Directive 2010/40/EU
ITS Progress Report 2017
Belgium

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

Period 2014-2017

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1 Introduction

1.1 General overview of the national activities and projects

In Belgium, responsibilities in the field of ITS are shared between the Regions and the Federal State. Coordination is ensured through the *Belgian ITS Steering Committee*.

1.1.1 Interfederal Governance

In the Belgium federal context, where decisional power is shared between the federal authority and the three Regions, the Brussels-Capital Region, Flanders and Wallonia, transport competences are shared between these four entities. Concerning ITS the domain for instance of telecommunications, railways network and operations, airways, some road safety aspects, vehicle registration and vehicle regulation, are federal competences. Whereas the domain for instance of road infrastructure, parts of road safety, inland waterways transport and public transport (other than railways) are regional competences. Therefor the Federal, Brussels-Capital, Flemish and Walloon Authorities are in charge of the ITS activities in their competences and on their territory.

Regarding ITS and the implementation of the Directive 2010/40 EU, the four entities (Federal, Brussels-Capital, Flemish and Walloon) signed July, 15th, 2014, a *Cooperation Agreement* for the Implementation of the ITS-Directive 2010/40 EU. This ITS Cooperation Agreement has created an *ITS Steering Committee*: each entity is represented for its competences on ITS in this Committee. The aim of the ITS Steering Committee is to follow up and exchange information about technical and legal aspects of ITS, to discuss, coordinate, align and to co-operate in all matters concerning the Directive 2010/40 EU and the forthcoming delegated acts.

Moreover, the Belgian federal Minister of Mobility launched, in the Belgium federal context, the proposal to restart concertation between the Ministers of Mobility from the four entities within the *Executive Committee of Ministers of Mobility*: this proposal was approved by the Concertation Committee in October 2015. From February 2016 onwards, several meetings took place between the four Belgian Ministers of Mobility, within the Executive Committee of Ministers of Mobility, on different aspects of mobility, in which ITS is an important subject.

1.1.2 ITS - Visions of the Belgian entities

Each Belgian entity is actually writing a new implementing plan concerning ITS. Hereby you will find the current status of the vision of each entity.

1.1.2.1 Federal Vision for Mobility in Line with ITS

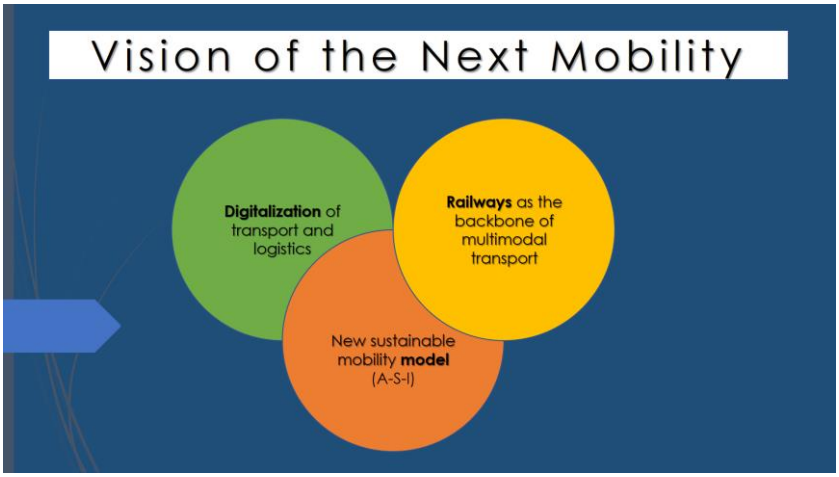
In line with the European politics of interoperability of the ITS-services, the Federal Government develops its ITS-policy in its domain of competences and in concertation with the regional entities. The *Federal ITS Action Plan* is part of a strategy based on the *Federal Vision of the Next Mobility* (see figures below).

Impact of mobility on sustainability - limit of previous policies

In recent years, Belgium has been suffering from heavy traffic congestion. An economic impact whose estimates range from a few hundred million euros to several billion, not to mention the obvious consequences on the environment, health and road safety.

