

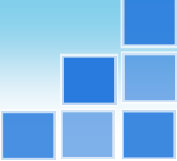


ITS Initiatives in China

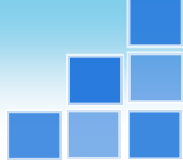


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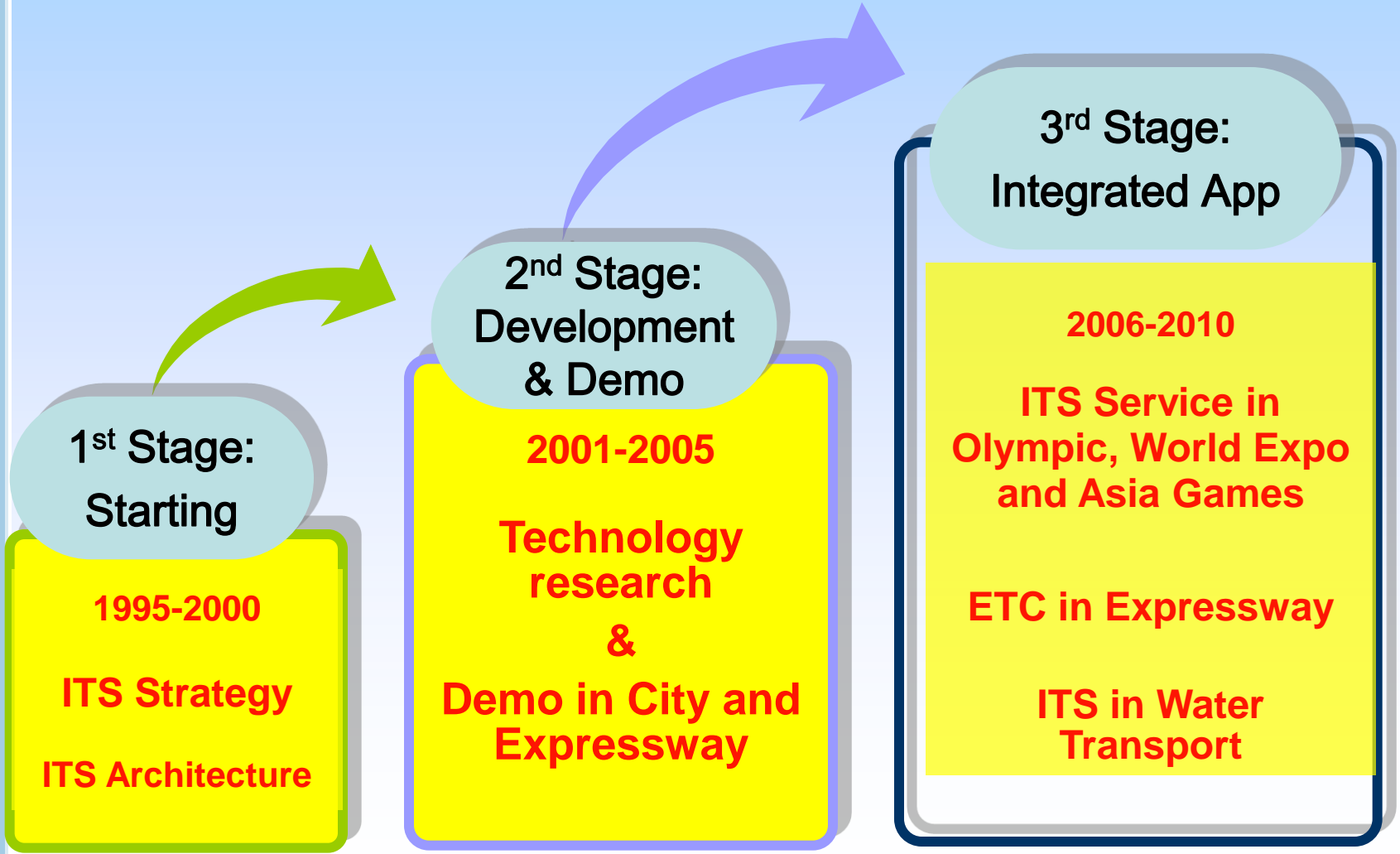
Content



- ◆ **ITS General Situation in China**
- ◆ **Traffic Information Service**
- ◆ **China's ITS Strategy Plan**
- ◆ **Main Progress in Past 2 Year**



1、 ITS General Situation in China



GDP : 790 billion \$
Vehicle: 36 m (1995)

GDP: 1400 billion \$
Vehicle: 90 m (2002)

GDP: 3400 billion \$
Vehicle: 160 m (2007)

Evaluation of ITS in China

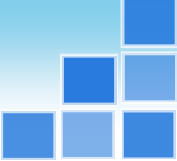


(1) Urban Area

- Major projects: Intelligent traffic management technology R&D and application
- Large City
- Effect: positive

(2) Highway

- Major projects: ETC and Expressway Monitoring
- ETC in 24 province (to the end of Sept. 2012)
 - ETC lane: 3600
 - ETC User: about 5 million
- Effect
 - ETC : positive
 - Expressway Monitoring : not so well



(3) Traffic Information Service

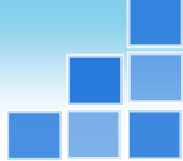
- Just beginning (detailed in the 2nd Part)

(4) New Technology Research for ITS

- Just beginning:
 - Intelligent control
 - Data management
 - Interoperability
 - Cooperative system, et. al.

