5G EVE

European validation platform for extensive trials

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

Bruxelles, 14th September 2018 - Maurizio Cecchi

5G EVE

The Vision

- The latest advancements in 5G technologies, architectures and facilities are reducing the gap towards the deployment of operational infrastructures, and the “eve” of commercial 5G services.
- All these technologies and solutions **are currently being validated by vendors, researchers and operators in labs and small field trials** in various EU countries and worldwide.
- However, **the imminent market needs, compel the existence of 5G end-to-end facilities capable of supporting extensive and realistic trials.** The challenge of **providing end-to-end 5G network solutions** is **crucial for all the actors in the 5G value chain**, starting from operators and vendors, but necessarily extending to vertical industries and SMEs.
- The aspiration of 5G-EVE **is to create the foundations for a pervasive roll-out of end-to-end 5G networks in Europe**. 5G-EVE supports this fundamental transition by **offering to all 5G experimenters, facilities to validate their network KPIs and their services**.
- As all the 5G programmes and initiatives worldwide have acknowledged, **5G technologies will not be deployed and adopted without a compelling demand by a wide set of *business* cases expressed by leaders of vertical markets.**

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5G EVE

The 5G EVE partners

NOKIA FR – GR - ES

b com

eDF

TRENITALIA GRUPPO FERROVIE DELLO STATO

SEGITTUR

CITTA' DI TORINO

ERICSSON IT – GR - ES

EURECOM

NEXTWORKS ENGINEERING FORWARD

ares2t

TIM

ASTI

EURESCOM

IDC Analyze the Future

OTE

orange FR – PL - RO

WINGS ICT SOLUTIONS

Telefónica

PIIU

uc3m

cnit

Telcaria

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5G EVE

Objectives

The 5G EVE facilitiy will provide the means for experimenting (tools) with:

- eMBB, mMTC, URLLC services;
- Access technologies (NR, spectrum, radio resource management);
- BH/FH technologies;
- MEC capabilities
- Core network and service technologies including a 5G VNF pool;
- Slicing and orchestration (cross domain and network segment/technology)

We are committed to enable experimentation and validation with full sets of 5G capabilities: **initially 3GPP Rel.15 compliant and 3GPP Rel.16 compliant by project end.**

The 5G EVE end-to-end facility will be composed of four interworking facility sites in Greece, Spain, France and Italy **offering vertical industries a validation platform through a unified functional and operational API**.

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Objectives

- The goal of the 5G end to end facility is to **be constantly evolving and be in alignment with the latest features released by the 5G standards.**

- At the end of the project the different site facilities are to be **upgraded to the latest compliant features with Release 16**. It is also the goal to be able to deploy selected pre-commercial features of 3GPP Release 16, preparing the site facilities beyond 5G standards.

- The site facilities of the 5G-EVE project will cooperatively interwork for achieving the notion of a 5G end to end facility towards the vertical industries**. Interworking among the site facilities, both at the control and user plane**, is a must for that purpose.

- Trials executed by some vertical use cases shall span multiple interworking site facilities. This **allows verticals to run trials using resources of multiple site facilities** and requiring interworking among them.

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Objectives

- The goal is to build an operational abstraction of the facility sites that **provide vertical industries with a single operational interface** towards the 5G end to facility. This includes development of APIs, tools, and mechanisms in an open framework that ease the verticals to deploy their multi-site trials.

- This will **enable vertical industries or operators to evaluate KPIs or perform a benchmarking of different technologies** in a consistent way, e.g., without dependencies on the particular facility sites where the KPI is collected or the technology that is benchmarked.

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Contributions to standards

- As a first step 5G-EVE will **focus on APIs for unified operation and management of network slices** across site facilities.

- Another area will be derived from the result of **vertical industry experimentation including ICT 19 ones,** in case the required network KPIs do not meet the expected results for such experiments.

