

# Connected Car and Traffic Management in China

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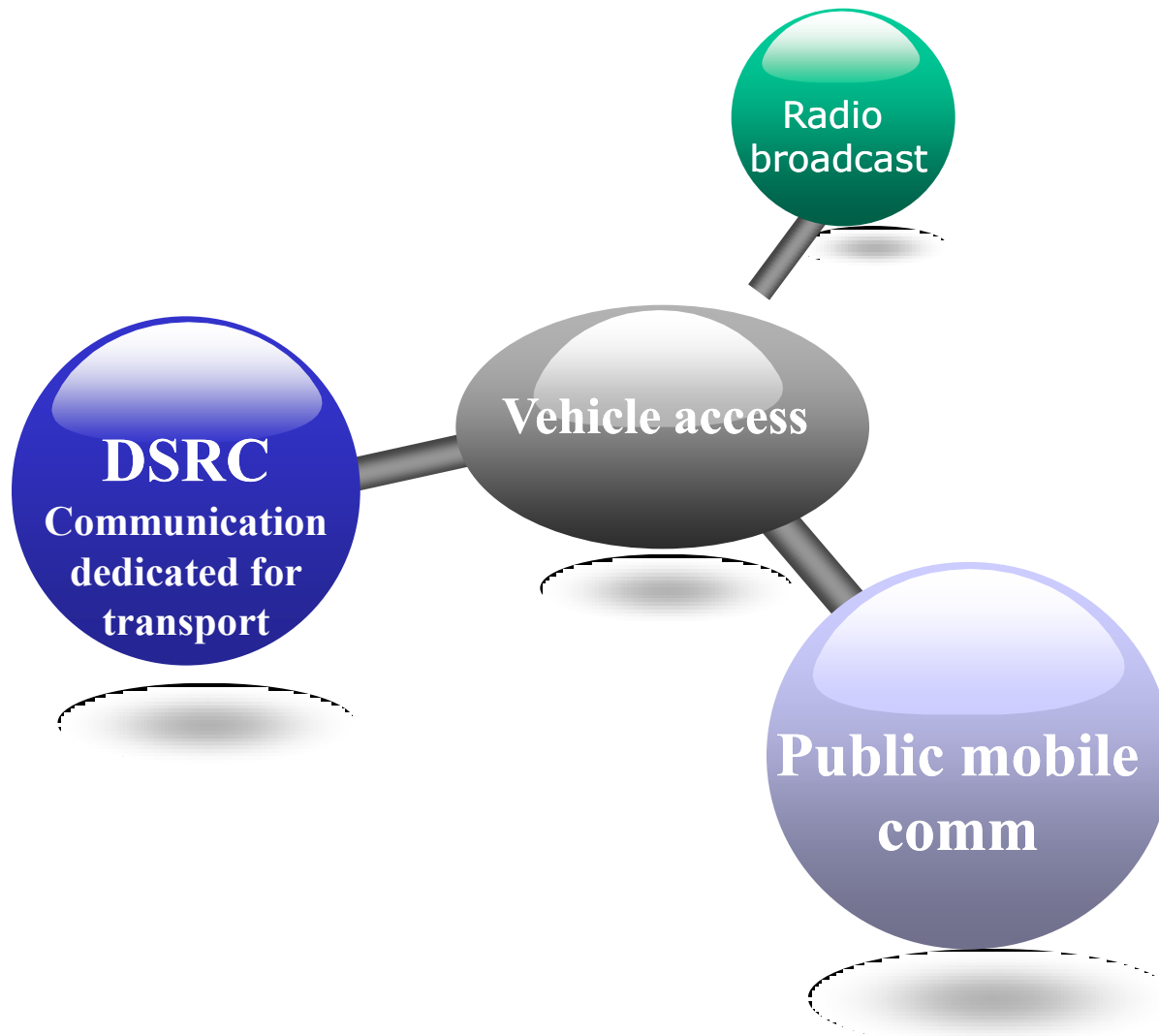
- Expressway 74,000 km, ETC & Expressway management



- Information service & traffic jam in cities such as Beijing, Shanghai and Guangzhou



