

ITS Services European Standard and Its Application

THALES in China

◆ Ground Transportation

- Modernization of the ticketing systems and signaling systems of Beijing, Shanghai among other cities, metro lines

◆ Air Traffic

- Modernization of Beijing Air Traffic Approach Center to prepare Capital airport for the 2008 Olympics

◆ Considerable Investment in R&T

- Widely cooperations with universities
- Innovation projects

**Thales has been operating in China for more than 20 years
And employs close to 500 people**

Problems we have

- How to identify and describe objects in IT system?
- Communications between organizations and systems?
- How to provide traffic information service?
- Reusability, efficiency, safety etc....

What is Transmodel?

- ◆ Reference data model for Public Transport operations
- ◆ Adopted as the European experimental standard ENV 12896 in 1997

What Transmodel can do?

- ◆ Tactical planning
- ◆ Personnel disposition
- ◆ Operations monitoring and control
- ◆ Passenger Information
- ◆ Fare Collection
- ◆ Management Information/Statics

European standards



Public transportation

TRANSMODEL

a comprehensive conceptual model
for public transport information systems

SIRI

Interface for
exchanging
information
about the
planned, current
or projected
performance of
real-time public
transport
operations

IFOPT

Data model for
the description
of the main
fixed objects
required for
public access
to Public
Transport

