

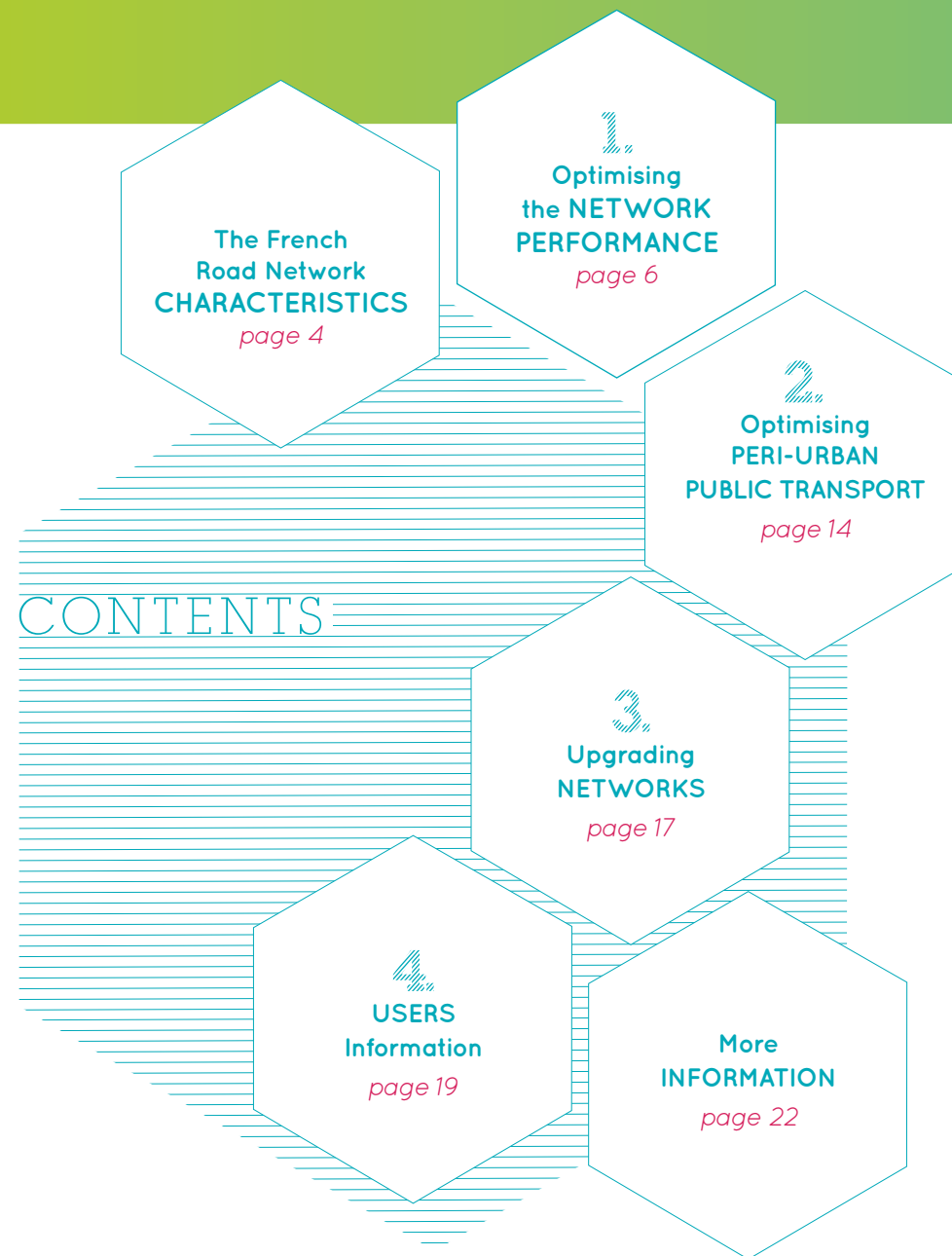
# TRAFFIC MANAGEMENT on the French Road Network

>>> FRENCH EXPERTISE <<<



COLLECTION  
EXPERTISE  
FRANÇAISE

# MAINTAIN, UPGRADE AND DEVELOP the Road Networks



**IN FRANCE**, roads are the main support for mobility of passengers (88% of trips) and freight (87,6%).

Since the 90s, the road network has been developed in order to connect areas, to open up the regions to Europe, to link the Channel and Atlantic coasts and major seaports to large cities and Europe, to answer the increase of traffic and to restrict the transit traffic in the capital region. The challenges of sustainable development have become a cornerstone of transport policy in France.

## France has identified four major trends in maintenance, modernisation and development of transport networks:

- optimise the existing transport system to limit the creation of new infrastructures;
- improve its performance to service territories;
- improve its energy efficiency;
- reduce the environmental footprint of infrastructure and of transport equipments.

## To achieve these goals, different strategies have been developed:

- implementation of dynamic traffic management systems on dense traffic sections;
- global management aimed at promoting public transport use;
- maintaining a high-level safety and comfort of road travels;
- extending predictive traffic information and real-time information.

