Digitalization & AI Drive
A New Stage for ITS in China

SUPCON Information Co. Ltd.

China ITS Industry Alliance

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Part One

China's Discussion on ITS Future Development

1.1 Brief Overview of ITS Applications in China

ETC

Covering 170,000+km national highways with network operation, with 225+ million users, 24,588 ETC lanes, and all provincial border toll stations were abolished

400+ Urban TOCC nationwide

1000+ million smartphone navigation service person hours

80+% online ticketing for railroad transportation

85+% online ticketing for air-travel

Online Taxi/Ridesharing:

400+ cities
440 million users
27 million Peak daily orders

Online Shopping:

46,000+ billion/year annual consumption,
Intelligent logistics delivery exceeds 80 billion parcels in 2020

Total number of BeiDou users exceeded 2 billions.

436+ million total sales of car navigation products in 2020

Total number of issue of "Traffic Union Card" is 105 million

170,000 km full-covered intelligent freeway
400,000 km monitoring covered highway

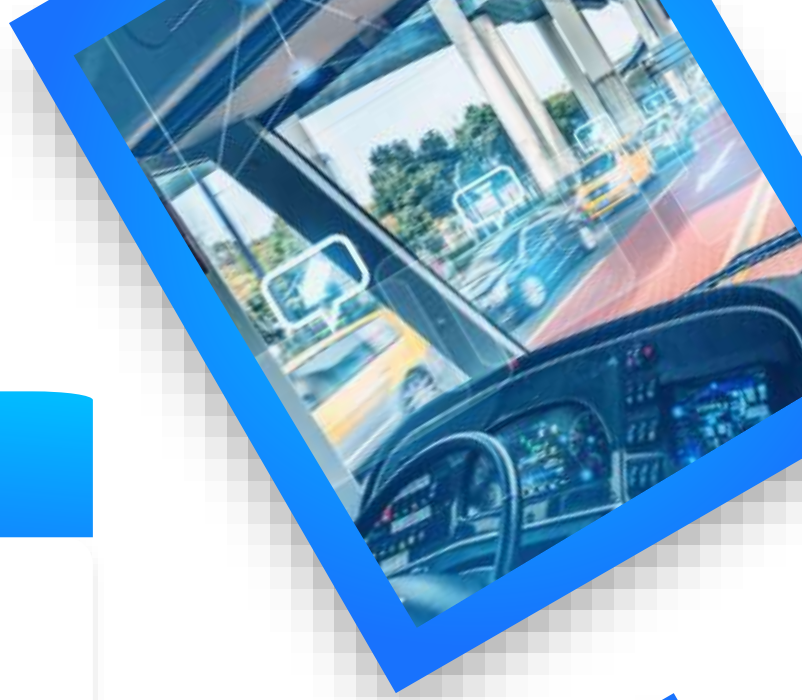
37% of commercial vehicles were intellectualized

Bicycle Sharing:

Service 300+ cities with 300 million users, & 20 million bikes

1.2 Digitalization & AI Promote A New transportation ecology

01	Digitalization, networking, and AI are driving the gradual emergence of industrial ecosystem for new types of vehicles and smart roads.
02	Road traffic dominated by human operators and by autonomous vehicles will operate simultaneously on the same road platform
03	The intertwined operation of the two systems (human/machine) will form a new road traffic ecology



1.3 Characteristics of the New Generation of ITS

People-centered

High connectivity

Sustainable development

Data-driven

Integration & interoperability

Learning capabilities

Reliable & resilience

Adaptive & dynamic

Part Two

China's Pilot Projects in ITS New Areas

2.1 Intelligent & Green Transport

China's transportation development has achieved historic accomplishments and is entering a golden era of new infrastructure, service improvement, and high-quality transformative development.

Current Status of Transportation in China

- The systematic construction of modern urban transportation infrastructure is steadily advancing, leading to large & quality comprehensive transportation network.
- The public's demand for high-quality, convenient & comfortable travel is gradually being met
- The pace of development of smart transportation is accelerating, using emerging technologies as 5G, big data, and AI

Relevant planning in Mainland China

《Outline for the Construction of a Powerful Country in Transportation》

Main goal: By the middle of this century, the level of intelligence and greening will be among the world's forefront.

《Outline of the National Integrated 3D Transportation Network Plan 》

Build a modern high-quality national integrated 3D transportation network that is convenient, smooth, economical, efficient, green, compact, intelligent, advanced, safe and reliable.

