Belgium ITS Progress Report

Progress made in the deployment of the actions referred to the national activities and projects regarding the priority areas.

Period 2011-2014

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1 INTRODUCTION

For a good understanding of the ITS reporting from Belgium, as requested under article 17(1) of Directive 2010/40/EU, it matters to consider the particular situation in Belgium with a federal governmental level and activities under the sole responsibility of the regions.

Indeed Belgium evolved into a federal structure and the last reform just came into force on 1/07/2014. The very precise scope of the responsibilities and resources transferred from Federal level to Regional level is still in progress. But concerning ITS:

- on one hand, the domain of **road transport**, **road infrastructure, road safety** and **public transport** (except railway) are mostly within the competence of the Regions and
- on the other hand, the Federal responsibilities focus roughly on the **railways network,** on a limited number of **road safety aspects** (e.g. safety and emergency services; technical requirement vehicles; …), and on **vehicle regulation**.

Therefore, the Federal, Flemish, Walloon and Brussels-Capital authorities are all in charge for the ITS activities on their territory.

This report gives an overview of both the Federal and the Regional activities/projects in this particular area of interest: ITS. An overview of all the reported projects and activities is given in the table of contents.

This Progress Report 2014 focuses primarily on the progress achieved since the Initial Reports of 2011, but also includes complements as per the 5-year plans submitted in 2012.

The structure of this Report is aligned with the priority areas of the ITS Directive, as recommended in the guidelines for reporting adopted as Commission Implementing Decision of 13 July 2011 (2011/453/EU) and is inspired from the taxonomy of ITS[1] (Table 2.1 - "Key performance indicators for intelligent transport systems – Inception Report – AECOM – June 2014").

In the last section, KPI are integrated at Federal, Regional and National levels, and provided at area level.

[1] This ITS taxonomy distinguishes four tree-structured levels; upper levels (L1, L2, L3, L4) characterizing the increasingly focused activities. It often appears that an ITS project has a systemic impact and can cover different areas. This is especially true for upper levels (L2, L3, and L4). Therefore the classification of a project in only one domain is of a somewhat arbitrary appearance.

2 PRIORITY AREA I: OPTIMAL USE OF ROAD, TRAFFIC AND TRAVEL DATA

2.1 SURVEY ON IMPLEMENTATION STATUS CONCERNING PRIORITY AREA I

Priority area I: Optimal use of road, traffic and travel data			
Activities or projects concerned with the optimal use of road, traffic and travel data	X Implemented	X Planned	☐ Not planned
Responsible person in administration	Federal authority Éric Bulon eric.bulon@mobilit.fgov.be +32 (0)2 277 36.25 Flemish authority Magda De Haes magda.dehaes@mow.vlaanderen.be +32 (0)2 553 71 23 Walloon authority Caroline Pourtois (DGO 1) caroline.pourtois@spw.wallonie.be + 32 (0)81.21.95.08 Nathalie Mayeux (DGO 2) nathalie.mayeux@spw.wallonie.be +32 (0)81 77.30.88 Brussels-Capital authority Luc Swartebroeck lswartebroeckx@sprb.irisnet.be +32 (0)2/204 18 07 Jean-Paul Gailly jpgailly@sprb.irisnet.be +32 (0)2/204 14 18		
Comments	23 activities/projects		

ITS Classification					NUMBER of Projects			
Area	Level 1	Level 2	Level 3	Level 4	FEDERAL	FLEMISH	WALLOON	BRUSSELS
Optimal Use of road traffic and travel data	Public Transport services	Public Transport Management			1		1	1
		Demand Responsive and Shared Transport					4	
		Public Transport Electronic Payment			1	1	1	
		Communication Systems				2		
	Traveller Information Services	Pre-trip Information	Internet Journey Planning and phone line	Trip Planning	1	2	1	
			Support Smart phones based Journey Planning					
			TV/Radio				1	
			Kiosks pages					
			Social Media / Social Data functions					
		On-Trip Information	Mobile Internet/Wireless page		1			2
			Radio Roadside variable Message Signs					1
			Public transport & multi-modal information displays					2
			In-vehicle Systems / navigation and route guidance			1		
			Social Media / Social Data functions					
		Travel Services Information						

2.2 PROJECTS/ACTIVITIES BY THE FEDERAL AUTHORITY

2.2.1 *Multimodal e-ticketing for all public transports*

Priority area		**Optimal use of road, traffic and travel data**
Level 1		Public Transport services
Level 2		Public Transport Electronic Payment
Level 3		-
Level 4		-
Activity/project		**Multimodal e-ticketing for all public transports**
Description		Multimodal e-ticketing makes it possible : 1. to buy 1 ticket online that can be used on multiple transport modes, and 2. to directly download transport contracts on the Mobib card (at a counter, automatic vending machine, conductor's PDA, Internet with or without card reader). Details : 1. On the SNCB-NMBS website customers can buy a number of multimodal products to travel in Belgium: - SNCB-NMBS season tickets ("traincards") combined with STIB-MIVB, De Lijn and TEC - Ticket to/from Charleroi Airport: with this e-Ticket you travel to Charleroi Station where you can take a TEC-bus - Event tickets for festivals like Rock Werchter: owners of a festival ticket can get a ticket for the train and bus via the SNCB-NMBS website. 2. The Mobib card is being developed and will give the possibility to customers to renew their multimodal season tickets (including the operators participating to the Mobib project) and buy tickets on the SNCB-NMBS Internet-site, at counters, at automatic vending machines and to download them on their Mobib card with or without card reader.
Period		1. Already possible. 2. Mobib: 2012 -2013.
Major milestones		2012: Launch of Mobib at SNCB-NMBS, development of the different sales channels and acceptance of Mobib card; 2013: Integration of the chip card reader in the SNCB-NMBS Internet portal; Integration of the T-purse (electronic wallet for transport) on the Mobib card; Integration of tickets in the Mobib offer. 2014: Integration of tickets in the Mobib offer is effective with STIB (bus/tram operators Brussels) and in progress with the other bus/tram operators
Financing		SNCB-NMBS
Related co-operation activities with other member states		Limited cooperation with neighbour railway undertakings for transborder season tickets.
Expected achievements		Ease of use for customers: only one ticket/traincard for different transport modes, possibility to buy them on the Internet; Improve service to customers: Mobib becomes a common support for SNCB-NMBS, De Lijn and STIB-MIVB fare tickets.
Further comments		-
Contact person(s)		Patricia LAMBY - patricia.lamby@b-rail.be - +32 2 528 82 83
If applicable	Interoperability issues addressed	Use of a single support (chipcard) for the different types of public transport as well as certain connected services, e.g. use of parking facilities, rental cars (Cambio), bikes (Villo), …
	Remaining challenges on interoperability	1. Format of the SNCB-NMBS e-ticket is not accepted by all transport companies; therefore the online offer is limited. 2. Implementation of the Mobib card by other transport companies (harmonize work plans and functionalities).
	Compatibility issues addressed	Compatibility of supports and services
	Remaining challenges on compatibility	Development of remote loading enabling to offer one Single Point of Service.
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.2.2 *Optimization of connections among (public) transportation providers: ARIBUS*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport Services		
Level 2	Public Transport management		
Level 3	-		
Level 4	-		
Activity/project	**Optimization of connections among (public) transportation providers: ARIBUS**		
Description	The current Aribus optimizes connections for travellers by adding a wait time for buses if necessary. The arriving version optimizes connections among various means of (public) transport.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	Automated version since 2000. New web version pilot 09/2011.		
Activity/project scope	☒ National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	The objective of Aribus is optimizing connections among (public) transportation providers. The new Aribus is an open system, prepared to operate as a platform for centralizing and distributing real time data from / for the transportation companies and offer the possibility to define assured connections.		
Milestones	2000: Release automated Aribus 2007: Start of centralisation 2008: Analysis new Aribus project 2011: Implementation new Aribus		
Resources	+/- € 2.000.000 (total estimated investment cost for all parties involved)		
Lead stakeholders	Infrabel, National Railway Infrastructure Manager, Marcel Broodthaersplein 2, 1060 Brussels, Mr L. Lallemand		
	NMBS-SNCB, National Railway Operator, Hallepoortlaan 40, 1060 Brussels, Mr E. De Ganck		
	SRWT (TEC), Bus/tram operator, 96 avenue Gouverneur Bovesse, 5100 Jambes, Mr M. Favay		
	MIVB-STIB, Public transport Brussels, Koningsstraat 76, 1000 Brussels, Mr A. Flausch		
	VVM (De Lijn), Bus/tram operator, Motstraat 20, 2800 Mechelen, Mr R. Kesteloot		
Were specifications and standards applied?	☒ yes	☐ no	Open standard exchange formats are used for communicating and exchanging schedules and real-time data. Beltac, XML, ...
Related co-operation activities with other Member States	There's no specific co-operation with other Member States. Aribus is an open web-based system, so it is possible to co-operate.		
Further comments concerning interoperability, compatibility and continuity of services	Aribus is a web-based open system for optimizing connections. After exchange of timetables, every operator controls its own vehicles and can define automated waiting times (connections), dependent on real-time information.		
Further comments	-		

2.2.3 *Railway real-time Information service: Rail-time*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Traveller Information Services		
Level 2	On-Trip Information		
Level 3	Mobile Internet/Wireless page		
Level 4	-		
Activity/project	**Railway real-time Information service: Rail-time**		
Description	Real-time information on train service via a website.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	Project started 12/2008 – first release website 26/02/2009		
Activity/project scope	☒ National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	Main objectives of Railtime website: 1. Inform passengers on Belgian train network in real time about their train schedule. 2. Make the available real time data more reliable. Expected achievements: 1. Inform travellers with the available data (real time)anywhere and anytime 2. Improve the quality of the available data by orienting operational structures towards client information		
Milestones	MS1: 26/01/2009 release 1 of website with real time train info MS2: 04/2009 release 2 of website and release of mobile website MS3: 06/2009 release 3 of website: new look – Railtime is now a “brand” for travellers information – more reliable train info MS4: 09/2009 release 4 of website: website was made more usable and accessible MS5: 01/2010 release 5 of website: train info not only in real time but also history and planning. New module to inform about disruptions on the network. MS6: 11/2010 release 6 of website: real time route planning, taking in account al disruptions in calculating real time routes. 2010 English en German version MS7: 12/2011 release 7: better info on cancelled trains, better info on deviated trains and website will retain favourites. The website will now function based on web services. 2011 The app is available for iPad, iPhone, Android Tablet, Android Phone and Windows Phone 7. 2014 Transfer from Infrabel to SNCB/NMBS in progress		
Resources	Approximate investments (3 years): € 2 500 000		
Lead stakeholders	Passengers on Belgian Rail Network		
	NMBS/SNCB, train operator on Belgian Network Infrabel, network manager		
Were specifications and standards applied?	☒ yes	☐ no	GTFS (Google Transit Feed Specification), xhtml 1.0 strictl, xml, CSS (cascading style sheets)
Related co-operation activities with other Member States	There has not been a specific cooperation with other member states. Though, there has been contact with member states. - To establish a benchmarking - There is an agreement on exchanging real time data (Europe T rails)		
Further comments concerning interoperability, compatibility and continuity of services	In order to obtain compatibility, there has been chosen to work with web services. The information now available on Railtime will so be exportable to other media or partners. We believe it is still a challenge to obtain interoperability. With data available via web services, any project with complete interoperability as scope can reuse our data. Another challenge is to integrate real time passengers’ info in traffic management of the future. Traffic management of the future is aimed to be intelligent and fully integrated, so should passengers info be.		
Further comments	http://www.railtime.be or http:www.railtime.be/mobile. And soon available in the Apple Appstore.		

2.2.4 *Door-to-door multimodal route planner*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Traveller Information Services		
Level 2	Pre-trip Information		
Level 3	Internet Journey Planning and phone line		
Level 4	Trip Planning Support		
Activity/project	**Door-to-door multimodal route planner**		
Description	An information system on a travel trip which includes all the modes and which is oriented on the dissemination current, integrated and objective information on the trip from door to door. This system includes the schedule and planned and unplanned deviations from the schedule, the ability to carry bikes, disruptions, public transport depends on demand, parking facilities, taxis, road journeys with travel time and possible congestion, ...		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2006		
Activity/project scope	☒ National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To give to the traveler a door-to-door multimodal information before and during his journey and to allow him to easily access this information via modern means of communication.		
Milestones	2006: Launch of a door-to-door route planner (RP) 2009: Real-time information introduced into the RP. Possibility to request a schedule and receive departing RP information via SMS on his train. 2010: Smartphone applications and mobile version, iPhone, ... 2011: Information on incidents introduced in RP		
Resources	Approx.1 million euros.		
Lead stakeholders	Customers		
	Federal Public Service (obligation of the SNCB-MNBS management contract, art. 40)		
	Regional transport companies (TEC, De Lijn, STIB-MIVB)		
Were specifications and standards applied?	☒ yes	☐ no	Hafas specifications (product HACON) used in many European countries (Germany, Austria, Switzerland, Denmark, soon SNCF ...).
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	Main challenges: - Quality of Real Time Information (RTI) - Cars RTI.		
Further comments	www.sncb.be ; m.sncb.be		

2.3 PROJECTS/ACTIVITIES BY THE FLEMISH AUTHORITY

2.3.1 *Public transport (de Lijn) data exchange service*

Priority area		**Optimal use of road traffic and travel data**
Level 1		Public Transport Services
Level 2		Communication Systems
Level 3		-
Level 4		-
Activity/project		**Public transport (de Lijn) data exchange service**
Description		Data exchange with interested organisations: By means of a license agreement data can be used by others. This service is offered by web services and real-time info is incorporated. In the near future it will be possible to sign the agreement online via our website.
Period		2012-2013
Major milestones		none
Financing		No extra financing needed
Related co-operation activities with other member states		Any other organisation can ask for permission to use the data
Expected achievements		integration of the available data by data seekers
Further comments		-
Contact person(s)		Stijn van Oostveldt (Stijn.vanoostveldt@delijn.be; 015 40 89 48)
If applicable	Interoperability issues addressed	Interoperability and compatibility constitutes the sole responsibility of the user
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.3.2 *Public Transport (de Lijn) - Plugin route planner & sms-ticketing*

Priority area		**Optimal use of road, traffic and travel data**
Level 1		Public transport services
Level 2		Communication Systems
Level 3		-
Level 4		-
Activity/project		**Public Transport (de Lijn) - Plugin route planner & sms-ticketing**
Description		As of 2015 the installation of our plug-in route planner will be made easier. There will be a new way to install the plug-in route planner by means of an I-Frame. This ensures the installation will be much easier than before. The professional use and installation will remain available. With the sms-ticket travellers are offered a cheaper alternative, thereby also freeing up time for the bus driver when making a stop. Since 2007 the sms-ticketing-system is a growing success. In 2014 De Lijn aims to sell more than 10 million sms-tickets.
Period		2014-2015
Major milestones		-
Financing		Marketing and ICT
Related co-operation activities with other member states		Any other organisation which is interested in implementing our route planner on their website
Expected achievements		More intensive use of the plug-in route planner
Further comments		-
Contact person(s)		Stijn van Oostveldt (Stijn.vanoostveldt@delijn.be; 015 40 89 48) Tim Tilsley (tim.tilsley@delijn.be; 015 44 09 35)
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.3.3 *Real-time traffic information services to make it comprehensible to EU users*

Priority area		**Optimal use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		On-trip Information
Level 3		In-vehicle Systems/navigation and route guidance, …
Level 4		-
Activity/project		**Real-time traffic information services to make it comprehensible to EU users**
Description		To reinforce the realtime traffic information and to make it comprehensible to EU users: Traffic information services are already widely deployed in Flanders. There is a public service (www.verkeerscentrum.be) as well as several private service providers active. The information is spread through different channels like VMS, Radio, RDS-TMC, Internet, mobile Internet and G3/GPRS. In order to be able to foresee information services for all of Europe, the public operator is foreseeing to implement DATEX II, so that service providers can use the information to distribute trough their proper channels.
Period		2013-2017
Major milestones		New multilingual website, DATEX II service implemented,
Financing		300K euro
Related co-operation activities with other member states		Easyway activity, DATEX II standards, the service is available.
Expected achievements		To have a broader European reach of the information brought by the Flemish traffic center
Further comments		-
Contact person(s)		Kristof Smet kristof.smet@mow.vlaanderen.be +32/3/2249629
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.3.4 *Public transport (de Lijn) route planner via Website*

Priority area		**Optimal use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		Pre-trip Information
Level 3		Internet Journey Planning and phone line
Level 4		Trip Planning Support
Activity/project		**Public transport (de Lijn) route planner via Website**
Description		New website with new route planning opportunities The new website focuses on the route planning because this is the main reason people visit the website. There will be graphic improvements and new features, example: highly detailed cartographic information. In 2015 the native apps of De Lijn will be refurbished. The look-and-feel as well as the user experience will match and resemble the new website. Route planning will become synchronized. For example: customers planning a route at home using their tablet, will continue to be informed on-route via their smartphone.
Period		2014-2015
Major milestones		-
Financing		Marketing
Related co-operation activities with other member states		No structural cooperation with other member states on this issue
Expected achievements		More intensive use of our website and focus on the route planner / routeplanner is available
Further comments		
Contact person(s)		Stijn van Oostveldt (Stijn.vanoostveldt@delijn.be; 015 40 89 48)
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	Adobe® Flash® Player might be necessary in some cases to activate sophisticated applications
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.3.5 *Registration-Ticketing-onBoard computer (ReTiBo-project De Lijn)*

