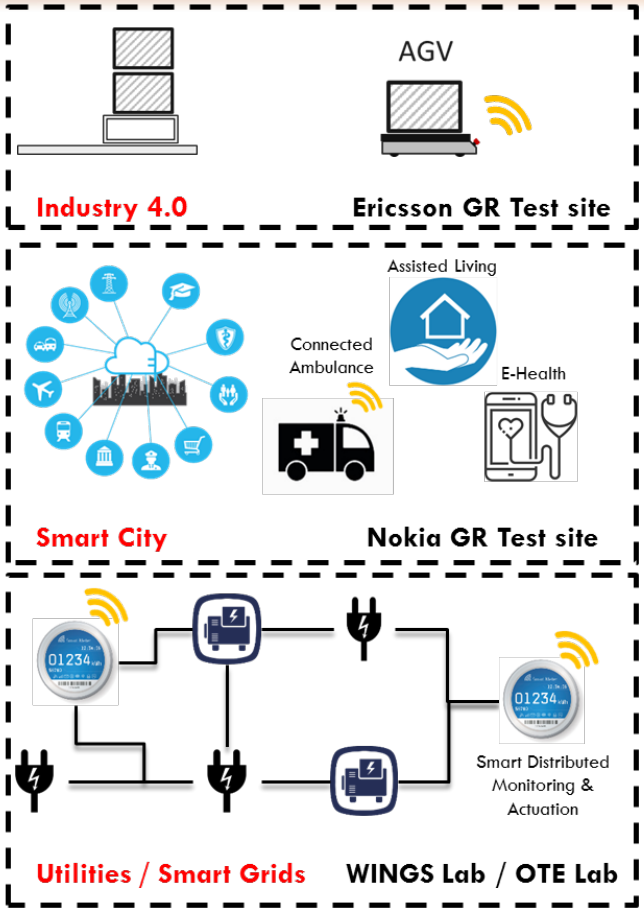
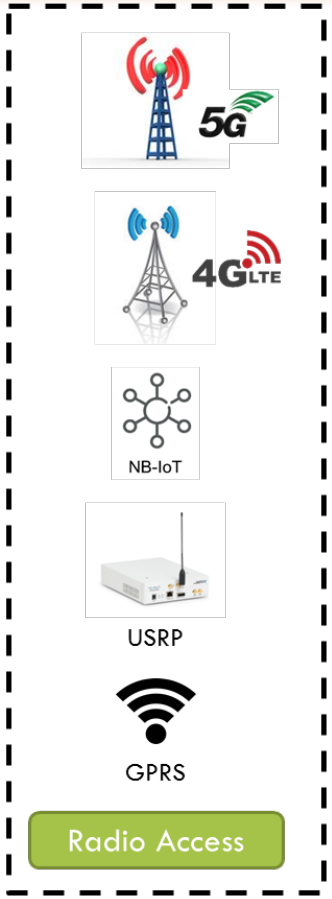
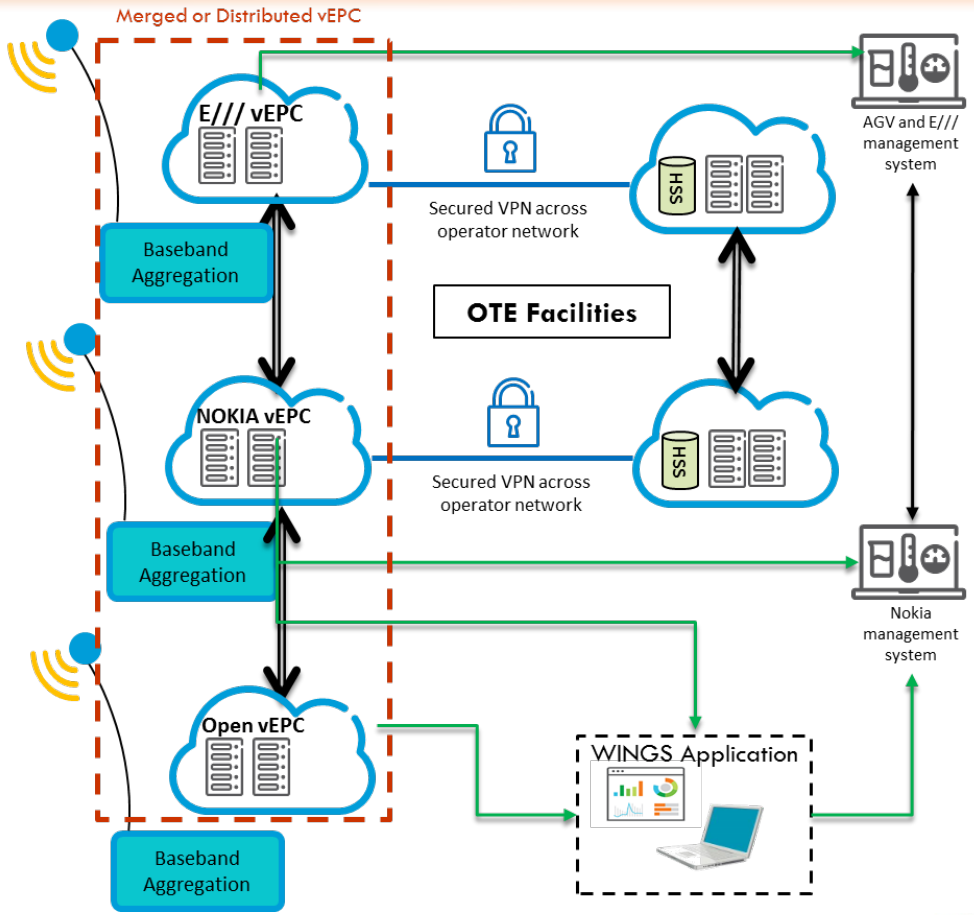
What 5G EVE can support you with