《The 14th 5-Year Plan for Development of a Modern Comprehensive Transportation System 》

- Accelerate the in-depth application of intelligent technology. Promote the upgrading of infrastructure. Promote the application of advanced transportation equipment.
- Promote green and low-carbon transformation， Optimize and adjust the transportation structure. Promote low-carbon facilities and equipment.

Practice Case 2 — Photovoltaic Power Generation for Transportation Infrastructure

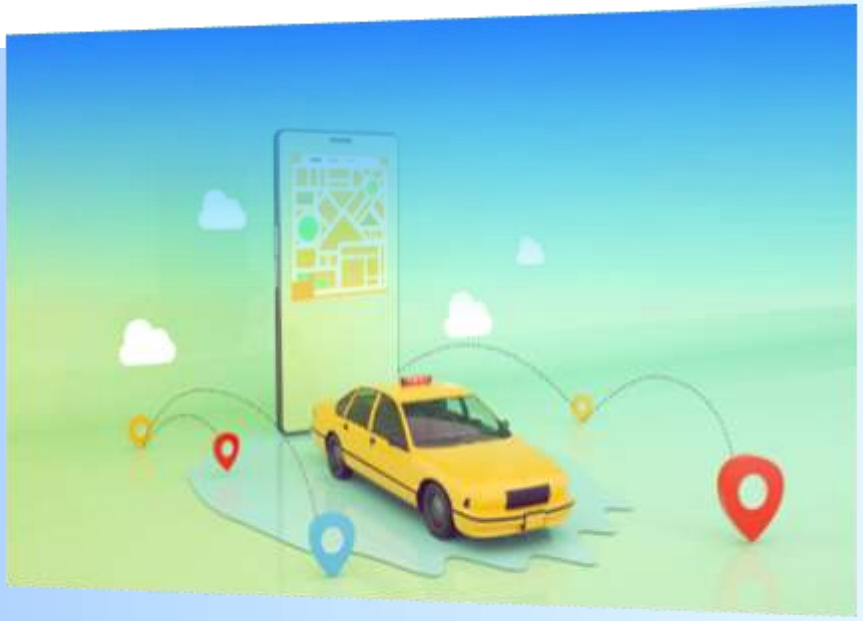
Qingdao–Yinchuan Highway PV Project

Hangshan East Tunnel PV Project

Toll Station Ramp Circle PV Project

Erguang Highway Sideway PV Project

Practice Case 3 — Development of New Types of Transportation Modes



Customized public transport

Commuter buses operated based on smartphone reservations.

Popular with young commuters in big cities.

Multiple modes transportation

Dedicated bicycle lanes.

Improve pedestrian walkways and street crossing facilities.

Ride-sharing

Large demand and big room for development.

Policies and regulations need to be adapted.

2.2 Pilot Projects of New Generation ITS

China's Ministry of Transport

Organizes local governments and enterprises to implement pilot applications of new ITS

1st batch of pilots (launched in 2022)

Pilot projects -- 14 for autonomous driving, 4 for intelligent shipping

Pilot content -- Autonomous driving

- Urban travel services and logistics
- Public transportation
- Horizontal transportation of containers
- Park area
- Distribution center trunk line logistics
- Logistics park road freight

Within the pilot -- Intelligent shipping

- Automatic loading of ships
- Assisted driving
- Remote control driving
- Intelligent coordination of ships
- Intelligent shipping of inland waterways

2nd batch of pilots (launched in 2024)