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**Electronic Registration of passengers 65+ and employees (part of De Lijn ReTiBo-project)**
Description	In accordance with the Belgian one-ticket-for-all the public transport operator De Lijn is executing the ReTiBo-program (Registration, Ticketing, onBoard computer).This program will introduce new technologies on the vehicles that is compliant with the MOBIB-cards. The first contracts that can be used are the free contract for the 65+ and some employees on a MOBIB-chipcard. Impact for the clients The clients need to request the card and must register on every trip on the vehicles with the ReTiBo equipment. Equipment For the use of the card the vehicles are equipped with an onboard computer, a new driver console and validators. The driver console can also communicate with the old (magnetic) ticketing system for a fluid transition.
Period	2009 : start project definition ReTiBo 2009-2010 : writing and publishing the specifications 2010-2011 : tendering 2012-2013 : software and hardware development/implementation 2013 & 2014 : deployment starting in September 2013 2014 : end of first wave for current clients
Expected achievements	Implementation of contracts on the MOBIB-chipcard. Issuing MOBIB-chipcards to >1.300.000 clients of De Lijn. Gaining experience with the system both on-vehicle and I the back office. Anonymous registration of the movements of our passengers for analytical purposes and management.
Major milestones	September 2013: start of distribution of the cards September 2014: all current 65+ clients who requested a MOBIB-card have one
Financing	-
Contact person(s)	Etienne Hemerijckx - etienne.hemerijckx@delijn.be – 015 408 600

2.3.5.1 Installation and placement of AVM's for the MOBIB-chipcard and MOBIB-tickets (part of De Lijn ReTiBo-project)

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**Installation and placement of AVM's for the MOBIB-chipcard and MOBIB-tickets (part of De Lijn ReTiBo-project)**
Description	In accordance with the Belgian one-ticket-for-all the public transport operator De Lijn is executing the ReTiBo-program (Registration, Ticketing, onBOard computer). This program will introduce new technologies on the vehicles that is compliant with the MOBIB-cards. To improve the commercial speed, a total of 195 automatic vending machines (AVM's) will be placed to provide tickets to the passengers and also allow current MOBIB-chipcard users to upload contracts to their card. All payments on the AVM will be electronic. No cash payment is possible. Impact for the clients The clients with a MOBIB-chipcard need to register on every trip on the vehicles with the ReTiBo equipment.
Period	2014: prototype 2015: start installation of AVM 2016: finish installation of AVM
Expected achievements	Installation of 195 AVM. Point of sale for MOBIB-tickets and loading point for the MOBIB-chipcards. A better commercial speed due to fewer sales on the vehicles. Better service (24/7) for all the passengers.
Major milestones	2014 : production and evaluation of prototype 2015 : start of installation 2016 : end of installation
Financing	-
Contact person(s)	Etienne Hemerijckx - etienne.hemerijckx@delijn.be - 015408600

2.3.5.2 Installation of the ReTiBo equipment on the vehicles (part of De Lijn ReTiBo-project)

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**Installation of the ReTiBo equipment on the vehicles (part of De Lijn ReTiBo-project)**
Description	In accordance with the Belgian one-ticket-for-all the public transport operator De Lijn is executing the ReTiBo-program (Registration, Ticketing, onBOard computer). This program will introduce new technologies on the vehicles that is compliant with the MOBIB-cards. The first contracts that can be used are the free contract for the 65+ and some employees on a MOBIB-chipcard. As part of the ReTiBo program all the vehicles of De Lijn and the subcontractors will be equipped. The equipment exists of an onboard computer, validators at every access door and a driver console which allows the driver to interact with the system. In the first phase the new equipment is interfaced with the existing magnetic ticketing system, the driver console gives access to both the new and old ticketing system. Impact for the clients The clients with a MOBIB-chipcard need to register on every trip on the vehicles with the ReTiBo equipment.
Period	2009 : start project definition ReTiBo 2009-2010 : Making and publishing the specifications 2010-2011 : Tendering 2012-2013 :software and hardware development/implementation 2013 & 2014 : installation on all the vehicles 2014 : end of installation of all the current vehicles
Expected achievements	Installing the ReTiBo-platform on all the vehicles. The vehicles are equipped with a MOBIB-card compliant system for further use of the MOBIB-cards. Gaining experience with the system both on the vehicle and in the back office. The on board computer acts as a hub for all the electronic equipment on the vehicle (eg. Traffic light influence by SRR)
Major milestones	2013 : start of installation October 2014 : all current vehicles are installed (busses, trams)
Financing	-
Contact person(s)	Etienne Hemerijckx - etienne.hemerijckx@delijn.be - 015408600

2.3.5.3 Integration of the SRR with the onboard computer (part of De Lijn ReTiBo-project)

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**Integration of the SRR with the onboard computer (part of De Lijn ReTiBo-project)**
Description	With the installation of an onboard computer and the traffic light influencing the integration of these 2 systems is tested in a POC in the Brussels region. The system of MOW is interfaced with the onboard computer. Impact for the clients The current system of traffic light influencing can be replaced with a more reliable technology of SRR. The commercial speed can be improved by making green waves for the public transport. Equipment The traffic lights need to be equipped with a SRR to enable communication with the vehicles.
Period	2014: POC in Brussels Region
Expected achievements	Installing the ReTiBo-platform on all the vehicles. The vehicles are equipped with a MOBIB-card compliant system for further use of the MOBIB-cards. Gaining experience with the system both on-vehicle and back office The on board computer acts as a hub for all the electronic equipment on the vehicle (eg. Traffic light influence by SRR)
Major milestones	2013 : start of installation October 2014 : all current vehicles are installed (busses, trams)
Financing	-
Contact person(s)	Etienne Hemerijckx - etienne.hemerijckx@delijn.be - 015408600

2.3.5.4 First interoperable contract Jump (part of De Lijn ReTiBo-project)

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**First interoperable contract Jump (part of De Lijn ReTiBo-project)**
Description	For the use of one card for the users of the public transport in Belgium interoperable contracts are used on the card. A first interoperable contract is provided for the Brussels Region with the implementation of the Jump contract on the MOBIB-chipcard. Impact for the clients The passengers can use one ticket the busses, trams and trains of the MIVB, De Lijn and NMBS. Equipment The vehicles need to be equipped with MOBIB-chipcard readers. In the back end a central system is implemented to transfer the necessary information between operators.
Timescale	2014: POC in Brussels Region
Objectives and expected achievements	Prove interoperability between all the operators of public transport in Belgium. Make it possible to remove the old magnetic system in the region where interoperable use of a contract is possible.
Milestones	2014 : specification and development February 2015 : implementation of the Jump contract
Resources	-
Lead stakeholders	Etienne Hemerijckx - etienne.hemerijckx@delijn.be - 015408600

2.3.5.5 Additional ICT tools for the drivers, dispatching and planning

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Public Transport services
Level 2	Public Transport Electronic Registration
Level 3	-
Level 4	-
Activity/project	**Additional ICT tools for the drivers, dispatching and planning**
Description	The onboard computer and the driver console enable data communication with the back-end. This communication will be used to make it easier for the driver to do the trip. Real-time info can be communicated more easily to the driver. The driver can also receive additional information to complete his trip in a more efficient way. Impact for the clients The driver can fulfill his trip in a more efficient way. Secondary in a later phase the relevant information (e.g. delays, altered routes) can be made available for the customers. Equipment The ReTiBo equipment must be operational on the vehicle. The software must be installed on the vehicles and the back-end.
Timescale	2014: POC in Brussels Region
Objectives and expected achievements	Improve the commercial speed. Improve the availability of real time information. Reduce the workload for both the driver and back office in case of a last minute change.
Milestones	2014 : specifications, installation and testing of the back end software 2015 : start installation of the software on the vehicles 2017 : end of the installations and integration
Resources	-
Lead stakeholders	Yvan Strubbe – yvan.strubvbe@delijn.be – 015 408 869

2.3.6 *Travel Time Information Services to better plan and route journeys on the road network*

Priority area		**Optimal use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		Pre-trip Information
Level 3		Internet Journey Planning and phone line
Level 4		Trip Planning Support
Activity/project		**Travel Time Information Services to better plan and route journeys on the road network**
Description		To provide users with realtime travel time information to better plan and route journeys: Travel time information services inform travellers (via their terminals or other equipment) about travel times on segments of the road network, complementary to the traffic situation, thus enabling travellers to optimize and better anticipate their journey ahead, both pre –trip and on-trip. Examples of user interfaces are - roadside information panels (VMS), - websites, - radio's/TV's, - mobile phones, - navigation computers, etc.
Period		2013-2017
Major milestones		To bring travel times for the main road network
Financing		500 k euro /year
Related co-operation activities with other member states		-
Expected achievements		To have the whole main network covered by 2017.
Further comments		2014: the main ringways of Brussels and Antwerp are available.
Contact person(s)		Jozef Cannaerts jozef.cannaerts@mow.vlaanderen.be +32/3/2249604
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

2.4 PROJECTS/ACTIVITIES BY THE WALLOON AUTHORITY

2.4.1 *Dynamic carpooling*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport services		
Level 2	Demand Responsive and Shared Transport		
Level 3	-		
Level 4	-		
Activity/project	**Dynamic carpooling**		
Description	La DGO2 a mené une étude de faisabilité relative à la mise en place d'un système de covoiturage dynamique. Ce service doit pouvoir s'intégrer dans une offre de service plus vaste, prenant en compte l'ensemble des modes de transport disponibles pour guider l'utilisateur de son point d'origine à sa destination et ce en fonction de ses préférences. Ainsi, ce service se positionne en complément des services existants en matière de transport public. L'étude est terminée et le système est actuellement en phase de test.		
State of implementation	☐ Implemented	☒ Planned	
Timescale	2010 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: *Please specify*
Type of project organisation	☒ Public	☐ Private	☐ Other: *Please specify*
Objectives and expected achievements	Le système de covoiturage dynamique vise à fournir une offre en temps réel aux usagers covoitureurs, grâce à l'utilisation des technologies GPS et de téléphonie mobile.		
Milestones	-		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Mobility and Hydraulic Ways – Direction of the Planning of Mobility – Mr Xavier GEORGE.		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

2.4.2 *Carpool service for journeys to work: "Carpoolplaza"*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport services		
Level 2	Demand Responsive and Shared Transport		
Level 3	-		
Level 4	-		
Activity/project	**Carpool service for journeys to work: "Carpoolplaza"**		
Description	En Wallonie, le covoiturage est le deuxième mode de transport utilisé dans le cadre des déplacements domicile-travail (4,8 % en Région wallonne). L'intérêt du covoiturage est qu'il permet de partager les coûts de transport, mais il permet également de palier au souci de manque de places de parking des entreprises. Afin d'augmenter la part du covoiturage en Wallonie et au vu de son potentiel énorme, la Région wallonne soutient l'asbl Taxistop qui propose un service de covoiturage domicile-travail appelé « Carpoolplaza » tout en étant active dans la promotion et la sensibilisation de ce mode de déplacement. Carpoolplaza est une banque de données de covoiturage spécialisée dans les déplacements domicile-travail. Cette banque de données regroupe à l'heure actuelle plus de 55.000 dossiers de covoiturage liés à une puissante application de croisement de données sur base de critères géographiques, horaires et de convivialité. www.carpoolplaza.be est aussi et surtout un site Internet d'informations complet et fouillé sur tout ce qu'il faut savoir sur le covoiturage.		
State of implementation	☒ Implemented		☐ Planned
Timescale			
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: *Please specify*
Type of project organisation	☒ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	Aider les usagers à trouver un partenaire de covoiturage pour les déplacements de et vers le travail		
Milestones	-		
Resources	-		
Lead stakeholders	Asbl Taxistop – Mme Sandrine VOKAER – info@taxistop.be Public Service of Wallonia (SPW) – General Directorate Mobility and Hydraulic Ways – Direction of the Planning of Mobility – Mr Philippe LORENT - philippe.lorent@spw.wallonie.be - (+32) 081/773096. -		
Were specifications and standards applied?	☐ yes	☒ no	Comment:
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	www.carpoolplaza.be		

2.4.3 *Schoolpool service to carpool to and from school*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport services		
Level 2	Demand Responsive and Shared Transport		
Level 3	-		
Level 4	-		
Activity/project	**Carpool service for journeys to work: "Carpoolplaza"**		
Description	Il s'agit d'une variante du covoiturage classique. Le schoolpool sollicite les étudiants et parents d'écoliers qui viennent seuls en voiture, à partager celle-ci pour se rendre à l'école. Autrement dit, faire du covoiturage vers l'école. Le site web offre, en adéquation avec le public des écoles, des parents et des enfants, une meilleure ergonomie et une plus grande facilité d'utilisation. Le système propose des fonctionnalités importantes au niveau de la visualisation des « schoolpooleurs » à destination de l'école, de la sécurité des données ou encore de la prise de contact entre utilisateurs.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2011 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: *Please specify*
Type of project organisation	☐ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	Covoiturage vers l'école		
Milestones	-		
Resources	-		
Lead stakeholders	Asbl Taxistop – Mme Sandrine VOKAER - info@taxistop.be		
	-		
	-		
Were specifications and standards applied?	☐ yes	☒ no	Comment: -
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	www.schoolpool.be		

2.4.4 *Carsharing « Cambio »*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport services		
Level 2	Demand Responsive and Shared Transport		
Level 3	-		
Level 4	-		
Activity/project	**Carsharing « Cambio »**		
Description	Le partage de voitures consiste en un système où plusieurs voitures à différents endroits (ou dans différentes villes) sont à la disposition des personnes affiliées au système de partage de voitures (membres). Les membres d'une organisation de partage de voitures ne doivent pas s'occuper des places de parking qui d'office sont réservées. Ils paient une mise en service et suivant leur consommation, une facture est envoyée mensuellement. L'organisation de partage de voitures s'occupe du reste.		
State of implementation	☒ Implemented		☐ Planned
Timescale			
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: *Please specify*
Type of project organisation	☐ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	Diminution des voitures personnelles		
Milestones			
Resources			
Lead stakeholders	Asbl Taxistop – Mme Sandrine VOKAER - info@taxistop.be		
Were specifications and standards applied?	☐ yes	☐ no	Comment:
Related co-operation activities with other Member States			
Further comments concerning interoperability, compatibility and continuity of services			
Further comments			

2.4.5 *Ticketing service in public transport (TEC): TEC it easy*

Priority area	**Optimal use of road, traffic and travel data**	
Level 1	Public Transport services	
Level 2	Public Transport Electronic Payment	
Level 3	-	
Level 4	-	
Activity/project	**Ticketing service in public transport (TEC): TEC it easy**	
Description	« TEC IT EASY » est une nouvelle technologie de billettique qui a pour objectif de rendre simple la vie du client. Ce projet concerne tous les secteurs de l'entreprise et représente un vrai défi technologique. Il fait appel aux technologies les plus modernes développées pour le transport public et il s'appuie sur la nouvelle plate-forme embarquée en cours d'installation au sein du Groupe TEC. A terme, l'ambition du Groupe TEC est que la carte TEC IT EASY donne accès à des solutions de mobilité alternatives, telles que les voitures partagées, les parking-relais (P+R), les vélos en libre-service…TEC IT EASY implique également une réflexion sur les différents canaux de vente et outils de rechargement possibles des cartes sans contact. Au 1er janvier 2014, 500.000 clients devront disposer de leur nouvelle carte à puce portant la mention MOBIB. Le groupe TEC va donc s'employer à trouver les meilleures solutions afin d'assurer une réelle fluidité à cette distribution, de façon à éviter les mouvements de cohue dans les Maisons de la Mobilité. C'est la raison pour laquelle cette distribution commencera dès le mois de janvier 2012. Elle concernera alors à ce moment les abonnés. En 2013, ce seront les Lynx Junior et les clients de plus de 65 ans. Viendront ensuite les voyageurs occasionnels. <u>Impact pour les clients</u> Concrètement, demain, les clients réguliers et occasionnels seront équipés d'une carte à puce MOBIB et personnalisée avec leur profil tarifaire. Ils pourront y (re)charger tous les titres de transport TEC et multimodaux. <u>Équipements</u> Le passage à la télébillettique va nécessiter l'installation de nouveaux équipements et impliquer de nombreux changements. Les canaux de vente vont vivre une (r)évolution: renouvellement des logiciels et périphériques aux guichets, développement de la vente par automates, rechargement par Internet, augmentation des points de vente externes (pour rechargement de la carte ou vente de tickets jetables). Dans les bus, la vente de billet papier via le nouveau pupitre du chauffeur (en cours d'installation) sera maintenue. Mais ce sont de nouveaux valideurs sans contact qui seront connectés à la plate-forme embarquée et remplaceront l'oblitérateur PRODATA actuel. Enfin, pour les contrôleurs et pour les services légers de multimodalité (proxibus, événements…), des outils portables permettront la vente, la validation ou le contrôle des cartes sans contact. Pour garantir la disponibilité de l'ensemble de ces équipements, un système informatique central, appelé back-office, sera mis sur pied. Il permettra leur paramétrage, supervisera leur disponibilité technique, assurera la sécurisation des données, fournira les rapports commerciaux et comptables, pilotera les canaux de vente ou la vente à distance et organisera les transferts financiers entre entreprises impliquées. La technologie sans contact sous-jacente à l'ensemble du système télébillettique reposera sur le standard Calypso présent à Bruxelles et dans de nombreuses villes en Europe et dans le monde. Lancement de la solution de télébillettique en février 2015 et non plus en septembre 2014 (ce projet est interopérable et le TEC dépend de l'implémentation à la STIB-MIVB/SNCB-NMBS et De Lijn).	
State of implementation	☐ Implemented	☒ Planned
Timescale	2010: définition du projet (validation des objectifs, périmètre, organigramme, planning du projet et première analyse coûts/bénéfices) + étude	