Site Facilities - Greece







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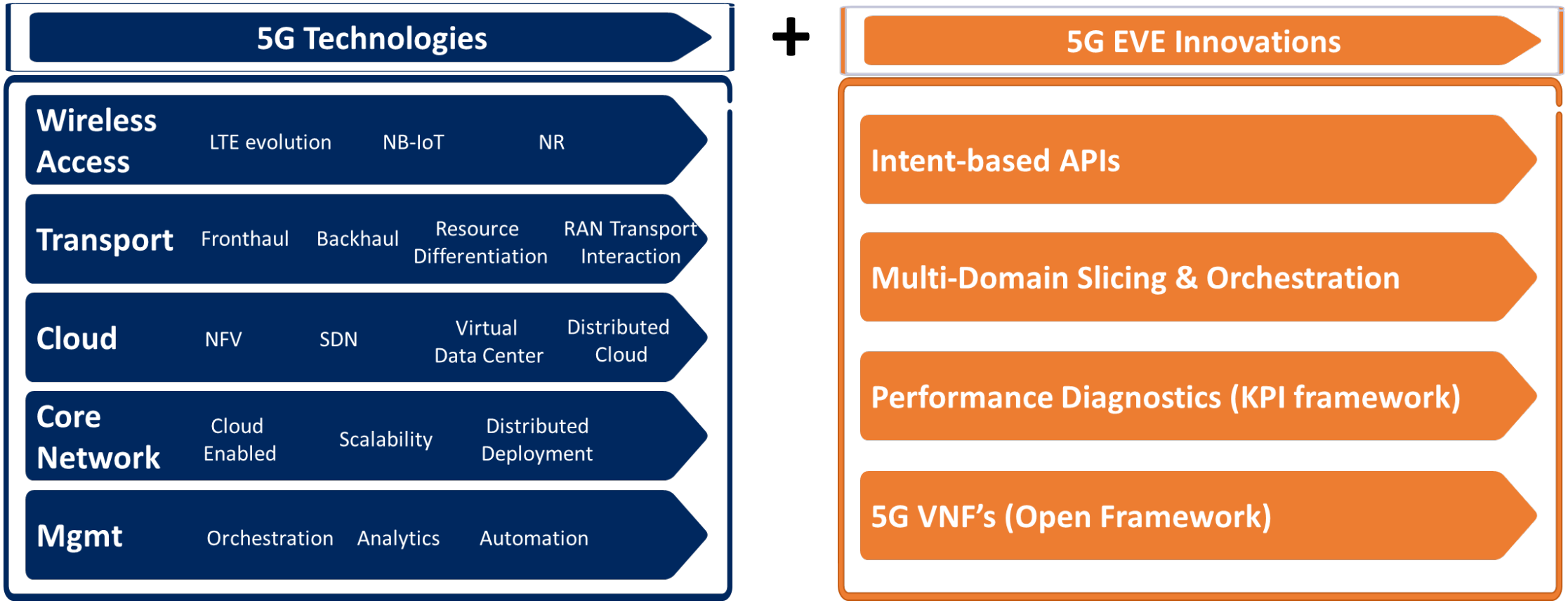
What 5G EVE can support you with