## IN THIS BROCHURE ARE PRESENTED:

specificities of the French non-urban road network



strategic orientations selected and developed by the State



their implementation by different network managers (State, motorway companies, local authorities) supported by many companies specialised in the field of intelligent transport systems





# The French Road Network CHARACTERISTICS

The network has been developed to meet more and more challenges

**THE NATIONAL ROAD NETWORK** accounts for less than 3 % of the total network, however it carries 35% of the traffic.

21,500 km  
of national road  
network

9,000 km  
of concession  
motorways  
(tolled)



Source: DGITM/DIT/DRN - January 2014

— Concession motorways  
— Non-concession motorways and national roads

**SPECIAL SITUATION OF THE COUNTRY**, mid-way between Northern and Southern Europe, hence an intense international transit traffic. Challenges at the borders, and on the major national network.

**LARGE METROPOLITAN AREAS DEVELOPMENT**  
Peri-urbanisation around the 60 more-than-100,000-inhabitants metropolitan areas creates growing traffic flows which needs to be controlled.

**TOURISM IN THE REGIONS** triggers seasonal traffic peaks which require an adapted management.

**DECENTRALISED ORGANISATION**  
Calls for coordination between the several networks managers.

## THE STAKEHOLDERS

Traffic managers are not the only ones implied: they also need emergency services, the police and services providers (information, maintenance, repair service).

	OWNER	STRATEGIC AUTHORITY	NETWORK MANAGER
Concession motorways (tolled)	State	Ministry in charge of Transport	Private Motorway Companies
Non-concession Motorways (non-tolled)	State	Ministry in charge of Transport	Interdépartemental Road Directorates (State Services)
National Roads	State	Ministry in charge of Transport	Interdépartemental Roads Directorates (State Services)
"Départemental" Roads	"Département"	General Council (elected local authority)	General Council Technical Services
Local Roads	City or metropolitan area authority	City Council or Metropolitan area Council (elected local authority)	Cities Technical Services

## THE FLEET OF VEHICLES

- more than 31 millions of private cars
- more than 5 millions trucks

## THE ELECTRONIC TOLL COLLECTION

39% of the transactions are electronic:  
 • 3.24 millions Liber-t badges (nation-wide system)  
 • 685,632 TIS-PL badges (new nation-wide system for trucks only)  
 Going through the toll is smooth thanks to dedicated lanes.

## MOTORWAYS NETWORK LENGTH (KM):

YEAR	CONCESSION MOTORWAYS	NON-CONCESSION MOTORWAYS	TOTAL
1970	1025	115	1140
2014	9000	2800	11800

## OTHER NETWORKS

- 9 700 km of national roads
- 380 000 km of "départemental" roads
- 650 000 km of local roads





# 1 Optimising THE NETWORK PERFORMANCE

## MAIN MEASURES

Offering users  
alternative  
routes

Dynamic  
traffic  
management

**PROVIDING A HIGH LEVEL** of fluidity, ensuring reliability and travel safety, reducing local pollution, noise, fuel consumption and emissions of greenhouse gases are among the objectives of network performance optimisation.

France has indeed implemented measures at all scales:

➤ **interregional, national and even international.** Plans for traffic management enable to predict and to take timely decisions on a border or corridor in case of major difficulty. The strategy is mainly based on the establishment of alternative routes available to users;

➤ **local.** The main tools involve real time traffic information and dynamic traffic management on busy roads. Dynamic speed control, dynamic management or variable assignment of lanes, can maximise the traffic flow.

## A Network Managed by Several Operators

### The system

The road network in the Lyon metropolitan area is characterised by:

- a traffic overlay of a metropolitan area of more than 1.3 million inhabitants with intense national and international transit flows;
- a large grid network that offers several alternative road routes;
- a division between 6 network operators: The State, the Grand Lyon (metropolitan area authority), the Rhône "département" and three concessionary companies, South of France Motorways (ASF), Paris Rhin Rhône Motorways (APRR) and its subsidiary Rhône-Alpes Motorways (AREA).

To coordinate and regulate the traffic flow through 230 km of structuring roads of the urban area, the partnership Coraly was set up.

### The management

Coraly is based on a two-level organisation:

- each operator ensures, through its own monitoring and intervention centre (PAIS) tasks related to the viability of the system and the safety of users in its sector (monitoring lanes, triggering interventions, infrastructure maintenance, etc.);
- the Coraly General Control Centre (PCG) supports missions that require a global vision of the network traffic management and user information.



