European Commission

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Call for projects validating 5G for cross-border CCAM

EU EIP C-ITS workshop for lessons learned in C-ITS corridor pilots , 22nd November 2017

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DG Communication Networks, Content and Technology
European Commission

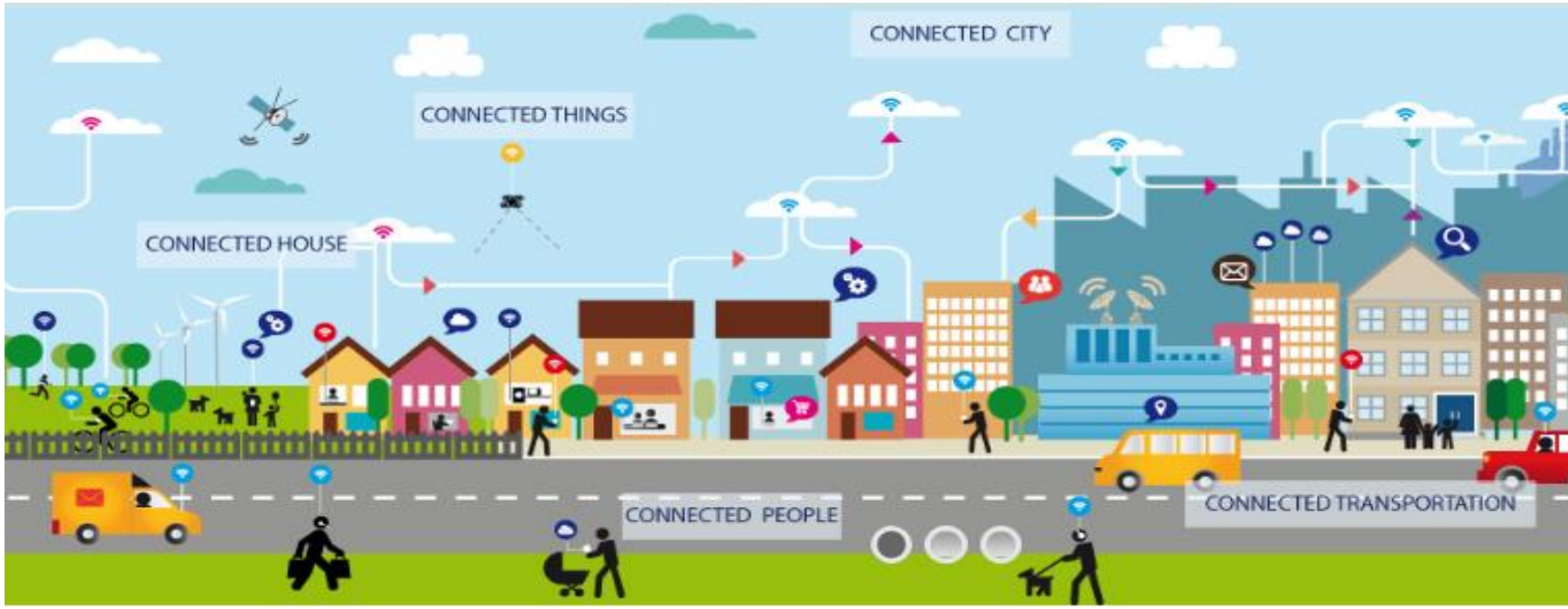
HORIZON 2020

"The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission"

The 5G Action Plan

For the competitiveness of EU industries

Pooling investments of different industries for scale



→ "2020: 5G commercial in at least one city per EU Member State"

→ "2025: 5G continuous coverage over all major transport paths"

5G Public Private Partnership (PPP)