→ 5G-EVE has the **objective of identifying these standardization gaps and contributing to the relevant standard SDO** (e.g., 3GPP, ETSI MANO, ETSI MEC, IETF.), **validating the results of these groups together with ICT19 projects - by real experiments with real users**.

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5G EVE

Methodology

The 5G-EVE concept consists in further developing and **interconnecting four existing European sites to form a unique 5G end to end facility, which will be offered to the vertical industries for pilots' execution and validation**. Specifically, the 5G-EVE concept to achieve its **technical objectives** consists of:

- **Implementing Release 16 compatible technologies** in the four sites, starting from the evolutions of current Release 15. Specific pilots will validate that 5G KPIs can be achieved;
- Designing **and implementing site interworking and multi-x slicing/orchestration mechanism**.
- **Implementing vertical-oriented open framework**.
- **Creating an advanced 5G testing mechanisms** to validate 5G advanced challenges.

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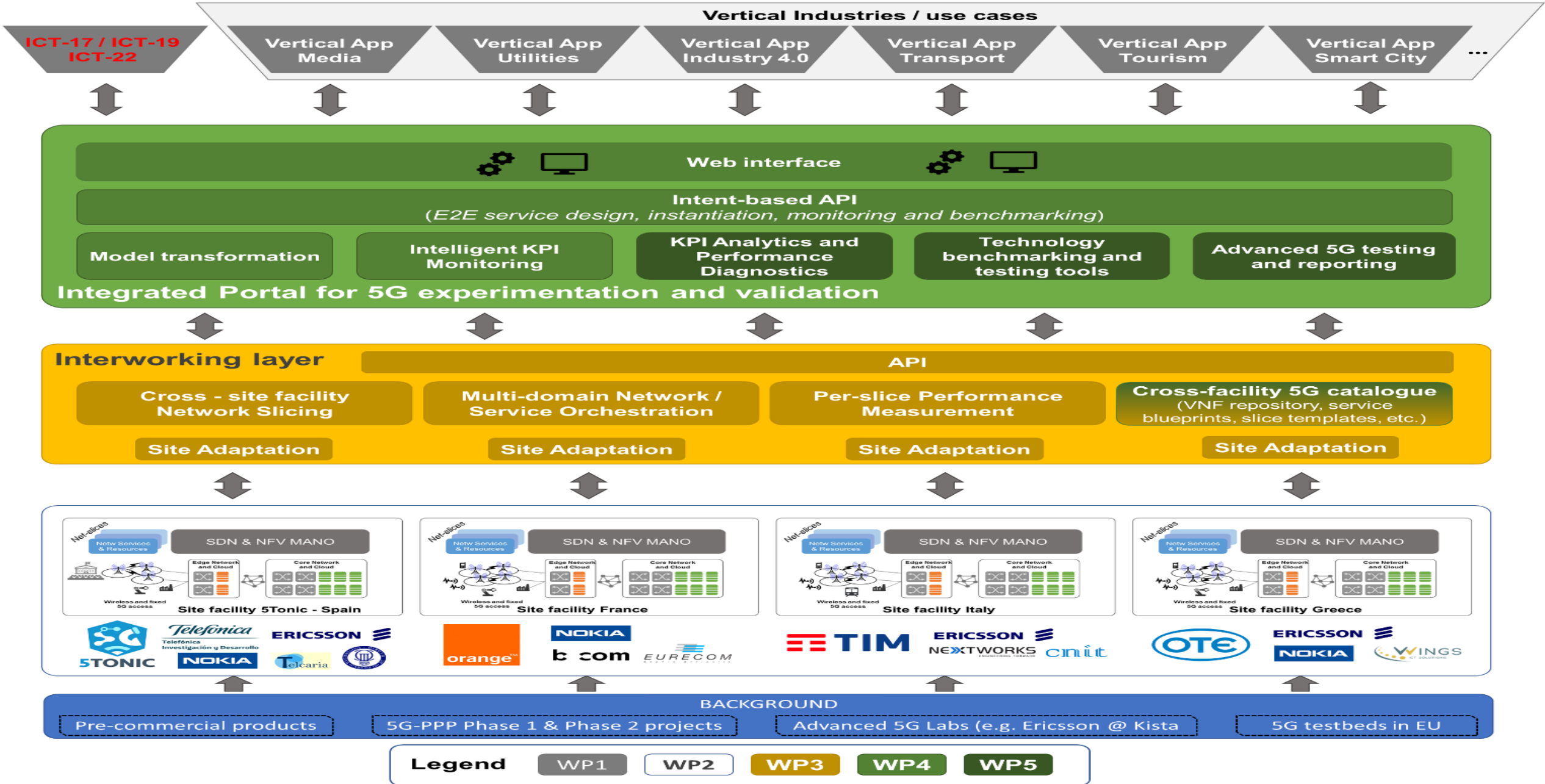
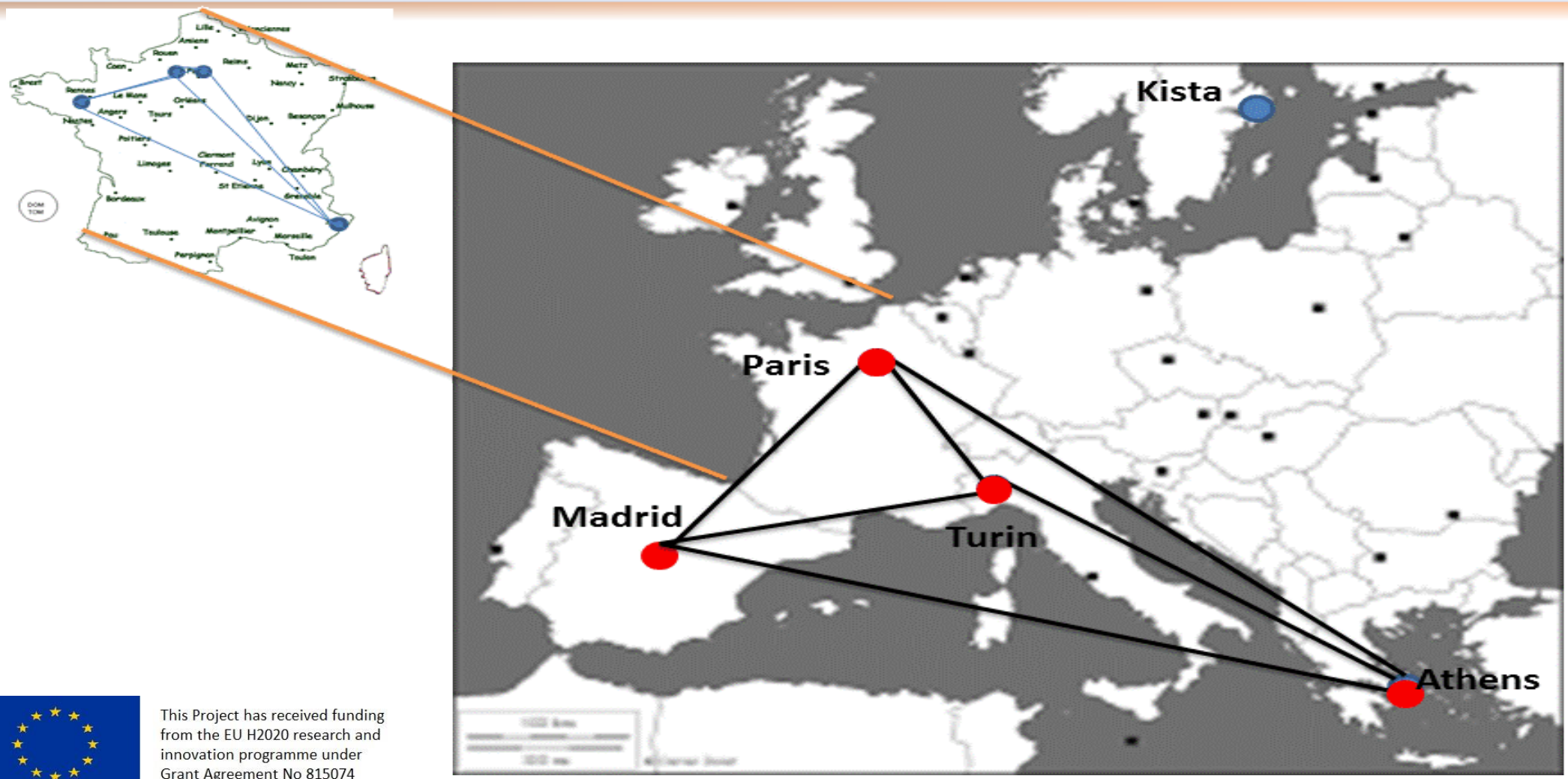
5G-EVE