Evolving 5G technologies + 5GEVE Innovations



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5G EVE

What 5G EVE can support you with

Evolving 5G technologies for …

Enabling your Validation tests against State-of-the-art 5G Technologies

MASSIVE MIMO (SP, IT, FR)

Combination of Single-User MIMO (SU-MIMO) and beamforming supported by advanced antennas with a large number of steerable ports. Massive MIMO improves both the user experience and the capacity and coverage of the network.

MULTI-USER MIMO (SP, IT, FR)

Building on Massive MIMO, Multi-User MIMO (MU-MIMO) transmits data to multiple user devices using the same time and frequency resources and coordinates beamforming. MU-MIMO provides a better user experience, enhances network capacity and coverage, and reduces interference.

RAN VIRTUALIZATION (GR, SP, FR)

Improves network efficiency and performance by enabling Virtual Network Functions (VNF) to be centralized on a common platform supporting both 4G and 5G.

LATENCY REDUCTION (GR, SP, IT, FR)

Shortens access procedures and modifies the frame structure to enable instant network access and more frequent transmissions. This in turn reduces time-to-content while enabling real-time communications for key 5G applications such as smart vehicles.

INTELLIGENT CONNECTIVITY (GR)

Where 5G and 4G coverage areas overlap, Intelligent Connectivity enables the network to robustly anchor and intelligently route data based on application needs and network resource availability, increasing the combined data throughput of 4G and 5G resources.

And those are just a few of the many 5G features supported by 5GEVE testbed

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5G EVE

What 5G EVE can support you with

5G EVE Specific Innovations for …

Increasing effectiveness and efficiency of your 5G Validation activities

1 Intent-based interface towards verticals	**A disruptive intent-based interface to simplify the access to the 5G end to end facility, specifying "what" is asked without details on "how" it is provided.**
2 Multi-domain slicing and orchestration	**A new orchestration framework with the necessary features able to manage effectively multiple site facilities, dramatically improve efficiency, prevent overload, and easily manage migration of networks components, while meeting performance requirements.**
3 Performance Diagnostics (KPI Framework)	**A completely new performance diagnosis mechanism and a new monitoring framework enabling the capturing of service and slice performance indicators, providing insight on performance.**
4 5G VNF's (Openness Framework)	**A new framework to provide a modular, reusable set of different SFs enabling the coexistence of proprietary and open source technologies; this will allow the modular replacement and chaining of components implemented with open and novel performance acceleration techniques.**