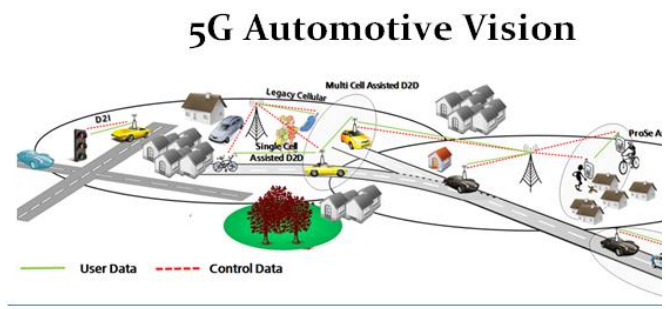
Funding: 700 million € public + 3.5 billion € private

Delivers positions on:

- Pre-standardisation
- Spectrum
- International cooperation
- 5G vision

Joint work in 5G for automotive

White paper on 5G Automotive Vision

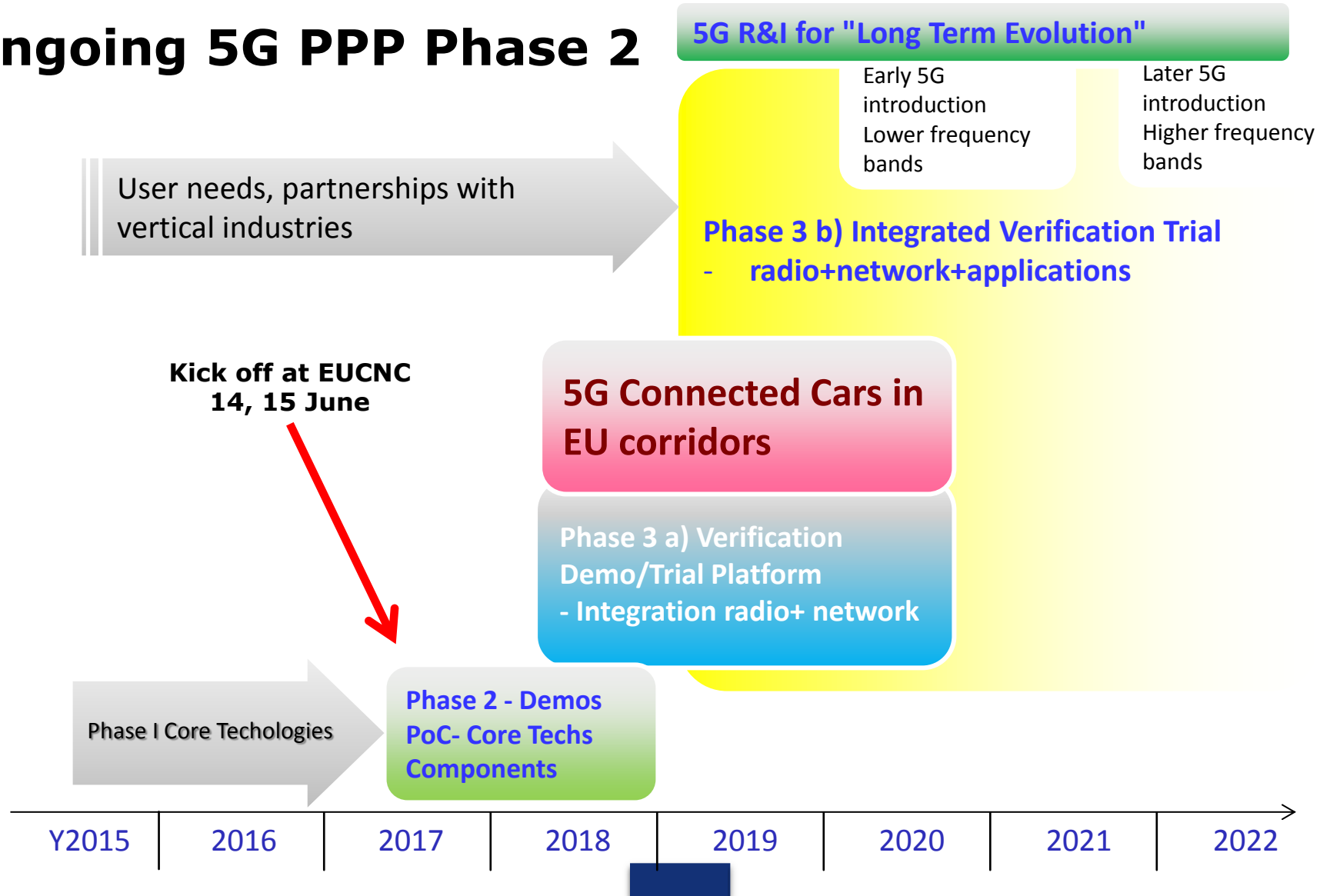


Category	Logo	Organization
Automobile Manufacturer	VOLKSWAGEN	Volkswagen AG
	VOLVO	Volvo Car Corporation
	PEUGEOT CITROËN	PSA Peugeot Citroën
Automotive Supplier	BOSCH	Robert Bosch GmbH
Telecom Operator	orange	Orange SA
	vodafone	Vodafone Group R&D
	docomo	DoCoMo Communications Laboratories Europe GmbH
Telecom Vendor	SAMSUNG	Samsung Electronics R&D Institute UK
	QUALCOMM	Qualcomm
	NOKIA	Nokia Networks
	Alcatel-Lucent	Alcatel-Lucent Deutschland AG
	ERICSSON	Ericsson AB
	HUAWEI	Huawei Technologies, European Research Center (ERC)
Research Institute	CTTC	Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)
	King's College London	King's College London
		National and Kapodistrian University of Athens
	EURESCOM	Eurescom
	TECHNISCHE UNIVERSITÄT DRESDEN	Technische Universität Dresden
Other	ERTICO ITS EUROPE	ERTICO – ITS Europe
	INTERDIGITAL	InterDigital Europe, Ltd.

5G for CCAM:

1. Ongoing Phase 2
2. Call for Phase 3

Ongoing 5G PPP Phase 2



The 5GCAR project: key data

Duration: 2 years

Funded by EU: 8 million EUR

ERICSSON
BOSCH
CHALMERS UNIVERSITY OF TECHNOLOGY
CTAG
CTTC
HUAWEI
KING'S College LONDON
MARBEN
NOKIA
orange
PSA GROUPE
SEQUANS COMMUNICATIONS
VISCODA
VOLVO

5GCAR project - Use cases: 5 examples

1. Lane merge
2. See-through
3. Vulnerable pedestrian protection with network assisted see-through
4. High definition local map acquisition
5. Automated parking with remote driving