Pilot projects -- 18 for autonomous driving, 14 for intelligent construction

Pilot content -- Autonomous driving

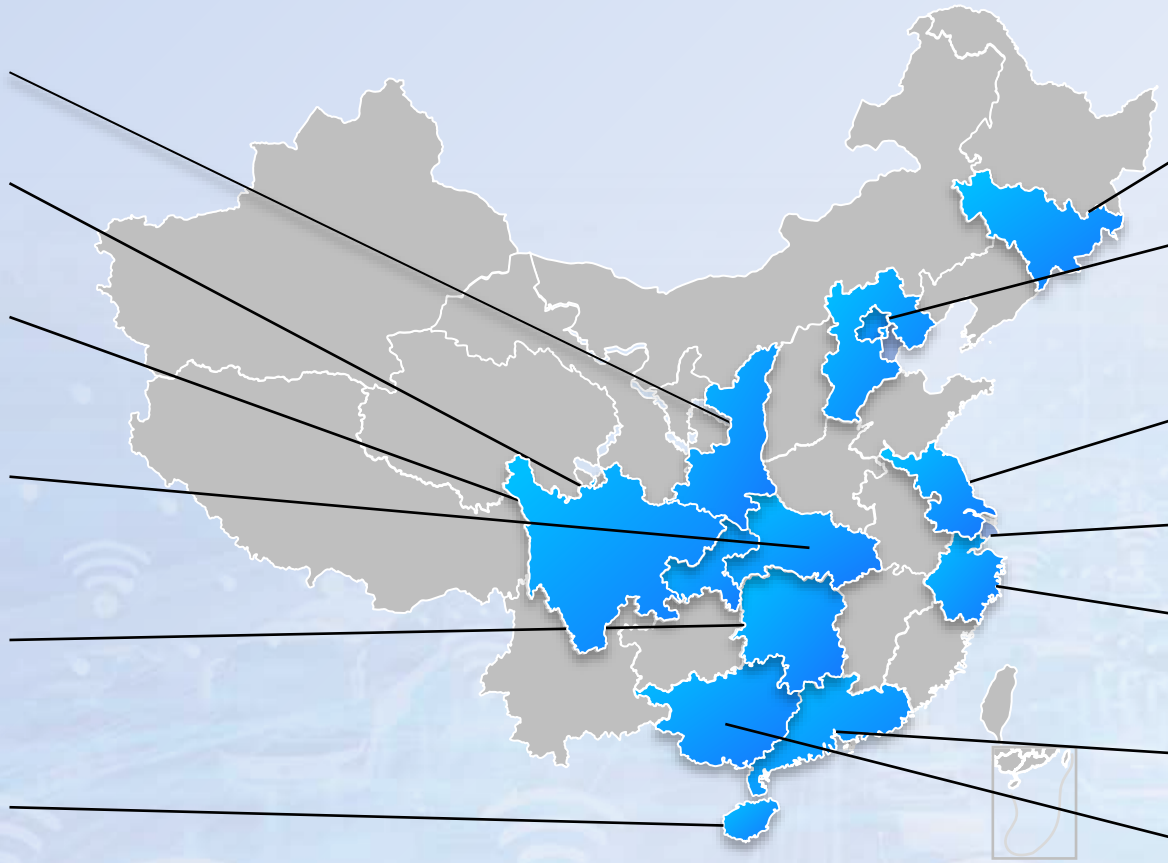
- Urban travel and logistics services
- Horizontal transportation of port containers
- Cross-border road freight
- Drone transportation
- Horizontal transportation of commercial vehicles
- Mining area mountain transportation
- Airport safety inspection operations
- Road freight

Within the pilot -- Intelligent construction

- Intelligent construction of prefabricated concrete components
- Digital processing of road steel materials
- Intelligent construction of tunnels
- Construction of tunnel assembled prefabricated components
- Intelligent construction of steel and concrete composite bridges
- Intelligent construction of road surfaces
- Intelligent construction of ultra-high concrete bridge towers
- Large-scale port and waterway engineering and facilities

2.3 Intelligent Connected Vehicles

Overview of the intelligent connected vehicle testing zone in Mainland China



Xi'an, ShanXi

Chengdu, Sichuan

Chongqing

Hubei

Changsha, Hunan

Qionghai, Hainan

Changchun, Jilin

Beijing, Tianjin, Hebei

Jiangsu

Shanghai

Zhejiang

Guangzhou, Guangdong

Liuzhou, Guangxi

Autonomous Driving Test Demonstration Scenarios

Urban travel and logistics

Self driving bus commuting, taxi travel, sanitation and cleaning, logistics and distribution

Transportation in the park

Ferry connection, sightseeing, etc

Specific scenario job

Ports, mines, etc


Port container trucks


Street sweeping vehicles


Mining vehicles

Logistics delivery


Buses

Taxis

2.4 Low-Altitude Economy

《Implementation Plan for the Innovation and Application of General Aviation Equipment (2024-2030)》

Plan released: 2024.03.27

Jointly issued by the Ministry of Industry and Information Technology, the Ministry of Science and Technology, the Ministry of Finance, and the Civil Aviation Administration of China


通用航空装备创新应用实施方案
（2024-2030 年）

Main goals

- Enhance the supply capacity of general aviation equipment and industrial innovation capabilities
- Achieve large-scale application of aviation emergency, low-altitude logistics, & commercial urban air traffic operation
- Create leading enterprises in the general aviation industry chain with ecological dominance

Key demonstration areas

Low altitude + logistics distribution

Low altitude + urban air traffic

Low altitude + emergency rescue

UAV demonstration in the field of transportation

Logistics transportation

Emergency rescue

Other application areas: Traffic monitoring and management, urban traffic planning and design, etc

Part Three

Brief of the 19th ITS WC @ Suzhou 2023

3.1 The Successful 29th ITS World Congress

44 countries and regions 12,000 registered representatives

From China (incl. Hong Kong and Taiwan), Japan, USA, Germany, UK, Australia, South Korea, Singapore, Malaysia, Indonesia, Dubai (UAE), and more