NETEX

exchange and
sharing of
multi-modal
Travel and
Traffic
information

DatexII

co-ordination of
traffic
management

Alert C

co-ordination of
traffic
management

RDS TMC

co-ordination of
traffic
management

Road and traffic

Siri is a European standard

Siri is made of 5 parts

DD CEN 15531-1

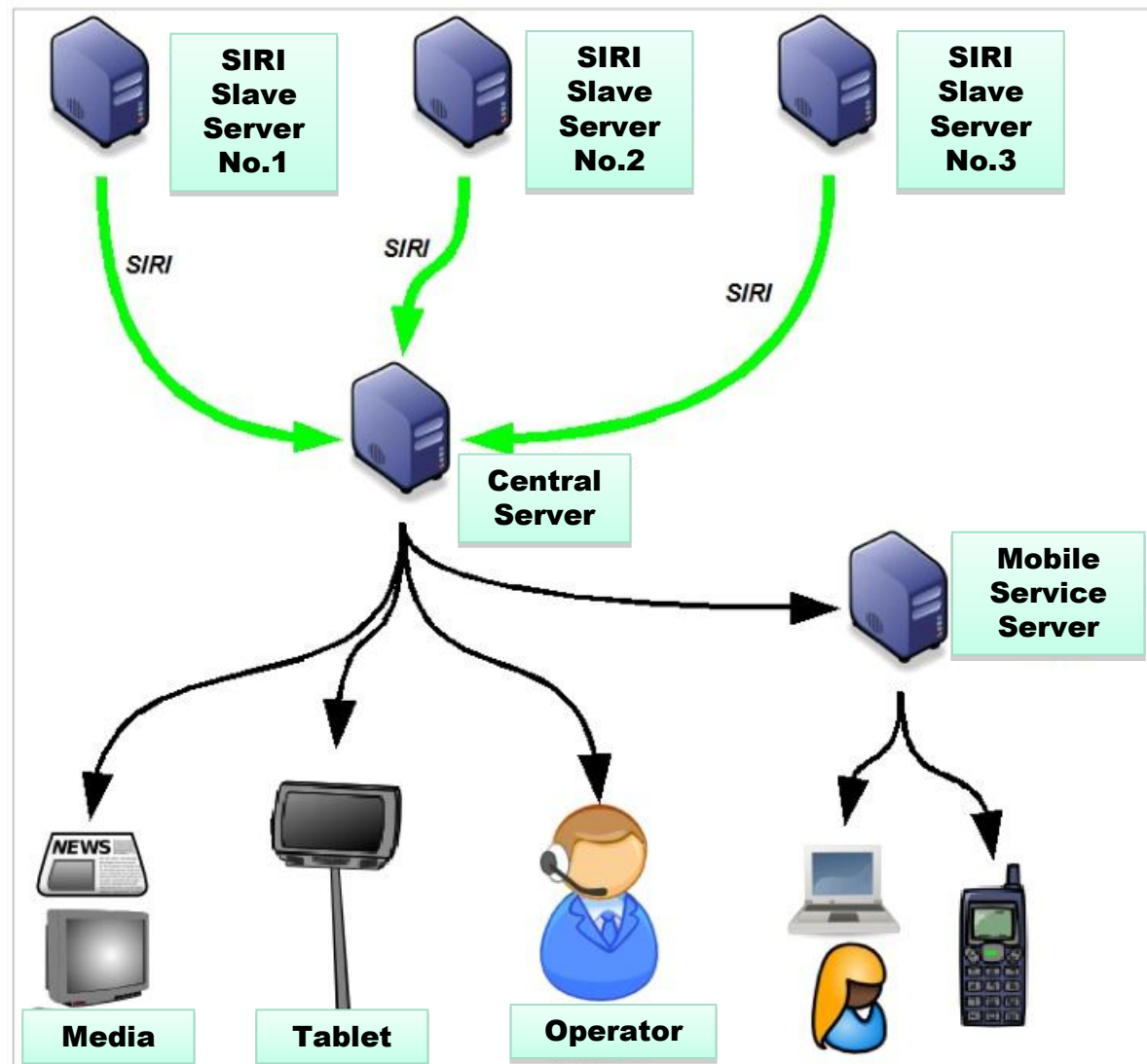
2007

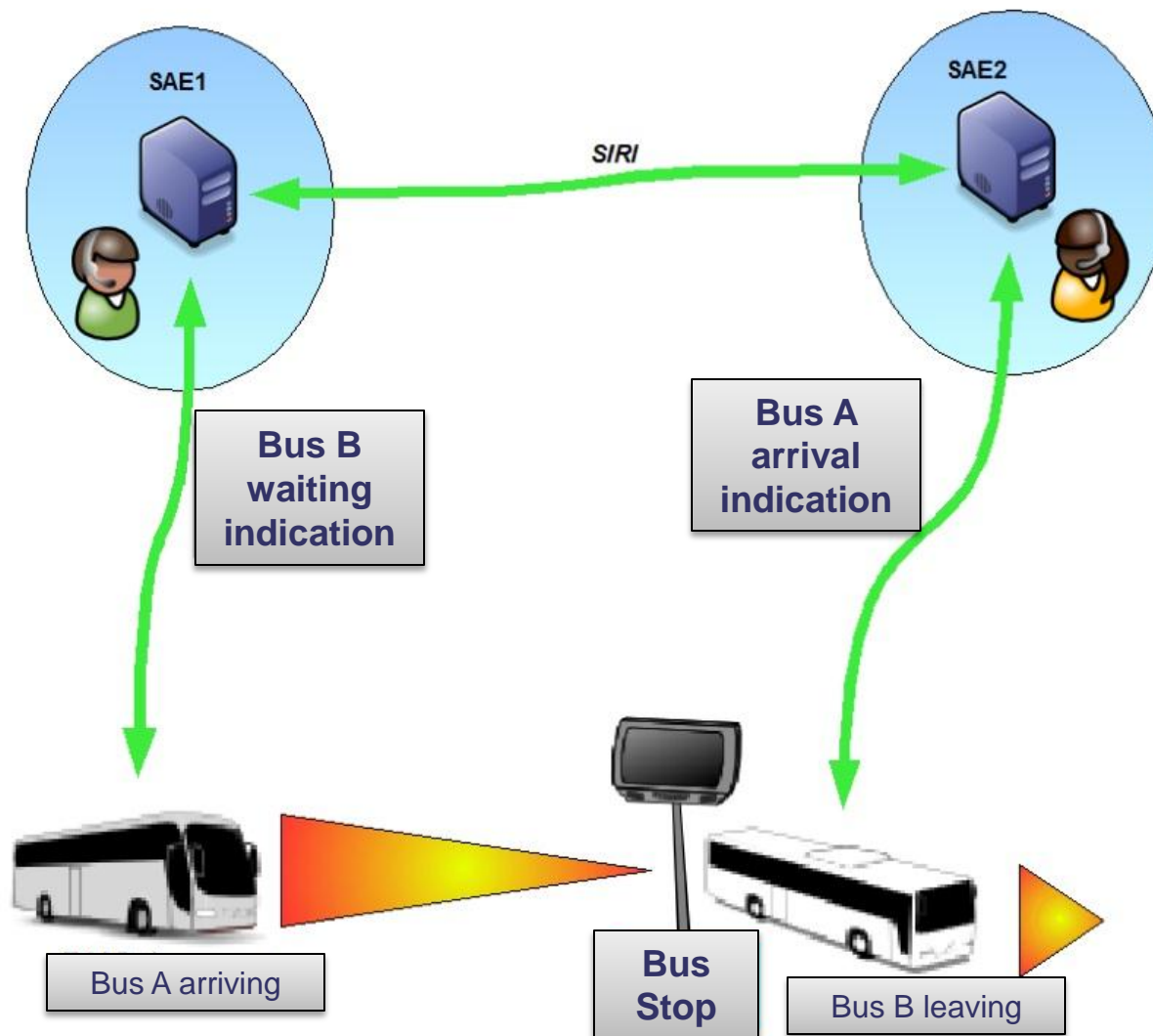
Public Transport – Service interface for real-time information relating to public transport operations

