





#### **5G PPP Achievements**

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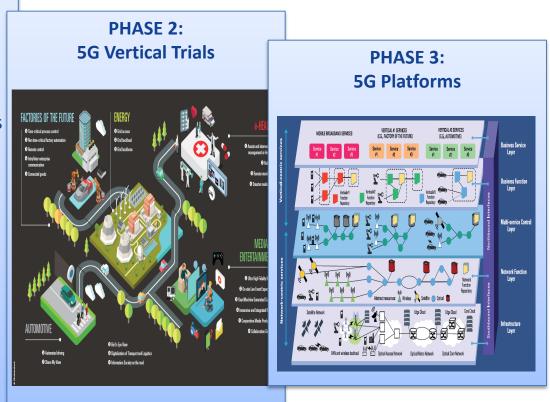


#### 5G PPP Research Partnership



#### PHASE 1: 5G Core Research main achievements:

- 5G System design & Evaluation aspects
- 5G Air interface innovations
- Network management & Security innovations
- Virtualization & Service deployment innovations
- 100s of contributions to standardization



2015 2016 2017 2018 2019 2020



#### Phase II – Vertical Trials & Pilots



## Connected and Automated Mobility

#### **Smart Cities**

#### Industry 4.0

				L				
Projects	Vertical Stakeholders	ITU Service Types	Locations	П	Projects	Vertical Stakeholders	ITU Service Types	Locations
TO R	PSA BOSCH	eMBB, URLLC	Montlhéry (FR)		5 <sub>G</sub> -MON RCH	Hamburg Port Authority	mMTC	Hamburg (DE) Turin (IT)
5GCity <sup>®</sup>	City councils of Barcelona, Bristol and Lucca	eMBB, URLLC (mMTC)	Barcelona (ES) Bristol (UK) Lucca (IT)		NRS5	engie emotion  ASM AM TELEP	mMTC, URLLC, (eMBB)	Terni (IT)
IORL Internet of Redio Light	issymedia agroman	eMBB	Watford (UK) Paris (FR) Madrid (ES)		5Gtango涨	Weidmüller ₹	mMTC (URLLC)	Detmold (DE)
<b>55</b> XCAST	EBU LiveU	eMBB	Surrey (UK) Munich (DE) Turku (FI)		(Phase 1)	SIEMENS Siemens Wind Power	URLLC	Brande (DK)
5G ESSENCE	SMART MOBILE LABS	еМВВ	Egaleo (EL)		5Ĝ-PICTURE	FGC Ferrocarrils de la Generalitat de Catalunya hDUSTRIAL	mMTC, URLLC, eMBB	Barcelona (ES) Bristol (UK)
5G•MEDIA	IPT rtve	eMBB	Athens (EL) Thessaloniki (EL) Madrid (ES) Rome (IT)		<b>Ne</b> paas:	Vertical Systems Virtual Open Systems	mMTC, URLLC	Paris, Grenoble (FR)
5Gtango⅓	NUROGAMES	eMBB, URLLC	Aveiro (PT) Athens (EL)		5G ESSENCE	THALES	URLLC, eMBB	Coventry (UK)
<b>GR</b> PRANSFORMER	CRF	URLLC	Turin (IT), Pisa (IT Madrid(ES) Nice (FR)	7)	A MATILDA	internet INSTITUTE//	URLLC (eMBB)	Genoa (IT) Ljubljana (SL)
			1			4		

Consumer and Professional Services

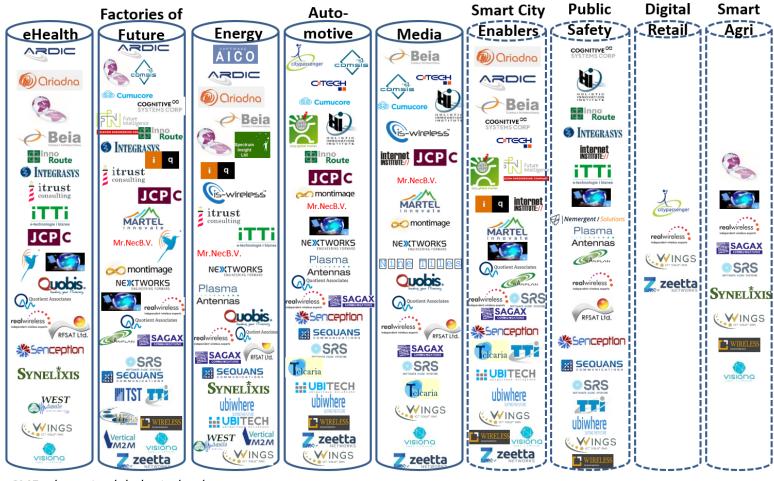
**Transport** 

Public Safety & Digital
Divide



#### **Mapping SMEs to Verticals**





SMEs shown in alphabetical order





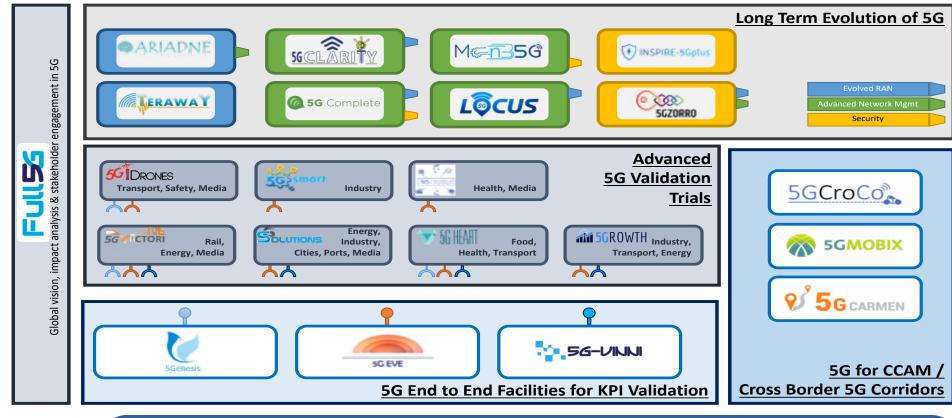
# Phase III – End to End Facilities and advanced Validation trials