(5) ITS Industry and Market

- Low level



2. Traffic Information Service

◆ Urban areas

- Data collection

- Vehicle detector
- Probe cars: GPS, Mobile phone

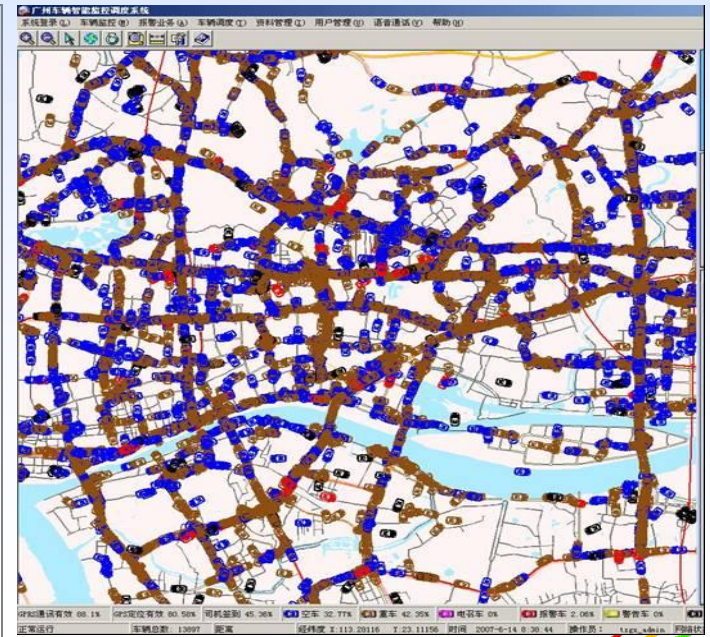
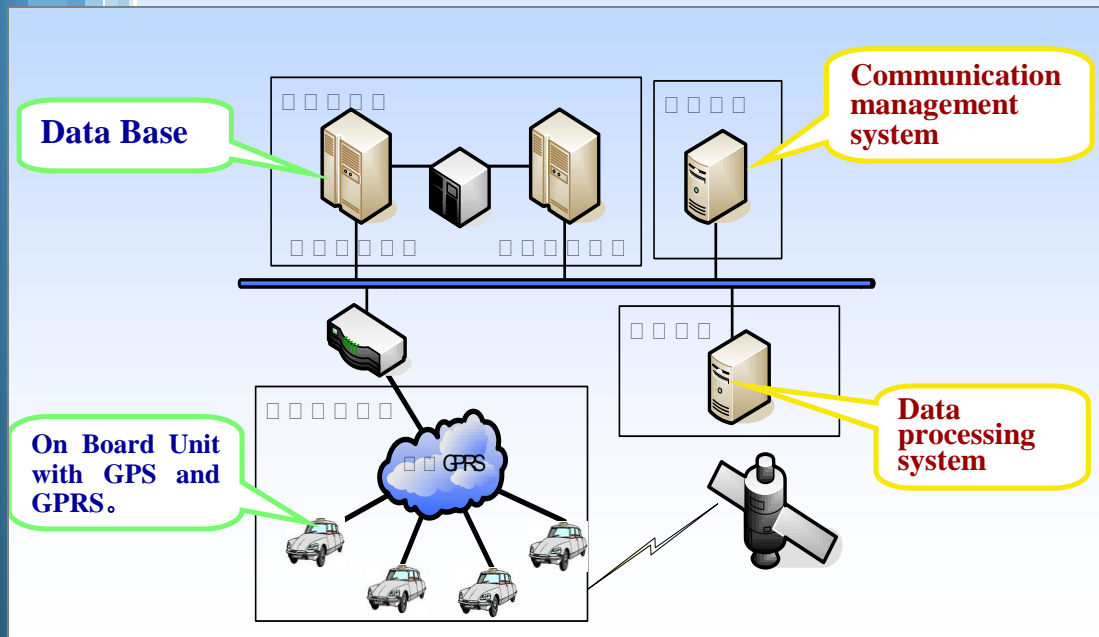
- Information service

- Broadcast
- VMS
- Navigator
- Website
- Intelligent phone

◆ Expressway

(1) Probe Car

- ◆ **Beijing: More than 60,000 taxis**
- ◆ **Shanghai: More than 20,000 taxis**
- ◆ **Guangzhou: More than 10,000 vehicles (taxi+bus)**
- ◆ **Hangzhou: About 6,000 vehicles**

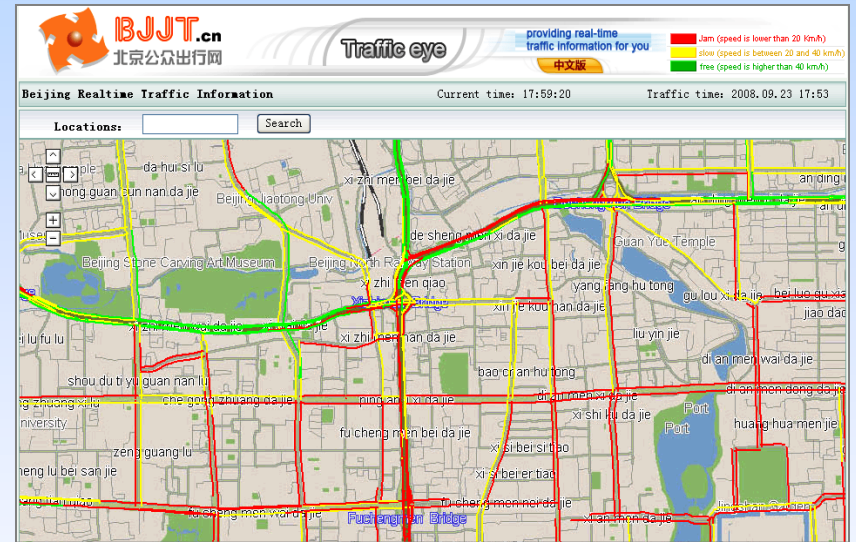


(2) Data Service

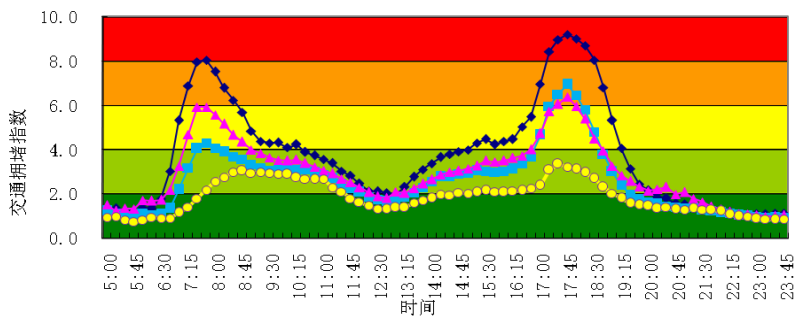
◆ Date of operation states for monitoring and decision