# Methods for vehicle access in China



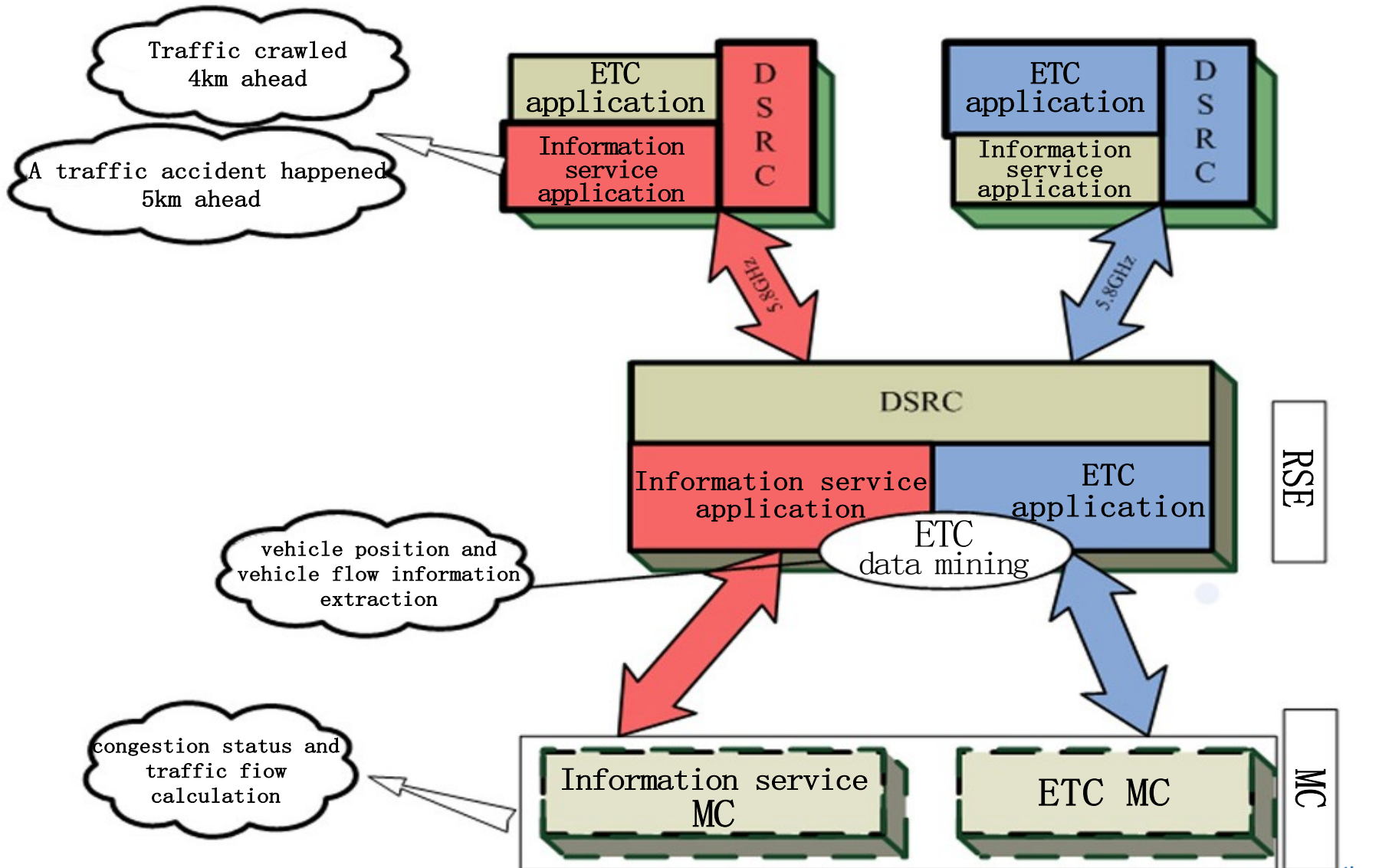
- o Developing ETC based on DSRC
- o Consideration on how to integrate ETC and information service based on DSRC

## ETC in China

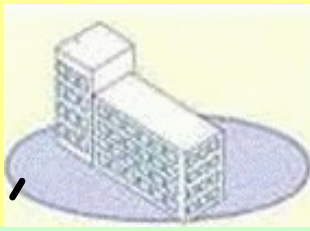
- National Standard of DSRC&ETC have been published in 2007
- The first application system opened in 2008
- ETC service opened in 15 Provinces
- More than 1,600 ETC lanes have been built
- More than 1,400,000 ETC users
- ETC inter-province Network
  - Beijing, Tianjin and Hebei (about 4000km)
  - Shanghai, Jiangsu, Anhui, Jiangxi and Zhejiang (More than 10,000km)

- o Ministry of Transport have associate with Ministry of Finance and National Development and Reform Commission to deploy ETC in China
- o The coverage of ETC will be 60%(6,000 road side units), and the number of OBU will reach 5,000,000 throughout China in the next 5 years.