### Advantages

- The exchange of information collected by each partner on the field
- Their centralisation and analysis by the same system and operators
- The launch of coordinated action plans

Coraly Network (coordination and regulation of traffic in the Lyon metropolitan area)

APRR - Grand Lyon - OPENLY pour le Grand Lyon - DIR Centre Est - DIRCE pour le département du Rhône - AREA - ASF

## Who are the equipment suppliers?

**For the general control centre and that of the interdepartmental roads directorate (DIR)**  
**Ereca**, optical fiber specialist, for emergency call network equipment

**Fareco** (brand SIAT) for counting devices  
**La Barrière automatique** for automated barriers  
**SES, Signature et Lacroix** for variable messages sign

**SPIE** for traffic management specific systems  
**For the network managed by APRR**  
**Aximum, SPIE South East, Eurocapteurs** for electro-

magnetic loops  
**Eiffage énergie Lyon** for cameras  
**Fareco** for counting devices  
**Lacroix, Signature, SES** for dynamic sign systems

### LA BARRIERE AUTOMATIQUE

Founded in 1984 and settled in Limonest, "Rhône" (close to Lyon), the company specialises in design and construction of automated road barriers for road maintenance and operation companies. In the road sector, it is a reference for French motorways companies. At the international level, its activities are developed in Morocco, Senegal, Mexico, Chile, Italy, Spain, Greece, Russia and

India. Very innovative, the company especially developed an unbreakable automated barrier and mobile guardrails, adapted to reversible flow lanes. In 2011, its sales amounted to more than 11.8 million euros. It now employs about 40 people.

➔ [www.barriere-automatique.com](http://www.barriere-automatique.com)



## The Dynamic Speed Regulation on a Dense Traffic Corridor

The A7 motorway operated by South of France Motorways (ASF) is a north-south axis which follows the Rhone valley. It faces a strong traffic increase every summer. In order to limit the inevitable effect of congestion during this period, ASF has implemented since 2004, and in close collaboration with the State, a dynamic speed limit control system. Building on its success, this measure was extended in 2008 to A8 and A9 motorways.

### The system

During traffic peaks, speed control aims to improve traffic flow and to optimise the operation of the infrastructure according to actual traffic conditions:

- by homogenising and moderating gradually speed, it increases the level of service by improving the security, comfort and reducing the highest congestion;
- by limiting periods of high congestion, it reduces emissions of local pollutants and greenhouse gas.

### The management

Every six minutes, the traffic data are collected on the whole network in real time and processed through a specific algorithm that anticipates the emergence of congestion risk on certain areas.

The speed limit (110, 90 or 70 km/h) is then automatically adapted to the traffic conditions in those areas. It is gradually lowered by steps of 20 km/h. A complete set of measures (regular radio messages on 107.7 radio, variable message signs, etc.) informs the users about safety instructions.

### Advantages

- > A better traffic homogeneity, by reducing the speed differences between the vehicles and between different lanes
- > A better distribution of vehicles between lanes, thereby increasing the capacity
- > A significant reduction in the duration and level of congestion
- > A reduced number of accidents road and their severity



### Who are the equipment suppliers?

ASF to design and implement the softwares for data exploitation and processing (supporting operations systems), with various informatics engineering subcontractors for coding, in order to:

- operate and manage information;

- design and integrate various parts or equipments from French or European (Barco video wall, etc.) manufacturers;
- compute travel time from a software company

Cegelec et Bouygues énergies et services, shooting devices installers

(hardware and cameras) for video recording deployment

Fareco, counting devices manufacturer

Labocom, counting data collection expert

Signature, SES nouvelle et Lacroix trafic for dynamic signage

Survision, sensors manufacturer for automatic reading of registration plates (information used for the computation of travel times)

Vinci autoroutes and its subcontractors, designer of the smartphone application

### FARECO

Fareco (Fayat régulation contrôle) belongs to the Fayat construction group, and is specialised in road traffic control. It gathers brands having each a range of products specific to a field of activity, in particular:

- **Garbarini**: urban traffic management softwares, crossroad controls, signing devices, traffic lights;
- **SIAT**: data collection, road equipment management softwares, automatic incident detection system, detection and management of parking;

- **CAFR**: crossing red lights control, in-vehicle speed control, speed control in construction zones.

Fareco has many references, including trams signing in Ile-de-France. In 2012, its sales amounted to 15 million euros with a workforce of 60 people.

➔ [www.fareco-fayat.com](http://www.fareco-fayat.com)





EASTERN  
PARIS

## Creation of an Additional Lane

The four-lane highway common section of the A4 and the A86 located in the East of Paris and managed by the State services, supports 280,000 vehicles daily. Considered as "Europe's largest traffic jam", this trunk faces congestion every morning and evening. Before dynamic management was implemented, the congestion could extend from 10 to 15 km every day during peak hours.

### The system

In 2005, the emergency lane was opened as a fifth potential lane to traffic only during periods of high traffic. It is identified by a lighter colour.

### The management

To enable efficient operation of the lanes, remote-control mobile assignment guardrails

(GMA) were installed. They open and close automatically depending on traffic density. The dynamic vertical signing consisting in variable messages signs and lane assignment signals, warns users of the opening or closing of the lane. Automatic radars are involved in speed control and contribute to maximum safety on this section. The area is covered by video cameras, linked with automatic incident detection systems in order to identify quickly any incident affecting traffic on this road and to restore the primary function of the emergency lane. Operating conditions (4 or 5 lanes) are proposed by the system from traffic data and validated by an operator, after a visual control using cameras.