◆ Traffic information service



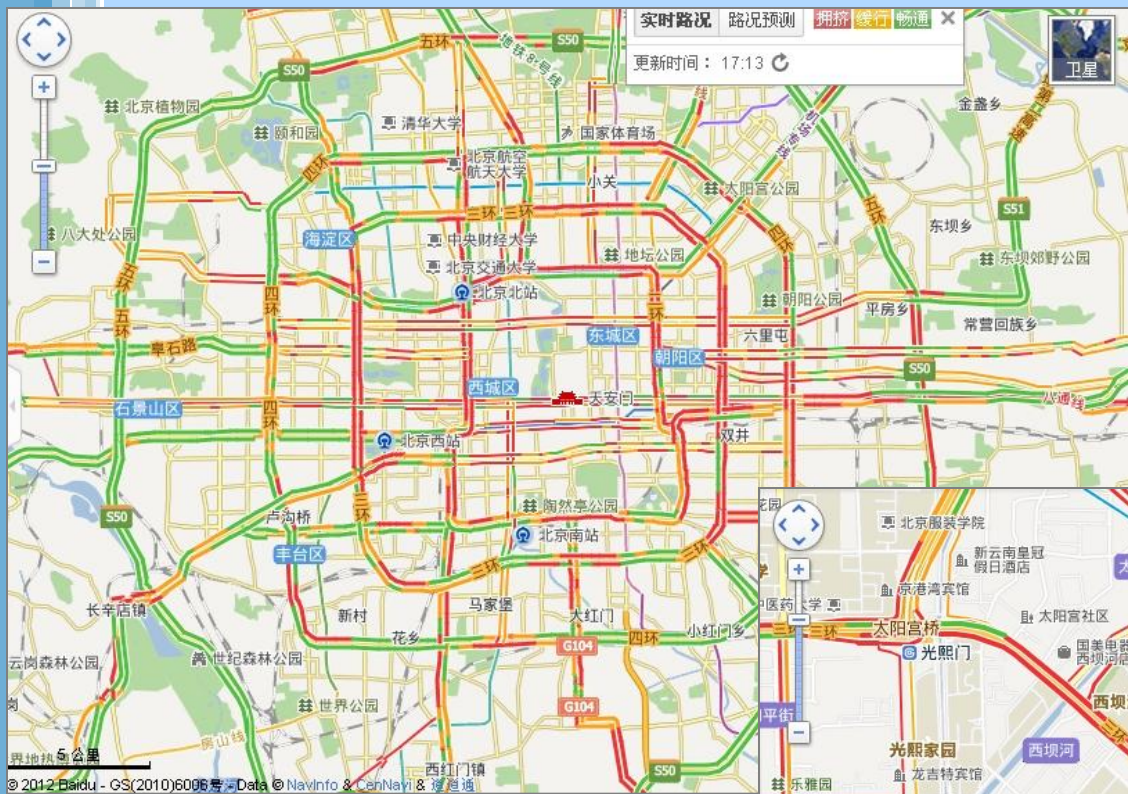
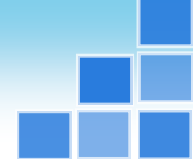
不同阶段北京市24小时交通拥堵指数 (工作日)



Congestion Index



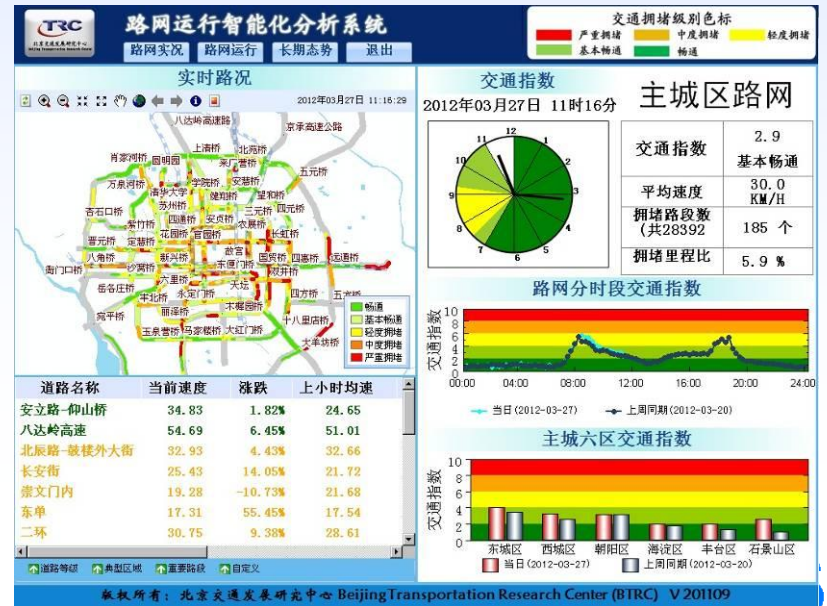
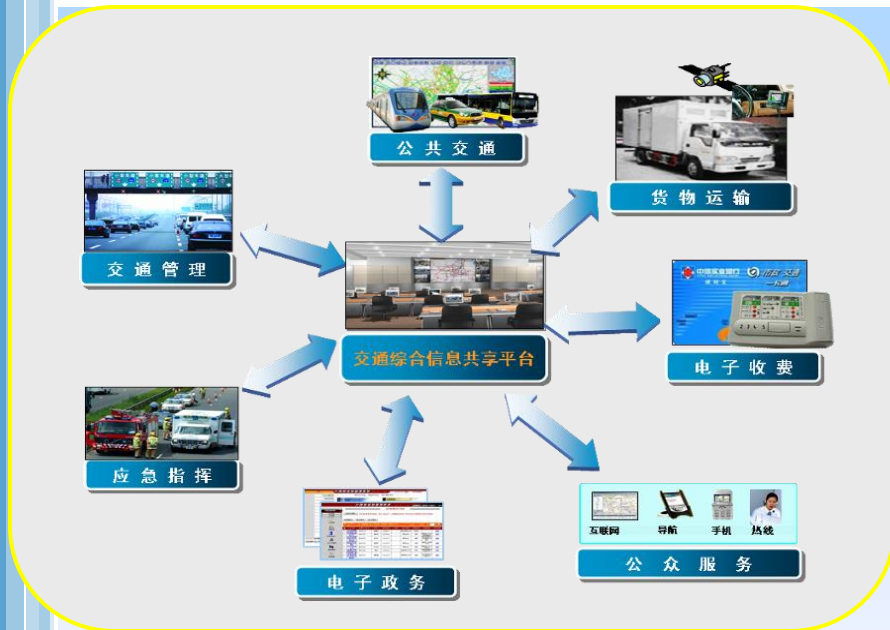
(3) Traffic Information on Website