# Integrating ETC and information service



# National Highway Network Management



**Expressway Management Center**

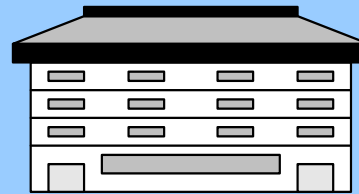


**Toll Collect System**

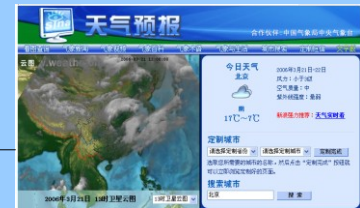
**Highway Incident Report System**



**Public Service**



**MOT Center**



气象信息服务



交通部监测管理



**Highway Data Base**



**Weather System**



**Transport Data Base**



# o Function

- Main Highway Network Monitoring
  - Message Collection
  - Checkage
  - Release
- Coordination
  - Different Provinces
  - Different Road Operators
- Information Service
- National Highway Weather Report



# Information service on highway

- Realtime Information is provided through VMS, internet, broadcast and television etc.
- www.chinahighway.gov.cn , visits more 30,000,000 in 6 months, and 150,000 per day at most

The screenshot displays the homepage of the China Highway Information Service Network. The main navigation bar includes links for 'Home', 'Industry News', 'Highway Map', 'Traffic Status', 'Highway Weather', 'Travel Reference', 'Information Transfer', and 'Information Subscription'. A prominent announcement at the top right reads: '【公告】欢迎填写《网站满意度调查》(点击)，目前共有617位用户提交调查表。李盛霖部长春节前莅临公路路网中心慰问并指导工作'.

The 'Traffic Status' (路况) section features a '路况快讯 (RSS订阅)' feed with entries such as: 'G025线(京秦高速)河北省秦皇岛市山海关恢复通车。(2010-03-06 09:39:46)', 'G45线(赤通高速)内蒙古自治区呼和浩特市赤峰至下洼段恢复通车。(2010-03-06 09:36:32)', and '大客车误入江西在建高速路段跌落 三人死亡 (2010-03-04 16:26:00)'. Below this is a '各地气象查询' (Weather Query) section for Beijing, showing '小雪转小到中雪 0℃/-4℃' and '无持续风向微风'.

The 'News Center' (新闻中心) section lists various news items, including '各地积压有价证券税费改革涉及人员' and '交通运输部批复建议提案四百三十件'. The 'National Highway Service Map' (全国公路服务地图) is also visible, showing a map of China with various regions highlighted.

At the bottom, there is a '各地公路出行服务热线' (Local Highway Travel Service Hotlines) section with a grid of numbers, and a '友情链接' (Links) section with dropdown menus for '国内相关单位' (Domestic Related Units) and '媒体' (Media).