“Intelligent Transportation”, Better Life

122 sessions

800 keynote speeches

Report Topics

- Green Sustainable Development
- Smart Cities and Future Transportation
- Digitalization of Transportation Infrastructure
- Mobility as a Service (MaaS);
- Intelligent (Connected) Driving, etc.
- …

Experience and demonstration of future digitalization and intelligence

22000 square meters

Exhibition area

15000 square meters

Demonstration area

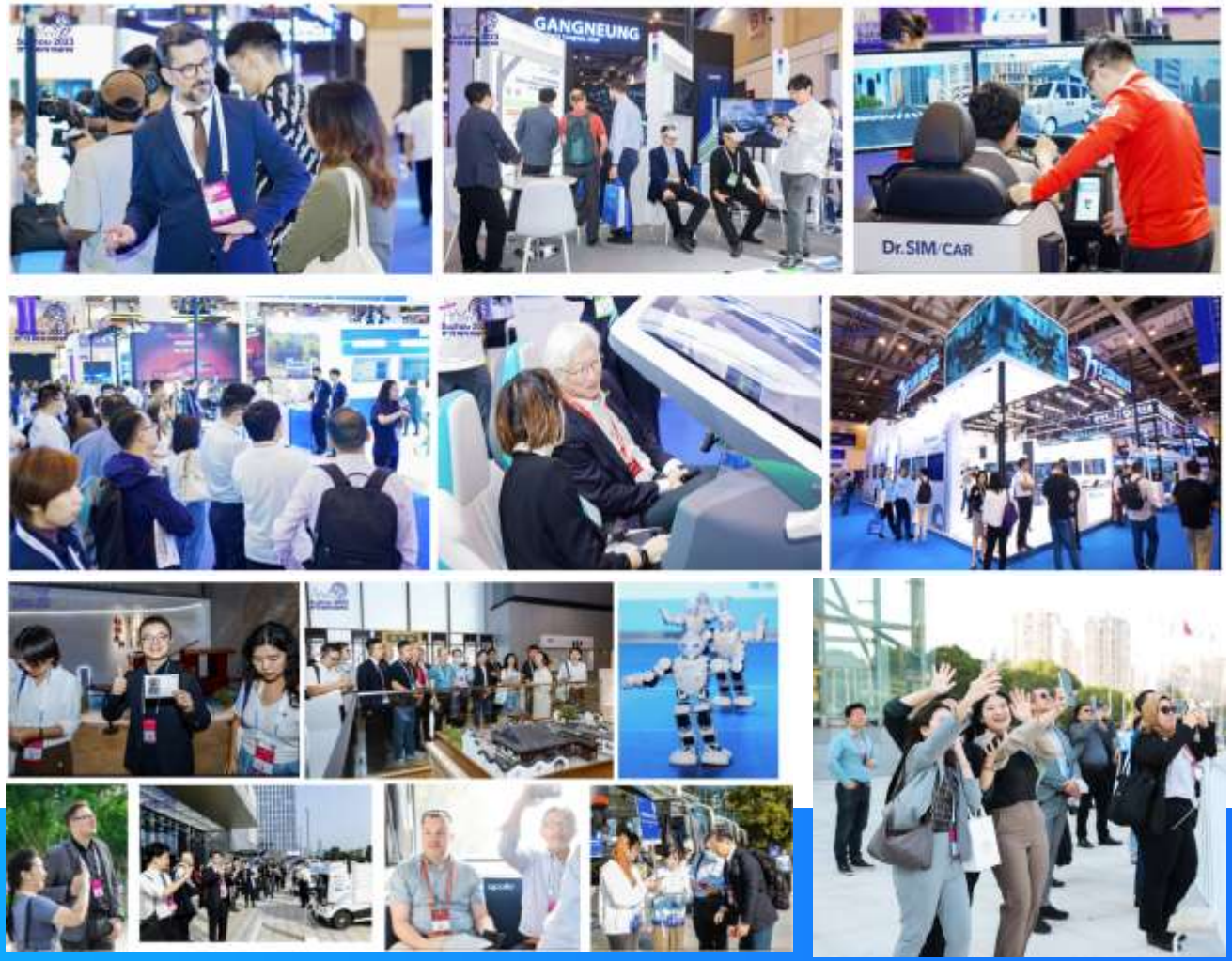
50000 Visitors

Worldwide visitors

134 Exhibitors

Domestic and foreign

CRRC group, Tesla, Toyota, Denso, Weilai, Tsinghua, Wanji, Zhijia technology, etc.



