

Progress Report of The China trial site to the ERTICO

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5GMOBIX



CN trial site of the 5GMOBIX project

H2020 Call ID: H2020-ICT-2018-20, ID: ICT-18-2018 on Oct 27, 2017

The 5GMOBIX organized by ERTICO



- 14 counties
- 58 partners
- 8 sites with 5G-V2X

Fund by National Key R&D Program of China
With RMB 3,480,000, No. 2018YFE0197700

国家重点研发计划“政府间国际科技创新合作/港澳台科技创新合作”重点专项立项项目清单

立项编号	项目名称	项目负责人	申报单位	推荐单位	合作国别/地区/组织	国拨经费/万元	项目总经费/万元
2018YFE0197700	面向多路段下协同网联自动驾驶的5G应用技术	史彦军	大连理工大学	大连市科学技术局	欧盟	252	348

CN 5G-V2X trial site

- 6 full partners
- 4 associate partners
- 2 MNOs
- 2 roads with urban and highway cases



China

5GMOBIX

Location & key stakeholders

- City of Jinan, China













East zone of SAS (urban of Jinan)



Shandong Binglai Highway

Full and Associate Partners

	(Full / Associate) Partner	Roles
	DUT(DALIAN)	CN site leader
	Institute of Automation, Shandong Academy of Sciences (SDIA)	User case leader, Vehicle provider
	China National Heavy Duty Truck	Truck provider
	Qilu Transportation Information Group	Smart highway provider
	Dalian Dazzlee Technology Co. Ltd	Vehicle application developer
	China Information Communication Technologies Group Corporation	5G Vendor
	Shandong company, China Mobile	5G MNO
	Shandong company, China Unicom	5G MNO
	Huawei	5G Vendor
	ZTE	5G Vendor

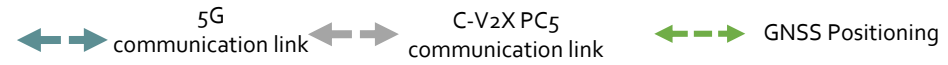
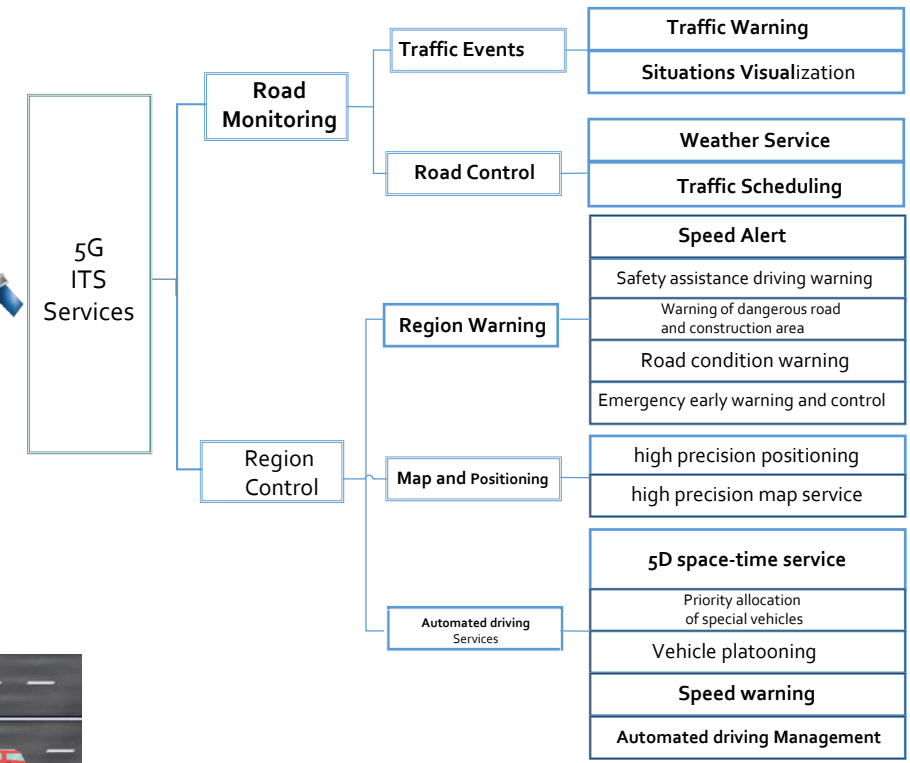
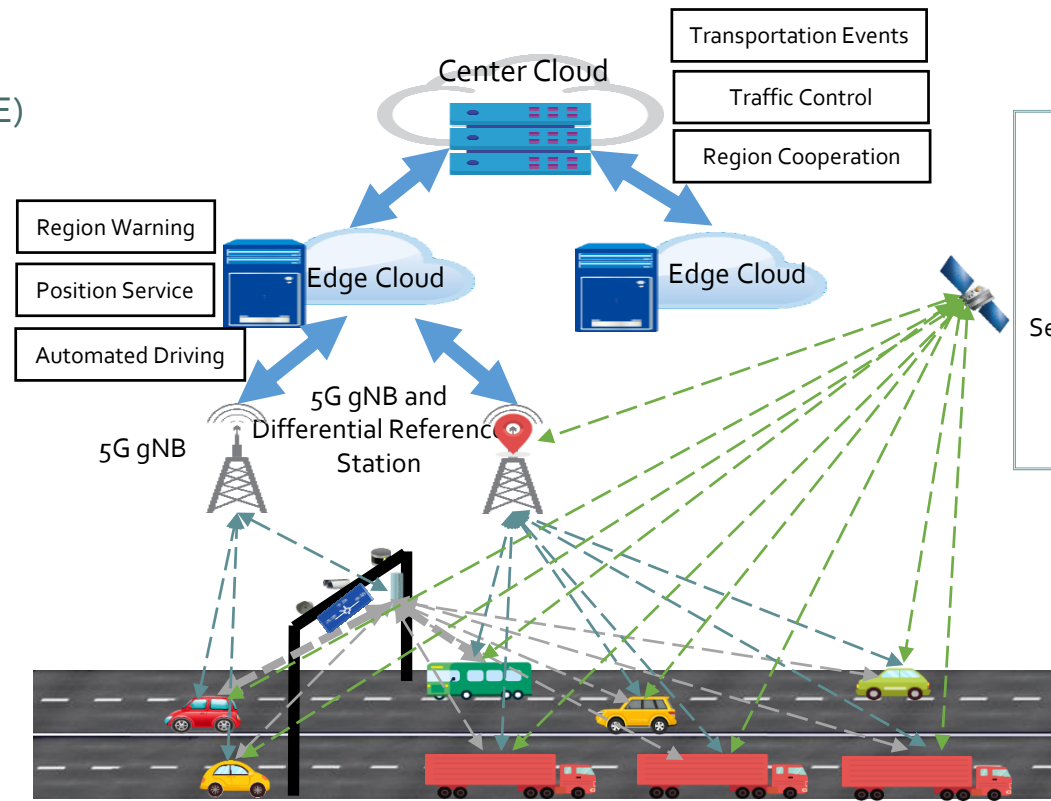
5G network framework