The Fully Networked Car  
Geneva, 2-3 March 2011

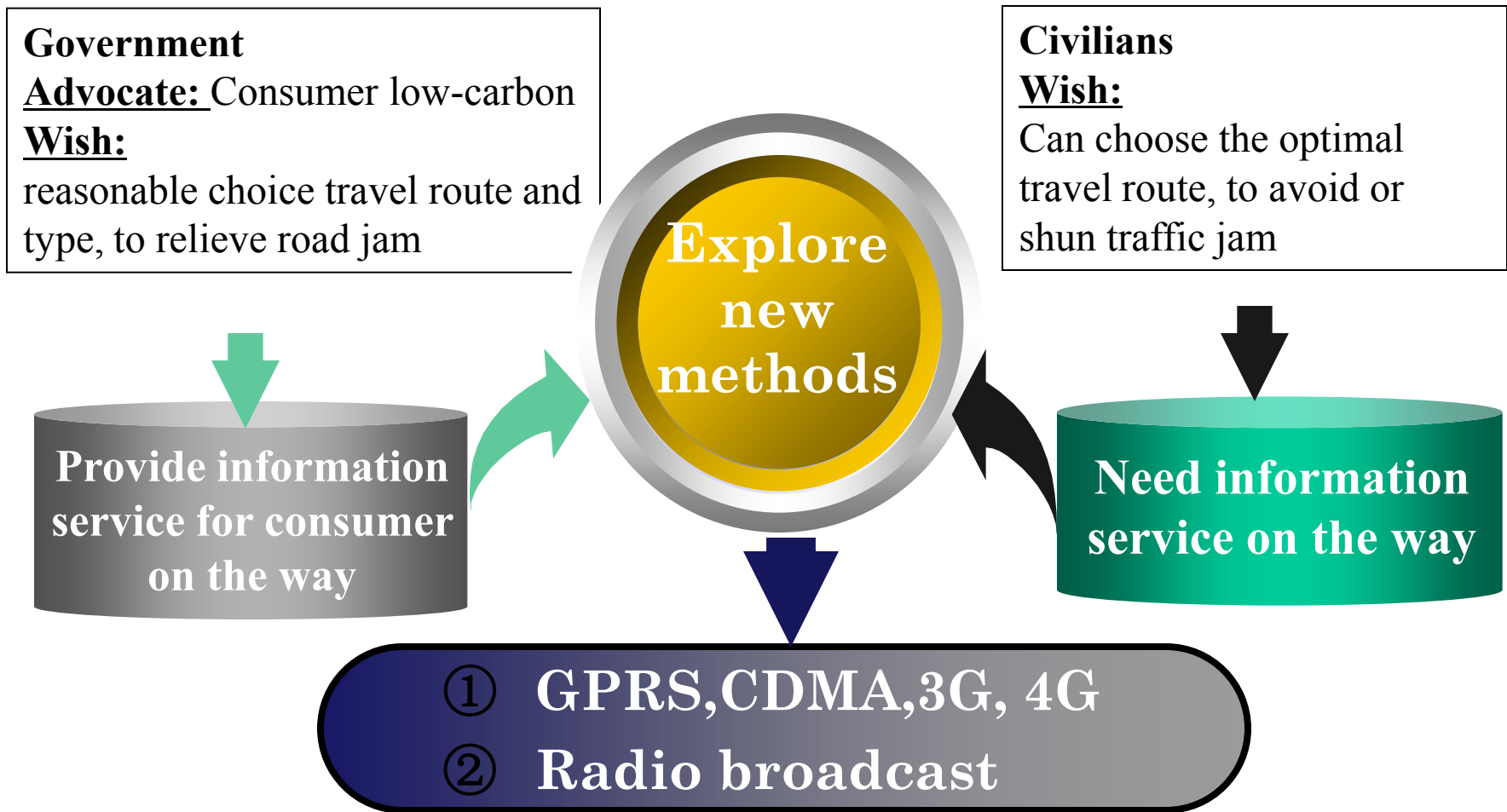
# Radio broadcast

**Highway information service  
system based on Radio  
broadcast**

Cover skeleton line of country  
highway

Provide public,  
differential , customized  
and pusher-type traffic  
information service

# How to use information in the vehicle more efficiently is researching in China



# Potential application of public mobile communication technology

- Hand-held terminal, PDA, Mobile phone, mobile TV, are popular in China and will contribute to the traffic application.
- The 3G telecom technology, such as TD-SCDMA, W-CDMA and CDMA2000 now is in operation.
- The CMMB(China Mobile Multimedia Broadcasting ) which was tested during Olympic game 2008, now covers 150 cities in China.

- The first TSP league of china was established in May.  
The vehicle service step into telematics time
- To realize the combination of vehicle and wireless communication
- Mainly depends upon the telematic service to provide the traffic information service and life information service to consumers

- Floating Car System in Beijing
  - Operated by the Beijing Municipal Committee of Transportation with more than 70,000 vehicles in the system
  - Based on the satellite positioning system and the public communication mode, such as the GPRS or CDMA.
- The Mobile phone operators also express great interest in traffic info collection and service.