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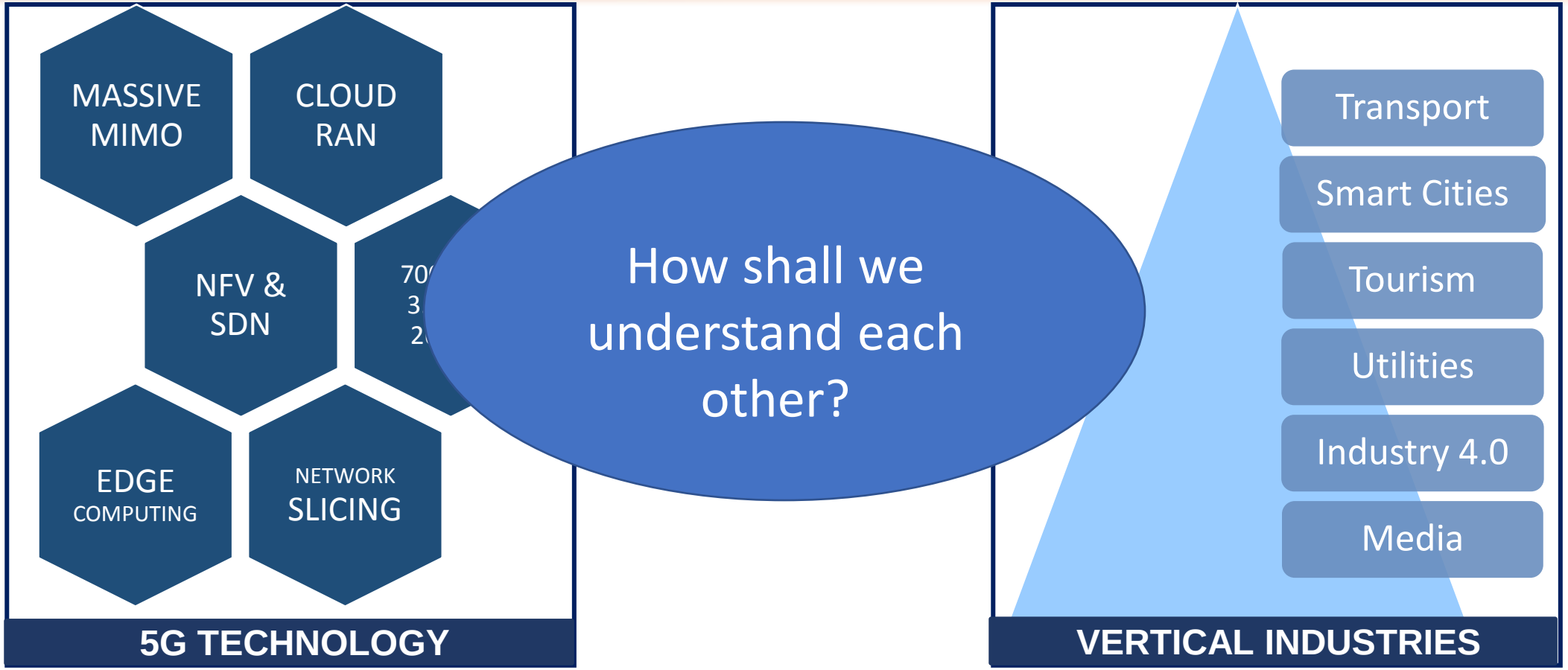
5G EVE: Collaboration Model – Technical Aspects

1. Joint Specification and Planning of the Trials



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5G EVE: Collaboration Model – Technical Aspects