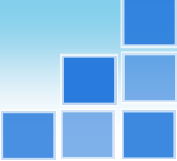


◆ Traffic Info in Baidu



(4) Beijing: Transport Information System





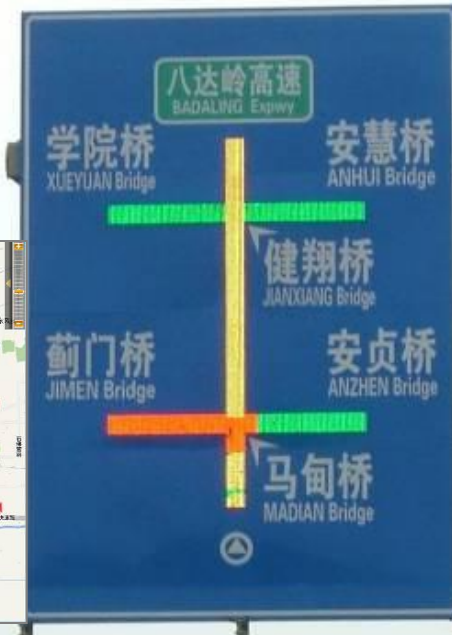
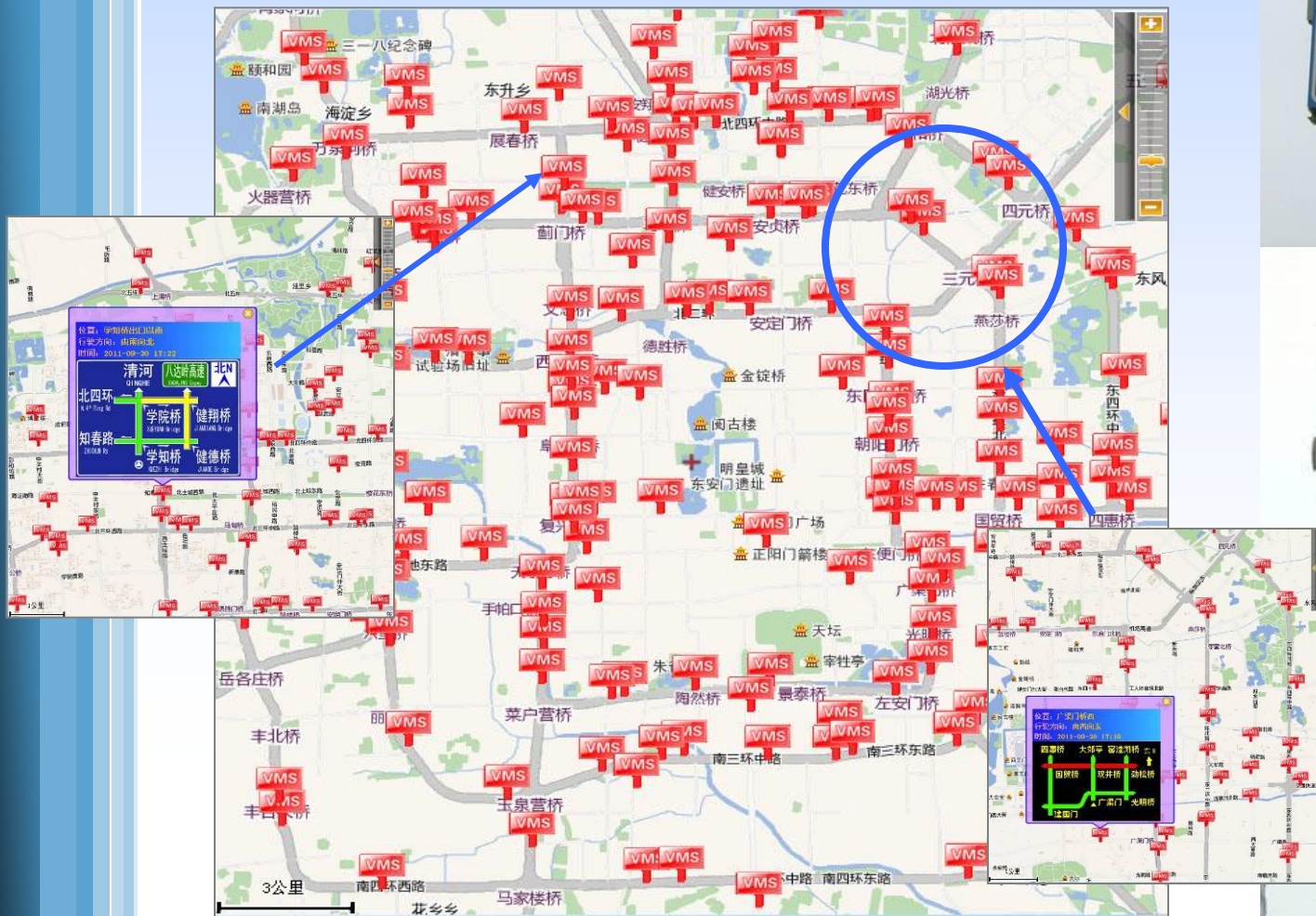
Traffic information service