5G end-to-end facility enabling pre-commercial, industrial experiments



Locations of the 4 sites facilities



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5G EVE

Organisation of the 4 sites

Site Facility	Greece	Spain	France	Italy
Owner (operator)	OTE	Telefonica	Orange	TIM
Location	Athens	Madrid	Nice, Paris & Rennes	Turin
Involved partners	Nokia, Ericsson, Wings	Ericsson, UC3M (IMDEA), Segittur, ASTI, Telcaria	Nokia, B-COM, Eurecom, EDF	Ericsson IT, Nextworks, CNIT, Comune Torino

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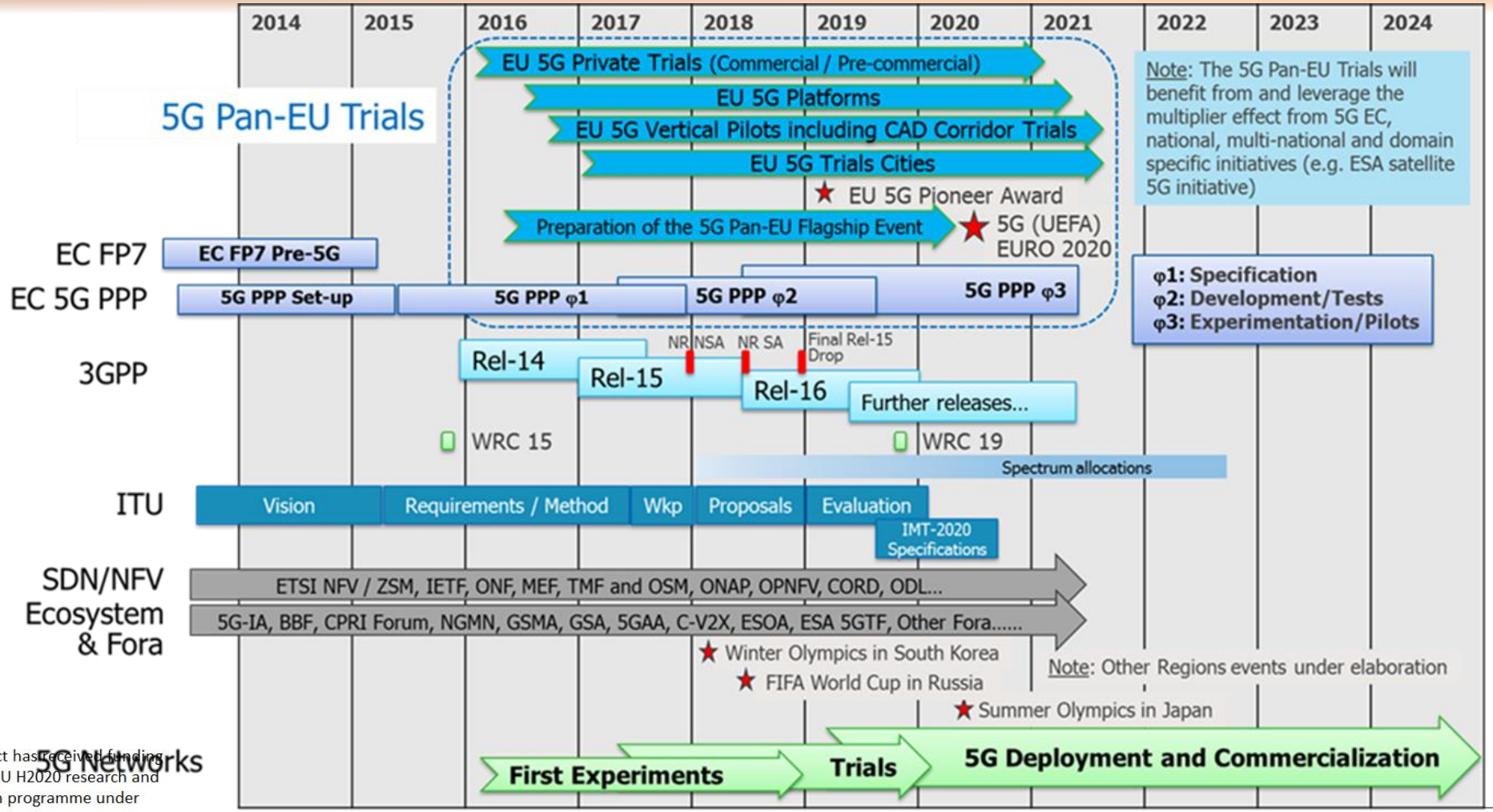
Timescale of 5G EVE