### Advantages

The temporary opening of an additional lane has three main advantages\*:

- > increasing infrastructure capacity between 7.5 and 10%;
- > reducing saturated traffic periods;
- > an increase by 20 km/h of the average speed during peak hours in the morning.

\* Evaluation conducted in 2006 by the National Research Institute on Transport and Safety (INRETS), now known as IFSTTAR.

Improving traffic flow and dynamic management also leads to:

- > gain safety in Nogent and Champigny tunnels, since traffic operators that control congestion sites can lead traffic to avoid tunnels;
- > reduce nuisance from traffic: fuel consumption, pollutants and greenhouse gas emissions decrease in the experimental area thanks to improved fluidity.

## Who are the equipment suppliers?

**SES, Citilog, Alcatel** for dynamic equipment (variable messages sign)

**Signature SA and SES** for signing

**Sodirel** for mobile affectation guardrails

### CITILOG

This SME is specialised in the intelligent and real-time traffic monitoring thanks to:

- **a suite of softwares** based on advanced image recognition (automatic incidents detection, traffic data collection, crossroads and urban traffic management);
- **a whole video management system.** The company provides a range of solutions from local device software to turnkey systems (video equipment, intelligent video, control and sanction, plate recognition, video management, etc.). These products enable intelligent road infrastructure management (bridges, tunnels, motorways, intersections) and safety of critical infrastructures (airports, public transport, ports). Installed on more than 700 sites in the world, these products equip renowned and prestigious infrastructures such as the tunnels of New York (Lincoln and Holland), bridges of Shanghai (Lupu, Nanpu, Yanpu), M30 urban tunnels in Madrid, the Mont-Blanc tunnel, the Millau Viaduct, the tram des Maréchaux in Paris or the A86 Duplex tunnel. Citilog, whose headquarters are located in Arcueil near Paris, has subsidiaries in the United States, Hong Kong and Spain. The company generated a turnover of 5 million euros in 2012. It employs 23 people in France.

www.citilog.com

### SES

With over fifty years of experience, this company, whose headquarters are in Tours, specialises in design, manufacture and marketing of road, highway, urban and temporary signing, as well as traffic management systems. Inventor of the variable message sign, it participated in several projects for different clients:

- **in France**, it has many references: motorway companies, general councils, municipalities, construction companies, etc;
- **across the 5 continents**, variables message signs inform daily users: in the United States, Africa, Australia, Malaysia, China, Russia, Belgium, Luxembourg, United-Kingdom, Brazil. In 2012, its turnover amounted to 44 million euros. The company brings together today 300 employees with a specialised service in export and resellers worldwide.