Previous mobility policies have been based on a logic of investment in infrastructure in order to increase the capacity of the road (and rail) networks. This policy of sacrificing public space to the roads has reached its limits, in particular by inducing the congestion problems.

The basics of a new vision



1. Digitalization of transport

The digitalization of transport and logistics is an important factor of efficiency, simplification, lower costs and better use of resources. Digitalization also creates new opportunities for businesses and has the potential to change the way freight and traffic flows will be organized and managed in the future.

Intelligent Transport Systems, such as traffic management systems or passenger information systems, are based on modern and proven ICT digital technology, to be able to exploit a lot of data (historical, static, real-time) in order to know the characteristics of the transport networks, the specificities of the traffic demand and the particularities of recurring problems.

For this reason, mobility data systems are the basis of ITS services, which will enable:

- strengthen the management capacity of governments in the performance of their public service tasks and in their oversight policy.
- provide many benefits to travellers themselves through the development of user-centred services.

2. Rail as backbone of integrated multimodal transport

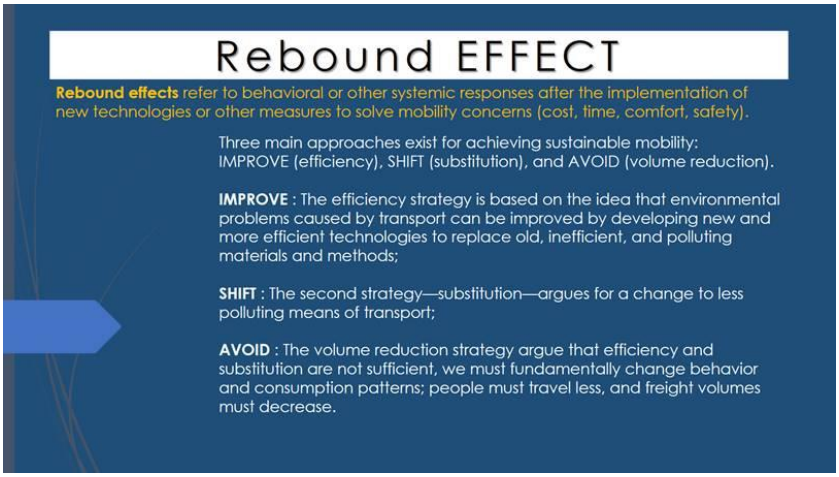
A modal shift from the most energy-intensive modes of transport (mainly individual cars) to more efficient modes is highly desirable. In this perspective, priority is given to alternative modes of transport, depending on their sustainability. Firstly, active modes (walking and cycling) and then public or shared transport (bus, rail, car sharing, car-pooling, etc.) are highlighted.

Of all public transport, rail has a structuring effect by the heavy nature of its infrastructure, which deserves better use as a starting point for integrated multimodal transport.

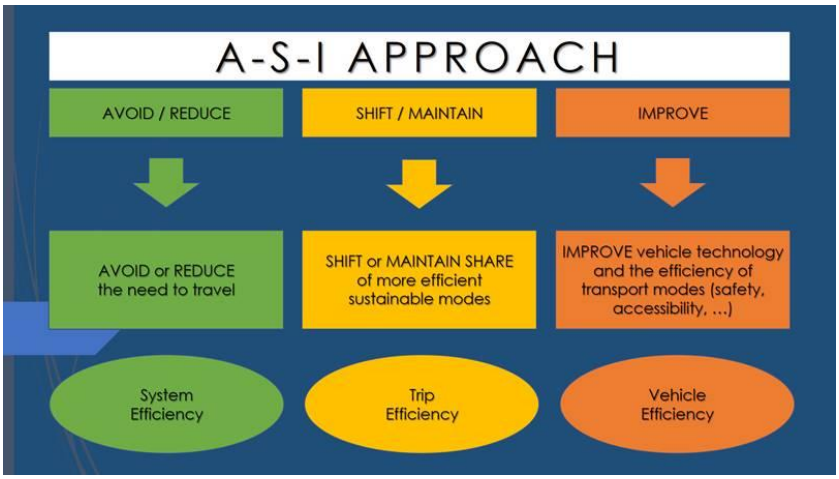
3. New model of sustainable mobility policies

One of the most attractive new models is the AVOID-SHIFT-IMPROVE (ASI) approach: reducing unnecessary travel needs, allocating demand, promoting multimodality and intermodality, optimizing use of existing capacities, improve transport efficiency (including safety and accessibility to persons with reduced mobility). This applies both to the transport of passengers and freight, especially in urban areas.