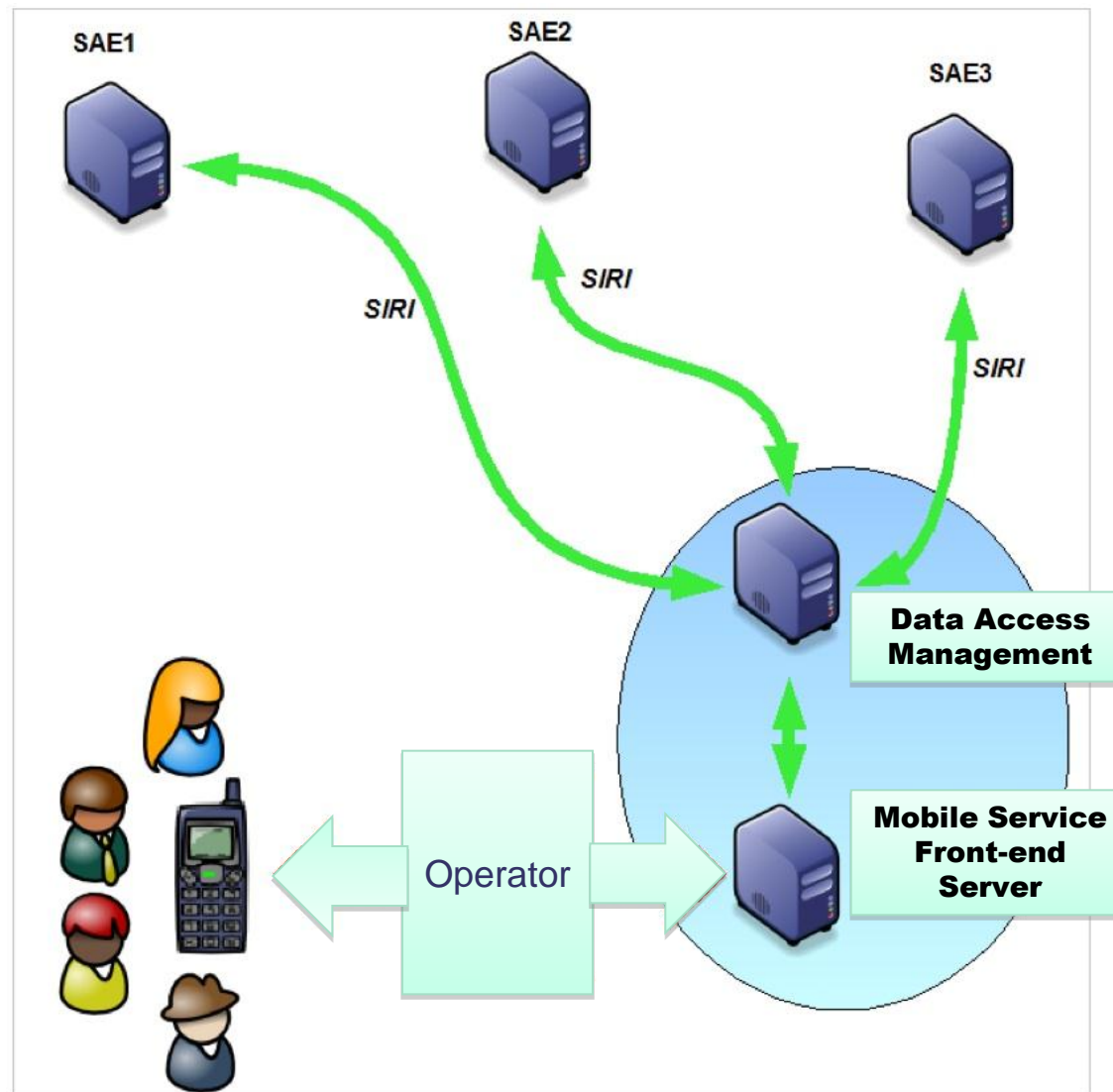
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- part 1: context and framework (2007)
- part 2: communications infrastructure (2007)
- part 3: functional services infrastructure (2007)
 - part 4: facility management
 - part 5: situation exchange







