



中国汽车技术研究中心有限公司
China Automotive Technology and Research Center Co., Ltd.

Informal document GRVA-19-53
19th GRVA, 25 June 2024
(For review during the
Troy meeting 20-24 May 2024)
Agenda item 11

Introduction to current capability of ICV tests in China

For the 19th meeting of WP.29/GRVA

Submitted by the experts from China
May/June 2024

China has carried out comprehensive research and capacity building on ICV test

ICV

Automated driving test capability



Virtual test



Track test



Real world test

Intelligent cockpit test capability



Voice interaction test



Intelligent lighting test



Image perception test

Network test capability



Network terminal test



Antenna test



V2X test

Security test capability



Cybersecurity test



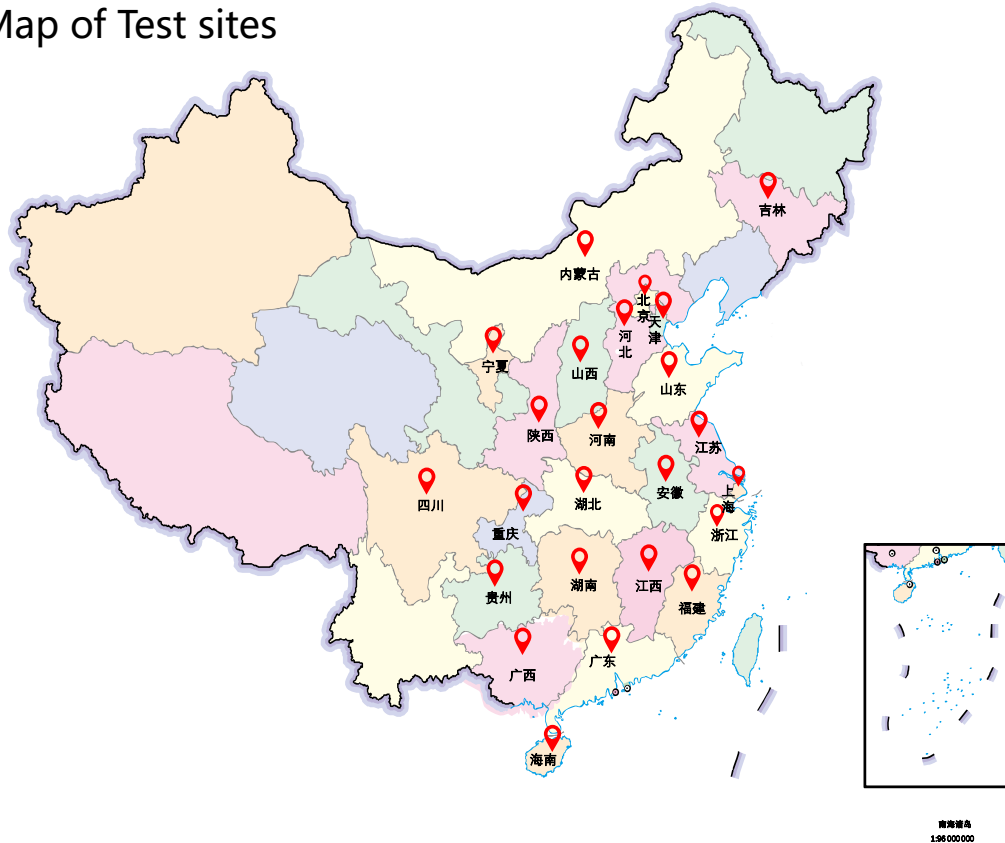
Software upgrade test



Data security test

In order to meet the ICV testing needs in different scenarios, China has established more than 50 ICV test demonstration zones, and issued more than 800 autonomous driving real-world test licenses, with a total test mileage of more than 10 million kilometers.