# Floating car data for info service



交通眼  
最新版

为您提供实时路况

- 拥堵 (时速小于20公里)
- 缓慢 (时速20至40公里)
- 畅通 (时速大于40公里)

北京实时交通路况

当前时间: 9:53:46

路况时间: 2010年09月21日09时50分

路况定位:

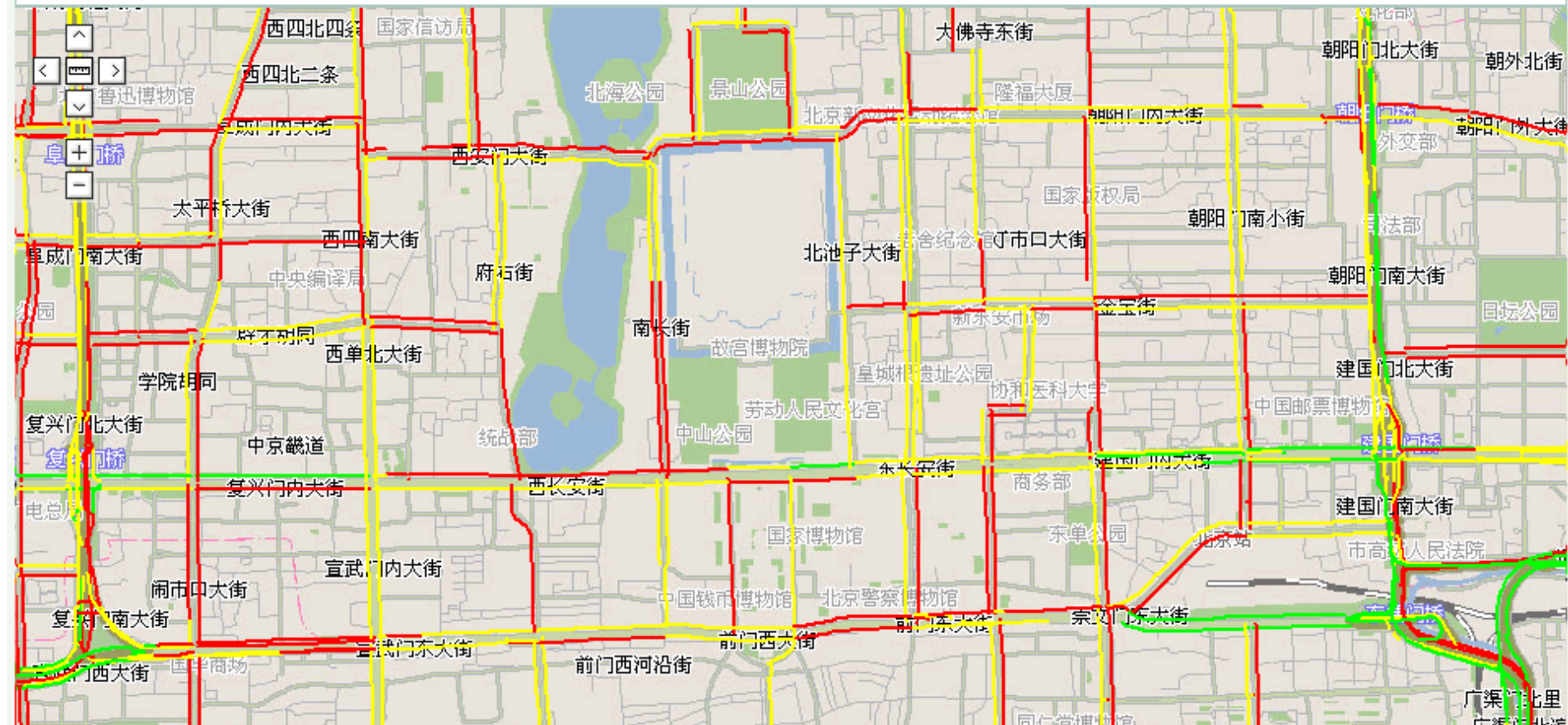
查询

放大

缩小

刷新

全图



Geneva, 2-3 March 2011





# Traffic Info. Service via Mobile Phone



路网交通路况

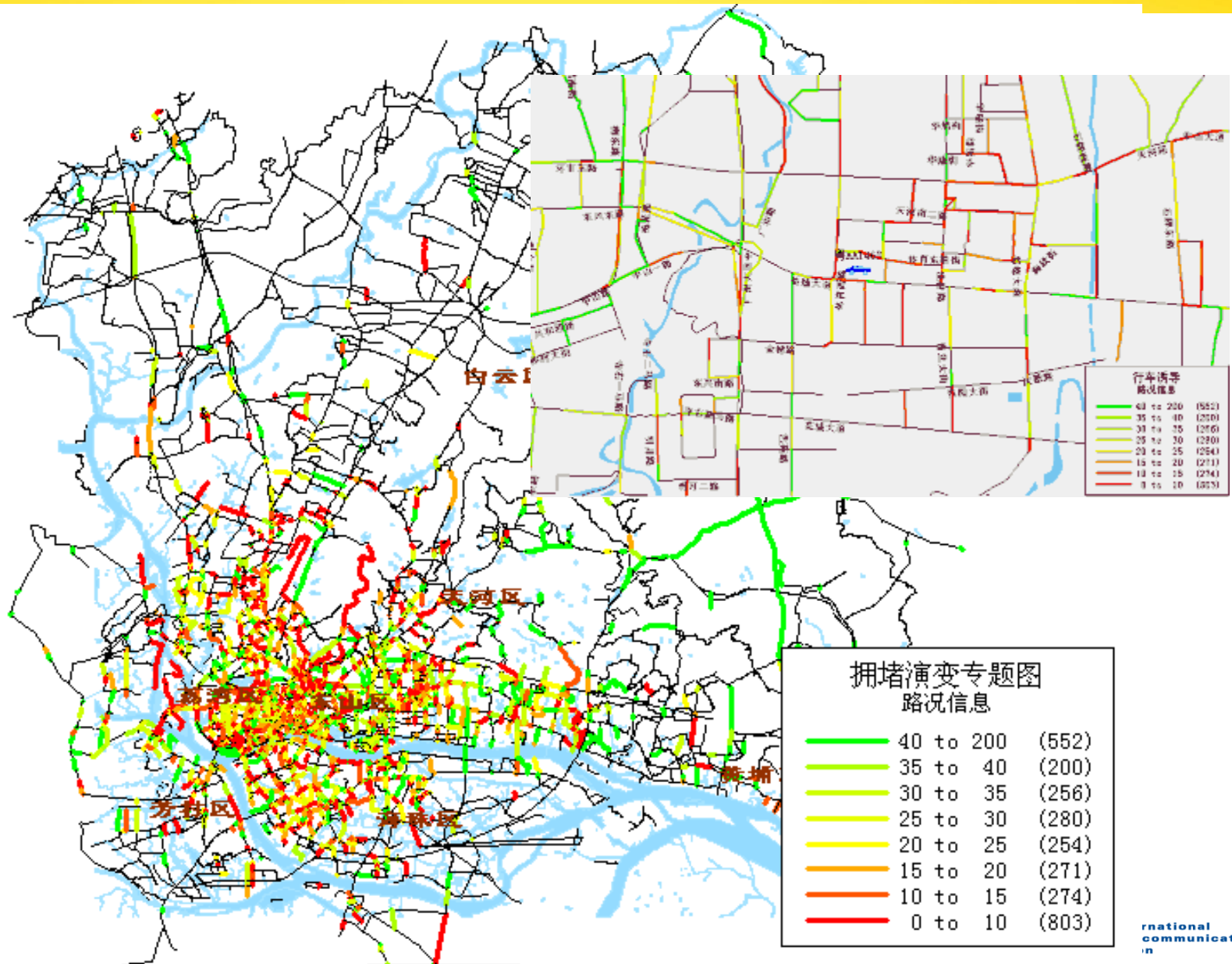


立交桥交通路况



高速公路交通路况

# Traffic Jam Information based on FCD in Guangzhou



# Standardization

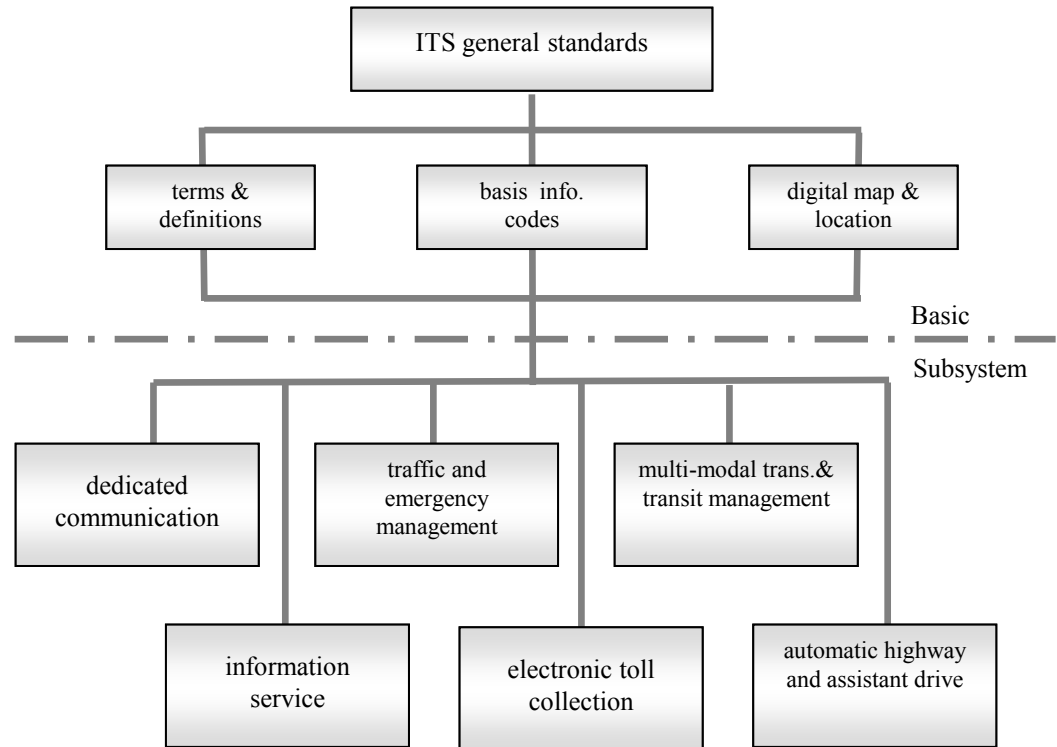
## o ITS

- Domestic: SAC/TC 268

- ATMS
- ATIS
- APTS
- ETC and AFC
- Freight and Fleet Management
- AVCS
- DSRC and Data Exchange
- Transportation Infrastructure Management

- ISO/TC 204

- Domestic Committee (SACTC268)



**Hierarchical Structure**

# National Standard Released By 2010

Serial Num.	Code of national standards	Name	Issue date	Implementation date
1	GB/T 20133-2006	Road traffic information collection – Information classification and code of message	2006-03-10	2006-10-01