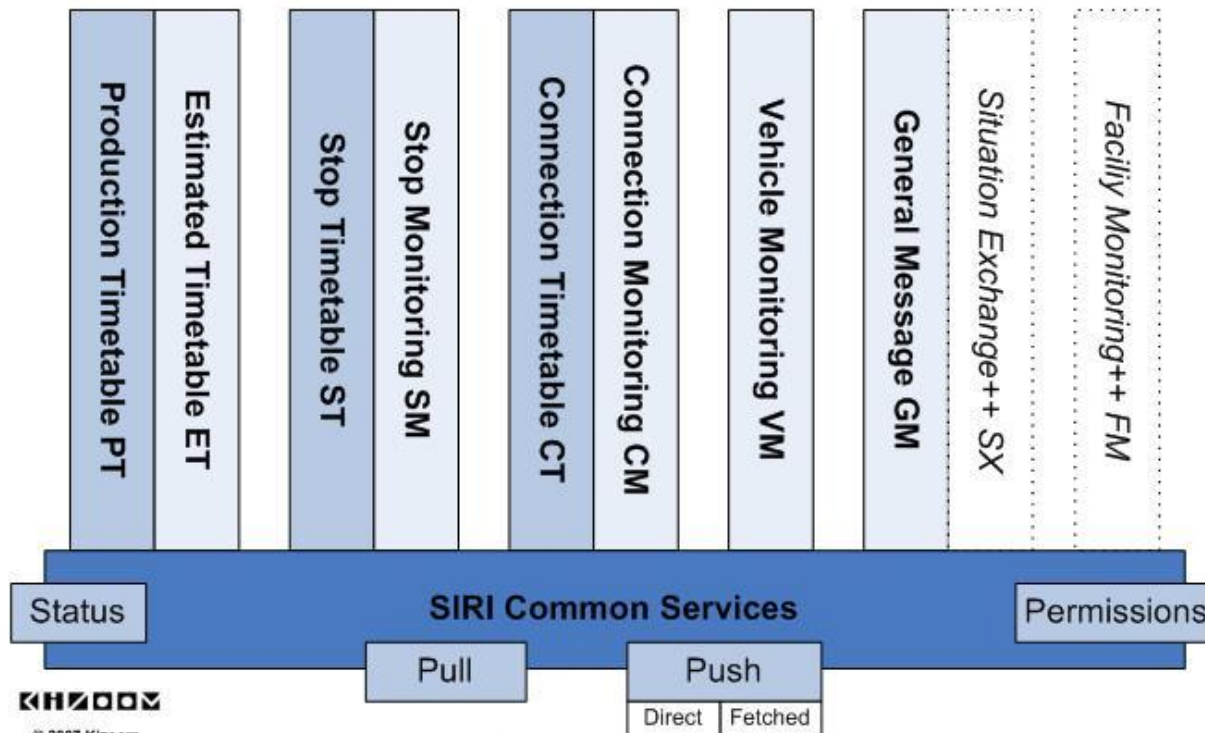


SIRI Functional Services

TPEG2: Situation Model
PT & Road Situations

Datex2: Situation Model
Road Situations

Transmodel: PT model + Stop Place model (IFOPT)
Stop Points, Vehicle Journeys, Lines, Journey Patterns, Vehicles etc



Web Service: Request/Response, Publish / Subscribe
Topic Filters, Policies, Heartbeat

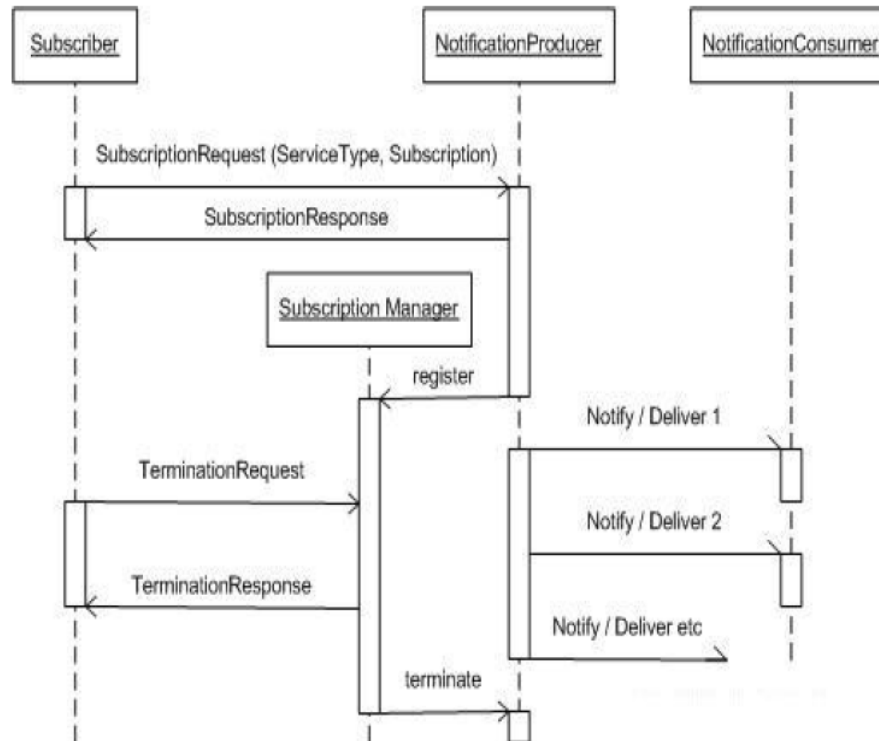
Request/Response pattern

- ◆ Stateless connection
- ◆ One-shot query
- ◆ Traffic info on web etc.