	2010 - 2013: mise en œuvre 2011: définition des spécifications + appels d'offre 2012 & 2013: déploiement 2014: lancement officiel de TEC IT EASY et retrait des équipements PRODATA		
Activity/project scope	☐ National	☒ Regional/Local	☐ Other: *Please specify*
Type of project organisation	☐ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	technologie de billettique qui a pour objectif de rendre simple la vie du client ; développement de l'intermodalité à la fois entre les différentes sociétés de transport en commun mais aussi avec les autres modes de déplacements		
Milestones	-		
Resources	-		
Lead stakeholders	Groupe TEC - Mr Martin DUFLOU - martin.duflou@tec-wl.be - (+32) 081/322732		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:-
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

2.4.6 *Public transport fleet management system (TEC): vehicle localization for real time passenger information*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Public Transport Services		
Level 2	Public Transport Management		
Level 3	-		
Level 4	-		
Activity/project	**Public transport fleet management system: vehicle localization for real time passenger information**		
Description	Système d'Aide à l'Exploitation (SAE) : Une fonction de localisation des véhicules est en cours de développement. Elle visera à fournir aux voyageurs une information en temps réel sur l'heure de passage aux arrêts, tenant compte notamment des conditions de circulation ou de perturbations sur le réseau. Le partage de ces informations avec d'autres usagers de la route n'est pas à l'ordre du jour actuellement. Trois TEC sur 5 sont équipés d'un SAE. Systèmes d'Aide à l'Exploitation et à l'Information Voyageurs (SAEIV) : Le Groupe TEC lance actuellement une fiche projet afin de définir les fonctionnalités d'un SAEIV commun aux 5 TEC.		
State of implementation	☐ Implemented	☒ Planned	
Timescale	2017		
Activity/project scope	☐ National	☒ Regional/Local	☐ Other: *Please specify*
Type of project organisation	☐ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	L'échange d'informations entre les véhicules et les infrastructures fixes, à destination des voyageurs et des chauffeurs		
Milestones	-		
Resources	-		
Lead stakeholders	Groupe TEC		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:-
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

2.4.7 *Radio Data System (RDS) and Traffic Message Channel (TMC) service of the traffic centre "PEREX"*

Priority area	**Optimal use of road, traffic and travel data**		
Level 1	Traveller Information Services		
Level 2	Pre-trip Information		
Level 3	TV/Radio		
Level 4	-		
Activity/project	**Radio Data System (RDS) and Traffic Message Channel (TMC) service of the traffic centre "PEREX"**		
Description	Basic service for traffic information based on WHIST data and developed by the regional public authority in charge of the road network in Wallonia		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2002 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To provide a basic traffic information service free of charge directly to all road users.		
Milestones	1995: Development of WHIST system 2002: Launching RDS-TMC service 2011: Integration of information from the other Belgian Regions in PEREX TMC-service 2013: New release of the Belgian location table (2.8)		
Resources			
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	RTBF – French-speaking public broadcaster.		
	-		
Were specifications and standards applied?	☒ yes	☐ no	Comment: RDS-TMC is based on a standardised list of messages and on national location tables.
Related co-operation activities with other Member States	RDS-TMC has been developed in the frame of European projects, ensuring the use of common standards: use of Alert C message list, approval of location tables by TISA		
Further comments concerning interoperability, compatibility and continuity of services	Cross-border RDS-TMC remains an issue.		
Further comments	-		

2.4.8 *Point-to-Point multimodal route planner « Infotec.be »*

Priority area	**Optimal use of road, traffic and travel data**
Level 1	Traveller Information Services
Level 2	Pre-trip Information
Level 3	Internet Journey Planning and phone line
Level 4	Trip Planning Support
Activity/project	**Point-to-Point multimodal route planner « Infotec.be »**
Description	Website « Infotec.be » + TECxto **Site Infotec.be** Initié et créé en mars 2004 par la SRWT pour l'ensemble des TEC, le site www.infotec.be a été le premier site en Belgique permettant la recherche d'itinéraires de point à point incluant tous les transports en commun belges (SNCB-NMBS, STIB-MIVB, De Lijn et TEC) ainsi que la marche à pied. Le site diffuse aussi de l'information sur tous les modes de déplacement alternatifs à la voiture. Ses caractéristiques sont les suivantes: • Site permettant de déterminer un itinéraire incluant tous les moyens de transport du pays, en ce compris la marche à pied de porte à porte ; • Recherche assistée de recherche d'horaire ligne ; • Calcul d'itinéraires de localité à localité ; • Recherche assistée du calcul du nombre de zones pour pouvoir établir le coût du voyage ; • Intégration des perturbations TECxto (voir ci-dessous). Au niveau de la fréquentation du site www.infotec.be, en 2010, 7.020.723 visites ont été comptabilisées contre 5.447.522 en 2009, 4.411.246 en 2008 et 448.485 l'année de lancement (2004). Situation future (à partir du printemps 2012) *Contexte interne:* Le projet de refonte du site infotec.be (version 3.0) consiste à poursuivre l'amélioration: • des informations proposées ; • de l'accès à ces informations ; • de leur présentation ; • des services proposés (en créant de nouvelles fonctionnalités). Il consiste également à simplifier la mise à jour du site de manière à ce qu'elle soit plus régulière et plus rapide. *Contexte externe:* Les Technologies de l'Information et de la Communication (TIC) font aujourd'hui partie intégrante de la vie quotidienne de la majorité des Wallons. Une version mobile du site www.infotec.be est donc envisagée. Une liste d'améliorations souhaitées par les clients pour www.infotec.be, notamment en matière d'accessibilité, de cartographie, d'information, de recherche d'itinéraires et d'horaires sera rencontrée dans la version 3.0. Une attention particulière sera portée à la communication des perturbations lors de périodes d'intempéries hivernales (le site a connu plus d'un million de visites au mois de décembre 2010). **Service TECxto** L'exploitation d'un réseau de transport public en voirie est confrontée à de nombreux aléas et des incidents indépendants de la volonté de l'exploitant peuvent surgir et modifier l'horaire et/ou le trajet des bus. Ce peuvent être des travaux, des accidents, des manifestations (braderies ou des courses cyclistes,…). La fiabilité des horaires et le respect des itinéraires sont fondamentaux pour assurer la qualité du service offert à la clientèle. Il est donc essentiel de mettre à disposition un système d'information le plus accessible possible pour le plus grand nombre. Le Groupe TEC a lancé le 23 octobre 2009 un système d'information à la clientèle par SMS dénommé TECxto. Ce service consiste à informer les clients des TEC des perturbations sur les lignes. TECxto Forfait permet de s'abonner via le 9222 pour recevoir pendant un an toutes les informations concernant la ou les ligne(s) régulièrement empruntée(s). TECxto Forfait coûte 0,30 € par an.TECxto Express fournit, en composant le 2442, l'information ponctuelle sur une ligne. TECxto Express coûte 0,15 € par SMS envoyé. Au 31 décembre 2010, 9.235 personnes étaient abonnées au service 9222. 473.709 SMS ont été adressés tout au long de l'année 2010. Remarquons l'extraordinaire trafic engendré par les intempéries exceptionnelles de décembre 2010: 4.827 abonnés supplémentaires entre la fin novembre et la fin décembre et 266.724 messages envoyés rien qu'en décembre. Le service ponctuel 2442 a, quant à lui, été sollicité 40.754 fois durant l'année 2010 et plus particulièrement 27.129 fois en décembre.

	Service d'e-mailing Le TEC Liège-Verviers utilise un logiciel qui lui permet de communiquer directement avec ses clients. Le voyageur qui souhaite recevoir une information par mail s'inscrit en remplissant un questionnaire reprenant un ensemble de données « clientèle » (lignes utilisées, titre de transport choisi, adresse,…). Ces diverses informations permettent de cibler les destinataires du courrier électronique qui leur sera adressé. En effet, certaines informations peuvent viser une partie choisie des voyageurs: déviations, parution de nouveaux fascicules horaires, implantation de nouveaux arrêts, modifications provisoires ou définitives de certains horaires ou de certains itinéraires… L'e-mailing présente donc l'avantage de ne pas encombrer la boîte de réception du client par des mails qui ne le concernent pas. Il offre aussi la certitude que l'information a circulé de façon ciblée et a atteint son but. Extension de ce service à tous les TEC à la mise en service du website www.infotec.be 3.0 au printemps 2012. La version 3.0 et le site mobile ont été lancés en juin 2013. La prochaine étape est l'arrivée de la géolocalisation des bus en temps réel sur la cartographie du site et ensuite le temps réel.		
State of implementation	☒ Implemented		☒ Planned
Timescale	2004 - www.infotec.be website 2009 - TECxto		
Activity/project scope	☐ National	☒ Regional/Local	☐ Other: *Please specify*
Type of project organisation	☒ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	Les objectifs du site infotec.be sont: 1. Améliorer l'information au voyageur, sa présentation et l'accessibilité à cette information: - notamment en cas de perturbations (prévisibles ou inopinées) sur le réseau (lors de perturbations importantes, présence de l'information en page d'accueil dans les deux heures, week-end y compris) ; - en offrant un accès plus direct aux informations régionales (telles que les perturbations, les actualités…) et aux informations qui intéressent directement les voyageurs (en fonction de leur profil) ; - en rendant le site accessible aux personnes souffrant d'un handicap (visuel, auditif ou moteur) et obtenir le label Anysurfer ; - en rendant le site accessible depuis les terminaux mobiles ; - en homogénéisant la présentation des informations publiées par les différents TEC et la SRWT. 2. Améliorer la qualité de service aux voyageurs en intégrant de nouvelles fonctionnalités dans le site: - un outil cartographique lors d'une recherche d'itinéraires ou d'horaires (ligne et arrêt) ; - le paiement de son abonnement en ligne (phase ultérieure liée à la mise en place du projet de nouvelle télébillettique) ; - l'inscription sur le site pour recevoir des informations par mail (perturbations, changement d'horaires…). 3. Faciliter la mise à jour du site: - en remplaçant le logiciel de gestion de contenu actuel par un logiciel plus simple à manipuler, plus convivial et disposant de plus de fonctionnalités. 4. Poursuivre la professionnalisation des relations avec la presse en créant un espace presse spécifique sur le site.		
Milestones	TECxto Forfait coûte 0,30 € par an TECxto Express coûte 0,15 € par SMS envoyé		
Resources	-		
Lead stakeholders	Groupe TEC - Mr Stéphane THIERY - stephane.thiery@tec-wl.be - (+32) 081/322820		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	www.infotec.be		

2.5 PROJECTS/ACTIVITIES BY THE BRUSSELS-CAPITAL AUTHORITY

2.5.1 *Real-time information service for the public transport (STIB/MIVB): Phoenix*

Priority area		**Optimal Use of road traffic and travel data**
Level 1		Public Transport Services
Level 2		Public Transport Management
Level 3		-
Level 4		-
Activity/project		**Real-time information service for the public transport (STIB/MIVB): Phoenix**
Description		Real-time information of the buses and trams in relation to the timetables, operated by STIB/MIVB “Networks” division
Period		2009-
Major milestones		Rollout
Financing		/
Related co-operation activities with other member states		/
Expected achievements		Obtain real-time information of the buses and trams in relation to the timetables
Further comments		-
Contact person(s)		Sébastien Goffin: goffins@stib.irisnet.be
If applicable	Interoperability issues addressed	/
	Remaining challenges on interoperability	/
	Compatibility issues addressed	/
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	/
	Remaining challenges on continuity of services	/

2.5.2 *Redefinition of the Internet strategy for Bruxelles Mobilité – Brussel Mobiliteit*

Priority area		**Optimal Use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		On-Trip Information
Level 3		Mobile Internet / Wireless page
Level 4		-
Activity/project		**Redefinition of the Internet strategy for Bruxelles Mobilité – Brussel Mobiliteit**
Description		Alteration of the website *www.bruxellesmobilite.be* - *www.brusselmobiliteit.be* Proposal and realization of a mobile website. This site provides users the possibility to check in real-time the traffic situation and the multimodal information services (Villo, Taxi's, Car parks, Cambio …) for the whole territory of the Region Brussels-Capital.
Period		Since march 2009 with a new version initially planned in 2012-2013. The scope of the project has changed into a redefinition of the Internet strategy.
Major milestones		End of 2012: Launch of the tender June 2013: Assignment of the mission July – August 2013: launch of the mission September 2014: End of the mission September – December 2014: Technical and functional analysis 2015: Launch of the tender for the realization of the Internet and mobile solutions 2016 and further: Evolution
Financing		Strategy: € 84.000,- Technical and functional analysis: € 60.000,- Realization first version (2015-2016): € 300.000,- Next versions: € 100.000,-/year
Related co-operation activities with other member states		/
Expected achievements		- Improve and increase number of communications in real time - Develop inter-modality - Better responses to needs (an evaluation of the Internet site is actually being undertaken)
Further comments		/
Contact person(s)		Marina Boreanaz: mboreanaz@mrbc.irisnet.be
If applicable	Interoperability issues addressed	Follow-up and improvement of data from existing ITS-tools is planned, whether internal data from Brussels Mobility mostly linked to road traffic (GMPV, OTAP…) or external data (interface with STIB-MIVB, SNCB-NMBS, Villo…).
	Remaining challenges on interoperability	Collect as much as possible information from different stake-holders in the field of mobility in Brussels

2.5.3 *Website and Apps for the public transport (STIB/MIVB)*

Priority area		**Optimal Use of road traffic and travel data**
Level 1		Traveller Information services
Level 2		On-Trip information
Level 3		Mobile Internet/Wireless
Level 4		-
Activity/project		**Real-time information service for the public transport (STIB/MIVB): Phoenix**
Description		Internet Website STIB-MIVB: *stib.be* and *mivb.be* and Smartphone applications for iPhone and Android : m.mivb.be or m.stib.be
Period		/
Major milestones		Launch mobile website and Android app 2010, iPhone app 2011, new website 2013
Financing		/
Related co-operation activities with other member states		No
Expected achievements		Providing real-time information about disruptions in journey planner
Further comments		/
Contact person(s)		Sébastien Goffin: goffins@stib.irisnet.be
If applicable	Problems with other public transport operators in journey planner	Problems with other public transport operators in journey planner
	Problems with data De Lijn, TEC in journey planner	Problems with data De Lijn, TEC in journey planner
	Problems with old browser versions (IE 7)	Problems with old browser versions (IE 7)
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	Permanent monitoring of availability
	Remaining challenges on continuity of services	Problems arise when number of visits increase during disruptions

2.5.4 *Informative urban furniture for the public transport (STIB/MIVB): Mupi's*

Priority area		**Optimal Use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		On-Trip information
Level 3		Public transport & multi-modal Information displays
Level 4		-
Activity/project		**Informative urban furniture for the public transport (STIB/MIVB): Mupi's**
Description		Mupi's (Mobilier urbain pour l'information): Advertising billboards with network and district maps at the entrance of the metro station, with information boards showing the next departures of the metro and explanations of major traffic disruptions if needed
Period		Begin: End 2011 Finish: Mid 2015
Major milestones		2012: The first ones installed at 7 stations 2014: The issuance of permits for 25 MUPI in Brussels City and the functioning of more than 90 MUPI (on a total of 140) in June 2014
Financing		Private funding by advertising (with generation of fixed revenues for STIB/MIVB)
Related co-operation activities with other member states		/
Expected achievements		Installing 140 MUPI's – Providing traffic information in real-time and corporate public transport information (e.g.: citizen campaigns of courtesy, renewal of ticket season for specific customers groups …) Promoting public transport by showing next departures of metro lines in real-time so that people spontaneous decide to use public transport thus attracting customers
Further comments		/
Contact person(s)		Jean-Michel Pochet: pochetjm@stib.irisnet.be
If applicable	Interoperability issues addressed	Relaying real-time information to the advertising company
	Remaining challenges on interoperability	Possibility to show next train departures at the smaller railway stations in Brussels
	Remaining challenges on compatibility	No
	Continuity of services issues addressed	Availability rate of 99% guaranteed by the advertising company on penalty of a fine
	Remaining challenges on continuity of services	Communicating information about traffic disruptions

2.5.5 *In board screens for the public transport STIB/MIVB (tram, bus, metro)*

Priority area		**Optimal Use of road traffic and travel data**
Level 1		Traveller Information Services
Level 2		On-Trip information
Level 3		Public transport & multi-modal Information displays
Level 4		-
Activity/project		**In board screens for the public transport STIB/MIVB (tram, bus, metro)**
Description		These screens gives on board the line number, destination, the name of the next three stops, the connections at the stop
Period		Start September 2006
Major milestones		In service on board the bus since September 2006, on board tram since August 2010
Financing		/
Related co-operation activities with other member states		No
Expected achievements		/
Further comments		/
Contact person(s)		Philippe Escoyez: escoyezph@stib.irisnet.be
If applicable	Interoperability issues addressed	/
	Compatibility issues addressed	/
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	/
	Remaining challenges on continuity of services	/