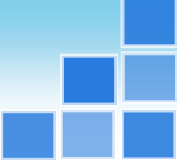
- Broadcast
- Real Time Route Guidance via VMS
- Navigator
- Website



◆ Traffic Information via VMS

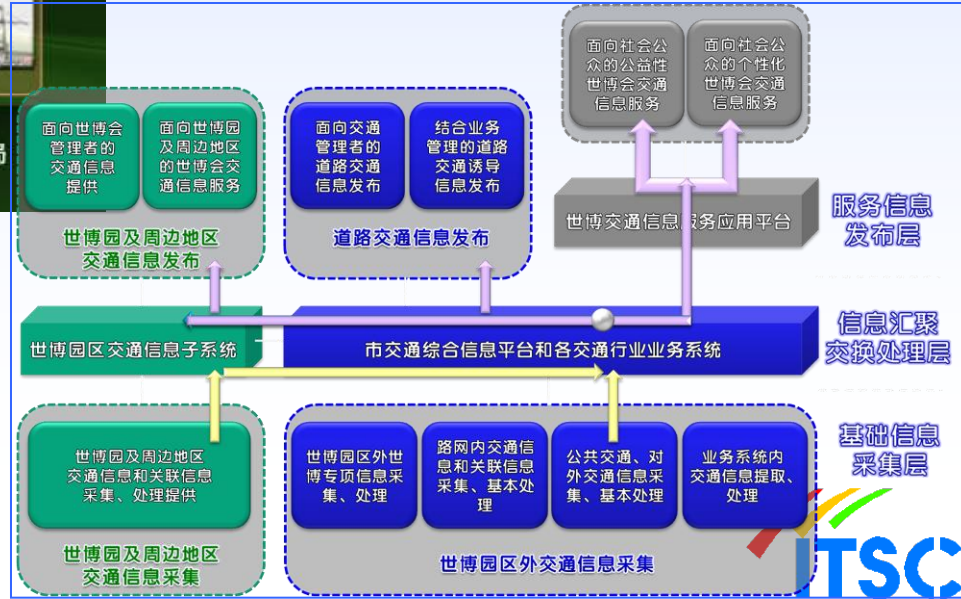
- A integrated system
- Cover urban area
- About 500 VMS





(5) Shanghai: City Traffic Info Platform

- ◆ Integrated Information Platform
- ◆ Information System in EXPO Area
- ◆ Information Service System