Map of Test sites



- **Beijing:** Beijing Network cloud-controlled high-level autonomous driving Demonstration Zone
- **Beijing:** Beijing Intelligent Connected Vehicle Demonstration Zone (Shougang Park)
- **Chongqing:** National Vehicle Networking Pilot Zone in Chongqing (Liangjiang New Area)
- **Chongqing:** Chongqing G5021 Shi-Yu highway Fufeng section wisdom highway
- **Jiangsu:** Wuxi national Vehicle networking Pilot zone
- **Jiangsu:** Suzhou (Jiangsu provincial) vehicle networking pilot area
- **Jiangsu:** Nanjing Sushui District Intelligent Connected Vehicle Test Road
- **Hunan:** Changsha (Xiangjiang New Area) national Vehicle networking pilot zone
- **Tianjin:** Tianjin (Xiqing District) national vehicle networking pilot zone
- **Fujian:** The first 5G new infrastructure project of the National Development and Reform Commission - Fuzhou Langqi Wisdom Island
- **Shanghai:** National intelligent connected vehicle pilot demonstration zone
- **Hebei:** Smart Vehicle and Smart Transportation Industry Innovation Demonstration Zone (Xushui)
- **Hubei:** Wuhan Intelligent connected Vehicle Demonstration Zone
- **Jilin:** National Intelligent network vehicle application (North) Demonstration zone
- **Sichuan:** Chengdu Sino-German Intelligent Connected Vehicle Demonstration Base

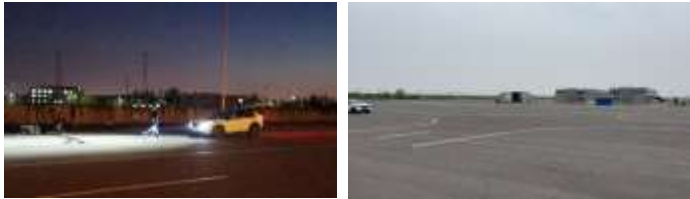
Note: The above data is from public reports and is available until 2023

Automated driving test capability



- China has established a number of ICV test centers with full coverage of complete vehicles and parts, and a combination of real vehicles, benches and simulations

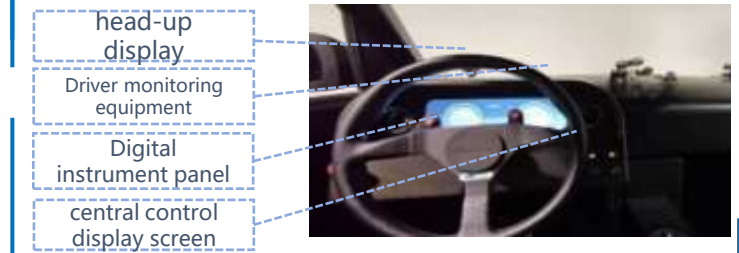
Active Safety



Driver assistance



automatic drive



Yancheng, Tianjin actual car test site



Site closure and development of road test equipment



Software in the loop/hardware in the loop/Driver in the loop/vehicle in the loop

Intelligent cockpit test capability



- China has established a full range of intelligent cockpit testing capabilities covering components, systems and vehicles, including a voice interaction laboratory based on Chinese dialects

Lighting safety



Optical performance evaluation



ADB Smart headlamp evaluation

Visual image



Panoramic reversing, HUD and visual evaluation of light safety



Camera, DVR, CMS image test

Intelligent interaction



eCall, Speech and auditory evaluation



Tactile evaluation of touch terminal

Intelligent service



HiCar, CarPlay, CarLife test



FaceID, CPD Monitoring and evaluation

Function safety



Vehicle and system functional safety testing



Process and product consulting and certification

- China has established adaptive test capabilities according to the characteristics of connected terminals and connected vehicles

Network-connected terminal



ETC terminal test



Wireless terminal test



GPS terminal test



Bluetooth, WiFi test



V2X terminal test

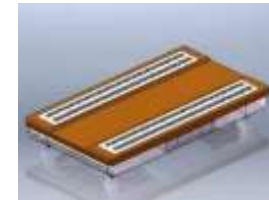


DSSAD test

Networked vehicle



Antenna test in laboratory



Antenna test in actual road



Vehicle networking test



Road Test



V2X test in actual road



C-NCAP V2X test



GPS test in whole vehicle



ETC test



Data conformance testing

- Some automobile inspection agencies in China are building cybersecurity database to ensure the consistency of cybersecurity test results



Input test scheme



Data feedback

Thank you for your attention!

Contacts: Sun Hang, sunhang@catarc.ac.cn

Wu Jiajie, wujiajie@catarc.ac.cn