2.5.6 *Dynamic guidance and access to Parking Facilities*

Priority area	**Optimal Use of road traffic and travel data**		
Level 1	Traveller Information services		
Level 2	On-trip Information		
Level 3	Radio Roadside Variable Message Signs		
Level 4	-		
Activity/project	**Dynamic guidance and access to Parking Facilities**		
Description	Dynamic guidance to available parking facilities. These signs give information of how much places are still available in the public parking and for some transit parking's. The information is also given on the website. Actually, the project consists of 125 signs on the regional road network.		
State of implementation	X Implemented	☐ Planned	
Timescale	2007: Feasibility studies 2008: Public market 2009 - 2014: Implementation 2014 - 2015: Roll out		
Activity/project scope	☐ National	X Regional/Local Brussels-Capital authority	☐ Other: Please specify
Type of project organisation	X Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To distribute the available parking facilities to road users so they can alter their journey.		
Resources	€ 4.500.000,-		
Lead stakeholders	Brussel Mobiliteit - Bruxelles Mobilité		
Were specifications and standards applied?	X yes	☐ no	Interoperability for the exchange of the parking data with other systems
Further comments concerning interoperability, compatibility and continuity of services	Project will be altered to include VMSs		
Further comments	www.brusselmobiliteit.be - www.bruxellesmobilite.be		

3 PRIORITY AREA II: CONTINUITY OF TRAFFIC AND FREIGHT MANAGEMENT ITS SERVICES

3.1 SURVEY ON IMPLEMENTATION STATUS CONCERNING PRIORITY AREA II

Priority area II: Continuity of traffic and freight management ITS services			
Activities or projects concerned with continuity of traffic and freight management ITS services	X Implemented	X Planned	☐ Not planned
Responsible person in administration	Flemish authority Magda De Haes magda.dehaes@mow.vlaanderen.be +32 (0)2 553 71 23 Walloon authority: Caroline Pourtois (DGO 1) caroline.pourtois@spw.wallonie.be + 32 (0)81.21.95.08 Brussels-Capital authority Luc Swartebroeck lswartebroeckx@sprb.irisnet.be +32 (0)2/204 18 07 Jean-Paul Gailly jpgailly@sprb.irisnet.be +32 (0)2/204 14 18		
Comments	2 activities/projects		

ITS Classification					NUMBER of Projects			
Area	Level 1	Level 2	Level 3	Level 4	FEDERAL	FLEMISH	WALLOON	BRUSSELS
Continuity of traffic and freight management ITS Services	Freight Transport Management	Management of Dangerous Freight						
		Intelligent Truck Parking				1	1	
	Transport-related Electronic Payment services	Transport-related Electronic Financial Transactions						
		Integration of Transport Related Electronic Payment Services						

3.2 PROJECTS/ACTIVITIES BY THE Flemish AUTHORITY

3.2.1 *Development of intelligent truck parking's for the new concessions of motorway service areas*

Priority area		**Continuity of Traffic and Freight Management ITS Services**
Level 1		Freight transport management
Level 2		Intelligent Truck Parking
Level 3		-
Level 4		-
Activity/project		**Development of intelligent truck parking's for the new concessions of motorway service areas**
Description		To have an information service on all intelligent truck parking's on the TERN network in Flanders: The task of Intelligent Truck Parking is to optimise the use of the existing infrastructure in terms of parking facilities and to provide therewith relevant and suitable information to the European truck drivers, hauliers and service providers, and it is advised to integrate the "intelligent" aspect already in the planning of a new truck parking area. There is a growing need for information provision to end-users as well as on optimal managed truck parking areas. Telematics systems should be used to accomplish both information provision and management. In Flanders the service areas at motorways are generally franchised concessions for a period of 20 years. The minimum required infrastructure is imposed via minimum franchise standards. The first step is to foresee all new concessions with the obligation to have intelligent truck parking within the service area. To speed up the process, in a second phase, we might consider adaptations of existing concessions.
Period		2012-2017
Major milestones		November 2012: Opening of the first safe and secure truck parking in Wetteren E17 Nov 2013: Conference on Truck Parking behaviour. The experts of the National Road Authorities and the Police came together to discuss the topic of unsafe parking along highways in North-West-Europe March 2014: start of development process for a strategic vision note on truck parking's
Financing		-
Related co-operation activities with other member states		2013: Truck Parking behaviour conference, Brussels - Belgium (Flanders, Wallonia), Netherlands, West Germany (Nord-Rhein Westfalen), Luxemburg and UK. April 2014: Bilateral working group – Flanders & Netherlands to discuss a common vision, approach on enforcement, responsibility
Achievements		-
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be
If applicable	Interoperability issues addressed	There is a need for a European service, so uniform standards and specifications are needed.
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	A European platform for reservation services would contribute considerably to the customers experience when making a reservation.

3.3 PROJECTS/ACTIVITIES BY THE WALLOON AUTHORITY

3.3.1 *Equipment of secured truck parking's*

Priority area	**Continuity of traffic and freight management ITS Services**		
Level 1	Freight Transport Management		
Level 2	Intelligent Truck Parking		
Level 3	-		
Level 4	-		
Activity/project	**Equipment of secured truck parking's**		
Description	Different initiatives (public and private) in order to provide secure truck parking as well as reservation facilities.		
State of implementation	☒ Implemented	☒ Planned	
Timescale	2009 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☒ Private	☐ Other: Please specify
Objectives and expected achievements	Optimizing the use of parking facilities and managing their occupancy in order to ensure traffic and driver safety, traffic distribution, security of persons and goods.		
Milestones	2009: Studies 2011: Launching of construction works for the new secured area in the parking of Wanlin (A4) 2012: Monitoring and improvement of security on type I parking areas of the motorway network: implementation of cameras in order to improve safety of drivers and goods as well as to monitor occupancy 2013: Private secured parking area for trucks opened in Grace-Hollogne (A15 motorway - Liège) 2013: Secured parking area for trucks opened in Wanlin (A4 motorway- Namur)		
Resources			
Lead stakeholders	SOFICO – Regional public company		
	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry		
	Petrol company Total		
Were specifications and standards applied?	☐ yes	☐ no	Comment: The provision of information and reservation services will be elaborated according to EasyWay "deployment guidelines"
Related co-operation activities with other Member States	Parking areas have to be seen as parts of a large international network.		
Further comments concerning interoperability, compatibility and continuity of services	Intelligent truck parking has to be considered on a large scale in order to have a well-balanced use of the different areas.		
Further comments	Data on occupancy in secured parking areas are collected at local level (parking area operator)		

4 PRIORITY AREA III: ITS ROAD SAFETY AND SECURITY APPLICATIONS

4.1 SURVEY ON IMPLEMENTATION STATUS CONCERNING PRIORITY AREA III

Priority area III: ITS road safety and security applications			
Activities or projects concerned with ITS road safety and security applications	X Implemented	X Planned	☐ Not planned
Responsible person in administration	Federal authority: Fabian Croen fabian.croen@ibz.fgov.be +32 (0) 2 500 25 82 Flemish authority: Magda De Haes magda.dehaes@mow.vlaanderen.be +32 (0)2 553 71 23 Walloon authority: Caroline Pourtois (DGO 1) caroline.pourtois@spw.wallonie.be + 32 (0)81.21.95.08 Nathalie Mayeux (DGO 2) nathalie.mayeux@spw.wallonie.be +32 (0)81 77.30.88 Brussels-Capital authority Luc Swartebroeck lswartebroeckx@sprb.irisnet.be +32 (0)2/204 18 07 Jean-Paul Gailly jpgailly@sprb.irisnet.be +32 (0)2/204 14 18		
comments	41 activities/projects		

ITS Classification					NUMBER of Projects			
Area	Level 1	Level 2	Level 3	Level 4	FEDERAL	FLEMISH	WALLOON	BRUSSELS
ITS road safety and security applications	Traffic Management and Operations Services	Traffic Management and Control	Traffic Flow Control	Dynamic lane management		1		1
				Ramp metering				
				Travel guidance using variable message signs (VMS)				1
				Co-ordinated traffic management		1	1	1
				Traffic management for specific vehicles (dangerous, wide loads)		2	1	
			Adaptive Traffic Control at Intersections			5		2
			Parking Facilities management					
		Information Infrastructures	Traffic monitoring					
			Weather monitoring				1	
			Environmental Conditions Monitoring					
			Traffic Information centres			1	2	2
			Traffic Control Centres (TCC) or combined				1	
			Planning and forecasting traffic conditions					
			(Mobility data Management & Exchange)	Digital Map	1 (ITS.be)	1	2	
				Data Base Management			1	1
				Operating Environment & Formats				1
				Data Exchange & Data Market Place				
		Incident Management						3
		Demand Management						
		Transport Infrastructure Maintenance Management						
		Policing/Enforcement				3	1	
	Emergency Services	Transport Related Emergency Notification and Personal Security			2	1		
		Emergency Vehicle Management						
		Hazardous Materials and Incident Notification						
	Road Transport Related Personal Safety	Public Travel Security						
		Safety Enhancements for Vulnerable Road Users				2		
		Safety Enhancements for Disabled Road Users						
		Safety Provisions for Pedestrians Using Intelligent Junctions and Links						
	Disaster Response Management and Coordination Services	Disaster Data Management						
		Disaster Response Management						
		Coordination with Emergency Agencies						

4.2 PROJECTS/ACTIVITIES BY THE FEDERAL AUTHORITY

4.2.1 *Conceptual position paper on eCall in Belgium*

Priority area	**ITS road safety and security applications**		
Level 1	Emergency Services		
Level 2	Transport related emergency notification and personal security		
Level 3	-		
Level 4	-		
Activity/project	**Conceptual position paper on eCall in Belgium**		
Description	General description of the activity/project.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	10/2010 – 9/2011		
Activity/project scope	X National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	X Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	Conceptual position paper of the responsible parties of the 112 project from Belgian police, Civil Safety and Medical Emergency Management regarding government policy's objectives, cross border accidents-related eCall handling and statutory steps.		
Milestones	3/2011: Common position of Belgian safety and emergency authorities 6/2011: Transmission to CION of concept paper 9/2011: Discussion with CION about concept paper		
Resources	Not applicable		
Lead stakeholders	Federal Public 'Service Health, Food Chain Safety and Environment', Mr Van Hoegaerden		
	Federal Public Service Home Office, Mr Glorie, General Manager		
	Federal Police, Mr Liekens, Manager		
Were specifications and standards applied?	☐ yes	X no	Comment: the Concept paper started from the principle that eCall should make sense and present an asset to both victims and to the rescue services. The authorities are convinced that the costs of the introduction of eCall, as far as both CAPEX and OPEX are concerned, may not be put on the budget of the respective rescue services.
Related co-operation activities with other Member States	No.		
Further comments concerning interoperability, compatibility and continuity of services	COM (2009) 434 Final of 21/8/2009 'eCall: Time for Deployment' mentioned two types of systems supported: pan-European eCall or Third Party Support for eCall. The Communication seemed to suppose that the choice between the two systems is mainly to be made by the vehicle manufacturers. As in both systems the alerting of the emergency services has to be done by a PSAP, the Belgian authorities believe that the choice between the two systems is the competence of the safety & emergency services taking into account global societal costs, effectiveness and costs/ benefits for the whole population (so not only for drivers). Though the CION want to accelerate the introduction of pan-European eCall, the introduction costs are not well researched by the CION. Moreover the CION has no reliable business model to finance the APEX and OPEX cost for the PSAPs (e.g. extra operators.) in case of accelerated, generalized pan-European eCall introduction. Until now, PSAP representatives are not sufficiently consulted, neither by CION nor by standardisation organisations. Other instruments to reduce the human and financial costs of traffic are not enough investigated: technical restriction of car speed, preventive measures alike enhanced first aid education and civil sense teaching for future drivers		

	might be much more cost effective measures on the long run than eCall. The Belgian safety and emergency services believe after study of the present situation, that the third party Support eCall of draft prEN 16102, compared with the pan-European eCall of draft FprEN 16072, provides a less risky frame work to create an auto-financed, sustainable, interoperable eCall not endangering the core functioning of the present PSAPs and this for the next 10 years. The continuity of services and the safety of non-car owners attempting to call 112 on classical way might not be endangered by introducing on great scale potential mechanisms of pseudo alarm generation towards PSAPs. Pseudo alarms from non-car sources are nowadays already a problem. The effects of manual eCalls and not justified automatic eCalls must therefore be investigated thoroughly before any delegated act is proposed by the CION especially affecting directly or indirectly the domain of Civil Safety being a competence of the member states. The CION should also apply a correct priority setting. First things first. As eCall is a special kind of 112 call and as the 112 number unique umber for fire, police and EMS is now only a very limited way implemented in the EU, first ambition should be to realize reliable 112 call, EU wide, requiring in many cases still replacement of not appropriate PSAP infrastructure, organisation and hardware.
Further comments	Not applicable

4.2.2 *Field test on eCall in Belgium*

Priority area	**ITS road safety and security applications**		
Level 1	Emergency Services		
Level 2	Transport related emergency notification and personal security		
Level 3	-		
Level 4	-		
Activity/project	**Field test on eCall in Belgium**		
Description	General description of the activity/project.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2013-2014		
Activity/project scope	X National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	X Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	Field tests of public and private eCall in the context of the European Heero II project (Belgian test site)		
Milestones	6/2014: live tests		
Resources	Not applicable		
Lead stakeholders	Federal Police, Mr Liekens		
	Mobistar, Mr Pauwels		
	NXP, Mr Patrick Pype		
	IBSR, Mr Jean-François Gaillet		
	Astrid, Mr Peter Gerber		
	Federal Ministry of the Interior, Mr Fabian Croen		
	Federal Ministry of Mobility, Mr David Schoenmaekers		
	Testronic Labs, Mr Erik Boelen		
	Federal Ministry of Public Health, Mr Serge Cornet		
	Touring, Mr Leeman		
	ITS Belgium, Mr van der Perre		
Were specifications and standards applied?	☐ yes	X no	Different scenarios were tested, some including vehicles on the road. Only manual eCalls were tested. MSD's were sent to the filtering center. The filtering centre is in charge of handling both the data and the voice call. The data were then saved on a server and made available via a web interface to the emergency services.
Related co-operation activities with other Member States	Cross-border tests with Luxembourg		
Further comments concerning interoperability, compatibility and continuity of services	The field test's goal was to get a clear picture of how a public and private eCall can be deployed based on all relevant European standards. A clear technical architecture emerged from the project.		
Further comments	In parallel to the Heero II project, the legal framework to accommodate public and private eCall in Belgium is being developed.		

4.3 PROJECTS/ACTIVITIES BY THE FLEMISH AUTHORITY

4.3.1 *Better protection of pedestrians and cyclists crossing unsafe roads*

Priority area		**ITS road safety and security applications**
Level 1		Road Transport Related Personal safety
Level 2		Safety Enhancements for Vulnerable Road Users
Level 3		-
Level 4		-
Activity/project		**Better protection of pedestrians and cyclists crossing unsafe roads**
Description		The Flemish road authority has a strict policy that outlines under which conditions a pedestrian and/or cyclist road crossing can be provided and which infrastructure must be used under those conditions. Following the current policy some locations are judged as unsafe and no crossing will be provided, although pedestrians/cyclists do in fact cross the road. For instance: a dedicated bicycle route crossing a two-lanes road with a high speed regime (90km/h) or a high speed road in the vicinity of a sports center, cultural center, etc… Note that this specific situation only occurs in case changing the current infrastructure is not possible or not feasible, at least on the short term. This project will focus on how ITS applications can contribute to the safety of pedestrians and/or cyclists at the above mentioned locations in such a way that making a crossing becomes acceptable. The solution will be temporarily implemented at a test location in order to evaluate the safety situation before and after the installation. After a successful test the application will be deployed at similar locations.
Period		mid 2013 – end 2015
Major milestones		25 June 2013: Smart Mobility conference in Brussels (government, road authority and industry) 14 February 2014: Start of public tender May 2014: Project allocated to supplier
Financing		50 000 €
Related co-operation activities with other member states		-
Achievements		-
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.2 *Mobiliteitscentrale for persons with reduced mobility*

Priority area		**ITS road safety and security applications**
Level 1		Road Transport Related Personal safety
Level 2		Safety Enhancements for Vulnerable Road Users
Level 3		-
Level 4		-
Activity/project		**Mobiliteitscentrale for persons with reduced mobility**
Description		Mobiliteitscentrale: A centrally organised service and the necessary software to optimally plan transport for people with limited mobility. Data provided in real-time by several parties (public transport providers De Lijn, TEC, MIVB-STIB, NMBS-SNCB; taxi services and transport services for the less mobile) is going to be queried to determine the most cost efficient transport option. Subsequently travel advice or actual organizing of the trip is offered. GPS tracking is going to be used for a share of the vehicles. Financial settlement will be organized using the same software.
Period		2013-2016
Major milestones		test: 01/01/13 - 06/30/13 implementation: 2016
Financing		estimated 30 million euro
Related co-operation activities with other member states		-
Expected achievements		service that provides people with limited mobility with the most efficient transport
Further comments		-
Contact person(s)		Eric Sempels (02 553 78 26; eric.sempels@mow.vlaanderen.be)
If applicable	Interoperability issues addressed	interoperability between the application that manages requests and the applications of transport providers
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	continuous funding

4.3.3 *Traffic sign database for map makers*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and operations Services
Level 2		Information Infrastructure
Level 3		(Mobility Data Management & Exchange)
Level 4		(Digital map)
Activity/project		**Traffic sign database for map makers**
Description		Provision of road, traffic and transport services data used for digital maps: The Traffic Sign Database contains all traffic signs and traffic lights located on paved roads in Flanders. Our aim is to provide this data to map makers and the navigational sector as a whole.
Period		2013-2017
Major milestones		a license agreement has to be concluded with parties who want to use data from the traffic sign database
Financing		estimated 60.000 euro a year for application maintenance
Related co-operation activities with other member states		eMaPS project
Expected achievements		integration of the available data in maps and navigation systems and use of the data by interested parties in general
Further comments		-
Contact person(s)		Barbara De Clerck (barbara.declerck@mow.vlaanderen.be ; 02/553.83.95)
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	Interoperability between Flemish traffic sign database and third party (map makers, …) applications.
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	updating of database by all authorities concerned