Traffic Information Collection

Road

Information Collection

City Motorway

Street

Expressway

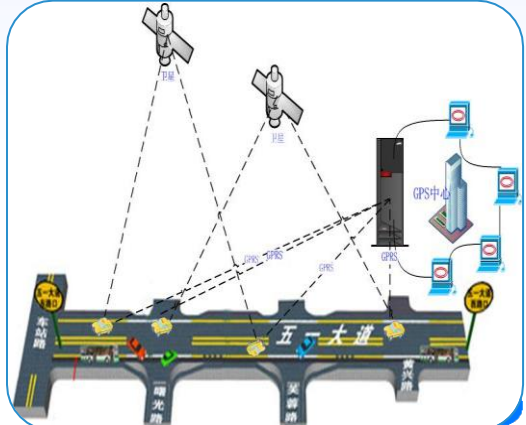
Loop

Camera

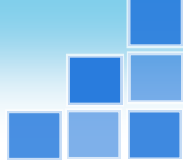
Signal control system

Probe car

Mobile phone



Traffic Information release via VMS



Area Navigation



Wide Area Navigation

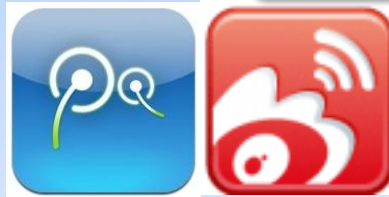


Section Navigation

Traffic Information Service via other media

Micro-blog

Info Station



Mobile Phone

Traffic
Information



Call Center

Website



Navigator



Broadcast

(6) Traffic Information via Navigator



◆ Navigator no Real Time Traffic Info

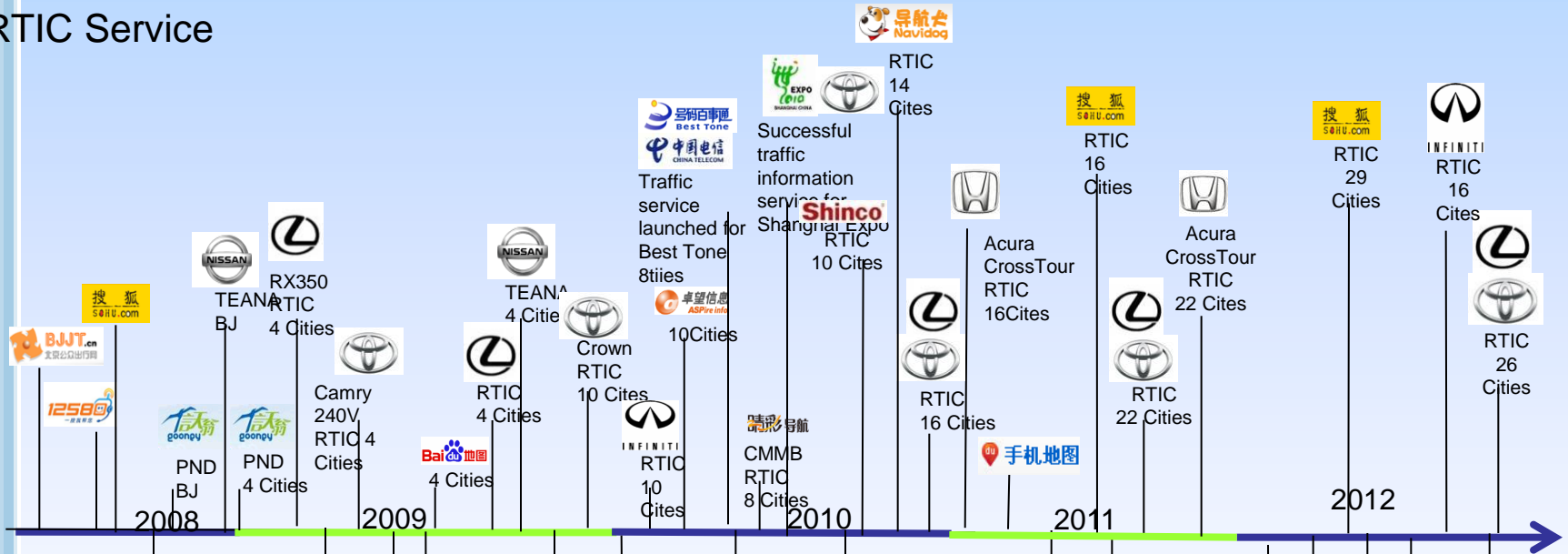
- Digital Map + GPS
- Large Numbers: Sold 7 million navigators in 2011

◆ Navigator with Real Time Traffic Info

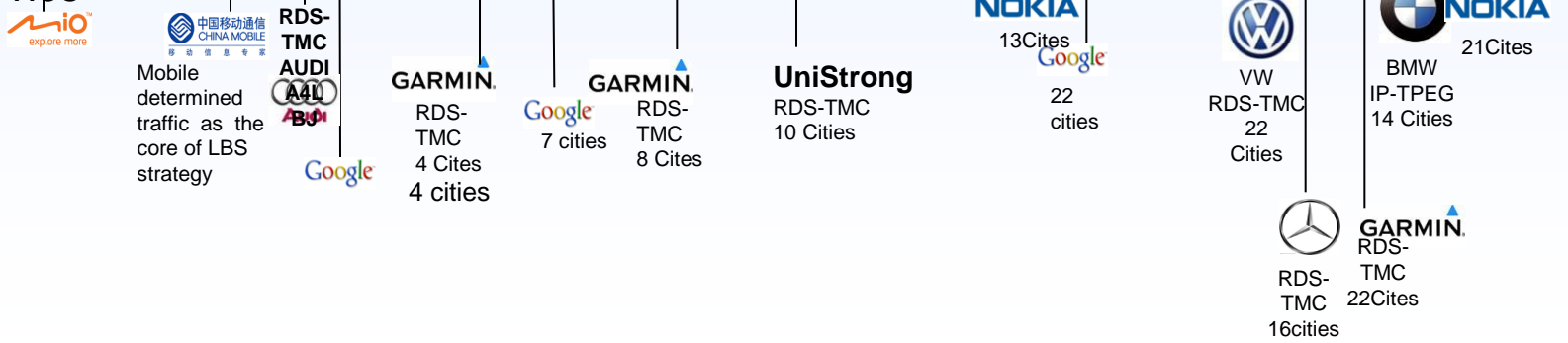
- Less than 1 million users total
- Several companies provide service in different standard
- RTIC (Road Traffic Information of China)
 - Adopt Chinese Standard
 - Provide Service in Several Cities via FM
 - Website: Map + Road traffic info

Road Traffic Info Service from 2008 to 2012

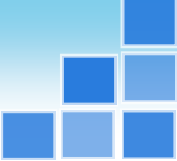
RTIC Service



Other Service



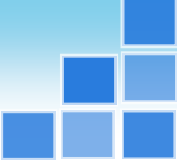
3. China ITS Strategy Plan



The New Stage, The New Priority

Service	
Past 10 Years	Next 5 ~ 10Years
Cars	Public Transport
Managers/ Operators	More for Travelers
Efficiency	Safety, Efficiency, and Environment
Urban Area	Urban and Rural Area
Road Transport	Inter-model Transport

(1) Research



- ◆ Sensor and Sensor Network in ITS
- ◆ Data Processing and Management
- ◆ ITS for Traffic Safety
- ◆ Cooperative System
- ◆ Communication in ITS
- ◆ Eco-ITS

(2) Demo and Deployment

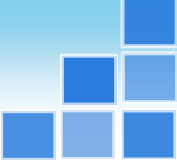


① Public Transport

- Intelligent Public Transport Management and Service
- Multi-modal Passenger Transit Center Management and Service
- Transfer Information Service System

② Urban Transport Coordination

- Urban Transport Operation Coordinating and Management
- Parking Guide and Management System



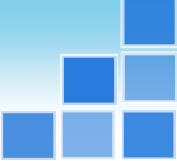
③ **Transport Safety and Emergency Management**

- Highway Network monitoring and Incident Management
- Highway Weather Report System
- Commercial Vehicles Monitoring and Management
- Subway and Light Rail Transport Safety management System

④ **Traveler Convenience and Information Service**

- The Application of Nationwide ETC
- Travel Information Service System
 - **Next Generation Broadcast,**
 - **Next Generation Internet**
 - **3G, 4G**

(3) ITS Standardization



◆ Standard

● General standard

- Data and Code in ITS
- Objects Identification and Expression in ITS
- Data Collection, Management and Exchange
- Communication in Cooperation System

● Dedicated standard

- Intelligent Public Transport
- Interface Standard of V2C and V2V
- Data Collection and Service in Multimodal Transport
- Logistics Information Exchange and Service Platform
- Man-machine Interface of Driver Assistant