2	GB/T 20134-2006	Road traffic information collection – Incident message sets	2006-03-10	2006-10-01
3	GB/T 20135-2006	Intelligent transport systems – Electronic toll collection – System architecture	2006-03-10	2006-10-01
4	GB/T 20606-2006	Intelligent transport systems – Requirements for data dictionaries	2006-11-07	2007-04-01
5	GB/T 20607-2006	Intelligent transport systems – Architecture – Service	2006-11-07	2007-04-01
6	GB/T 20608-2006	Intelligent transport systems-Adaptive cruise control system – Performance requirements and test procedures	2006-11-07	2007-04-01
7	GB/T 20609-2006	Traffic information collection – Microwave traffic flow detector	2006-11-07	2007-04-01

## National Standard Released By 2009

Serial Num.	Code of national standards	Name	Issue date	Implementation date		
8	GB	Road transport and traffic telematics – Electronic				
	17	GB/T 20851.4-2007	Electronic toll collection – Dedicated short range communication – Part4:Equipment application	2007-03-19	2007-05-01	
9	GB	18	GB/T 20851.5-2007	Electronic toll collection – Dedicated short range communication – Part5:Test methods of the main parameters in physical layer	2007-03-19	2007-05-01
10	GB	19	GB/T 20925-2007	Data exchange for passenger transport settlement based on XML	2007-05-15	2007-12-01
11	GB	20	GB/T 20999-2007	Data communication protocol between traffic signal controller and control center	2007-07-17	2008-01-01
12	GB	21	GB/T 21379-2008	Classification and coding of the attribute of traffic management information – City code	2008-02-03	2008-08-01
13	GB	22	GB/T 21381-2008	Coding rules for entity identification code of traffic management geographical information – City road	2008-02-03	2008-08-01
14	GB	23	GB/T 21394-2008	Road traffic information service – Information classifying and coding	2008-02-03	2008-08-01
15	GB	24	GB/T 23434-2009	Transport information and control systems – In-vehicle navigation systems – Communications message set requirements	2009-03-31	2009-11-01

The FT  
Geneva, 2-3 March 2011



# Thanks !