1. Joint Specification and Planning of the Trials

MASSIVE MIMO

CLOUD RAN

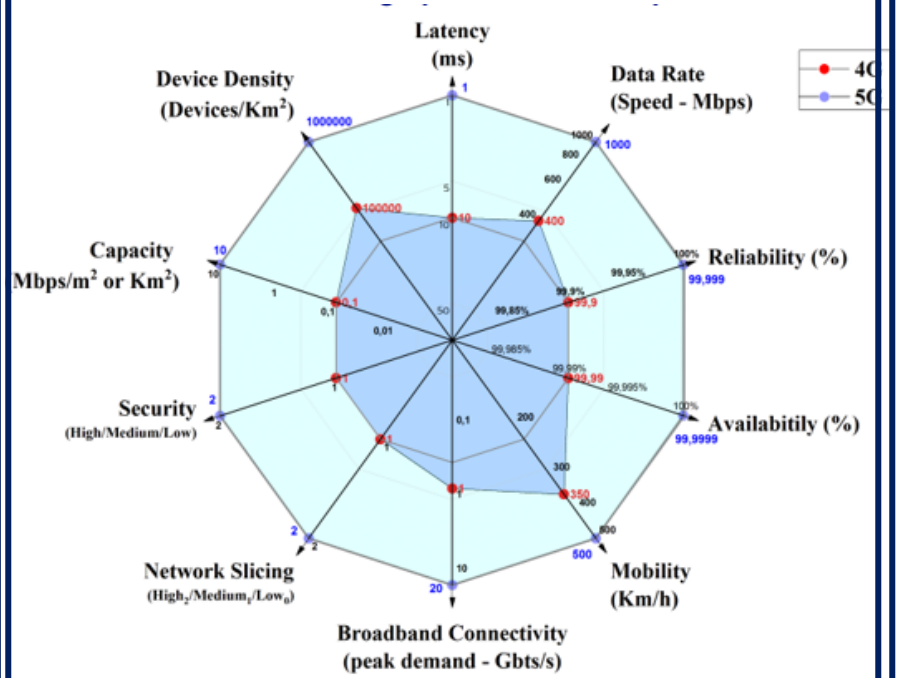
NFV & SDN

700 MHz
3.5 GHz
26 GHz

EDGE COMPUTING

NETWORK SLICING

5G TECHNOLOGY



USE CASE NEEDS INTO KPI's

Transport

Smart Cities

Tourism

Utilities

Industry 4.0

Media

VERTICAL INDUSTRIES

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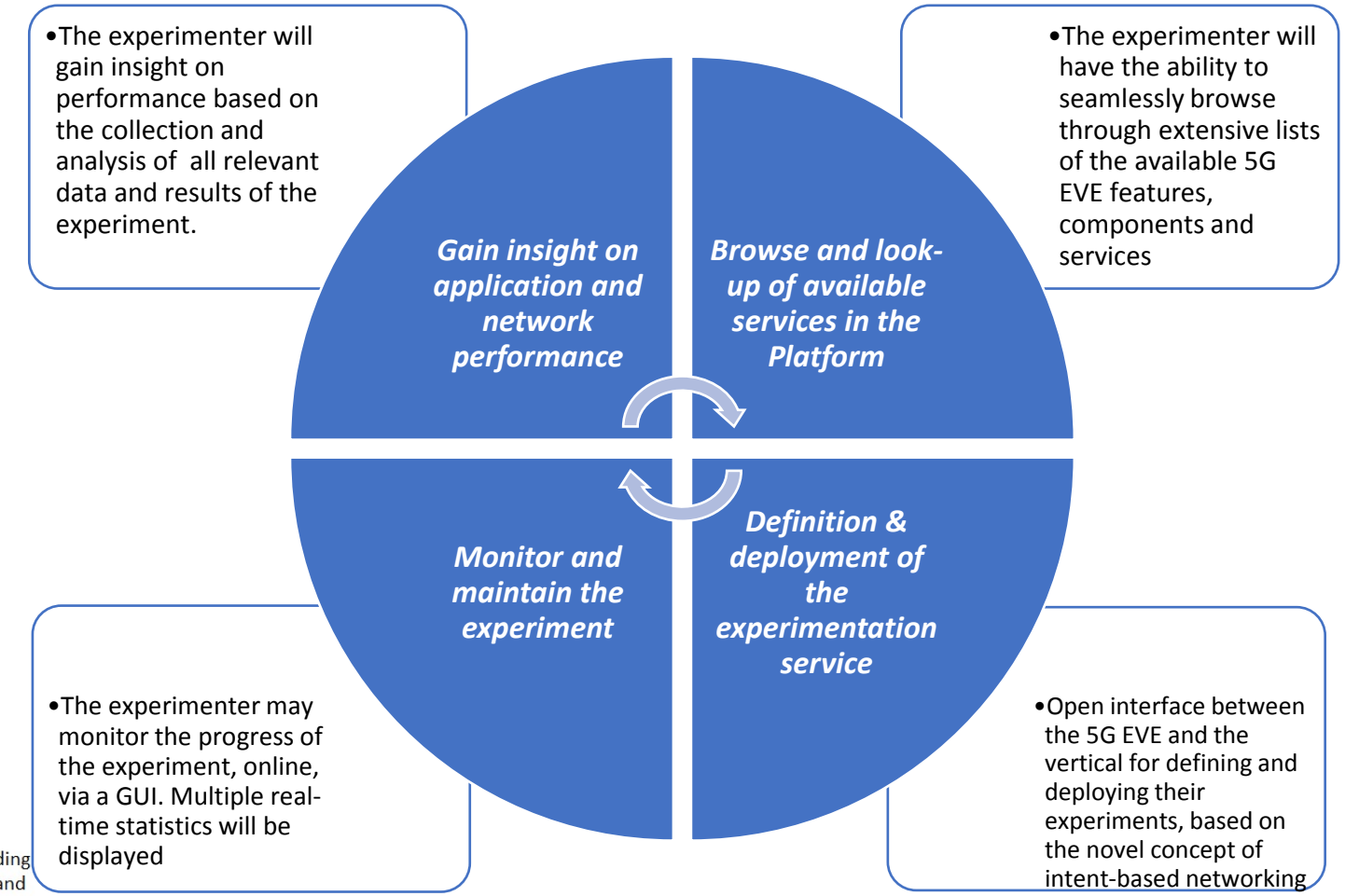
5G EVE: Collaboration Model – Technical Aspects