◆ Cooperation

- Cooperate with Other Chinese SAC/TCs
- Cooperate with ISO, ITU and ETSI

4. Main Progress in Past 2 Year



◆ Research

- Communication in ITS
- Cooperative System
- Connected Vehicle

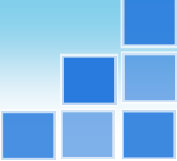
◆ Demo

- Cooperative System

◆ Deployment Project

- ITS Application Based IOT
- Commercial Vehicle Monitoring System

(1) Communication in ITS



National Project

1. Communication Architecture for ITS

1-1 Study of Need for Communication in ITS

1-2 Study of Communication Technology Using Scene in ITS

1-3 Development of Communication Architecture for ITS

2. Communication Technology in ITS

2-1 Evaluation of Key Communication Technology in ITS

2-2 Demo of Communication in ITS

2-3 DSRC Development

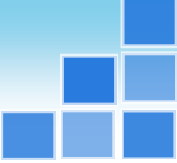


(2) Cooperative System Technology

National Key Research Project

- ◆ On board system technology
- ◆ Road side system technology
- ◆ Communication and control
- ◆ Simulation
- ◆ Integration

(3) Connected Vehicle Research



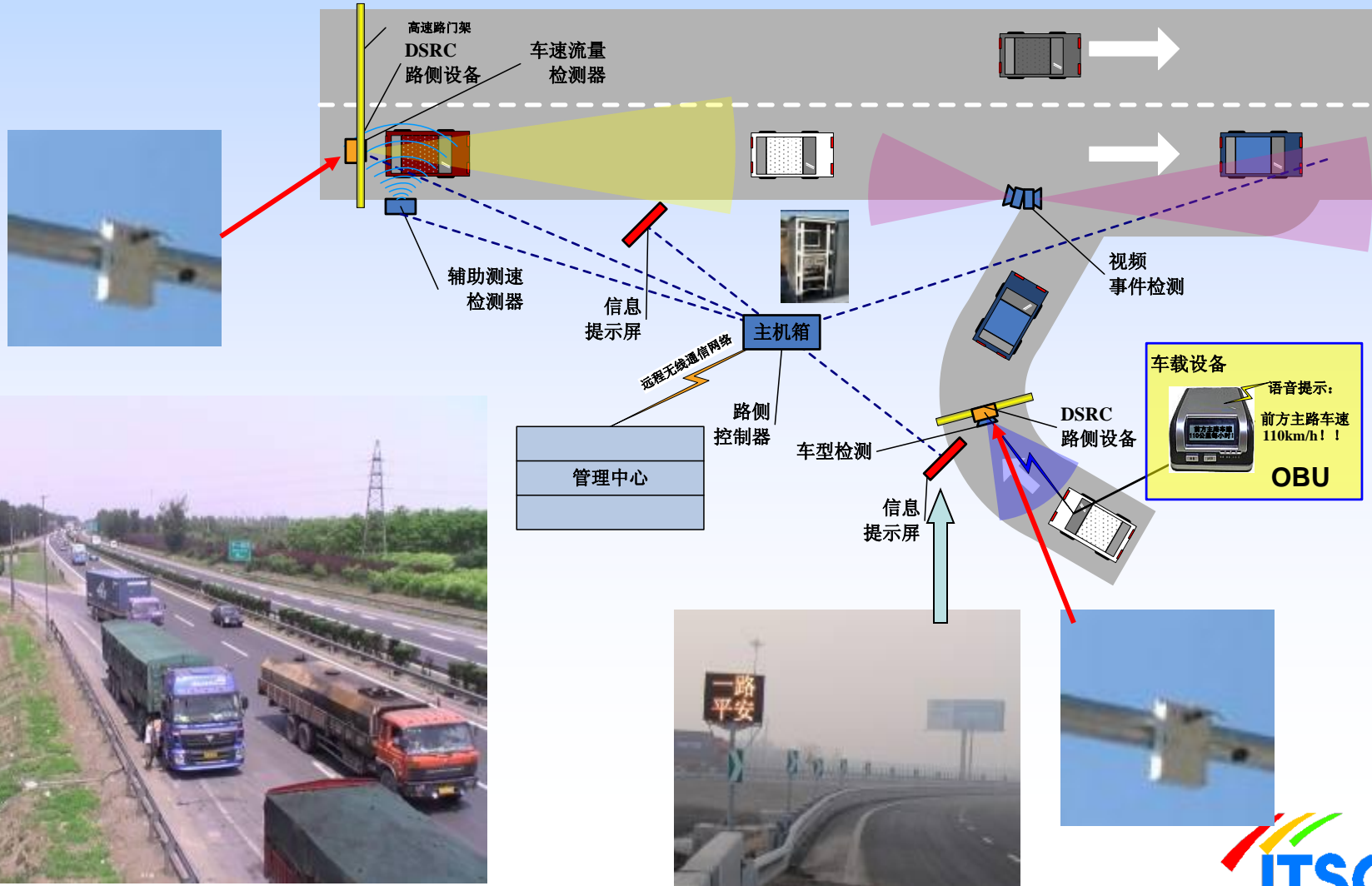
Research in University

Development in Telecommunication Company

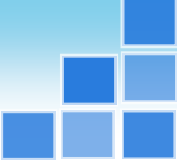


(4) Cooperative System Demo

Cooperative system for Safety In Beijing-Tianjin Expressway



(5) ITS Application Based IOT (Guangzhou)