4.3.4 *Reliable gathering and dissemination of safety related information*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Information Infrastructures
Level 3		Traffic Informations centres
Level 4		-
Activity/project		**Reliable gathering and dissemination of safety related information**
Description		To improve safety by reliable gathering and dissemination of safety related information: Already a lot of safety related information is distributed in Flanders, especially through VMS, Radio and RDS-TMC towards the drivers. Flanders is in favour of a European service in this area that can reach all European drivers in a safe way. Flanders will further develop and enrol its measurement network, for the whole of the main network, to allow the detection of the safety related information. Also floating car data is now considered as a potential source for the detection of abnormalities in the network.
Period		2013-2017
Major milestones		To bring this service in line with the expected European standards and or specifications.
Financing		Less than 500k Euro
Related co-operation activities with other member states		EU level expert meetings and workshops
Expected achievements		To have the service fully operational 2 years after the standards/specifications publication. The service is available in DATEX II.
Further comments		-
Contact person(s)		Mieke Van Grimberge mieke.vangrimberge@mow.vlaanderen.be +32/3/2249635
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.5 *Heavy Goods Vehicle safe distance control and HGV overtaking ban enforcement*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Policing/Enforcement
Level 3		-
Level 4		-
Activity/project		**Heavy Goods Vehicle safe distance control and HGV overtaking ban enforcement**
Description		On highways heavy goods vehicles need to keep a distance of minimum 50m. Respecting that min. distance is very important as head-to-tail collisions with heavy goods vehicles often have severe consequences due to the large mass. When it's raining there is also an overtaking ban for heavy good vehicles with a mass above 7500 kg on roads across Belgium. A site for such application contains double measuring loops grinded into the road surface, video cameras and automatic number plate recognition (ANPR) cameras. The measuring loops detect vehicle speed, vehicle length and time. Based on these data the distance to the vehicle ahead is calculated as well as the vehicle category. The video cameras are used to identify the current traffic conditions in order to judge the context of a potential infringement. The ANPR cameras detect the number plates. The combined data is sent to the Federal Police that judges infringements and whether prosecution is necessary. As a surplus, the system can also detect vehicles misusing the hard shoulder.
Period		As of 2009
Major milestones		Anno 2013: there are 9 sites operational. In 2014: 5 additional sites will become operational.
Financing		Installation and maintenance are covered by the road operator budget. Operational issues are for the police authorities.
Related co-operation activities with other member states		-
Achievements		Improvement of traffic safety
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	Combining data from ANPR camera's currently installed would allow origin-destination tracking of heavy goods vehicles.
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.6 *Trajectory average speed control enforcement*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Policing/Enforcement
Level 3		-
Level 4		-
Activity/project		**Trajectory average speed control enforcement**
Description		Trajectory average speed control measures the average speed of vehicles between 2 fixed points. It harmonizes speed, increases safety and is perceived as a fairer way of checking speed compared to fixed speed camera's. The 2012 ITS Action plan stated trajectory control to be available in Gent-Brugge available in 2012 and 3 other locations to be determined. Vehicles are identified based on automatic number plate recognition (ANPR) photo processing at the entry and exit location of the trajectory. Based on the ANPR data a PC system links the entry and exit pictures of the same vehicle together and calculates the average speed over the trajectory. In case the speed exceeds the max allowed speed, the data is sent to the federal police for prosecution. Number plates of Belgium as well as the surrounding countries can be processed.
Period		As of 2008.
Major milestones		2008: technology study and public tender 2010: new Belgian legislation voted allowing trajectory control 2010 – 2012: system field testing and creation and passing of type approval 2012: first trajectory average speed control on E17 – Gentbrugge operational 2013: 3 additional highway locations operational (E17 Gentbrugge – other direction - and E40 Erpe-Mere-Wetteren in both directions) as planned + 10 locations on regional roads of Brecht and Brasschaat (N115, N117, N133) 2014: N12 Schilde, Waaslandtunnel and investigation on some trajectories on secondary roads.
Financing		Highway trajectories: - 800.000€: first trajectory: E17 Gentbrugge - 1.000.000€ for the next 3 trajectories together: E17 Gentbrugge other direction - and E40 Erpe-Mere-Wetteren in both directions Regional road trajectories: - 2x1 lanes in both directions: 140.000€ - 2x2 lanes in both directions: 210.000€
Related co-operation activities with other member states		-
Achievements		Improvement of traffic safety due to more homogeneous traffic flow and less speed violations. E17 Gentbrugge installation: from 7000 infringements per day to 600 infringements per day after installation became operational. Since start of the operation no accident with injuries has been reported.
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.7 *Weigh-in-motion for overload detection enforcement*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Policing/Enforcement
Level 3		-
Level 4		-
Activity/project		**Weigh-in-motion for overload detection enforcement**
Description		Overweight heavy goods vehicles can do severe damage to the road infrastructure. There is also an increased safety risk as the braking distance is longer. Classic intervention occurs ad-random and/or via a visual inspection of the tires. Therefore such intervention only has a low efficiency rate of 15 to 20%. The goal of weigh-in-motion technology is to increase this efficiency rate to make the best use of the available resources. Also, a more precise measuring method is perceived to be more honest towards drivers that do respect the regulations. ANPR cameras register the license plate of each vehicle. Inductive loops in the road surface detect vehicle length. The weigh-in-motion sensors mounted on the left and middle lane in the road surface measure the load on each axle while the vehicle is driving. By combining all data, the system can judge the vehicle type and whether it is overweight. Road inspectors which have limited enforcement authority or federal road police receive the information online and potentially overloaded vehicles can be screened and removed from traffic more efficiently. The vehicles are then checked on a fixed weighing installation to determine the actual (over)weight.
Period		As of 2011.
Major milestones		2011: 5 installations in use 2012: 9 installations in use
Financing		1.822.453 € (2011 Allocated budget)
Related co-operation activities with other member states		/
Achievements		Less road damage and improvement of traffic safety Detection efficiency increased from 15% to more than 85%
Further comments		/
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.8 *Intelligent traffic lights – Antwerp Traffic Light Coordination Centre*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Intelligent traffic lights – Antwerp Traffic Light Coordination Centre**
Description		The traffic computer in Antwerp has been established in the 1980's and is at the end of its lifespan. The goal of the new system is to improve traffic flow for both public transport as well as regular transport. The new coordination centre will make it possible to align multiple traffic lights with one another. As part of this project 323 traffic lights (232 under governance of the Flemish road authority and 91 under governance of the city of Antwerp) will be surveyed, commanded and partially coordinated by a central traffic-computer. The project also includes the renewal of several controllers, building a better performing telematics network and performing and implementing traffic studies. With intelligent traffic lights we can obtain a better flow of regular and public transport. By introducing a better detection and control system, the lights can become vehicle dependent (on intersection-level) and traffic dependent (also taking traffic from other roads into account - on a higher level). By providing the central traffic-computer with different scenarios for foreseeable incidents and special occasions, we can optimize traffic flow at all the connected intersections.
Period		The first vehicle dependent traffic lights were implemented in 1980. Nowadays almost every traffic light on regional roads is vehicle dependent. More than half of the traffic lights at intersections are influenced by public transport (bus or tram). Around 20% of the intersections have influence on one another.
Major milestones		2011: Study on the technical requirements for the new installation + study on which traffic studies will need to be done to establish the new traffic light arrangement. End 2013: Public tender. End 2014/early 2015: Project allocated to supplier. By 2016: First results on the field. By 2020: Project completed: the Antwerp traffic light coordination centre fully operational including dynamic traffic light arrangements.
Financing		As the project is currently in public tendering process, we prefer not to disclose this information at this point in time.
Related co-operation activities with other member states		-
Expected achievements		To optimize traffic flow on regional and city roads
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	Current standards for traffic lights as well as other ITS applications are mostly restricted in use to specific private companies. This increases costs to establish interoperability considerably. Open standards for traffic lights and ITS applications in general would largely contribute to the speed at which progress can be made as well as keeping costs to establish interoperability under control.
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.9 *Intelligent traffic lights – Ghent City Ring Road R40 Traffic Light Coordination*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Intelligent traffic lights – Ghent City Ring Road R40 Traffic Light Coordination**
Description		The traffic computer for the city ring road R40 in Ghent has been established in the 1990's and is at the end of its lifespan. The goal of the new system is to improve traffic flow for both public transport as well as regular transport. The Ghent city ring road full trajectory contains 24 intersections for which the traffic lights need to be aligned to one another. As part of this project new hardware and software need to be installed and programmed. The traffic lights of 24 intersections need to be connected to the system. Public transport is prioritised at the intersections via inductive loops grinded into the road surface. This infrastructure needed to be in-line with the changed traffic situation. The traffic light programs needed to be adjusted and the telematics network upgraded. Ramp metering is applied at the intersection R40-Korterijksepoortstraat: in order to prevent public transportation towards the city centre to be delayed due to congestion, access from R40 into the Korterijksepoortstraat is managed.
Period		The first vehicle dependent traffic lights in Flanders were implemented in 1980. Nowadays almost every traffic light on regional roads is vehicle dependent. More than half of the traffic lights at intersections are influenced by public transport (bus or tram). Around 20% of the intersections have influence on one another.
Major milestones		2011: Study on the technical requirements for the new traffic PC for Ghent. Early 2012: Public tender As of October 2012: Delivery, installation, programming and testing of the traffic computer + inductive loops installation As of April 2013 - 2014: Implementation of the new system for all 24 intersections.
Financing		Estimated at 1,1 million €
Related co-operation activities with other member states		-
Achievements		Optimized traffic flow on Ghent city ring road. Dynamic traffic lights (intersection to intersection dependence) within each of the 3 ring road segments.
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.10 Traffic light priority for public transport based on short distance radio for coastal tram

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Traffic light priority for public transport based on short distance radio for coastal tram**
Description		Traditionally systems which allow priority for a tram at the next intersection with traffic lights use inductive loops to detect a tram. Installation and maintenance of these loops is expensive and causes inconvenience to road users because a road section needs to be closed to grind the loops into the road surface. More-over, a defective loop cannot always be detected very quickly which impacts the reliability of the system. The goal of this project is to investigate and implement a tram priority system based on short distance radio (in Dutch: *Korte AfstandsRadio* or KAR). The traditional inductive loops which detect tram presence have been replaced with “virtual loops”. These are actually GPS defined areas. When the GPS equipped tram passes a virtual loop the tram’s radio modem will communicate with the traffic lights in order to receive priority at the next intersection.
Period		As of 2007
Major milestones		As of 2007: Technology study 2011: Public tender 2012: Pilot introduction of KAR on coastal tram line: 14 traffic light installations and 10 trams 2013: KAR implemented on the full trajectory of the coastal tram line: De Panne – Knokke-Heist: 53 traffic light installations for a total of 67 km of tram tracks.
Financing		1,2 million euro
Related co-operation activities with other member states		\
Achievements		- Reduced installation and maintenance cost of tram priority system influencing the traffic lights. - Less inconvenience for road users due to less installation and maintenance work - Increased reliability of tram flow and other traffic flow in the direction parallel to the tram. - Easier to change the location of a virtual loop when requirements change at an intersection. - Ability to use prioritisation when the tram is on the track of the opposite direction during maintenance work on the normal track.
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.11 *Traffic light priority for public transport based on short distance radio for buses*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Traffic light priority for public transport based on short distance radio for buses**
Description		Project for prioritizing public transport: buses send a radio signal which influences the operation of the traffic lights. The goal of this project is to implement the public transport priority system based on short distance radio (in Dutch: *Korte afstandsradio* or KAR) at bus line 358 Leuven - Brussels and to verify and compare the results with the existing public transport priority system based on inductive loops. Also the system is integrated into the board computer of the vehicles to make it possible to use information like time of delay. In this project we will make the public transport priority system in Flanders interoperable with the system in Brussels.
Period		2011 - 2015
Major milestones		As of 2007: Technology study 2011: Public tender 2012: Start of a pilot project to implement KAR at 1 bus on line 358: Leuven – Brussels 2013: Roll-out of KAR to 14 intersections on the same trajectory/integration of KAR with board computer of bus 2nd half 2014: Roll-out of KAR to 9 additional buses on the same trajectory. 2nd half 2014: Achieving compatibility with traffic light infrastructure from Brussels
Financing		337.369,19 euro
Related co-operation activities with other member states		\
Achievements		- optimized traffic lights on regional roads - reduced maintenance cost of public transport priority systems
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	Achieving compatibility with road infrastructure in and public transport from Brussels

4.3.12 *Definition of KPI's for the optimization of traffic lights management*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Definition of KPI's for the optimization of traffic lights management**
Description		The Flemish road authority manages about 1600 intersections with traffic lights. Optimizing the operation of the traffic lights is currently done based on request coming from internal or external stakeholders or because the infrastructure itself is changing. The goal of this project is to investigate whether a methodology can be developed which would allow the regional road authority to monitor the quality of the traffic light operation as well as monitoring the traffic flow. The established method would enable the road authority to use resources more efficiently and focus the attention to where it is required most. This project will investigate whether various potential "key performance indicators (KPI)" could be defined. We will look at how the data to calculate the KPI's could be acquired and how the KPI's could be evaluated in order to assess the quality of traffic lights as well as monitoring traffic flow.
Period		mid 2013 – end 2015
Major milestones		25 June 2013: Smart Mobility conference in Brussels (government, road authority and industry) 14 February 2014: start of public tender – this is a public/private sector cooperation within an R&D context. May 2014: project allocated to supplier
Financing		50 000 €
Related co-operation activities with other member states		-
Achievements		-
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.13 *Highways Dynamic Traffic Management Plan*

Priority area	**ITS road safety and security applications**
Level 1	Traffic Management and Operations Services
Level 2	Traffic Management and Control
Level 3	Traffic Flow Control
Level 4	Co-ordinated traffic management
Activity/project	**Highways Dynamic Traffic Management Plan**
Description	The dynamic traffic management plan Flanders (DVM) is a comprehensive plan with specific organization methods and instruments to optimize the existing capacity of road infrastructure on the highways in Flanders. This is accomplished via: - Intelligent guiding of the traffic flows, e.g. through speed harmonization. - Avoiding accidents, e.g. through alerting road users in real time where a traffic jam starts. - Informing road users for obstacles on the road, e.g. through dissipation of traffic information - Alternative route guidance - Reducing the inconvenience of road users, e.g. by streamlining road works Incident management, e.g. by clearing the road quickly after accidents (F.A.S.T. towing contracts, etc…). DVM is an overall plan to implement a system for dynamic traffic management on highways in Flanders. It contains 4 types: 1. Basic monitoring: via loops and cameras to follow up the actual traffic situation at highway entry and exit points. 2. Network management: via Variable Message Signs (VMS) road users are informed about the traffic situation so they can make a conscious decision on the best route to follow. 3. Basic road section management: Roadside Variable Message Signs (RVMS) inform road users of events, incidents, etc… and are installed every 6 km and additional inductive loops (every 1500 m) create an optimal measuring grid. On missing locations cameras are installed. 4. Full Road section management: dynamic lane signalisation panels (RSS) are mounted above each individual lane to harmonize vehicle speed and close lanes (road works, incidents, etc…).
Period	As of 2001
Major milestones	- first quarter of 2014: Basic monitoring for all highways in Flanders completed - Network Management: implemented at big ring roads, tunnels and intersections - Basic road section management: trajectory Gent-Brussels completed - Dynamic lane Signalisation: implemented in Antwerp and Ghent Next steps: - Complete basic monitoring for parking's with franchise companies - Basic road section management: 2014-2015: o E19 Loenhout→Antwerpen, o E34 Lille→Ranst, o E40 Heverlee→St.StevensWoluwe, o E19 Wilrijk↔Machelen, o E17 Waasmunster↔Kruibeke,

	○ E313 Ranst→Geel-oost - Complete dynamic lane signalisation in Leuven - Full road section management: R2 Antwerp circular. - Complete DVM plan in and around tunnels: ○ 2014: 4-armentunnel (2014), ○ 2015: Beverentunnel and Tijsmanstunnel
Financing	-
Related co-operation activities with other member states	-
Achievements	Overall a better traffic flow and less incidents. 2011: Basic monitoring at 85% of total required capacity, Dynamic lane signalisation Ghent Area (E40), Network management Brussels area, ANPR camera's on 11 sites with 56 camera's, Dynamic signalisation in Craeybeckx tunnel. 2012: Basic Monitoring: continued deployment, Network management Brussels, Bruges, Kortrijk 2013: Basic Monitoring: continued deployment, Basic road section management E40: Wetteren-Groot Bijgaarden, Dynamic lane signalisation Ghent area (E17) and Kennedy tunnel Antwerp 1st half 2014: Basic monitoring completed, Basic monitoring for parking's with franchise companies.
Further comments	
Contact person(s)	Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable: Interoperability issues addressed	-
If applicable: Remaining challenges on interoperability	-
If applicable: Compatibility issues addressed	-
If applicable: Remaining challenges on compatibility	-
If applicable: Continuity of services issues addressed	-
If applicable: Remaining challenges on continuity of services	-

