USER NEEDS INTERVIEW

Introduction



The objective of this interview is to collect the views of road managers and operators on:

- intelligent systems currently used to operate their road network
- solutions needed for the future.

Identity



Name of interviewee	T. Carpentier		
Name of organisation	***COURLY (COmmunauté URbaine de LYon): Metropolitan Public Authority of the City of Lyon***		
Type of organisation *(tick as appropriate)*	**Public road authority**	Toll road operator (public / private / semi-public)	
	Police	Other (please state : _____)	
Geographical Responsibility *(tick as appropriate)*	National	Local	
	Regional	Other (please state : _____)	
Responsibility for *(tick all that apply)*	Motorways	Expressways	Major roads (national or trunk roads)
	Secondary roads	Local roads and streets	**Other** (e.g. Tunnel, Bridge), please state: **2 Tunnels: Fourvière and Croix-Rousse**
Position of interviewee *(job title)*	Maintenance and Operation Manager		
Roles of interviewee	Maintenance and Works		
Responsible for *(number of persons approx.)*	43 persons		

Open Questions

1 What are the main problems you currently face in managing your network (traffic and infrastructure)?
Give proposals and classify them by priority. For each problem: What measures are you taking, have taken in the past, are planning to take in the future?

Priority	Problem description	Measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
1a	Traffic volume too great for 80% of the day. Access restrictions not allowed by politicians	Telephonic coordination to control tunnel equipment		X			
		System dedicated to automated tunnel equipment control			X		2006
1b	Too much HGV traffic	Clearance restrictions in tunnels		X			
		Patrol agents			X		End of 2006 - 2007

* Be as precise as possible, e.g.: *"Measure started in 2002 and ongoing", "Measure definitely planed to start in 2006", "Aim to implement around 2008 but not definite"*, etc

Open Questions (continued)

1

Priority	Problem description	Measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
1c	Road surface state	Measurements by dedicated public laboratory to provide adherence coefficient and drainage Measurements are done when scheduled by the operator; it is not regular, not automatic.		X			
1d	Incidents	Automated Incident Detection with video cameras		X	X		

* Be as precise as possible, e.g.: *"Measure started in 2002 and ongoing", "Measure definitely planed to start in 2006", "Aim to implement around 2008 but not definite"*, etc

Open Questions (continued)

2 How will planned measures be financed? (Direct financing from own funds / BOT (Build Operate and Transfer / PPP (Public Private Partnership), etc.

Fourvière Tunnel:

50% of global expenditure financed from state / 50% from the Metropolitan authority

Croix-Rousse Tunnel:

100% of global expenditure financed from the Metropolitan authority

3 What is the approximate split of spending between road building, road maintenance and installation of new equipment on existing roads? / How has this split evolved?

In 2005:

€ 2.2 Million for annual maintenance and repair

€ 10 Million for new equipment

Budget for new equipment increasing (€ 3 million in 2004 and huge budget to come for 2006 and 2007)
The total renovation of the Fourvière tunnel is planned.

4 If you could choose one ITS or traffic management solution to improve safety, what would it be?

Automated Incident Detection by video cams.

Currently used by the COURLY, but no permanent recording of the images, planned in the short term.

5 If you could choose one thing to improve predictability of journeys (reliability of journey time information), what would it be?

Not useful for short tunnels

Open Questions (continued)

6 What degree of traffic control could you accept? (concerning speed enforcement, use of electronic toll tags to gather data, etc)

Speed enforcement

7 What causes the most damage to the your road network today?

Pollution in tunnels– Fouling up of the road side equipment

Impact of HGV on the tunnel infrastructure: damage due to height and lateral clearance

8 What system(s) or process(es) do you currently use to reduce this damage?

Over ventilation, cleaning and preventive maintenance to prevent tunnel damage due to pollution

No solution to prevent damage due to over clearance vehicles.

9 What do you understand by “Intelligent Roads”?

Today Intelligent road applications are dedicated to operators; it has to be developed to road users.

Communication between road and vehicle is an interesting way.

Targeted Questions

→ For each Item (which corresponds to a technical task in INTRO), please state what measures you are taking at the moment / have taken in the past / are planning to take in the future (tick appropriate box)

10 **Surface safety monitoring** *(INTRO WP2)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
A. Stopping distance and skid resistance	**1** **No draining systems in the two tunnels concerned. Problems with water infiltration, and damage to road, bad skid resistance. The determination of the slippery road is done by visual control of an agent and users are just informed via VMS or traffic radio.**	X				
	2					
	3					

The INTRO project aims to develop models to link stopping distance to dynamic micro-slip data and to static skid-resistance measurements. This is to better understand these relationships for two pilot phases (information to drivers and to road authorities). This information could for example be used in winter to recommend variable speeds according to the measured conditions.	**Comments (if any):**

Targeted Questions (continued)

10 **Surface safety monitoring** *(INTRO WP2)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
B. Real time information for maintenance data	**1** **no real time information about slippery road except visual monitoring**					
	2					
	3					