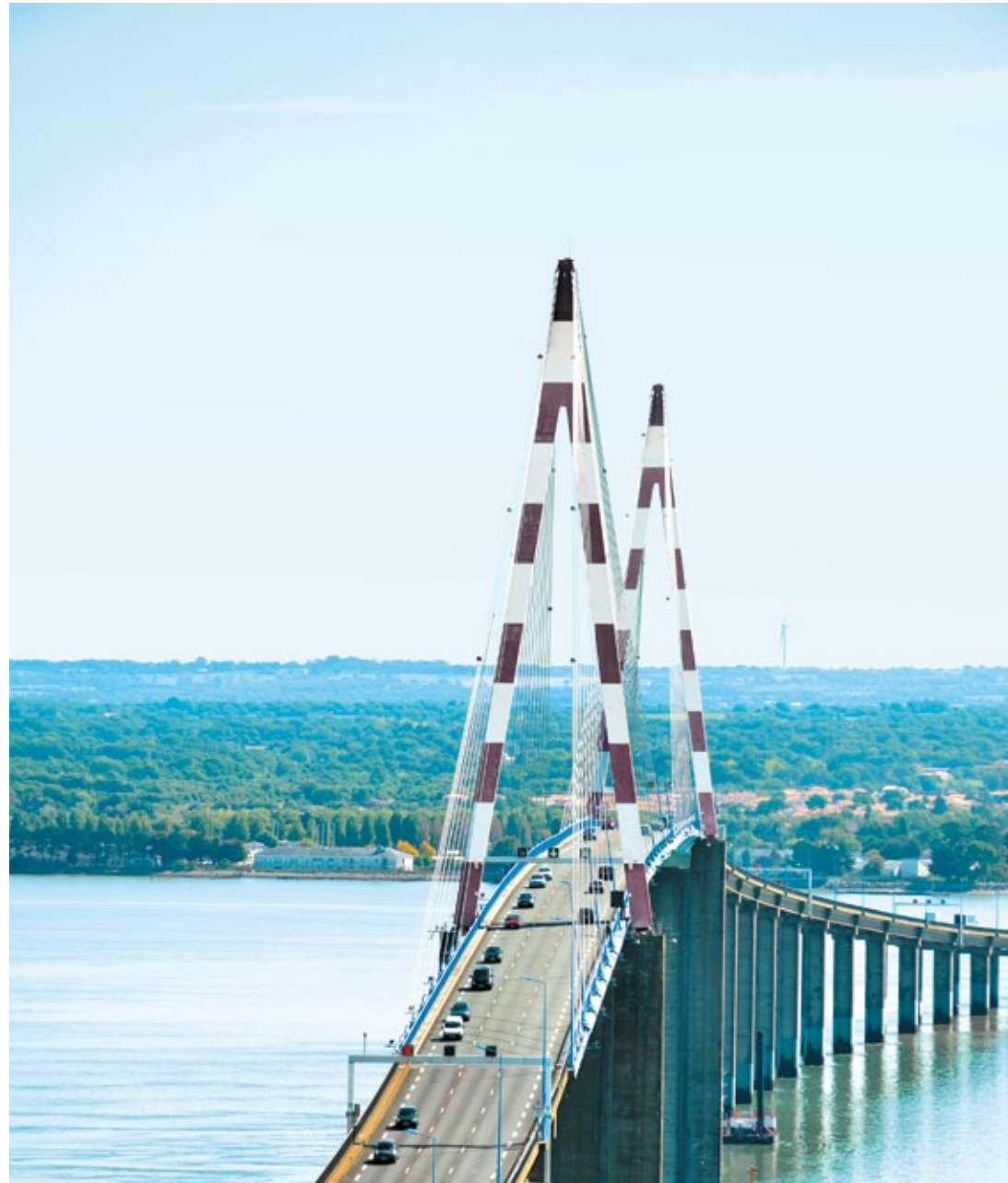
www.ses-signalisation.com





SAINT-  
NAZAIRE

## Reversible Central Lane of a Bridge



The bridge that connects Saint-Nazaire to Saint-Brevin in Loire-Atlantique, is the only one that spans the Loire estuary, downstream of Nantes. Connecting residential areas to a dynamic employment zone, it is the only commuting possibility. The old configuration of traffic lanes on the bridge, two lanes input which is reduced to one lane, was the cause of congestion every day in the morning and in the evening, in the most crowded way.

### The system

To relieve congestion when crossing the estuary, the General Council of Loire-Atlantique established in 2010 a dynamic allocation of the central lane of the bridge, in the most circulated way. That requires features over a length of about 6 km.

### The management

The assignment of the direction of central-lane flow depending on traffic is materialised by lights on gantries. Users safety is a priority, hence the whole site has a strong density of dynamic and communicating equipments: lighting, automatic barriers to let drivers use the right lane, dynamic

signing. All these facilities are controlled from a departmental centre of traffic coordination and management, specially dedicated to this item.

### Advantages

First evaluations of the system show a real improvement of traffic conditions. The crossing time is now very regular : between 4 and 6 minutes, including during peak hours in the morning and in the evening, to be compared with 4 to 11 minutes before. The users are very satisfied and they do not report reading nor understanding problems.

### Who are the equipment suppliers?

Lacroix traffic and SPIE, while EGIS ensures the coordination of their actions.

#### SPIE

Specialised in electrical, mechanical and climate-related engineering services, as well as energy and communication systems, the SPIE group has specific expertise in the area of transport infrastructure. Thus, to make traffic safer, more fluid and more environmentally friendly, SPIE participates in the development of public transport (bus, tram, metro hubs, multimodal stations...), road signage, management of urban, interurban and motorway traffic, installation of charging infrastructure for electric vehicles, centralised management of car parks, airport signage and facilities, securing tunnels as well as the development of river and maritime areas (ports, locks, dams...).

SPIE has many motorways companies as clients and is in charge of the maintenance of automation of all A43 motorway (autoroute de la Maurienne) equipment and tunnels (ventilation, security, lighting) and ensures the development of the monitoring system.

In the field of transport, SPIE had a turnover of more than € 160 millions in 2011.

[www.spie.com](http://www.spie.com)

#### LACROIX TRAFIC

Subsidiary company of Lacroix Signalisation very present on the French market of road signing and street furniture, Lacroix Traffic ensures the design, manufacture and marketing of traffic management products. Mastering the technology of collection, processing and dissemination of information, Lacroix Traffic offers a full range of management traffic amenities: traffic lights, crossroads management, lane assignment signals, pedestrian signals, variable message signs... Its products are used in many countries including Senegal, Malaysia, Brazil and Morocco. Its sales amounted in 2012 to € 32 millions. The company employed 91 people in 2012.

[www.lacroix-traffic.fr](http://www.lacroix-traffic.fr)



## 2 Optimising PERI-URBAN PUBLIC TRANSPORT

### MAIN MEASURES



**Dedicated-lane  
management**



**Dealing with  
interfaces  
between roads  
and other  
transport  
networks**



**OPTIMISING THE USE OF EXISTING NETWORKS** also requires the implementation of measures to promote some categories of users:

➤ **dedicated lanes management** is a solution that expands to ensure better consistency and reliability of travel time by public transport through the entrance of large cities;

➤ **interfaces between road and other transport networks** are improving to enhance the competitiveness of alternatives to individual car (development of park-and-ride, park for carpoolers and multimodal platforms).

