ITS in China: Updates & Future

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1. Development updates of ITS in China

2. Hotspots of China ITS

3. Next Step Plans
Development Updates of ITS in China
Development History

Socio-economic growth and Motorization process

1995-2000
- Developing strategy and framework

Breakthrough & Demonstrations
- 2001-2005
  - Technology breakthroughs for specific application
  - 13 cities in demonstration ......

Integrated Services and Implementations
- 2006-201X
  - Beijing Olympic Games
  - Shanghai Expo
  - ETC
  - Guangzhou Asian Games
  - Waterborne transport ITS
  - ......
Remarkable Development of ITS in China

- **Highway Infrastructure Construction**
  - The total mileage of highways in China is 4.7735 million kilometers

- **Informatization and Intelligence of Highway Construction**
  - The traffic parameter monitoring facilities of highways reaches 20,000 sets
  - The total scale of video monitoring facilities of highways reaches 48,000 sets.
  - ETC Lane reaches 17295

- **High-speed Railway Establishes New Face**
  - National mileage reached 19,000 kilometers
  - The maximum operating speed can reach 350 km/h.
  - The annual passenger volume of Railways in China is 2.535 billion
Remarkable Development of ITS in China

- The Vehicle ownership increased continually
  - 279 million motor vehicles and 124 million private vehicles in China.
  - 14.7312 million commercial vehicles and 13.925 million taxis

- Mobility With More Convenience
  - Metro card volume is 430 million, 37 cities are identified as public transport city
  - Airline ticket online booking market is 23.16 billion yuan, with an online penetration rate of 59.2%.
  - Upgrading railway ticketing online Platform 12306
ITS for Urban traffic

- Integrated applications for traffic management and services
- Applications for megalopolis traffic coordination
- Many cities developed urban transit intelligent systems
- Public transit smart card systems have been connected in Guangdong and Yangtze River Delta area
ITS for Highway management & services

- 2017 ETC volume reached **3.408 billion**, the whole network ETC use rate of 38% ; the total number of users is about **60.469 million**, accounting for about 30% of the car ownership.

- 17295 ETC-dedicated lanes were built, accounting for about 23% of the total number of highway lanes; the **dedicated lane coverage rate** of the main line toll stations is 99.19%.
Commercial vehicle networking and controlling

- More than 1 million special commercial vehicles involved, e.g. dangerous chemical transport
Mobility service model and industry improving constantly

- **Carpooling APPs** are covered > 300 cities, with > 10,000,000 orders per day.

- The number of **shared mobility bills exceeded 10 billion**, and the market share reached 67%, ahead of the world shares the travel industry.

- The three shared mobility modes complemented public transport at different levels.
V2X & Automated Driving are Commercialized

• In April 2018, MOT, MIIT and MPS issued “Specifications of Automated Driving Tests on Public Roads (Trial)”, which will support and standardize intelligent network vehicles to test and verify public roads and maintain traffic safety.

• MOT issued “Technical Guide for Construction of Automated Driving Closed Test Site (Provisional)”, which specify the site, communication, power supply and other basic requirements of closed test field for automated driving.
02 Hotspots of ITS in China
Hotspot of current ITS in China

- Information technology progress
- Transport service enhancement
- Market Driving Force

- Automated Driving
- Smart Highway
- Big Data for ITS
- Cyber Security in ITS
- Standards & Specifications
Automated Driving

• Beijing, Xi’an and Chongqing test bases were chosen to support automated driving and V2X testing.

• Since Nov 2017, Beijing, Shanghai, Chongqing, Changsha, etc., have issued some policy documents supporting the road test for automated driving.

• By the end of 2018, there were 12 cities and regions in China that issued automated driving road test licenses, a total number is 73.
Smart Highway

• In February 2017, the Ministry of Transport officially launched the “Next Generation National Transportation Cybernetic System and Smart Highway Demonstration Project”, and selected 9 provinces and municipalities as the undertaking units
Big Data for ITS

- Highway route information
- Road route information
- Real-time Location Data of Line Coach
- Highway Service Information
- Real-time location data of Taxi

Basic Map
Road condition
Bus Stop
Index of Waterway
Flight schedule
Weather information
Floating population information
Cyber Security in ITS

• Transportation Industry Key Management and Certificate Certification

- Entrusted by the Ministry of Transport to be responsible for the daily operation management and technical support of the "Transportation Industry Key Management and Certificate System"

- The only industry information security infrastructure of MOT

- Full support for national secret algorithms SM1, SM2, SM3, SM4

- Joined the national trust source root CA

- Achieve cross-certification under the national unified trust source
Standards & specifications

• In 2017, the National Standards Committee of ITS completed 99 various drafts of international standards
  - 28 new pattern proposals (NP)
  - 11 committee drafts (CD)
  - 7 internal committee voting (CIB)
  - 26 international standard drafts (DIS)
  - 7 final international standards (FDIS)

• Officially released by the International Organization for Standardization (ISO)
  - 10 drafts (DTS)
  - 6 draft technical reports (DTR)
  - 4 international standard review (SR)

Intelligent transport systems (ITS)—The use of personal ITS station to support ITS service provision for travelers—Part1: General information and use cases definitions

Standards & Specifications of ITS improve gradually
Next Step Plans
Five Directions

- Intelligent Infrastructure
- Automated Driving & V2X
- New Transport Services
- Transportation Management with Big Data
- Integrated or Multimodal Transportation
Relying on Demonstration Project

• **National Strategy: Building China's strength in transportation**
  - Xiong’an New Area
  - Intelligent Freight
  - Toll Collection of Highway
  - Intelligent high-speed railway

• **Keep on the “Next Generation National Transportation Cybernetic System and Smart Highway Demonstration Project”**

• **Intelligent Transportation Development Action Plan (2017-2020)**
Increase investment in scientific research

- Automatic Operation Technology of Railway and Urban Rail Transit
- Intelligent Port and Ship Technology
- V2X and Automated Driving Technology
- Smart Road-side Unit for Smart Highway
- Coordinated Management and Service Technology of Urban Traffic
- Collaborative Operation and Service Technology of Integrated Hub
- Integrated Mobility Service with Big Data
- Intelligent Bus System, forecasting and service technology
Thank You

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