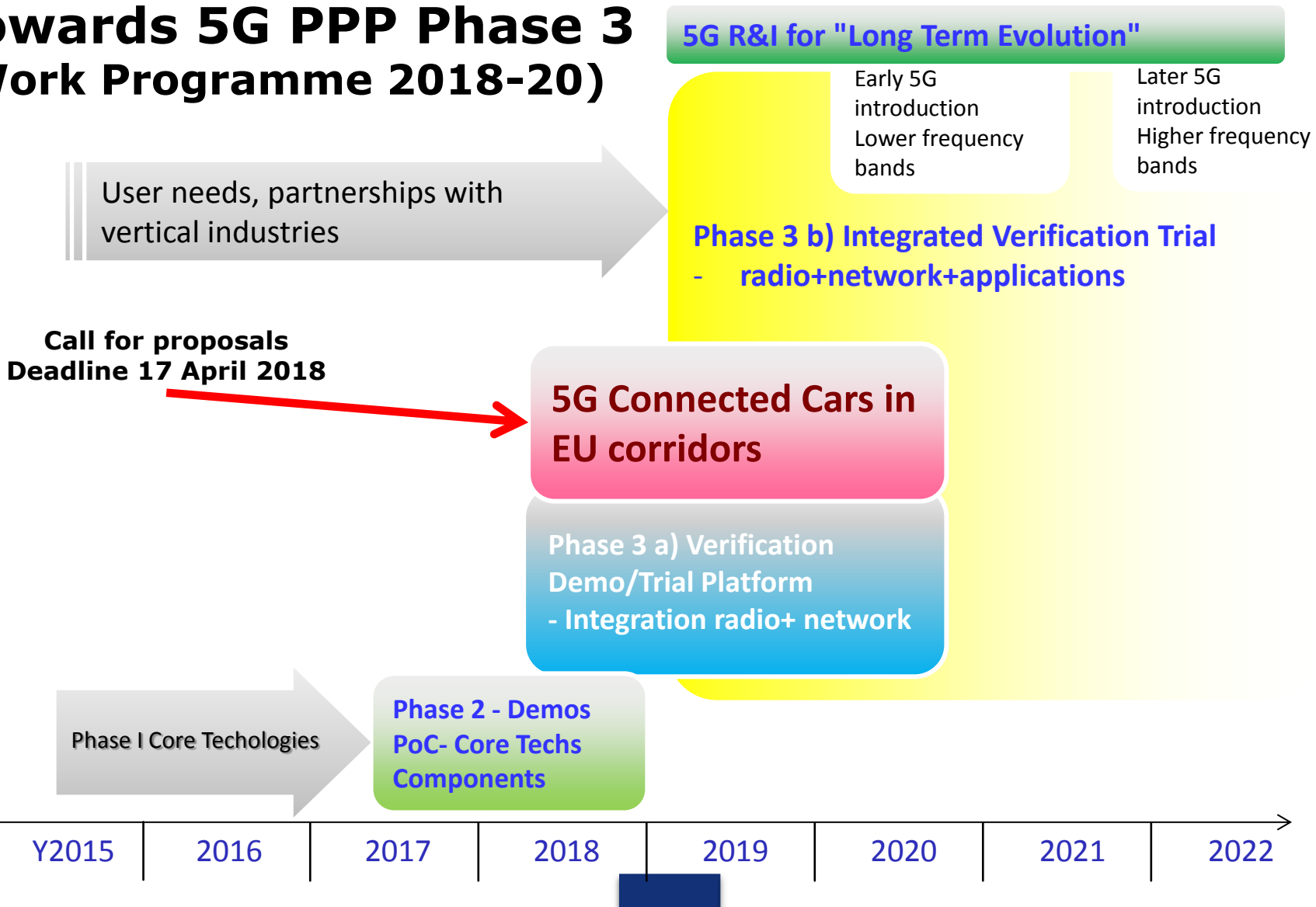
5GCAR project: ambitions

1. End-to-end latencies, below 5 ms
2. Ultra-high reliability, close to 10^{-5}
3. Very large density of connected vehicles
4. Positioning accuracy VRUs:10 cm Vehicles:30 cm

5G for CCAM:

1. Ongoing Phase 2
2. Call for Phase 3

Towards 5G PPP Phase 3 (Work Programme 2018-20)



ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM) - general context

- Member State support with Letter of Intent, signed at ministerial level in March 2017
- European Automotive and Telecom Alliance (EATA) launched in September 2016
- 5G Automotive Association (5GAA) launched in September 2016

ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM) – scope

- Validation of 5G in a broad CCAM context is realised through **cross border trials** along 5G corridors
- Core technological innovation expected from 5G, such as (but not limited to):
  - New Radio, new frequency bands
  - C-RAN
  - Mobile Edge Computing
  - network virtualisation
  - new network architecture
  - cross domains data flows

ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM) - scope

- Define options for deployment, taking into account the evolution from earlier cellular technology (e.g. LTE-V2X), and possible co-existence with other technologies (e.g IEEE 802.11p).
- Includes cost/complexity assessment of the deployment options.
- Identifies who has to invest and who will benefit commercially.

ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM)

- Opening 31/10/2017
- **Closing 17/04/2018**
- Target is 2 to 4 projects
- Type of action: Innovation action
- funding rate: 70% (except for non-profit legal entities, 100%)

up to 50 M€

Thank you for your attention

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ICT Work Programme: web page and document (topic ICT18 page 40)

5GCAR project

www.5gcar.eu

5G Action Plan for Europe

https://ec.europa.eu/digital-single-market/en/5g-europe-action-plan

5G PPP *http://www.5G-PPP.eu*