## The Shared Dedicated Lane

The north-west of the A48 motorway, providing access to Grenoble, goes by a valley and concentrates traffic during peak hours, with no alternative solution.



### The system

The General Council of Isere ("département" where Grenoble is located), in collaboration with road services of the State, studied the ability to circulate buses on the emergency lane. In September 2007, this studies led to the creation of a 4.5 km-long shared dedicated lane.

### The Management

The shared dedicated lane is only open when the usual lanes of the highway are congested, usually at peak hours in the morning. Only bus drivers who received training are allowed to take the lane. Apart from these situations, the traffic is prohibited and the lane remains an emergency lane. When it is open to buses, an automatic incident detection allows to disable traffic on this path to restore its emergency lane function (for example, if a vehicle stops at some point). The speed limit is 50km/h with a maximum difference of 20km/h of speed measured on the other lanes and the maximum speed allowed to buses and coaches.

### Advantages

The success of the shared dedicated lane is measured through satisfaction survey performed 6 months after opening. 26% of respondents are new customers of the line, 89% believe that the lane is effective and 90% want an extension. This success is mainly due to the consistency of the time travel of the bus. Time reliability of buses is a key factor to attendance of the line. The lane will be extended and will be operational in 2014.



### Who are the equipment suppliers?

**Lacroix** for dynamic devices

**TTS** for video recording





## Right-of-Way Public Transport

The Wasselonne-Strasbourg road, which serves the western part of Strasbourg metropolitan area, bears significant traffic. Intercity bus lines are thereby penalised.

### The system

To revitalise these bus lines and strengthen their competitiveness in comparison to cars, the General Council of the Bas-Rhin ("département" in which Strasbourg is located) plans to develop an area of about thirty kilometers reserved to public transport (public transport dedicated lanes - TCSP). The objective of the General Council is to provide the equivalent regional train or tramway service through buses with a high level of service (BHLS): regular journey time, high frequency and easy connections with other modes of transport (park-and-ride, multimodal stations, etc.).



### Advantages

The first feedback shows good rate of technical operation and significant gains in terms of regularity and flow for buses. The travel times have decreased by 5 minutes in rush hour. One can imagine the future extension of this type of measure for other categories of users, eg carpooling or vehicles with high occupancy rates.

### The management

An experiment was conducted since 2006 in the corridor going through the village of Furdenheim. The idea has been to treat homogeneously both ways by creating a 1500 m-long lane dedicated to "département" buses running in the two directions. In parallel, a light regulating system retains the traffic outside the village to give priority to buses. When a bus arrives, it is detected by GPS, and gets priority for its passage through lights synchronising so that it meets only green lights.



### Who are the equipment suppliers?

**Gorba** for bus to road communication (V2I)

**Prosign** for horizontal signage

**SignalesT / Lacroix** for vertical signage



MAIN  
MEASURE



developing  
intelligent  
transport  
systems



**NETWORK OPERATIONS** on a daily basis is primarily intended to ensure travels of people and goods in the best possible conditions.

> **The fast development of intelligent transport systems** (ITS, application of new technologies of information and communication to transport) provides useful services to users and facilitates the work of operators with the automation of some tasks.

> **There are many applications:** operating assistance systems, road safety (automatic incident detection) or electronic payment.



CONCESSION  
MOTORWAYS

## Unified Electronic Tolling System: Liber-t and TIS-PL

### The system

In 2000, an agreement was signed by twenty highways companies and tolling structures. Any light vehicle with an onboard equipment issued by a Liber-t approved issuer may pay the amount on 9,000km of motorways, 3 bridges, 2 tunnels and more than 200 car parks. A customer can choose his supplier out of 11 issuers. This service accounts today more than 4,250 accessible toll lanes. The device has been generalised for trucks in 2007.

### the management

For example, trucks can register at one of the four provider companies approved by TIS-PL (inter-companies electronic tolling system for trucks):

Eurotoll, Axxès, DKV Euro Service France and Total GR. Providers sign a bilateral contract with each highway company. The customer receives a single invoice with details (split by highway company) which allows it to recover VAT.

### Advantages

The customer has a unique badge that facilitates the passage of the toll barriers. He receives only one invoice, published by the company with which he endorsed his contract. The two existing tolling organisations (light and heavy vehicles) are ready to work with other European electronic tolling service providers when a global scheme is to be implemented.



ALL ACROSS  
FRANCE

## Automatic Incidents Detection

### The system

Incidents and accidents have severe consequences on the flow of traffic, especially on highways. To minimise detection time, traffic managers use automatic incident detection systems. The deployment of these automatic video analysis systems has proved that they can reduce detection time to 20 seconds, whereas with traditional alarm systems (network emergency calls, patrols, telephone or operator-monitored video), this period could reach several minutes.

### The management

The operator of a monitoring centre is alerted in real time by the device of the occurrence of predefined events. This facilitates its surveillance and monitoring of the network.