Publish/Subscribe pattern

- ◆ Stateful connection
- ◆ Continuous communication
- ◆ Real-time monitoring

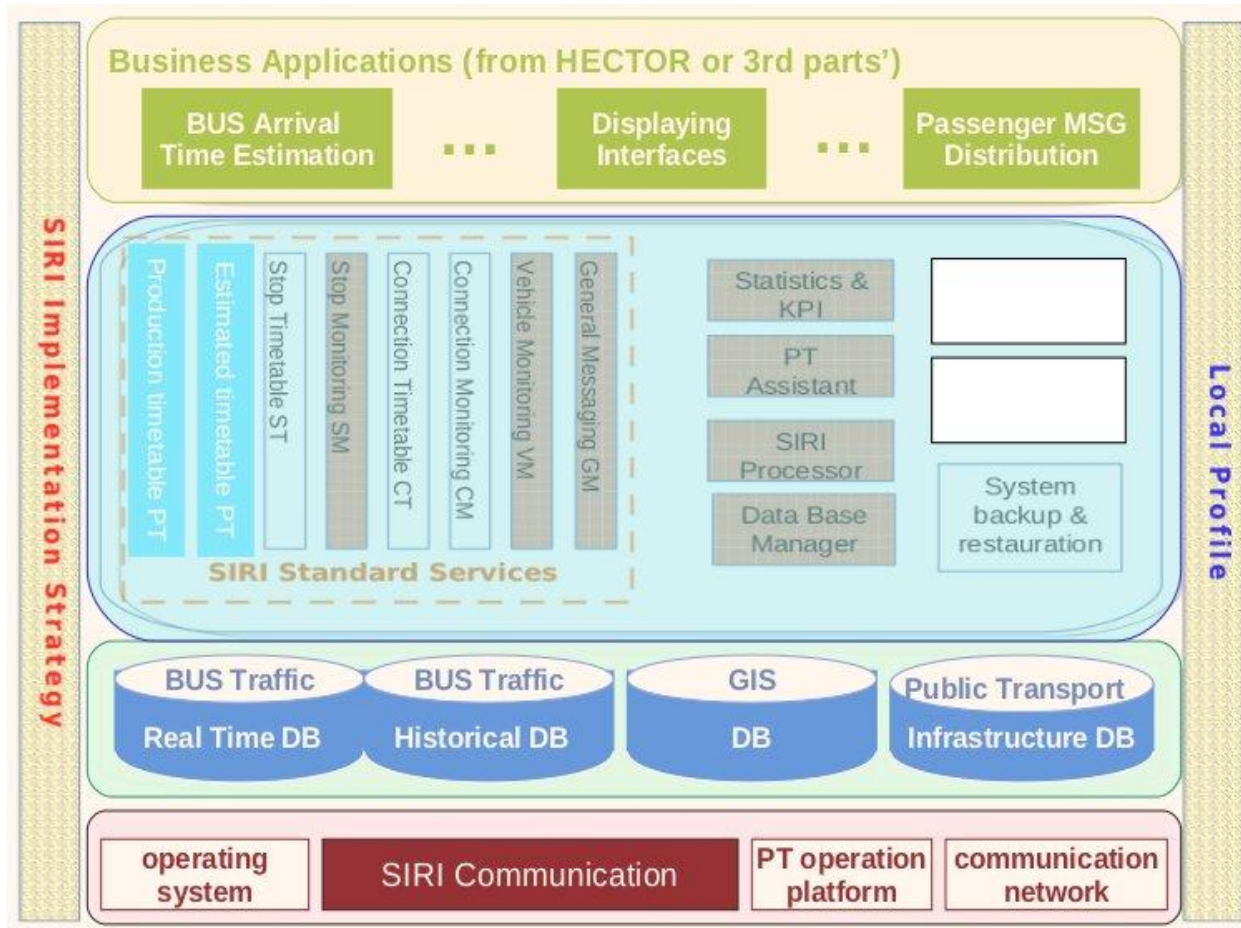


SIRI for RPC

- ◆ SIRI defines APIs and RPC procedures
- ◆ Business logics are free to be customized
- ◆ Webserver takes care of data encapsulation

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  </ServiceRequestInfo>
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</GetVehicleMonitoring>
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LPDA Hector Software