2. Deployment, Execution and Analysis of the Trials



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5G EVE: Collaboration Model – Technical Aspects

3. Interworking Framework: Levels of support

Single site.
Pre-provisioned apps

5GEVE Verticals: All

Single site.
Common App interface

5GEVE Verticals: All

Interworking.
Application Control traffic.

5GEVE Verticals: Industry 4.0:

Interworking.
User-plane traffic

5GEVE Verticals: Tourism and Media

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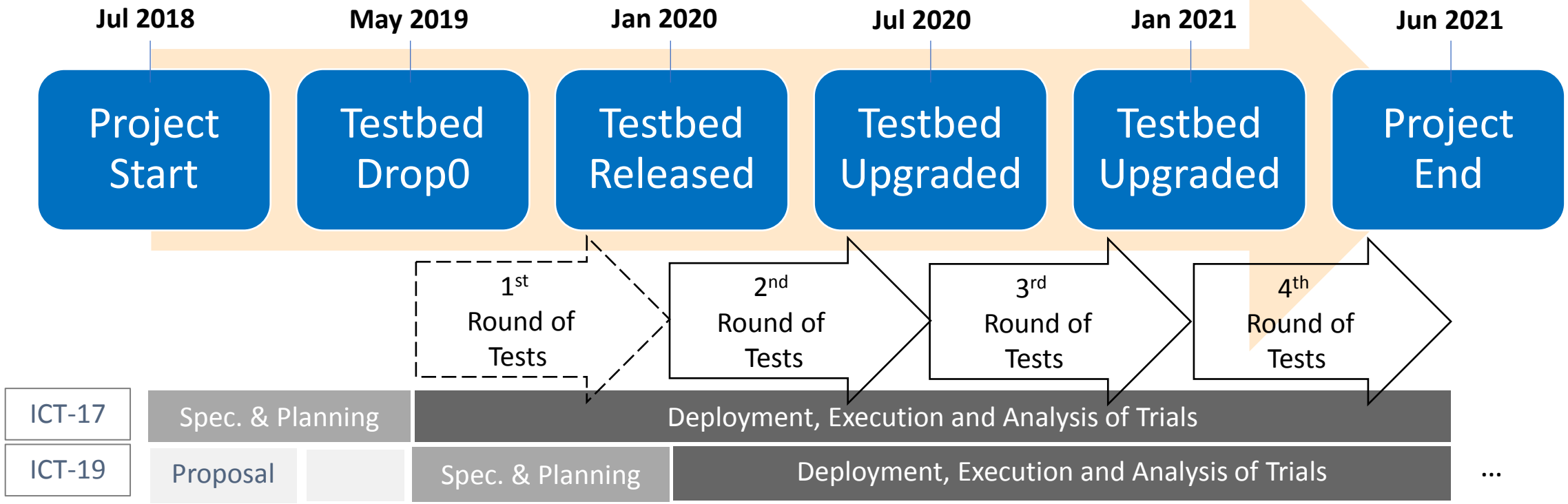
5G EVE: Collaboration Model – Technical Aspects

Timeline



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Thank you!

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5G EVE

Useful information

General information on methodologies and solutions

→https://www.5g-eve.eu/

Information on available facilities in the different sites

→https://www.5g-eve.eu/end-to-end-facility

Specific requests

→https://www.5g-eve.eu/contact/

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