### Advantages

The response time of the operators for incident management operation is shortened : call for emergency services, variable messages signs, radio, automatic barrier to let drivers use the right lane(s), access closure, users exit advice. This is a crucial safety factor: emergency services arrive more quickly and users expecting an incident can better anticipate their choices. The fast return on investment of these systems explains their success and their deployment by all managers.



MAIN  
MEASURES  
Forecast  
information  
Real-time  
information

**TRAFFIC INFORMATION** essential to improve users travelling conditions:

> **Forecast information**, which provides alternative routes or optimal departure periods allows users to schedule their travel;

> **Real-time information** on traffic conditions, which ensures comfort, and allows users to adapt their driving speed or route. It improves road safety, mostly by avoiding accidents caused by accidents.

Overall, quality information can:

- reduce economic and environmental costs for road users, by improving traffic or increasing transport safety;
- let authorities better manage crisis situations.





ALL OVER  
FRANCE



## Road Information Channel

### The system

Traffic information is produced by road managers, police authorities or emergency services, before being integrated by management centres into an aggregate and workable set. They are concentrated in regional centres for road information and coordination and in the National Centre for Traffic Information. Dissemination of traffic information is coordinated between all actors. It is based on the Tipi system, established since 2010 on the basis of open standard, which allows sharing of information at the national level.



### The management

The aggregated information is then broadcasted to the public through public authorities or through private service providers:

- “Bison Futé” website, created and powered by the services of the State, is the main service to provide traffic information directly to road users, for both individuals and professionals;
- a unique FM radio channel (RDS / TMC service) broadcasts in France the data collected on the conceded motorway network (107.7 radio), the national interurban road network and some metropolitan areas such as Paris. It is the true precursor of collaborative services involving network operators, suppliers and car makers.

## France Bleu: a Local Radio Stations Network

### The system

With its 43 local radio stations located throughout the territory, France Bleu network (Radio France group) is a historical and effective vector of nearby information dissemination, including traffic information.

### The management

France Bleu network has an access to the national database of traffic data and events collected



in real time over the National Road network. Local stations make regular information points on traffic conditions. Airtime dedicated to traffic is increased during crisis situations.

### Advantages

Signed in 2007, the partnership between the State and Radio France offers an efficient link to interested users. Several projects of multimodal information dissemination on road networks in major cities are in progress to have comprehensive information on the transport supply. They aim to inform in real time on the effectiveness of different available modes and thus encourage modal shift.

## Sytadin: a Road Information Website

### The system

Sytadin provides real-time traffic and work information in the Ile-de-France region. A free application for smartphones offers the main services available on the website. It gives the real time traffic status with different functionalities as touch navigation, the user GPS positioning information on works, congestion and planned closures. A website for Mobile phones has also been established. Sytadin was funded by the Regional Council of Ile-de-France and the State. The operation and maintenance of the website are done by the Directorate of roads of the Ile-de-France region.

### The management

All information provided on Sytadin is the result of close collaboration between operators of road networks who have real time systems for traffic data collection and computation: State services, the city of Paris, some motorways companies (Société des autoroutes Paris-Normandie, Société des autoroutes du nord et de l'est de la France, Autoroutes Paris Rhin-Rhône, Cofiroute).



### Advantages

Thanks to real-time information provided on traffic conditions and in progress or scheduled works, the user can decide to reroute, or to change his departure time or mode of travel.



ÎLE-DE-FRANCE  
REGION

# More INFORMATION

## COMPANIES

Besides large groups of internationally famous, many small and medium-sized companies have expertise in the field of intelligent transport systems for traffic management. They make a major contribution to innovation.

The following list, which is not exhaustive, identifies some of these private players, divided into several large fields. It was established with the assistance of UBIFRANCE ([www.ubifrance.fr](http://www.ubifrance.fr)) and from information from the intelligent transport website from the Ministry ([www.transport-intelligent.net](http://www.transport-intelligent.net)). Other references can be obtained from the Road Equipments manufacturers association ([www.ser-info.com](http://www.ser-info.com)) and association Atec-ITS ([www.atec-itsfrance.net](http://www.atec-itsfrance.net)).