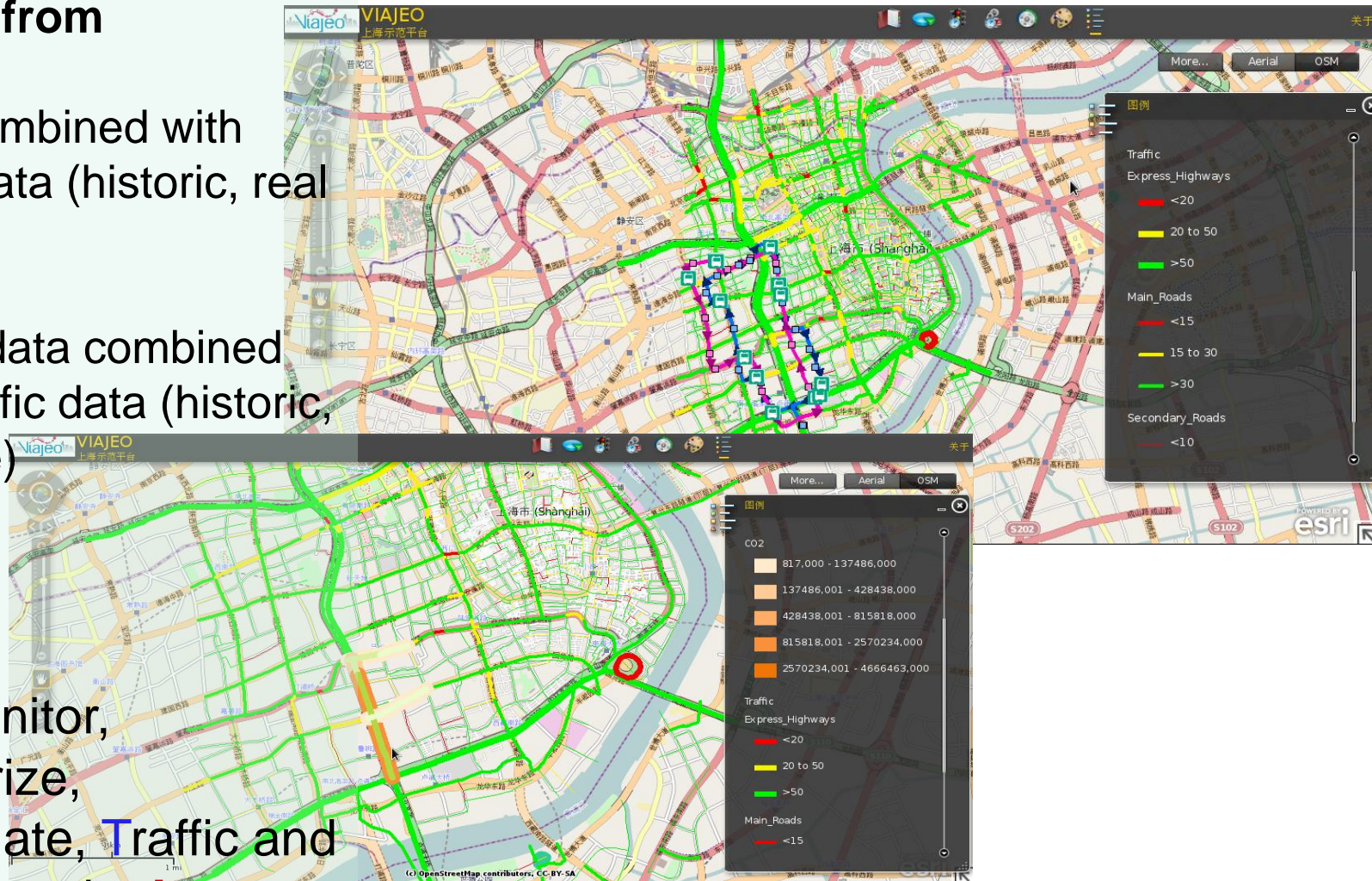




Benefiting from

- PT info combined with Traffic data (historic, real time)
- Pollution data combined with Traffic data (historic, real time)

Better Monitor,
Regularize,
Coordinate, Traffic and
Transportation!



Future

- ◆ Pollution monitoring
- ◆ Statistics and Data Mining
- ◆ Real time indoor mapping
- ◆ Integrated Public Transport Information Service
- ◆ Dynamic Multimodal Journey Planner (timetable)
- ◆ Traffic Management & Emergency Handling
- ◆ Public Transport KPI
- ◆ Public Transport Operational Control Centre

谢谢 ! **Thanks! Merci!**