#### Phase III – Active projects





new projects are about to start shortly as a continuation of Phase 3:

- > 5G for Connected and Automated Mobility
- 5G core Technology Innovations
- 5G Innovations for Verticals with Third Party Services
- Smart Connectivity beyond 5G





#### **Phase III – Services for verticals**

	4.0 Industry 4.0	Agriculture & agri-food	Automotive	Transport & logistics	Smart Cities & utilities	Public Safety	((iii)) Smart (air)ports	EnergY	eHealth & wellness	Media & entertain.
5G EVE	<b>V</b>		<b>√</b>		√	<b>√</b>	- 12-5	√	√	√
5GENESIS				<b>√</b>	√	<b>√</b>				√
5G VINNI	√			√		<b>V</b>		√		
5G!DRONES		V.		√		<b>V</b>				√
5G HEART		<b>V</b>	√	√				$\triangle$	√	
5GROWTH	√			√				√		1
5G SMART	√			7		17				
G SOLUTIONS	√				√		√	√		√
5G TOURS	$\leq 1$			√	√		√		√	√
5G VICTORI	√			<b>√</b>				<b>V</b>		<b>√</b>



## 5G PPP: Key achievement version 3.0 (June 2020) IA







Phase 3 Key Achievements from the 5G PPP include Over 80 highlighted results from projects in phase 3 under 20 program level achievements as shown by the symbols here. Please click on the symbols to see the relevant results.

































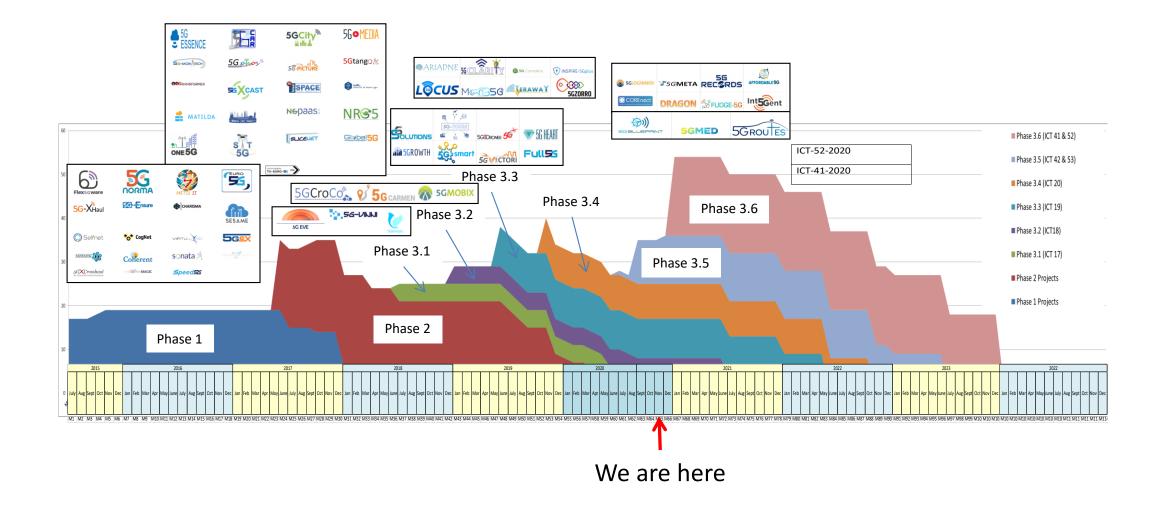






## **5G PPP: The big picture**







## **5G PPP global impact I**



- Created 5G technology leadership for the European industry through the hard work of 5G-PPP projects, WGs, and TFs
- Successfully achieved most of the challenging business and technical KPIs and is well on track for the societal ones
- Mobilized huge private investments in 5G
- > Stimulated a high level of SME participation and created a positive impact on the innovation capacity of SMEs
- > Has organized meaningful and disruptive trials all over Europe

For more information, refer to the **5G PPP Annual Monitoring Report 2019** <a href="https://5g-ppp.eu/annual-progress-monitoring-reports/">https://5g-ppp.eu/annual-progress-monitoring-reports/</a>



### **5G PPP global impact II**



- > Over 1300 scientific publications (Phase II and III)
- ➤ A major impact on 5G standards with over 800 Tdoc contributions to SA1, SA2 and RAN3, and ETSI TR 103.611 for the definition of architecture options
- ➤ Beyond standards, proving the 5G system is working for verticals in 70 test/experiment sites
- > An active engagement in the IMT-R IMT 2020 evaluation process



### Beyond 2020





- Communication networks provide the life blood to realize the digital society
- Connectivity has gone from a luxury to a critical human right
- Research, development and deployment of communication networks will be a key future economic differentiator
- 2020 does not mark the end of network infrastructure development We need a Smart Networks Partnership instrument in Horizon Europe to continue European technology leadership





#### Thank you for your attention



For more information about 5G PPP activities please visit <a href="https://5g-ppp.eu">https://5g-ppp.eu</a>
The white paper is available at <a href="https://5g-ppp.eu/white-papers/">https://5g-ppp.eu/white-papers/</a>