4.3.14 *Hard Shoulder Running for an active traffic management of motorways*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Traffic Flow Control
Level 4		Dynamic lane management
Activity/project		**Hard Shoulder Running for an active traffic management of motorways**
Description		A 2009 tactical traffic study on the E313 identified a capacity issue during evening rush hour. The capacity from E34-E313 between Antwerp-East and Wommelgem to cope with traffic coming from both directions of the Antwerp ring road and Antwerp Centre was insufficient. This led to a structural traffic jam on the Antwerp ring road in both directions upstream of the connection with E34-E313. The capacity has been optimized by hard shoulder running on the E313: Antwerp-East – Ranst. Due to the success of the first hard shoulder running lane, 2 more locations have been identified and developed. Vehicles can use the hard shoulder lane during peak hours to cope with the demand of a higher capacity. Opening and closing of the hard shoulder is visualised via dynamic traffic lane signage and managed by the Flemish traffic control centre. Opening hours of the additional lane are typically from 14:00h until 20:00h.
Period		Project started in 2011 and still ongoing
Major milestones		Opened in September 2011: E313 Antwerpen-Oost – Ranst (first hard shoulder running lane in Flanders) 2012: Feasibility study on potential other trajectories Opened in September 2013: E40 Sterrebeek-Heverlee To be opened July 2014: E19 Antwerpen-Noord – St-Job-in-t-Goor
Financing		Work needed to allow hard shoulder running, will be done together with necessary road works at these road sections. Overall cost is as follows: - E313: Antwerpen-Oost – Ranst: 6,7 million euro - E40/E314 Sterrebeek – Heverlee (- Wilsele – De Vunt): 48,5 million euro - (Note: The last part of this trajectory is “weaving area” in which the entry and exit points of the highway and extended and connected to each other). - E19 Antwerpen-Noord – St-Job-in-t-Goor: 10,0 million euro
Related co-operation activities with other member states		-
Achievements		Better traffic flow : - E313: Antwerpen-Oost – Ranst: o 25% reduction in nr of total vehicle loss hours, o average travel time decreased with 12 minutes - E40/E314: evaluation in progress
Further comments		Anno 2014 we are investigating on Red X misuse when the hard shoulder is closed, and how to countermeasure misuse.
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.15 *Tunnel safety – Radio retransmission in tunnels with break-in functionality*

Priority area		**ITS road safety and security applications**
Level 1		Emergency Services
Level 2		Transport Related Emergency Notification and Personal Security
Level 3		
Level 4		
Activity/project		**Tunnel safety – Radio retransmission in tunnels with break-in functionality**
Description		The radio retransmission system consists of a radiating cable in the tunnel and an active broadcasting infrastructure. The radiating cable is a “leaky feeder” which is installed all the way along the ceiling of the tunnel in longitudinal direction. Characteristics of the cable are optimized for the TETRA frequency band. The cable is shared by the ASTRID network (the Federal TETRA network for the emergency services) and the local radio retransmission network. The local radio retransmission network picks up the radio signal from an external antenna and provides a retransmission in the tunnel via the leaky feeder, using components for selective filtering and amplification of the incoming signals. Currently 7 FM channels of the most popular radio stations and 2 VHF channels used by the Antwerp fire brigade are retransmitted in the tunnel. An FM break-in system is provided, which may interrupt the radio retransmission and replace the FM programs by emergency messages. This system can be remotely controlled via a specific software system. It has been designed to provide a user with an interface to the hardware architecture enabling an operator to interrupt FM broadcasting into tunnels and to replace FM programs by emergency messages. These emergency messages can be live or pre-recorded voice messages to warn tunnel users of occurring emergency situations in tunnels.
Period		Since 2009
Major milestones		“Break-in” installed and tested in tunnels: 2012 Rupeltunnel 2013 Craeybeckxtunnel, Kennedytunnel, Vierarmentunnel, Bevrijdingstunnel 2014 Tijsmanstunnel Installations planned in near future: 2014 Waaslandtunnel 2015 Beverentunnel, Leonardtunnel
Financing		Installation and maintenance are covered by the road operator budget.
Related co-operation activities with other member states		-
Achievements		Installation (in some tunnels renewal) of communication network for emergency services (ASTRID) in the tunnel, radio retransmission of the main FM radio channels in the tunnel, installation of a break-in functionality which can be operated by tunnel operator VTC.
Further comments		-
Contact person(s)		Jos Hennissen - josef.hennissen@mow.vlaanderen.be
If applicable	Interoperability issues addressed	Development of coupling interface via OPC-UA to enable communication with command console radio system via integrated central tunnel system software instead of via a stand-alone infrastructure
	Remaining challenges on interoperability	Integration of operation console software in integrated central tunnel system software to provide tunnel operator with an integrated user interface
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.16 *Restriction of the access of rural areas for Heavy Goods Vehicle via an ANRP lock*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Traffic Flow Control
Level 4		Traffic Management for Specific Vehicles (dangerous, wide loads)
Activity/project		**Restriction of the access of rural areas for Heavy Goods Vehicle via an ANRP lock**
Description		The villages around the Ghent harbour area experience on a daily basis heavy goods traffic which is travelling straight through the village in order to reach the harbour area. This has a heavy impact on the quality of life in those villages. In order to resolve this issue the HGV's need to be banned from the villages without compromising the accessibility of the harbour. In the past the pass-through prohibition was visualised via traffic signs. However, the signs were frequently ignored so a more advanced way of enforcement needed to be established. A heavy goods circulation plan needed to be created and implemented and a new HGV restricted access system via a lock was developed. The system contains measuring loops in the road to detect the vehicle, lasers to measure the height of a vehicle and an ANPR camera to detect the number plate and forward the data to the relevant parties. Vehicles registered on a white-list such as public transport, local delivery services, emergency services and police are permitted in the area and are excluded from enforcement activities. There are installations at the entry and at the exit of the village which are linked to each other in order to establish travel time. This allows separating pass-through traffic from specific origin-destination traffic.
Period		As of 2009
Major milestones		October 2009: First installation in Rieme became operational As of November 2010: Enforcement started. 2014: A new installation is being deployed in Zelzate.
Financing		-
Related co-operation activities with other member states		-
Achievements		Improvement of quality of life in a specific area. Decrease from 700 passages per day to 8 not allowed passages per day after installation of the lock and enforcement started.
Further comments		
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.3.17 Road counting of dangerous goods transport by road to develop an ARD risk analysis

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Traffic Flow Control
Level 4		Traffic Management for Specific Vehicles (dangerous, wide loads)
Activity/project		**Road counting of dangerous goods transport by road to develop an ARD risk analysis**
Description		The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) regulates transportation of dangerous goods. When doing a risk analysis, either from road authority perspective or from environmental perspective, ADR transports have a high impact due to the nature of the products (explosive, toxic, flammable …). Today there are no quantitative data available on ADR transportation. In order to run an efficient policy and increase road safety there is a need to have information on ADR transports available. Also concerning access to tunnels for vehicles transporting dangerous goods, risk analysis must be performed in order to define the appropriate tunnel category codes and restrictions and to make sure that specific measures are taken. Via innovative technology the Flemish road authority will gather data on ADR transports automatically. In line with the ADR agreement, the data will be classified in the various types of dangerous goods including the transportation quantity for each type. The data will be made available to the relevant instances. Measurements will be done on 30 locations in both directions of traffic. Each measuring site will be monitored for 2 full weeks around the clock.
Period		As of 2013
Major milestones		Nov 2013: vision note on necessity of measuring ADR transport
Financing		-
Related co-operation activities with other member states		-
Achievements		2013: Technology study and preparation of the public tender Next steps: 2nd half 2014: public tender 2014-2015: start measurements
Further comments		-
Contact person(s)		Kristof.Rombaut@mow.vlaanderen.be ; expertise.verkeer.telematica@vlaanderen.be
If applicable	Interoperability issues addressed	-
	Remaining challenges on interoperability	-
	Compatibility issues addressed	-
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	-
	Remaining challenges on continuity of services	-

4.4 PROJECTS/ACTIVITIES BY THE WALLOON AUTHORITY

4.4.1 *Central database of speed limits*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Information Infrastructures		
Level 3	(Mobility data management & Exchange)		
Level 4	(Data Base Management)		
Activity/project	**Central database of speed limits**		
Description	Collection of speed limitations on the Walloon road network		
State of implementation	☐ Implemented	☒ Planned	
Timescale	Start (and end if applicable) of the activity or project.		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	Availability of the speed limit for every stretch of the Walloon road network Dynamic provision of current speed limit to the drivers on the road.		
Milestones	2011: collection of speed limits in the regional road database 2014: study for the development of a new database of static road data (including speed limits)		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:-
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	The database of static road data is the cornerstone for all the projects developed by the Road Administration (coding of the roads).		
Further comments	-		

4.4.2 *Improvement of the quality of the available public maps with GPS data base providers*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and operations Services		
Level 2	Information Infrastructure		
Level 3	(Mobility Data Management & Exchange)		
Level 4	(Digital map)		
Activity/project	**Improvement of the quality of the available public maps with GPS data base providers**		
Description	Sur base des plans communaux de mobilité qu'il établit et de ses contacts avec les communes wallonnes, le Service Public de Wallonie – DGO2 compare les bases de données de la région avec celles des fournisseurs de données GPS, met en évidence les erreurs, les corrige et communique des données qui pourront par la suite être recueillies dans les appareils GPS. Actuellement, le projet est toujours en phase de test.		
State of implementation	☐ Implemented	☒ Planned	
Timescale	Phase de test		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: *Please specify*
Type of project organisation	☒ Public	☒ Private	☐ Other: *Please specify*
Objectives and expected achievements	Le but est que les données reprises dans les appareils GPS concordent avec ce qui se fait sur le terrain en matière de mobilité et répondent à la volonté de réguler le trafic.		
Milestones	-		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Mobility and Hydraulic Ways – Direction of the Planning of Mobility – Mrs Bernadette GANY - bernadette.gany@spw.wallonie.be - (+32) 081/773099		
	-		
	-		
Were specifications and standards applied?	☐ yes	☒ no	
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

4.4.3 *Geographical positioning tool of road signs in Wallonia: Oppsarcow*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and operations Services		
Level 2	Information Infrastructure		
Level 3	(Mobility Data Management & Exchange)		
Level 4	(Digital map)		
Activity/project	**Geographical positioning tool of road signs in Wallonia: Oppsarcow**		
Description	Logiciel Oppsarcow: Outil de Positionnement géographique de Panneaux de Signalisation et d'Aménagements Routiers dans les COmmunes de Wallonie. Dans le prolongement du projet GPS, la DGO2 travaille sur la mise en place d'une base de données évolutive de la signalisation routière qui sera en lien avec les communes wallonnes et les services de la DGO1 (via notamment les règlements complémentaires de police sur les voiries communales et régionales).		
State of implementation	☐ Implemented	☒ Planned	
Timescale	2011 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other:
Type of project organisation	☒ Public	☐ Private	☐ Other:
Objectives and expected achievements	Les différents intervenants en matière de circulation routière auront accès aux mêmes données simultanément et les changements pourront être immédiatement transmis au sociétés récoltant les données pour les GPS.		
Milestones	-		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Mobility and Hydraulic Ways – Direction of the Planning of Mobility – Mr Erich SUPLIS - erich.suplis@spw.wallonie.be - (+32) 081/773136		
	-		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment: -
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

4.4.4 *Development of a local traffic centre "Les Tilleuls" on the A602 in Liege for incident detection and prevention*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Information Infrastructures		
Level 3	Traffic Control Centres (TTC) or combined		
Level 4	-		
Activity/project	**Development of a local traffic centre "Les Tilleuls" on the A602 in Liege for incident detection and prevention**		
Description	"Les Tilleuls" is a local traffic centre on the A602 motorway, characterized by dense traffic and limited capacity. Traffic is monitored by 180 cameras, with half connected to an automatic incident detection system. Variable signing is used for traffic regulation, driver information and in case of diversions. Action plans have also been established in collaboration with the police and emergency services. A semi-automatic system is used for the management of the different traffic scenarios.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	-		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	Traffic management on this 4 km motorway section enables daily 55.000 vehicles (peaking at more than 60.000 on certain days) to pass through major and complex engineering structures freely and safely.		
Milestones	2000: Opening to traffic equipped with 180 cameras and over 450 pieces of dynamic equipment (traffic lights, VMS, barriers…) 2005: Update of incident management plans 2009: Implementation of average speed calculation and control 2013: Revision of emergency and intervention plan		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	SOFICO – Regional public company		
	-		
Were specifications and standards applied?	☒ yes	☐ no	Comment: Use of EasyWay deployment guidelines
Related co-operation activities with other Member States	Implementation of ITS systems, especially dynamic signing, has been made according to European best practice and recommendations.		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

4.4.5 *Open Travel data Access Protocol (OTAP) node to get access point to traffic centre information*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Information Infrastructures		
Level 3	Traffic Informations centres		
Level 4	-		
Activity/project	**Open Travel data Access Protocol (OTAP) node to get access point to traffic centre information**		
Description	Providing an access point on the Internet, from which service providers can get easily the information owned by the Walloon traffic centre in order to develop or to integrate it in their services.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2004 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To ensure availability of public traffic data to service providers and to foster the development of services to the drivers		
Milestones	2004 Implementation of OTAP node		
Resources			
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	-		
	-		
Were specifications and standards applied?	☒ yes	☐ no	Comment: OTAP is a common standard developed by the traffic centres involved in Euro-regional project CENTRICO in order to facilitate the access to traffic data by service providers.
Related co-operation activities with other Member States	The OTAP protocol, characterized by its simple format, the low cost and using the Internet technology, is available and implemented in many traffic centres, promoting data exchange and deliverance.		
Further comments concerning interoperability, compatibility and continuity of services	The OTAP project was designed in order to meet the recommendation for the development of a legal and business framework for the participation of the private sector in deploying telematics-based Travel Information services.		
Further comments	-		

4.4.6 *Development of the Walloon traffic centre PEREX*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Information Infrastructures		
Level 3	Traffic Informations centres		
Level 4	-		
Activity/project	**Development of the Walloon traffic centre PEREX**		
Description	PEREX constitutes the heart of the Walloon motorway network and the central point for traffic management.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	1999 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	PEREX is a complete traffic centre, which carries out the whole range of traffic information and traffic control functions, i.e. to collect data from electronic detectors and human witnesses; to validate and process the information; to launch actions with the help of electronic equipment; to exchange information and to send traffic messages.		
Milestones	1999: Official opening 2000: Arrival and installation of RTBF – broadcasting of traffic information from PEREX 2002: Launching of RDS-TMC service 2004: Implementation of OTAP node: exchange with other traffic centres 2005: Arrival and installation of Police 2012: Study on optimization of ITS equipment management		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	RTBF – Public broadcaster		
	Federal Police		
Were specifications and standards applied?	☒ yes	☐ no	Comment:
Related co-operation activities with other Member States	Automatic exchange of data with other Belgian traffic centres Traffic management plans with neighbouring traffic centres		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

4.4.7 *Weather information for winter maintenance management: Météoroutes*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and operations services		
Level 2	Information infrastructures		
Level 3	Weather monitoring		
Level 4	-		
Activity/project	**Weather information for winter maintenance management: Météoroutes**		
Description	Operating aid for winter maintenance based on a network of road weather stations and the integration of specialized data sources delivered in a user-friendly way		
State of implementation	☒ Implemented	☐ Planned	
Timescale	1995 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other:
Type of project organisation	☒ Public	☐ Private	☐ Other:
Objectives and expected achievements	Implementation of a network of 50 meteorological stations spread out all over Region's territory and specially fitted to measure road weather parameters. Processing of the data, extrapolation, and integration of forecasts in order to provide efficient decision aid for local operation units in charge of winter maintenance.		
Milestones	1995 – 1998: Development of the system 2010 – 2011: Improvement of weather forecast for the main weather stations 2012: Reporting on winter maintenance operations (logbook ; tracking spreading vehicles)		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	NSI – Contractor		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:
Related co-operation activities with other Member States	Exchange of weather data in Datex 2 with Germany, Luxembourg and France is planned.		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	http://meteoroutes.wallonie.be/meteoroutes/login.jsp (restricted access)		

4.4.8 *Radar section for the motorway network*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Policing/Enforcement		
Level 3	-		
Level 4	-		
Activity/project	**Radar section for the motorway network**		
Description	Calculation of the average speed based on the comparison of the number plates registered at 2 different points distant of 3 km: the system calculates the average speed of each vehicle according to the time needed to cover the distance. Implementation of control devices (including mobile devices) at strategic points of the motorway network and in the approach of road works in order to improve observance of speed limits.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	Start (and end if applicable) of the activity or project.		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	The advantage of controlling average speed is to guarantee the observance of the authorized speed on a complete section and not only at the point of control.		
Milestones	2008: Synchronisation of the 2 ANPR counting sites on the A602 motorway in Liege 2009: Operation of the average speed calculation system with display on VMS 2011 – 2012: Implementation of 24 fixed control devices in high accident risk sections 2013: Enforcement of average speed calculation by the police 2014: Implementation of 10 mobile speed display devices on road works sites 2014: Update average speed calculation: taking into account in-coming and out-going traffic		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry		
	SOFICO – Regional public company		
	-		
Were specifications and standards applied?	☐ yes	☐ no	Comment:
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