The INTRO project aims to conduct a pilot demonstration of information on slippery roads to road maintenance authorities. This is to enable them to differentiate between ice/snow that needs clearing and bad surface conditions that need repaving. Data will be processed and displayed using a GIS (Geographical Information System) interface. The test will take place using probe cars near Vienna, Austria.	**Comments (if any):**

Targeted Questions (continued)

10 **Surface safety monitoring** *(INTRO WP2)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
C. Real time information to drivers regarding road surfaces	**1 VMS**		X			
	2 Traffic Information Central monitoring centre informed by patrol agents of the visual aspect of the road, information given to the traffic radio station		X			
	3 CORALY –www.coraly.com Partnership between the departmental public road authority of the Rhône, the regional council of Rhône-Alpes, the Metropolitan public authority of Lyon, and the conceded motorway companies AREA, ASF and APRR CORALY is a coordination post getting data from the 5 partner operating posts, - Diffusing these informations to users via its web site, - Allowing data exchange between the partners - Allowing safety intervention coordination		X			

The INTRO project aims to provide road surface-related information (mainly stopping distance) to drivers via an appropriate in-vehicle HMI (Human-Machine Interface). This will be based on data from floating cars with an on-board micro-slip measurement system (which provide this data to a central server), and also from static road surface data (for floating cars without micro-slip data).	**Comments (if any):**

Targeted Questions (continued)

11 **Pavement conditions and infrastructure production** *(INTRO WP3)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
A. Intelligent pavements (pavement management, lifecycle and deterioration sensors)	**1** **not used**					
	2					
	3					

The INTRO project aims to improve the management of the maintenance of the network (pavements and bridges) through smart methods of predicting the deterioration process and actual condition. The aim is to measure pavements in unobtrusive ways and make the information accessible at low cost. This includes a demonstration of sensor methods including in-situ sensors (such as loops, cameras and weigh-in-motion).	**Comments (if any):**

Targeted Questions (continued)

11 **Pavement conditions and infrastructure production** *(INTRO WP3)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
B. Remote pavement sensing from vehicles	**1** **not used, considered useful!**					
	2					
	3					

The INTRO project aims to demonstrate the use of data provided by sensors fitted to standard vehicles ("probe vehicles") for improving the monitoring of pavement condition, and hence maintenance. This will concentrate on monitoring comfort and safety of the ride, as well as road defects such as rutting.	**Comments (if any):**

Targeted Questions (continued)

12 **Traffic and safety monitoring** *(INTRO WP4)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
A. Data sensing for road, weather and traffic including Probe Vehicle / FCD (Floating Car Data) Technology	**1** **Floating car data and loops data from CORALY**		X			
	2					
	3					

The INTRO project aims to establish key traffic indicators, and to develop methods to calculate or estimate them using existing data sources for sensor-based measurement of traffic parameters. This includes analysis of data quality from using conventional single data sources and how this influences derived data (traffic flow, density, speeds, travel time, etc)	**Comments (if any):**

Targeted Questions (continued)

12 **Traffic and safety monitoring** *(INTRO WP4)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
B. Data fusion of data from different sources for providing a comprehensive picture of network conditions	**1** **Data from CORALY**		X			
	2					
	3					

The INTRO project aims to design and develop a data fusion module accepting and combining information and data from traffic detectors and other sources, for assessing the traffic conditions on the road network and detecting critical traffic situations. This task involves fusion of travel time data and traffic data, link travel time correction, etc.	**Comments (if any):**

Targeted Questions (continued)

12 **Traffic and safety monitoring** *(INTRO WP4)*

Problem description	Your measures	Finished	Ongoing	Planned *(definite)*	Planned *(not yet definite)*	Time scale*
C. Safety indicators for monitoring traffic condition *(inter-vehicle distance, speed variance, etc)*	**1** **Speed sensors in tunnels (average speed of 20 to 25 km/h in the day and of 60 to 70 km/h in the night)** **Enforcement at the exit to the tunnel**		X X			
	2					
	3					

The INTRO project aims to develop methods allowing relevant safety indicators to be estimated using traffic parameters. This will help traffic managers and drivers have a real-time overview of the safety level on different parts of the road network. This will be done by analysing accidents (only accidents linked to traffic conditions or road surface) on 6 sections of road network across Europe and using this data to build and validate models of safety indicators.	**Comments (if any):**

Targeted Questions (continued)

13 **General**

A. Which out of the above are in your opinion the most important/most useful approaches?

Vehicle to road communication,

because the precise location of a vehicle in a tunnel is very important in case of fire, and video information is not efficient in this case.

B. What risks do you see?

Undermining Freedom

14 **This is the end of the interview. Do you have any other comments?**

Precise localising of vehicle associated to an efficient vehicle to road communication would allow better monitoring of inter-vehicle distance, localisation of a stopped vehicle, and in case of an incident could give a precise count of the vehicles involved.