◆ IOT technology development in ITS

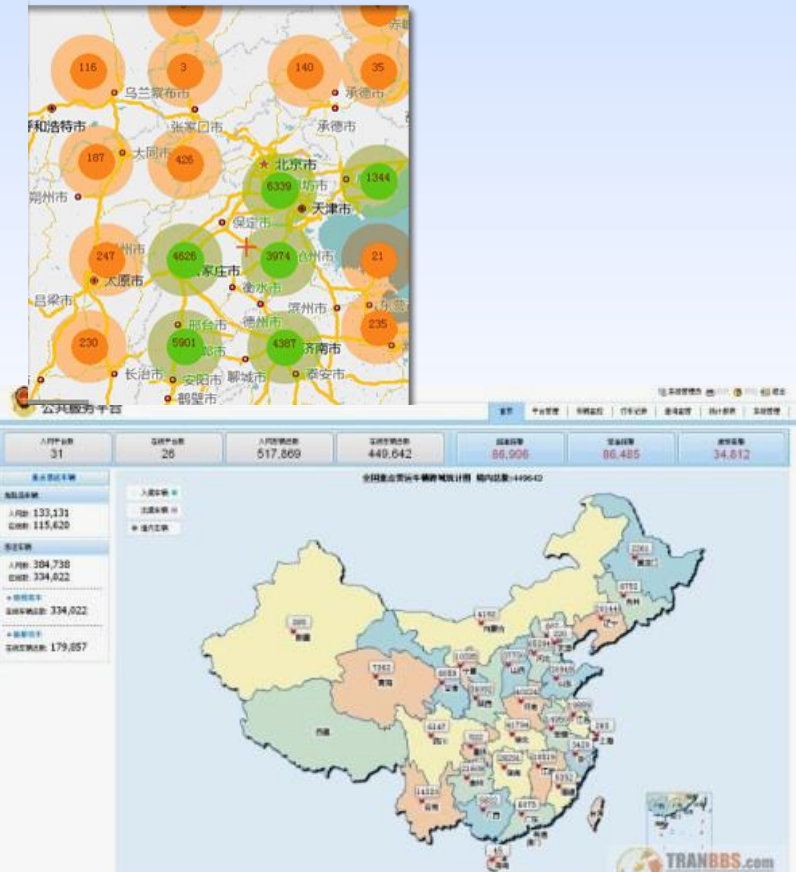
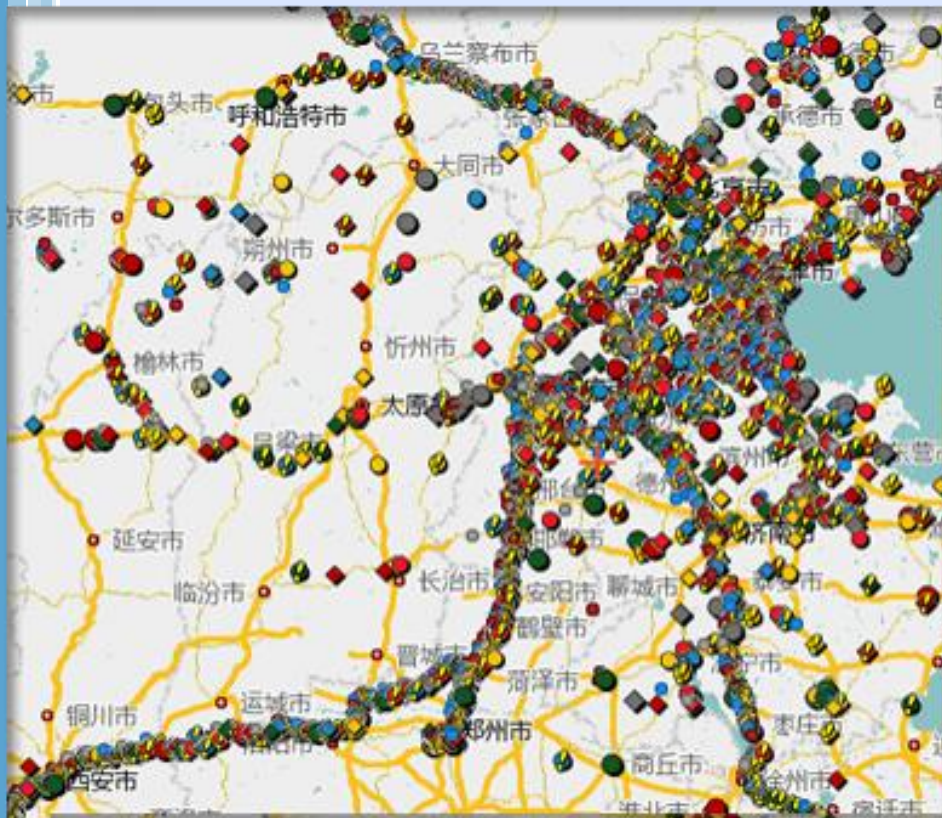
- Sensor and Sensor network in Vehicle and Infrastructure
- Objects Identification

◆ Application system deployment

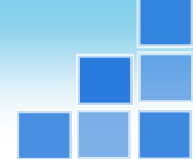
- Smart Public Transport
- Taxi Service
- Transit System in Urban Area
- Smart Parking System
- Smart Infrastructure Management
- Smart Drive System
-

(6) Commercial Vehicle Monitoring System

- ◆ Integrated 1000 GPS Service Companies
- ◆ GPS Service Company – Province Government Platform – National Platform
 - Sharing information, Monitoring vehicle and driver, Management
- ◆ On line vehicle: 1.6 million



Welcome to Shenzhen in May of 2013



**The 4th ITS Conference China 2013
And Shenzhen International Expo On ITS & LBS 2013**
Satellite Navigation & Vehicle Safety Management Exhibition
May 26-28, 2013 | Shenzhen Convention & Exhibition Center, China
www.its-expo.com 2013.itssc.cn

ITS Leveraging Industrial Development

Supervised by: Ministry of Transport, People's Republic of China

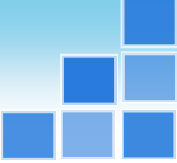
Organized by: Research Institute of Highway, MOT
Transport Commission of Shenzhen Municipality

Hosted by: National ITS Center, China
Shenzhen ITS Association



Topics:

- Next Generation of ITS
- Urban Intelligent Transportation
- Highway Network Management and Services
- Integrated Transport Electronic Payment
- IOT for Transport
- Connected Vehicles and Telematics



Thank You!