4.4.9 *Motorways and major roads traffic information data base for traffic centre (Perex): WHIST-system*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Traffic Management and Control		
Level 3	Traffic Flow Control		
Level 4	Coordinated traffic management		
Activity/project	**Motorways and major roads traffic information data base for traffic centre (Perex): WHIST-system**		
Description	The WHIST system is the operating aid system for the regional traffic centre of Wallonia (PEREX). All traffic information related to motorways and major roads is entered in its database according to standardized classification. From there, it can be disseminated automatically through different means: Internet site, RDS-TMC, OTAP node. The same information is also taken into account for the semi-automatic launching of traffic management scenarios, especially the display of messages on variable signs.		
State of implementation	☒ Implemented	☐ Planned	
Timescale	1996 – 1999 for basic system 1999: website trafiroutes.wallonie.be Still on-going for updates and development of new functionalities (LOS calculation and travel times)		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	This project aims at gathering and processing real-time information on traffic conditions on the motorways and major roads in order to be able to launch actions and to disseminate information in a coherent and co-ordinated way.		
Milestones	1996: designing and development of the system 1998: development of information database 1999: launching of website trafiroutes.wallonie.be 2011: new version of trafiroutes.wallonie.be, including mobile app. 2013 - on-going: implementation of new generation counting loops and new algorithm for the calculation of LOS and travel times		
Resources			
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry – PEREX traffic centre		
	AMEC SPIE - contractor		
	NSI - contractor		
Were specifications and standards applied?	☒ yes	☐ no	Comment: DATEX I (OTAP)
Related co-operation activities with other Member States	Project developed in the frame of CENTRICO and EasyWay in order to ensure common standards, data exchange, cross-border traffic information.		
Further comments concerning interoperability, compatibility and continuity of services	Automatic exchange of information to be developed with foreign traffic centres, as it has been set up between the 3 Belgian regional centres.		
Further comments	http://trafiroutes.wallonie.be/trafiroutes/maptempsreel/		

4.4.10 *Mobile devices for the management of transit truck traffic in the Ardenne*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Traffic Management and Control		
Level 3	Traffic Flow Control		
Level 4	Traffic Management for Specific Vehicles (dangerous, wide loads)		
Activity/project	**Mobile devices for the management of transit truck traffic in the Ardenne**		
Description	Use of mobile devices (mobile cameras and mobile VMS) in order to support traffic management measures: mobile devices are installed beforehand according to predictive information on weather conditions, events and road works (including coming from neighbouring regions).		
State of implementation	☒ Implemented	☐ Planned	
Timescale	2010 -		
Activity/project scope	☐ National	☒ Regional/Local Walloon authority	☐ Other: Please specify
Type of project organisation	☒ Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	The objective is to manage transit traffic, especially international truck traffic in case of forecast events: closing of borders, heavy snows, special events and major road works. Traffic conditions are monitored and traffic management measures (like re-routing, closing of the motorway and prohibition for trucks) are displayed.		
Milestones	2010: Studies 2011: Development of a common strategy with Police and operation units 2012: Launching of “Plan Neige” 2012 – 2013: Implementation of mobile VMS and cameras		
Resources	-		
Lead stakeholders	Public Service of Wallonia (SPW) – General Directorate Roads and Buildings – Regional Ministry		
	Federal Police		
	Public Service of Wallonia (SPW) Centre regional de crise		
Were specifications and standards applied?	☐ yes	☐ no	Comment: Installation and use of dynamic signing is made according to EasyWay “deployment guidelines”
Related co-operation activities with other Member States	Measures taken by a country (typically closing of the border) have a direct and strong influence in the neighbouring ones.		
Further comments concerning interoperability, compatibility and continuity of services	Exchange of information and common approach is needed for the management of truck traffic in special circumstances.		
Further comments	-		

4.5 PROJECTS/ACTIVITIES BY THE BRUSSELS-CAPITAL AUTHORITY

4.5.1 *FM radio broadcast and "radio break-in" system for tunnels safety*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Incident Management
Level 3		-
Level 4		-
Activity/project		**FM radio broadcast and "radio break-in" system for tunnels safety**
Description		Renewal of the FM radio broadcast transmission installation in tunnels and implementation of a "radio break-in" system The break-in system keeps the radio connection active in tunnels. Furthermore, it can be used to give information or instructions directly in tunnels. In fact, the radio broadcast is interrupted to broadcast other messages (for example: evacuation of a tunnel). The break-in is able to work during any incident (it has its own power system). This system will only be used during a serious incident.
Period		2008 – 2014
Major milestones		2011 – 2013: Modifications of the system. 2014: Implementation.
Financing		€ 284.074,-
Related co-operation activities with other member states		/
Expected achievements		Continuous radio broadcast in tunnels and radio break in is used for serious incident only and increase the safety and the security of the users
Further comments		/
Contact person(s)		Craen Baudouin: bcraen@sprb.irisnet.be
If applicable	Interoperability issues addressed	/
	Remaining challenges on interoperability	/
	Compatibility issues addressed	There are a interface with other systems in the traffic centre
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	The central system is installed in the traffic centre (physically not in the tunnels)
	Remaining challenges on continuity of services	Creation of an other central system (backup system)

4.5.2 *Automatic barriers closing tunnel access*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Incident Management
Level 3		-
Level 4		-
Activity/project		**Automatic barriers closing tunnel access**
Description		These barriers are installed on the front wall of the tunnels. They can be used to close the tunnel during an intervention (maintenance, incident …). The closing is possible from the traffic centre but also locally (by the emergency service, for example).
Period		2012 and on-going
Major milestones		2012: First installation, NATO tunnel 2015: Implementation in Belliard Tunnel
Financing		€ 3.500.000,-
Related co-operation activities with other member states		/
Expected achievements		That all tunnels have this installation
Further comments		/
Contact person(s)		Arthur Kabuya: tkabuya@sprb.irisnet.be
If applicable	Interoperability issues addressed	The supervision system has a data system to exchange information with other systems (a protocol should be define)
	Remaining challenges on interoperability	To have specification to exchange the data
	Compatibility issues addressed	The system is able to work with other equipment with some logistical adaptations
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	/
	Remaining challenges on continuity of services	/

4.5.3 *Automatic incident detection in road tunnels*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Incident Management
Level 3		-
Level 4		-
Activity/project		**Automatic incident detection in road tunnels**
Description		Automatic incident detection (AID) This is an automatic detection system based on the real-time analysis of camera images. The system detects automatically an incident (accident, fire, stopped car, pedestrian) and gives an alarm to the operator in the traffic centre. AID will be used in road tunnels.
Period		2010 - 2017
Major milestones		2010 - 2013: feasibility studies 2013 - 2017: implementation
Financing		€ 3.000.000,-
Related co-operation activities with other member states		-
Expected achievements		Most of Brussels' tunnels will have an AID installation
Further comments		
Contact person(s)		Yves Delincé: ydelince@sprb.irisnet.be
If applicable	Interoperability issues addressed	yes
	Remaining challenges on interoperability	/
	Compatibility issues addressed	yes
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	Yes, redundant system (but physically at the same place)
	Remaining challenges on continuity of services	To create redundant systems not physically at the same place

4.5.4 *Central Traffic Data Server gathering all available traffic data : IRMA*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and operations services		
Level 2	Information Infrastructures		
Level 3	(Mobility data Management & Exchange)		
Level 4	(Data Base Management)		
Activity/project	**Central Traffic Data Server gathering all available traffic data : IRMA**		
Description	Development of a server to collect all available traffic data		
State of implementation	☐ Implemented	X Planned	
Timescale	2010 - 2011: Feasibility study 2012 - 2014: development 2015: implementation		
Activity/project scope	☐ National	X Regional/Local Brussels-Capital authority	☐ Other: Please specify
Type of project organisation	X Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To collect and calculate all available traffic data.		
Resources	€ 980.000,-		
Lead stakeholders	Brussel Mobiliteit - Bruxelles Mobilité		
Further comments concerning interoperability, compatibility and continuity of services	Traffic data will be gathered from all possible public and private service providers.		
Further comments	www.brusselmobiliteit.be - www.bruxellesmobilite.be		

4.5.5 *Operating environments - EasyWay Map*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Information Infrastructures
Level 3		(Mobility data Management & Exchange)
Level 4		(Operating Environment & Formats)
Activity/project		**Operating environments - EasyWay Map**
Description		Within the scope of the EasyWay programme, Operating Environments for the provision of ITS Services are defined (Deployment Guidelines 2012 : http://dg.easyway-its.eu/DGs2012) For the Brussels Capital Region, this framework will be used to define the need for supplementary Traffic and Security Equipment and Systems
Period		2011-2013 Project cancelled
Major milestones		2011: Proof of concept for some roads 2012: Application of the method for a first area 2013: Application of the method on the remaining area's Project cancelled
Financing		30 kEuro (2011) + internal
Related co-operation activities with other member states		Easyway/Centrico coordination
Expected achievements		Common internal approach on ITS provision (services and equipments)
Further comments		/
Contact person(s)		Dirk Thibau: dthibau@mbhg.irisnet.be
If applicable	Interoperability issues addressed	See Easyway Deployment Guidelines
	Remaining challenges on interoperability	-
	Compatibility issues addressed	See Easyway Deployment Guidelines
	Remaining challenges on compatibility	-
	Continuity of services issues addressed	See Easyway Deployment Guidelines

4.5.6 *Definition of an Enterprise architecture for the Brussels Traffic Centre*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Information Infrastructures
Level 3		Traffic Informations Centres
Level 4		-
Activity/project		**Definition of an Enterprise architecture for the Brussels Traffic Centre**
Description		During this study a road map is developed for the implementation of the ITS systems related to the Traffic Centre. The approach is based on the TOGAF-ADM (The Open Group Architecture Framework – Architecture Development Method).
Period		2010-2013 (Project finished)
Major milestones		2010: opening bids 7-2011: end first iteration 2012: start-up of an ITS projects Coordination Committee 2013: start second iteration
Financing		2011: 350 kEuro 2012-2013: 350 kEuro
Related co-operation activities with other member states		Visits of similar organisations (benchmarking): Traffic Centres of Utrecht and Düsseldorf
Expected achievements		Better alignment between business needs and IT systems based on common business, information and technical architecture. Better programme management thanks to the ITS projects Coordination Committee
Contact person(s)		Dirk Thibau: dthibau@mbgh.irisnet.be
If applicable	Interoperability issues addressed	Definition of organisation wide standards and methods for the ITS-projects (based on existing international standards and best practices)
	Remaining challenges on interoperability	/
	Compatibility issues addressed	See interoperability
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	Some knowledge management aspects are addressed (in order to assure the continuity of the projects and the offered services).

4.5.7 *Open Travel data Access Protocol to access the Brussels traffic centre information*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Information Infrastructures
Level 3		Traffic Informations centres
Level 4		-
Activity/project		**Open Travel data Access Protocol (OTAP) to access the Brussels traffic centre information**
Description		OTAP (Open Travel Data Access Protocol): OTAP is a program that is used to enable stakeholders and partners to access the Brussels traffic centre information.
Period		2008 – 2012 Project finished
Major milestones		10/ 2008: Production of the platform OTAP 10/2010: The contract for the maintenance of the platform OTAP 12/2011: Development to the link between OTAP-GPMV. 06/2012: Production to the solution to create a link between OTAP-GPMV
Financing		2006: Preparatory study ~25kEuro 2008: Public tender ~125kEuro
Related co-operation activities with other member states		OTAP is a common standard between traffic centres members in Euro-regional project CENTRICO (EasyWay project). Besides the OTAP publication towards the 2 other Belgian Regions and some service providers, there is also foreseen in an RDS-TMC-ready publication towards the public FM-radios in Flanders and Wallonia.
Expected achievements		To increase the collaboration between partners with the final goal to rise the costumer services
Contact person(s)		Dirk Thibau: dthibau@mbgh.irisnet.be
If applicable	Interoperability issues addressed	Yes, with the traffic server
	Remaining challenges on interoperability	/
	Compatibility issues addressed	With systems which use Datex II
	Remaining challenges on compatibility	Actually the system use Datex II. In the future, it should be use Datex II
	Continuity of services issues addressed	OTAP is a common standard between traffic centres member's in Euro-regional project CENTRICO (EasyWay project)

4.5.8 *Traffic light priority for public transport improving the commercial speed in Brussels (MIVB-STIB)*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Traffic light priority for public transport improving the commercial speed in Brussels (MIVB-STIB)**
Description		VICOM-AVANTI, the commercial speed improvement program of MIVB/STIB: Priority of traffic lights for the buses and trams of the MIVB/STIB by installation of radio transmitters in the bus/streetcar and receivers in the traffic controllers and special MS-12 signal plans for the public transportation
Period		Phase 1: 2007-2012 Phase 2: 2012-2015 Phase 3: 2015-2017
Major milestones		Go live: 16.12.2008
Financing		Regional investment budget for the installation budget of the fixed part and MIVB/STIB budget for the equipment on board oft the buses and trams
Related co-operation activities with other member states		No (although compatible with De Lijn)
Expected achievements		Equipment of 200 traffic controllers in the Brussels Capital Region
Further comments		No
Contact person(s)		Philippe Boogaerts, pboogaerts@gob.irisnet.be
If applicable	Interoperability issues addressed	Yes
	Remaining challenges on interoperability	The upgrading of old traffic controllers and the implementation of an open application protocol. In 2012, the Brussels Region took over 20 local controllers from the municipalities. In 2014, the Region took over 4 local controllers of the municipalities. There are talks on-going with the City of Brussels to hand over 30 controllers in order to implement VICOM/AVANTI.
	Compatibility issues addressed	Yes
	Remaining challenges on compatibility	No
	Continuity of services issues addressed	Yes
	Remaining challenges on continuity of services	No

4.5.9 *Central coordinated management system for the traffic light controllers in Brussels*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Adaptive Traffic Control at Intersections
Level 4		-
Activity/project		**Central coordinated management system for the traffic light controllers in Brussels**
Description		Station for the distance control of traffic lights: The aim is to have a central coordinated management system for the traffic light controllers instead of local coordination. The coordination between road intersections can be fine-tuned in function of the traffic circumstances (incident, no traffic, peak hours)
Period		Tender in 2011; Budgeted in 2012; On 05.06.14, there are 38 controllers connected to the central.
Major milestones		Presentation to the public: 03.02.2014
Financing		Financing 3 MEUR on the Regional Budget
Related co-operation activities with other member states		No
Expected achievements		Distance control of 300 traffic controllers connected to the cable network: diagnostics and selection of signal plans and detectors, quality checks of the VICOM-AVANTI traffic pre-emption for buses and trams of the MIVB/STIB
Further comments		No
Contact person(s)		Philippe Boogaerts, pboogaerts@gob.irisnet.be
If applicable	Interoperability issues addressed	Yes
	Remaining challenges on interoperability	A new tender is to be issued to buy new traffic controllers that can be directly connected (without adaptation of the firmware) to the central.
	Compatibility issues addressed	Yes
	Remaining challenges on compatibility	The upgrading of old traffic controllers and the implementation of an open application protocol.
	Continuity of services issues addressed	Yes
	Remaining challenges on continuity of services	No

4.5.10 *Advanced Traffic Management System: "Compas"*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic Management and Control
Level 3		Traffic Flow Control
Level 4		Co-ordinated Traffic Management
Activity/project		**Advanced Traffic Management System : "Compas"**
Description		Compas is the new ATMS (Advanced Traffic Management System) that will be used by the traffic and technical operators at the Brussels traffic centre information's in order to comply to the defined action plans for traffic management and security management (especially concerning 25 road tunnels).
Period		2011-2014
Major milestones		2008-2010: study 2/2011: opening bids 11/2011: start development 2014: first version available 2014: second version available At least 3 new versions are foreseen in the period 2014-2015
Financing		Total: € 1.000.000,-
Related co-operation activities with other member states		Eventually cooperation with the Charm-programme: http://www.rijkswaterstaat.nl/CHARM
Expected achievements		Better operator support with the final goal offer a better ITS service to the citizens
Contact person(s)		Dirk THIBAU: dthibau@mbhg.irisnet.be
If applicable	Interoperability issues addressed	Conformity foreseen to DATEX-II for publication of the information OPC-UA is evaluated on the input side
	Remaining challenges on interoperability	/
	Compatibility issues addressed	Use of OGC standards for the geographical information (WFS…) See also Interoperability.
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	Utilisation of a high availability technical architecture

4.5.11 *Dynamic lane signalization for road section (motorways and tunnels) management*

Priority area		**ITS road safety and security applications**
Level 1		Traffic Management and Operations Services
Level 2		Traffic management and Control
Level 3		Traffic Flow Control
Level 4		Dynamic lane management
Activity/project		**Dynamic lane signalization for road section (motorways and tunnels) management**
Description		The lane control signals are displayed above the road to indicate the availability of the various lanes : - A green arrow indicates that the lane is available to traffic facing the signal. - A white diagonal arrow means that the lane is closed ahead and traffic should move to the next lane on the left. - A red cross means that the lane is closed to traffic facing the signal.
Period		2014: Study. 2015: Implementation
Major milestones		Installation in Belliard Tunnel
Financing		More than 3.500.000 € for all project
Related co-operation activities with other member states		/
Expected achievements		to provide safe and efficiently managed motorways and also tunnels.
Further comments		/
Contact person(s)		Arthur Kabuya: tkabuya@sprb.irisnet.be
If applicable	Interoperability issues addressed	Open field controller TCP/IP based Open SCADA system, OPC
	Remaining challenges on interoperability	/
	Compatibility issues addressed	/
	Remaining challenges on compatibility	/
	Continuity of services issues addressed	/
	Remaining challenges on continuity of services	/