- Current

- Spectrum licenses
 - 5G (2.6 GHz TD-LTE)
- 5G SA
 - 5G NR SA gNB
 - 5GC

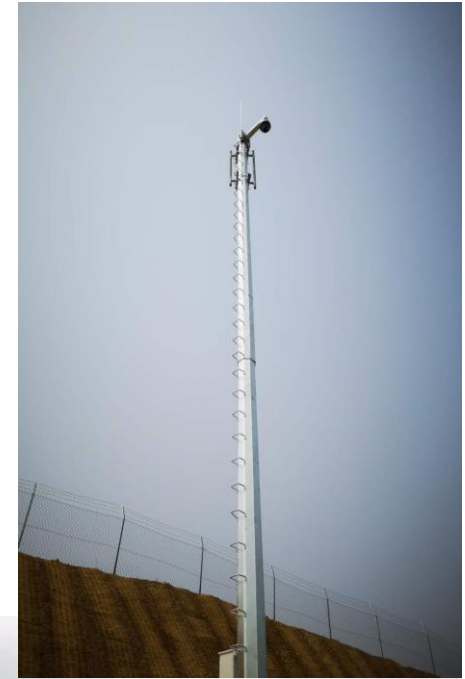
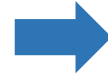
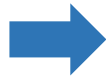
- To be upgraded

- 5G SA
 - 5G CPE (available)



5G network infrastructure

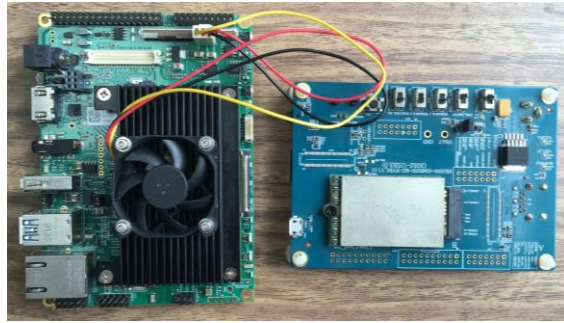
- The highway test site has installed 2-kilometer road with 5G infrastructure
- SDIA has already installed three 5G base stations in east zone, which will be used for remote driving tests.



Vehicles & OBU infrastructure

- L4 vehicles from SDIA and CNHTC
- 5G modems from SDIA and QILT

The SIM8200EA-M2 is Multi-Band 5G NR/LTE-FDD/LTETDD/HSPA+ module solution in a M.2 type which supports R15 5g NSA/SA up to 4.0 Gbps data transfer.