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5G networks

5G EVE

How we can collaborate with ICT-19 proposers

- Main challenges
- Different levels of collaborations
- Useful information

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5G EVE

Main challenges

- Selection of use cases/trials **where 5G performance is essential**
- **Direct** involvement of relevant users/stakeholders
- **Concrete field** trials; not «labs experiments»
- **Precise roles and responsibilities** in the trials
- **Quantitative** parameters with precise timescale
- Regarding the use of ICT-17 facilities a precise **location** definition is essential

➢ Usable **frequencies** / cells coverages

➢ **Gap analysis** to identify the needed additional equipment and technologies related to specific trials

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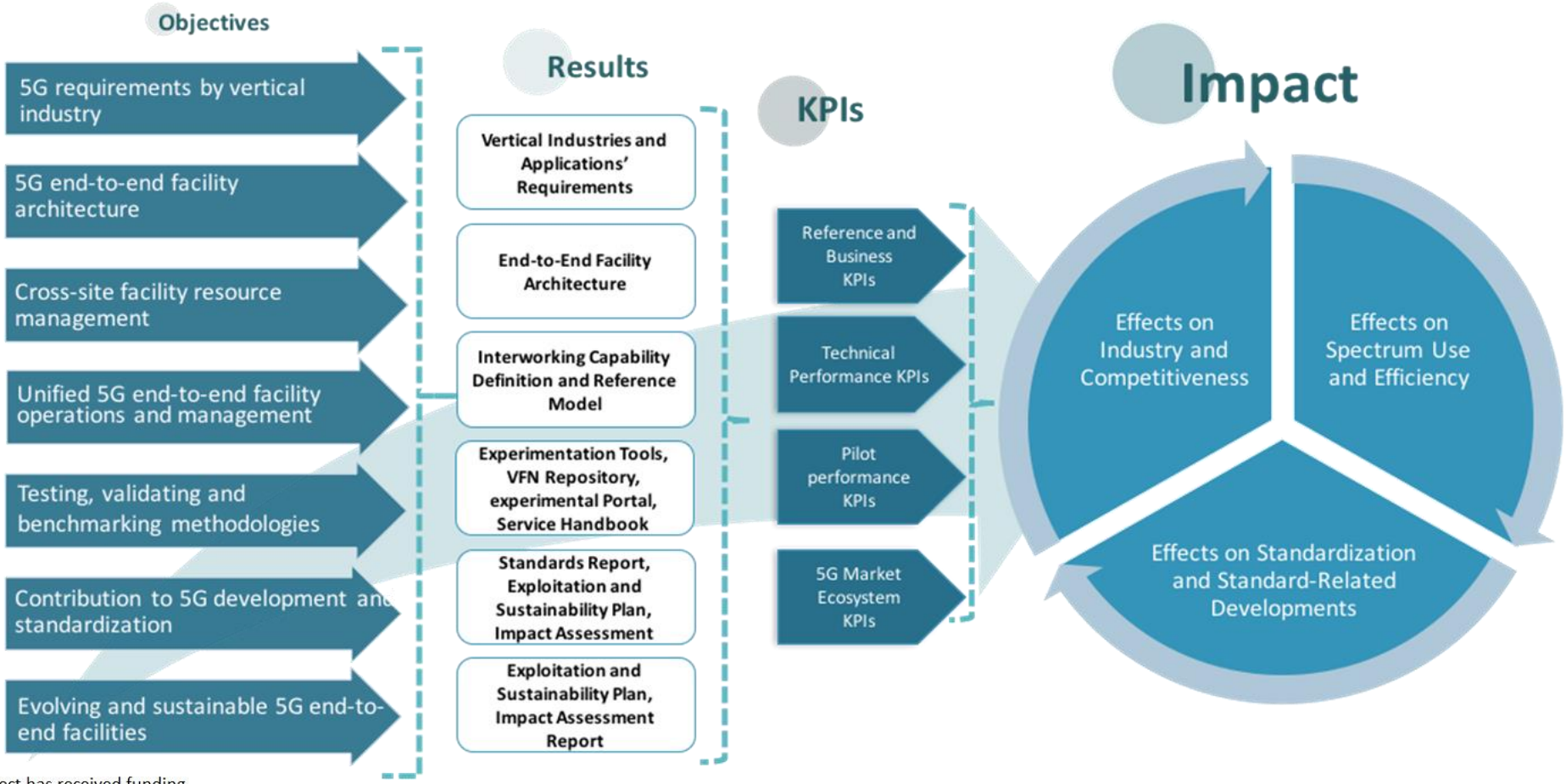
An important challenge for cooperations with ICT-19 projects → **Evaluate the impact on the market**



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5G EVE

Different levels of collaborations

- **General support**
  - Tools and solutions offered through our portal
  - Intent based interfaces available for any kind of experimenters (not only ICT-19 projects)
  - Monitoring system to evaluate 5G KPIs

- **Trials covered by the local 5G available infrastructures**
  - Focus on geographical constraints
  - Planning of extra hardware in case it is needed

- **Specific trials with partners of 5G EVE:**
  - No restrictions or priorities set by our consortium
  - Open to anybody if addressing the mentioned challenges
  - Decisions to participate will be taken by each partner
  - Circulation of information about new proposals will be ensured to 5G EVE partners IF REQUESTED, otherwise confidentiality is the general rule

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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/

→Training (a specific webinar has been planned the 20° of September at 15.00 CEST, see following slide)

→https://www.5g-eve.eu/training/

Specific requests

→ https://www.5g-eve.eu/contact/

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Webinar on 5G EVE facility for ICT-19 proposers

Purpose:

Inform ICT-19 proposers how to access and use the 5G EVE facility for trials and validations of ICT-19 projects.

Date & time: Thursday, 20 September 2018 | 3:00 pm - 5:00 pm CEST

Agenda:

https://www.5g-eve.eu/event/the-5g-eve-end-to-end-facility-webinar-for-ict-19-proposers/

Registration deadline: Tuesday, 18 September 2018

Registration form:
https://www.5g-eve.eu/registration-5g-eve-webinar-for-ict-19-proposers/

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Thank you!

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