4.5.12 *Variable Message Signs on highways and tunnels*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and operations services		
Level 2	Traffic management and Control		
Level 3	Traffic Flow Control		
Level 4	Travel guidance using variable message signs (VMS)		
Activity/project	**Variable Message Signs on highways and tunnels**		
Description	Installation of VMS on highways and tunnels which are controlled from the traffic centre		
State of implementation	X Implemented	☐ Planned	
Timescale	Tunnels: 1998-1999 Highways: start in 2009 and on-going Full Matrix/Full Colour in tunnels: 2014 study and 2015-2016 implementation		
Activity/project scope	☐ National	X Regional/Local Brussels-Capital authority	☐ Other: Please specify
Type of project organisation	X Public	☐ Private	☐ Other: Please specify
Objectives and expected achievements	To inform road users of traffic safety messages and real time information on strategic points so they can change their journey.		
Resources	€ 3.500.000,- (rough estimate of the total amount all underlying items)		
Lead stakeholders	Brussel Mobiliteit - Bruxelles Mobilité		
Were specifications and standards applied?	X yes	☐ no	For an effective and efficient use of the EasyWay-Guidelines to display messages on dynamic signs, standards were used to develop the VMSs on highways.
Further comments concerning interoperability, compatibility and continuity of services	The supervision system is oriented WEB and have a date system MYSAL to exchange the data with other systems (the protocol should be defined). There is also a FTP server for the exchange of files. Real-time traffic messages coming from other traffic centres (partners in CENTRICO and the EasyWay-program) will be displayed. The system is able to work with others equipment with some logistical adaptations		
Further comments	www.brusselmobiliteit.be - www.bruxellesmobilite.be		

4.6 OTHER PROJECTS/ACTIVITIES

4.6.1 *Development of an integrated digital map of the Belgian road network*

Priority area	**ITS road safety and security applications**		
Level 1	Traffic Management and Operations Services		
Level 2	Information Infrastructures		
Level 3	(Mobility data Management & exchange)		
Level 4	(Digital Map)		
Activity/project	**Development of an integrated digital map of the Belgian road network**		
Description	Traffic information workgroup ITS Belgium: Development of a digital map of the Belgian road network integrating public data from the regional authorities in charge of road infrastructure and traffic management.		
State of implementation	☒ Implemented	☒ Planned	
Timescale	2014 - 2016		
Activity/project scope	☒ National	☐ Regional/Local	☐ Other: Please specify
Type of project organisation	☐ Public	☒ Private	☐ Other: Please specify
Objectives and expected achievements	Improving existing maps developed by the private sector Making use of public data owned by the 3 Belgian Regions		
Milestones	2014 requirements due to delegated act 2015 specification		
Resources	-		
Lead stakeholders	ITS Belgium – Peter Van der Perre – pv@its.be		
	Regional traffic centres: 1. Mobiris 2. Perex 3. Vlaams verkeerscentrum		
	Navteq		
Were specifications and standards applied?	X yes	☐ no	Comment:
Related co-operation activities with other Member States	-		
Further comments concerning interoperability, compatibility and continuity of services	-		
Further comments	-		

5 PRIORITY AREA IV: LINKING THE VEHICLE WITH THE TRANSPORT INFRASTRUCTURE

5.1 SURVEY ON IMPLEMENTATION STATUS CONCERNING PRIORITY AREA IV

Priority area IV: Linking the vehicle with the transport infrastructure			
Activities or projects concerned with linking the vehicle with the transport infrastructure	☐ Implemented	☐ Planned	☐ Not planned
Responsible person in administration	Flemish authority: Magda De Haes magda.dehaes@mow.vlaanderen.be +32 (0)2 553 71 23 Walloon authority: Caroline Pourtois (DGO 1) caroline.pourtois@spw.wallonie.be + 32 (0)81.21.95.08 Nathalie Mayeux (DGO 2) nathalie.mayeux@spw.wallonie.be +32 (0)81 77.30.88 Brussels-Capital authority Luc Swartebroeck lswartebroeckx@sprb.irisnet.be +32 (0)2/204 18 07 Jean-Paul Gailly jpgailly@sprb.irisnet.be +32 (0)2/204 14 18		
Comments	No project/activity reported in this area.		

ITS Classification					NUMBER of Projects			
Area	Level 1	Level 2	Level 3	Level 4	FEDERAL	FLEMISH	WALLOON	BRUSSELS
Linking the vehicle with the transport infrastructure	Intelligent Vehicle Services	Vision Enhancement						
		Safety Readiness	Driver impairment					
			Intelligent vehicle safety systems or eSafety systems					
			Collision avoidance					
			Lane keeping					
			Platooning					
			Speed control (including ISA, Intelligent Speed Adaptation)					
		Automated Vehicle Operation						
		Co-operative Systems	Traffic Safety					
			Traffic efficiency					
			Supporting services					
			Value-Added services					

6 KEY PERFORMANCE INDICATORS

TABLE 1 : NUMBERS OF THE BELGIAN ITS PROJECTS BY ENTITY AMONG THE PRIORITY AREAS

Area	Level 1	Level 2	Level 3	Level 4	FEDERAL	FLEMISH	WALLOON	BRUSSELS
Optimal Use of road traffic and travel data	Public Transport services	Public Transport Management			1		1	1
		Demand Responsive and Shared Transport					4	
		Public Transport Electronic Payment			1	1	1	
		Communication Systems				2		
	Traveller Information Services	Pre-trip Information	Internet Journey Planning and phone line	Trip Planning	1	2	1	
			Support Smart phones based Journey Planning					
			TV/Radio				1	
			Kiosks pages					
			Social Media / Social Data functions					
		On-Trip Information	Mobile Internet/Wireless page		1			2
			Radio Roadside variable Message Signs					1
			Public transport & multi-modal information displays					2
			In-vehicle Systems / navigation and route guidance			1		
			Social Media / Social Data functions					
		Travel Services Information						
Continuity of traffic and freight management ITS Services	Freight Transport Management	Management of Dangerous Freight						
		Intelligent Truck Parking				1	1	
	Transport-related Electronic Payment services	Transport-related Electronic Financial Transactions						
		Integration of Transport Related Electronic Payment Services						
ITS road safety and security applications	Traffic Management and Operations Services	Traffic Management and Control	Traffic Flow Control	Dynamic lane management		1		1
				Ramp metering				
				Travel guidance using variable message signs (VMS)				1
				Co-ordinated traffic management		1	1	1
				Traffic management for specific vehicles (dangerous, wide loads)		2	1	
			Adaptive Traffic Control at Intersections			5		2
			Parking Facilities management					
		Information Infrastructures	Traffic monitoring					
			Weather monitoring				1	
			Environmental Conditions Monitoring					
			Traffic Information centres			1	2	2
			Traffic Control Centres (TCC) or combined				1	
			Planning and forecasting traffic conditions					
			(Mobility data Management & Exchange)	Digital Map	1 (ITS.be)	1	2	
				Data Base Management			1	1
				Operating Environment & Formats				1
				Data Exchange & Data Market Place				
		Incident Management						3
		Demand Management						
		Transport Infrastructure Maintenance Management						
		Policing/Enforcement				3	1	
	Emergency Services	Transport Related Emergency Notification and Personal Security			2	1		
		Emergency Vehicle Management						
		Hazardous Materials and Incident Notification						
	Road Transport Related Personal Safety	Public Travel Security						
		Safety Enhancements for Vulnerable Road Users				2		
		Safety Enhancements for Disabled Road Users						
		Safety Provisions for Pedestrians Using Intelligent Junctions and Links						
	Disaster Response Management and Coordination Services	Disaster Data Management						
		Disaster Response Management						
		Coordination with Emergency Agencies						
Linking the vehicle with the transport infrastructure	Intelligent Vehicle Services	Vision Enhancement						
		Safety Readiness	Driver impairment					
			Intelligent vehicle safety systems or eSafety systems					
			Collision avoidance					
			Lane keeping					
			Platooning					
			Speed control (including ISA, Intelligent Speed Adaptation)					
		Automated Vehicle Operation						
		Co-operative Systems	Traffic Safety					
			Traffic efficiency					
			Supporting services					
			Value-Added services					

TABLE 2 : BUDGET (UP TO 2014) OF THE BELGIAN ITS PROJECTS

AREA	Entity	Projects/Activity names	Level 1	Level 2	Level 3	Level 4	Budget (sub-total) up to 2014	Total per entity	Total per area
Optimal use of road, traffic and travel data	FED	Multimodal e-ticketing for all public transports	Public Transport Services	Public Transport Electronic Payment			n.a.	5.500.000 €	10.770.000 €
		Optimization of connections among (public) transportation providers: ARIBUS		Public Transport Management			2.000.000 €		
		Railway real-time Information service: Rail-time	Traveller Information Services	On-Trip Information	Mobile Internet/Wireless page		2.500.000 €		
		Door-to-door multimodal route planner		Pre-Trip Information	Internet Journey Planning and Phone line	Trip Planning support	1.000.000 €		
	VL	Registration-Ticketing-onBoard computer (ReTiBo-project De Lijn)	Public Transport Services	Public Transport Electronic Payment			n.a.	1.120.000 €	
		Public transport (de Lijn) data exchange service		Communication Systems			- €		
		Public transport (de Lijn) route planner via Website					n.a.		
		Real-time traffic information services to make it comprehensible to EU users	Traveller Information Services	On-Trip Information	In-Vehicle Systems / navigation and route guidance		120.000 €		
		Public Transport (de Lijn) - Plugin route planner		Pre-Trip Information	Internet Journey Planning and Phone line	Trip Planning Support	n.a.		
		Travel Time Information Services to better plan and route journeys on the road network					1.000.000 €		
	RW	Dynamic carpooling	Public Transport Services	Demand responsive and Shared transport			n.a.	n.a.	
		Carpool service for journeys to work: "Carpoolplaza"					n.a.		
		Schoolpool service to carpool to and from school					n.a.		
		Carsharing « Cambio »					n.a.		
		Ticketing service in public transport (TEC): TEC it easy		Public Transport Electronic Payment			n.a.		
		Public transport fleet management system (TEC): vehicle localization for real time passenger information		Public Transport Management			n.a.		
		Radio Data System (RDS) and Traffic Message Channel (TMC) service of the traffic centre "PEREX"	Traveller Information Services	Pre-Trip Information	TV/Radio		n.a.		
		Point-to-Point multimodal route planner « Infotec.be »			Internet Journey Planning and Phone line	Trip Planning Support	n.a.		
	BL	Real-time information service for the public transport (STIB/MIVB): Phoenix	Public Transport Services	Public Transport Management			n.a.	4.150.000 €	
		Redefinition of the Internet strategy for Bruxelles Mobilité – Brussel Mobiliteit	Traveller Information Services	On-Trip Information	Mobile Internet/Wireless page		150.000 €		
		Website and Apps for the public transport (STIB/MIVB)					n.a.		
		Informative urban furniture for the public transport (STIB/MIVB): Mupi's			Public Transport & Multi-Modal Information Displays		n.a.		
		In board screens for the public transport STIB/MIVB (tram, bus, metro)					n.a.		
		Dynamic guidance and access to Parking Facilities			Radio Roadside Variable Message Signs		4.000.000 €		
Continuity of Traffic and Freight Management ITS Services	VL	Development of intelligent truck parking's for the new concessions of motorway service areas	Freight Transport Management	Intelligent truck Parking			n.a.	n.a.	n.a.
	RW	Equipment of secured truck parking's					n.a.	n.a.	
ITS road safety and security applications	FED	Conceptual position paper on eCall in Belgium	Emergency Services	Transport related emergency notification and personal security			n.a.	n.a.	102.991.808 €
		Field test on eCall in Belgium					n.a.		
	VL	Better protection of pedestrians and cyclists crossing unsafe roads	Road Transport Related Personal Safety	safety Enhancements for Vulnerable Road Users			33.333 €	87.196.489 €	
		Mobiliteitscentrale for persons with reduced mobility					15.000.000 €		
		Tunnel safety – Radio retransmission in tunnels with break-in functionality	Emergency Services	Transport related emergency notification and personal security			- €		
		Traffic sign database for map makers	Traffic Management and Operations Services	Information Infrastructure	(Mobility Data Management & Exchange)	(Digital Map)	120.000 €		
		Reliable gathering and dissemination of safety related information			Traffic informations Centres		200.000 €		
		Heavy Goods Vehicle safe distance control and HGV overtaking ban enforcement		Policing/Enforcement			n.a.		
		Trajectory average speed control enforcement					2.150.000 €		
		Weigh-in-motion for overload detection enforcement					1.822.453 €		
		Intelligent traffic lights – Antwerp Traffic Light Coordination Centre		Traffic management and Control	Adaptive traffic control at Intersections		n.a.		
		Intelligent traffic lights – Ghent City Ring Road R40 Traffic Light Coordination					1.100.000 €		
		Traffic light priority for public transport based on short distance radio for coastal tram					1.200.000 €		
		Traffic light priority for public transport based on short distance radio for buses					337.369 €		
		Definition of KPI's for the optimization of traffic lights management					33.333 €		
		Highways Dynamic Traffic Management Plan			Traffic Flow Control	Co-ordinated Traffic Management	n.a.		
		Hard Shoulder Running for an active traffic management of motorways				Dynamic Lane Management	65.200.000 €		
		Restriction of the access of rural areas for Heavy Goods Vehicle via an ANRP lock				Traffic Management for Specific Vehicles (dangerous, wide loads)	n.a.		
		Road counting of dangerous goods transport by road to develop an ARD risk analysis					n.a.		
	RW	Central database of speed limits		Information Infrastructure	(Mobility Data Management & Exchange)	(Data Base Management)	n.a.	n.a.	
		Improvement of the quality of the available public maps with GPS data base providers				(Digital Map)	n.a.		
		Geographical positioning tool of road signs in Wallonia: Oppsarcow					n.a.		
		Development of a local traffic centre "Les Tilleuls" on the A602 in Liege for incident detection and prevention			Traffic Control Centres (TTC) or Combined		n.a.		
		Open Travel data Access Protocol (OTAP) node to get access point to traffic centre information			Traffic informations Centres		n.a.		
		Development of the Walloon traffic centre PEREX					n.a.		
		Weather information for winter maintenance management: Météoroutes			Weather Monitoring		n.a.		
		Radar section for the motorway network		Policing/Enforcement			n.a.		
		Motorways and major roads traffic information data base for traffic centre (Perex): WHIST-system		Traffic management and Control	Traffic Flow control	Coordinated Traffic Management	n.a.		
		Mobile devices for the management of transit truck traffic in the Ardenne				Traffic Management for Specific Vehicles (dangerous, wide loads)	n.a.		
	BL	FM radio broadcast and "radio break-in" system for tunnels safety		Incident Management			284.074 €	15.795.320 €	
		Automatic barriers closing tunnel access					2.625.000 €		
		Automatic incident detection in road tunnels					2.250.000 €		
		Central Traffic Data Server gathering all available traffic data : IRMA		Information Infrastructure	(Mobility Data Management & Exchange)	(Data Base Management)	816.667 €		
		Operating environments - EasyWay Map				(Operating Environnement & Formats)	30.000 €		
		Definition of an Enterprise architecture for the Brussels Traffic Centre			Traffic informations Centres		700.000 €		
		Open Travel data Access Protocol to access the Brussels traffic centre information					333.000 €		
		Traffic light priority for public transport improving the commercial speed in Brussels (MIVB-STIB)		Traffic management and Control	Adaptive traffic control at Intersections		n.a.		
		Central coordinated management system for the traffic light controllers in Brussels					3.000.000 €		
		Advanced Traffic Management System : "Compas"			Co-ordinated Traffic Management		875.000 €		
		Dynamic lane signalization for road section (motorways and tunnels) management			Traffic Flow Control	Dynamic Lane Management	1.750.000 €		
		Variable Message Signs on highways and tunnels				Travel guidance using Variable Message Signs (VMS)	3.131.579 €		
	Other	Development of an integrated digital map of the Belgian road network		Information Infrastructure	(Mobility Data Management & Exchange)	(Digital Map)	n.a.	n.a.	

Table 3 : ITS INVESTMENTS up to 2014 per Entity and Priority Area (€)					
	FEDERAL	FLEMISH	WALLOON[2]	BRUSSELS	NATIONAL[3]
Optimal Use of road traffic and travel data	5.500.000 €	1.120.000 €	n.a.	4.150.000 €	10.770.000 €
Continuity of traffic and freight management ITS Services	-	n.a	n.a.	-	n.a.
ITS road safety and security applications	n.a.	87.196.489 €	n.a.	15.795.320 €	102.991.808 €
Linking the vehicle with the transport infrastructure	-	-	-	-	-
Total	5.500.000 €	88.316.489 €	n.a.	19.945.320 €	**113.761.808 €**

[2] For the Walloon region, the specific investments in Intelligent Transport Systems are not easy to determine given the nature of the projects (e.g. involving autonomous companies of public transport).
[3] "National" means sum of the federal and the 3 regional contributions.

TABLE 4 [4] : ITS INVESTMENTS in BELGIUM (% of Mobility & Transports Budgets 2011-14)				
FEDERAL [5]	FLEMISH	WALLOON	BRUSSELS	NATIONAL
0.038 %	-	-	-	-

[4] The ITS Investments-to-Mobility Budget ratio does not give an objective picture of the situation. The definition of the mobility budget is not the same in each country. Is the mobility budget concerning all transport modes or only the road mode? Should the budget include autonomous companies of public transport? It would be interesting to report ITS investment to a more objective basis such as the population, the land area or the GDP.

[5] Budget of the *Federal Public Service Mobility and Transports*: 2011: 3 584.9 M€; 2012: 3 456.3 M€; 2013: 3 658.0 M€ (after the 3rd budgetary control); 2014: 3 625.3 M€ (initial budget). Total 2011-2014:14 324 500 000 €. But a very large part of this federal mobility budget is dedicated to the Railways sector.