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	Lennart Olsson
Name of organisation	***Swedish road administration (Vägverket), western region***

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: **Tunnels, bridges**

Position of interviewee *(job title)*	Project manager
Roles of interviewee	Coordinator Traffic information.
Responsible for *(number of persons approx.)*	

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 safety	Full scale surveillance of tunnels on the TERN	x		x		Gotatunnel will be ready in 2006.
		MCS installed	x		x	x	Gotatunnel will be ready in 2006. Other areas on the TERN is planned for 2008- but not yet definite
		Queue warning system (light version of MCS)	x			x	
		Simulator for traffic management in tunnels		x			one tunnel is implememented an three to go
1b	Slippery roads	Road weather information system	x				
		V2V and V2I information exchange.				x	Integrated with upgrading road 45 to motorway, 2006 - 2015

* 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	Accessible roads	Equipment to collect traffic flow and speed					
		Rerouting system		x			Starts in urban areas and continues through out the country
		Road assistance	x			x	Only in Gothenburg so far. More vehicles are planned for 2007
		VMS	x		x	x	Only in Gothenburg so far.
1d	Speeding offence	Automatic Traffic Control		x			Started in 2002, update of equipment 2005, coninuous on going extension to 2015
		Variable speed limits		x			National tests with variable speedlimits, validates in 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)

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

Own funds.

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?

	Maintenance	Building	New equipment
2000	1208	915	6
2001	1260	677	10
2002	1318	1247	16
2003	1314	1347	68
2004	1508	1329	68

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

Infrastructural = Queue warning

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

Reliable, cheap and relevant real-time data.

Open Questions (continued)

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

All systems that does not oppose the personal integrity of the driver.

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

Heavy traffic and frost in the ground

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

Better grounding and limitations for heavy vehicles on minor roads.

9 What do you understand by “Intelligent Roads”?

Road with integrated information systems.

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**					
	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** VVIS Road weather information system	x				
	2 Measurement of frost limit.	x				
	3 Alarm from technical equipment in tunnels when critical levels are reached (ex UPS)	x	x			

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** Information regarding snow, ice and congestions is available on WAP services		x			
	2 All information about slippery roads is provided to service providers for free via XML protocol.		x			
	3					

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** Maximo system for predicting measures on the roads.		x			Will be implemented in 2005
	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**					
	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): Nothing planned but a very interesting subject.**

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** Inductive loops, radar and microwave sensors, video detection	x	x			
	2 Travel time information bought from supplier and paid for if data is correct.		x			2005-2006
	3. Road weather information system.	x				

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** Measure server. (collects data from different traffics systems and initialises measures on other systems that are related to the traffic situation.					
	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** These things are measured and signals are distributed to the traffic via MCS, VMS and queue warning systems.	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?

With more and more electronic equipment in the cars this is a new and very powerful data source if a reliable communication with standardised protocol could be established.

B. What risks do you see?

Without standards we will have expensive and limited access to data.

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

Other more traditional measures are taken to prevent the problems described above, such as salt for slippery roads and collaboration with rescue services in case of accidents on the road.