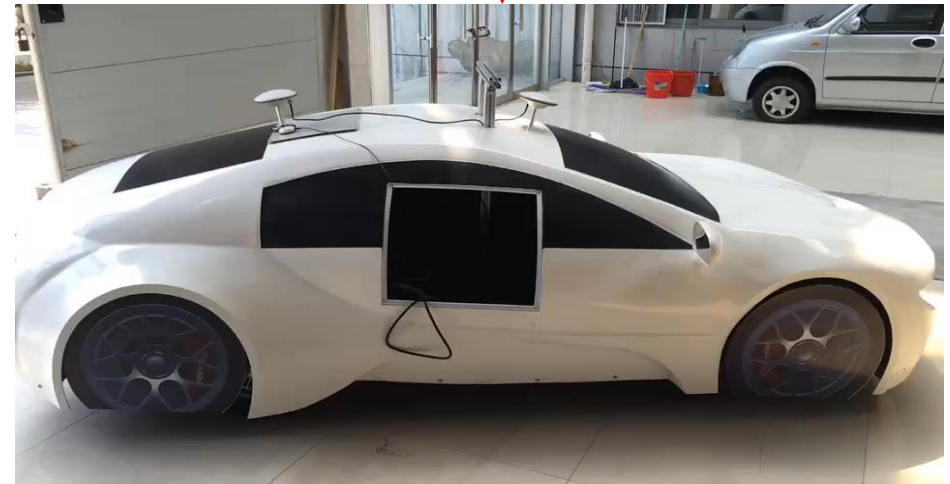


- OBUs (Uu) from CNHTC



Vehicles & OBU infrastructure

- A variety of vehicle test platforms have been used in the CN site, and a special vehicle have been designed and modified for tests (video on the right).



video

CN Trial Site-Use Cases

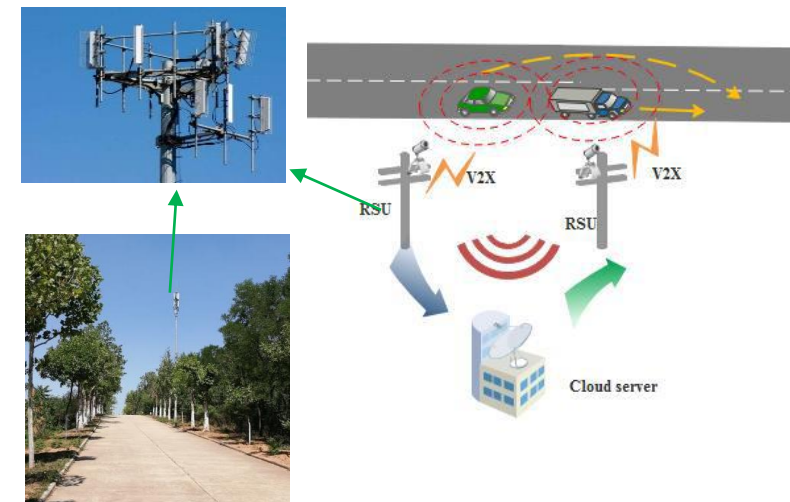
- UC name: advanced driving with remote driving
- UC category: advanced driving, remote driving
- Key aspects

5G service	Implementation
eMBB	Remote center receive HD videos and control vehicles.
uRLLC	The collected data will be delivered by ultra-low latency and high reliable communication in emergency case.

- Testing two MNOs with two 5G Devices (ZTE, Huawei)



Remote Manoeuvre scenario (Scenario 1)



Coordinated overtaking and collision avoidance scenario (Scenario 2)

Tests for Urban Road Scenarios

- Remote driving tests have been able to conduct . The video on the right below is for backhaul testing of HD video under 5G.



video

A Highway Case (2km now, 26km later) for Highway Scenarios

CN site has completed 2km highway in the north of Miao Mountain, with three full-width gantry with a spacing of 500 meters and eagle-eye camera. Also Mechanical and electrical equipment such as roadside LIDARs, and V2X roadside units are installed with 5G, LTE-V, DSRC, EUHT, Wi-Fi, 10G network and other heterogeneous networks for 3D high-precision map and other vehicle-road collaborative applications



A brief introduction



- Associate Professor, Ph. D
- Deputy leader of Collaborative Research Institute for Intelligent Connected Vehicle Technology in DUT
- Technical Committee on Cooperative Computing of China Computer Federation
- IEEE SMC Technical Committee on Computer Supported Cooperative Work in Design (CSCWD, since 2014)
- Program Committee of IEEE CSCWD (since 2015), Program Committee Co-Chair of IEEE CSCWD 2020 and 2021
- Organizing committee of IEEE Smart Internet of Things (since 2018)

My Work on 5G-MOBIX

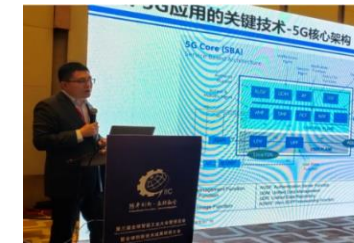
- Introducing the 5G-MOBIX in China and ITS Conference →
- As CN trial site leader, organizing and managing the activities of CN team
- Contacting the ERTICO for project coordination in China



Beijing : 2019 World Transport Convention, Europe-China ITS



Singapore : 2019 ITS World Congress, SIS62



Guangzhou : 2019 The 4rd Global Intelligent Industry Conference



Shenzhen : 2019 ZTE Industry-University-Research Collaboration Innovation Meeting



Thank you!



www.5g-mobix.com



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