### Dynamic signing, electromagnetic sensors

**Aximum**  
[www.aximum.fr](http://www.aximum.fr)

**Eurocapteurs**  
**Fareco**  
[www.fareco-fayat.com](http://www.fareco-fayat.com)

**Franche-Comté signaux (FCS)**  
[www.franche-comte-signaux.fr](http://www.franche-comte-signaux.fr)

**Isosign**  
[www.isosign.fr](http://www.isosign.fr)

**Lacroix signalisation**  
[www.lacroix-signalisation.fr](http://www.lacroix-signalisation.fr)

**Lacroix trafic**  
[www.lacroix-traffic.fr](http://www.lacroix-traffic.fr)

**SEA signalisation**  
[www.sea-signalisation.fr](http://www.sea-signalisation.fr)

**SES nouvelle**  
[www.ses-signalisation.com](http://www.ses-signalisation.com)

**Signature**  
[www.groupe-signature.com](http://www.groupe-signature.com)

**Signaux Girod**  
[www.signaux-girod.fr](http://www.signaux-girod.fr)

**SPIE**  
[www.spie.com](http://www.spie.com)

**Optifib**  
[www.optifib.com](http://www.optifib.com)

**TTS**  
[www.ttsys.fr](http://www.ttsys.fr)

**Vinci énergies – infrastructures  
et mobilité**  
[www.vinci-energies.com](http://www.vinci-energies.com)

### Toll equipment, ticketing

**Actoll**  
[www.actoll.com](http://www.actoll.com)

**Axxès**  
[www.axxes.fr](http://www.axxes.fr)

**ERG Transit System France**  
**Eurotoll**  
[www.eurotoll.fr](http://www.eurotoll.fr)

**GEA**  
[www.gea.fr](http://www.gea.fr)

**Sanef ITS**  
[www.sanef-its.com](http://www.sanef-its.com)

### Cameras, automated image processing, accident detection

**Citilog**  
[www.citilog.com](http://www.citilog.com)

**Neavia**  
[www.neavia.com](http://www.neavia.com)

**Survision**  
[www.survision.fr](http://www.survision.fr)

**Wireless sensors**  
**HiKob**  
[www.hikob.com](http://www.hikob.com)

**Mobile assignment guardrails**  
**La Barrière automatique**  
[www.barriere-automatique.com](http://www.barriere-automatique.com)

**Sodirel**

### Engineering

**Artelia**  
[www.arteliagroup.com](http://www.arteliagroup.com)

**BMIA**  
[www.bmia.fr](http://www.bmia.fr)

**Carte blanche conseil**  
[www.cbconseil.com](http://www.cbconseil.com)

**Ceryx**  
[www.ceryx-ts.net](http://www.ceryx-ts.net)

**Clesmessy**  
[fr.clemessy.com](http://fr.clemessy.com)

**EGIS**  
[www.egis.fr](http://www.egis.fr)

**IBM**  
[www-05.ibm.com](http://www-05.ibm.com)

**Ingerop**  
[www.ingerop.fr](http://www.ingerop.fr)

**Orange business services**  
[www.orange-business.com](http://www.orange-business.com)

**Setec ITS**  
[www.its.setec.fr](http://www.its.setec.fr)

**Steria**  
[www.steria.com](http://www.steria.com)

**Thales**  
[www.thalesgroup.com](http://www.thalesgroup.com)

**Traffic first**  
[www.trafficfirst.com](http://www.trafficfirst.com)

### Onboard devices, vehicles fleet management systems, freight monitoring, command centres devices

**Aeroproduct**  
[www.aeroproduct.org](http://www.aeroproduct.org)

**Actia**  
[www.actia.fr](http://www.actia.fr)

**Actus system**  
[www.actus-system.com](http://www.actus-system.com)

**Aplus-informatique**  
[www.aplus-informatique.com](http://www.aplus-informatique.com)

**Axygest**  
[www.axygest.fr](http://www.axygest.fr)

**CJM international**  
[www.cjm-international.com](http://www.cjm-international.com)

**Cofiroute**  
[www.vinci-autoroutes.com](http://www.vinci-autoroutes.com)

**D3E**  
[www.d3e.com](http://www.d3e.com)

**DKV euro service France**  
[www.dkv-euroservice.com](http://www.dkv-euroservice.com)

**GPI**  
[www.g-p-i.fr](http://www.g-p-i.fr)

**Labocom**  
[www.labocom.fr](http://www.labocom.fr)

**Mobility tech green**  
[www.mobilitytechgreen.com](http://www.mobilitytechgreen.com)

**Mobiloc**  
[www.mobiloc.fr](http://www.mobiloc.fr)

**Nomadic solutions**  
[www.nomadicsolutions.biz](http://www.nomadicsolutions.biz)

**Quartix**  
[www.quartix.fr](http://www.quartix.fr)

**Saphelec**  
[www.saphelec.fr](http://www.saphelec.fr)

**Saphymo**  
[www.saphymo.com](http://www.saphymo.com)

**Strada**  
[www.strada.fr](http://www.strada.fr)

**Total GR**  
[www.total.fr](http://www.total.fr)

**Vialtis**  
[www.vialtis.com](http://www.vialtis.com)

**Vigilant**

### Weigh in motion

**ECM**  
[www.ecm-france.com](http://www.ecm-france.com)

**Sterela**  
[www.sterela.fr](http://www.sterela.fr)

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[www.cerema.fr](http://www.cerema.fr)

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[www.cetu.developpement-durable.gouv.fr](http://www.cetu.developpement-durable.gouv.fr)

**French Institute of science and  
technology for transport,  
development and networks (Ifsttar)**  
[www.ifsttar.fr](http://www.ifsttar.fr)

**Sytadin**  
[www.sytadin.fr](http://www.sytadin.fr)

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**ATEC ITS France**  
[www.atec-itsfrance.net](http://www.atec-itsfrance.net)

**Road Equipments manufacturers  
association (SER)**  
[www.ser-info.com](http://www.ser-info.com)

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[www.ubifrance.fr](http://www.ubifrance.fr)

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