Part Four

Enterprise's Perspective of New ITS in China
- SUPCON's Practice -

SUPCON Information : A Leading Service Provider of Digital and Intelligent Infrastructure

Improve Urban Operational Efficiency | Build a Green Lifestyle | Improve Public Services

20
Years Since 1999

1500+
Talented Employees

5000+
Projects

3 Billion+
Revenue over last 3 years

Holographic Digital Transportation Infrastructure

Integrating core capabilities such as industrial control, edge computing, IoT networks, artificial intelligence, cloud-edge collaboration, and information security to enrich the perception equipment system


Radar vehicle detector


Data gateway


Event detector


Mini-station


RSU


Personnel Detector


mm-Wave Radar


AI Camera


Holographic Smart Intersection


Holographic Digital Elevated Road


Holographic Digital Road


Holographic Toll Station


Holographic Digital Tunnel


Holographic Digital Highway


Holographic Smart Hub


Holographic Rail Transit Station

ITS Governance Services - 5 Intelligence

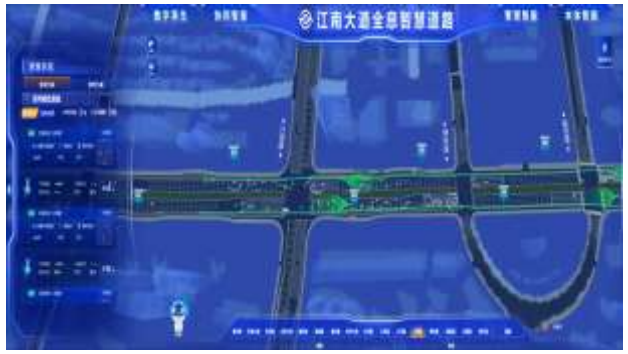
Promoting the evolution from traditional "perception" to intelligent "cognition"

Cognitive intelligence

Based on digital twin scenarios

Collaborative intelligence

Optimal allocation of spatio-temporal resources



Management intelligence

Intelligent control of transportation governance

Ontology intelligence

Self-state monitoring and regulation

Service intelligence

Accompanied information push

Cognitive intelligence

Promoting the evolution from traditional "perception" to intelligent "cognition"

Problem discovery → Deductive prediction → event sourcing

Traffic event detection

- Intersection overflow
- Intersection imbalance
- Illegal events
- Abnormal parking
- …

Traffic indicator evaluation

- Smooth traffic index
- Vehicles en route
- Congestion prediction
- Congested mileage
- Queue length
- …

Management intelligence

Precision intelligent control of transportation governance, reduce and control the number of traffic accidents

Hidden danger analysis

Event early warning

Order evaluation

Slow traffic management

Service intelligence

Accompanied information precise push, enhance the sense of travel acquisition

Precise information guidance

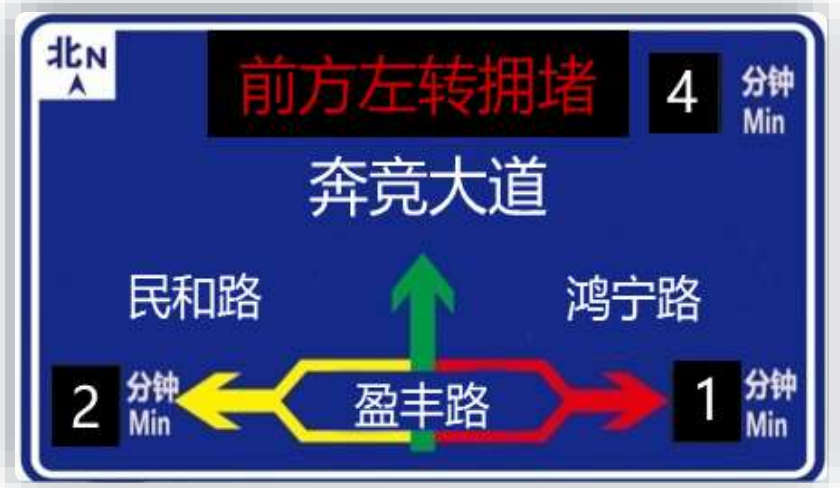
- Relying on digital roads and event cognition, achieve precise push of multi-channel guidance information

Multi-end information synchronization

- Integrate multi-source traffic data to assist in the refined display of mobile terminal information

Real-time driving assistance

- Road digitalization supports future high-level assisted driving and vehicle-road collaborative autonomous driving



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Thanks for Your Attention!

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Zhejiang SUPCON Information Co. Ltd.

Making City Life Better !