The implementation of the ITS aims at a better use of current transport capacities. But paradoxically, ITS could lead to an increase in traffic and therefore greenhouse gas and particles emissions. It is therefore really necessary to adopt a strategy that aims to prevent these "*rebound effects*" through sustainable mobility planning ("AVOID"), the promotion of public and collaborative transportation ("SHIFT"), and the integration of connected, cooperative and automated vehicles ("IMPROVE").



Federal Strategy for ITS : AVOID-SHIFT-IMPROVE



1. AVOID

"Avoid" represents long-term political initiatives that take time to show their effects but help address the root causes. The main objective of this strategy is to reduce or eliminate the need to move or transport goods *where there is no added value* (e.g. reducing the need for commuting through the promotion of new ways of working: telecommuting, shared offices,

etc.). The "Avoid" aspect aims to reduce the need for travel, those that create societal harm (economic, quality of life, ...).

While this approach is by far the most effective, it requires a difficult and long-term coordination of spatial planning policies, the internalization of external costs of transport, the organization of working time and workplaces, adjustment of school schedules (family mobility), ...

However, in the short term, the application of the first ITS services will enable the collection of rich and new information on the travel needs of Belgians and to identify the most disruptive movements for society and citizens. The first step is to determine which data to harvest and analyse for better mobility (or how administrations can take advantage of the Big Data).

2. SHIFT

"Shift" is a combination of short- and medium-term improvements to influence (rather than force) a change from the individual car towards more recommendable modes of transport as regard as energy, space, health or the environment such as walking, cycling, public transport and shared models. The aim is to support a more sustainable modal shift by better information, integrated ticketing and a promotion of the sharing economy, all in a *truly integrated and attractive multimodal offer*.

To facilitate this modal shift, the combined benefits of public transport and new mobility services must be taken into account. A concrete example in the field of ITS is supporting the development of intermodal/multimodal route planners.

An intermodal/multimodal route planner provides real-time information to travellers to enable them to select their route, door-to-door and seamless, i.e., continuously from your departure point to your final destination, by integrating different modes of transport.

There are already (partial) information services on intermodal travel on the market, but there are still a number of gaps and barriers limiting the full potential of these services.

Therefore, the MMTIS delegated act of the ITS Directive will aim to create conditions conducive to supporting the provision of comprehensive, easily accessible and reliable multimodal information for travellers.

In this context, public transport operators (and the administrations referring to them) should be encouraged to publish the data listed in the ITS and PSI Directives in an European standard, with an acceptable license model, and with a quality control mechanism. This condition is necessary for the development of intermodal/multimodal route planners based on real-time data.

In the longer term, *Mobility as a Service* (MaaS) will be promoted by integrating ticketing and emerging modes of participation in the *collaborative economy* supported by the European Union. There is a lack of integration of offers between modes of transport, which results in poor local, regional and (inter)national accessibility.

3. IMPROVE

"Improve" means supporting research and development of vehicle technology to improve energy efficiency, reduce emissions, operational efficiency and, above all, safety and accessibility.

Significant progress has been made in *Advanced Driving Assistance Systems* (ADAS) such as lane warning, collision avoidance, night vision, and pedestrian detection systems. Their first goal has been to promote safer use of infrastructure through partially automated driving. Vehicle automation has thus been developed in order to reduce the number of accidents or to limit their consequences.

But the final goal is the *autonomous car*, without driver, which points to the 2020-2040 horizon. For specific applications, this technology is already under test in real conditions: for example, a shuttle bus that runs on a short route on a dedicated road.

Autonomous vehicles can bring about a real revolution in mobility. Indeed, they have enormous potential for shared transport and offer an unprecedented possibility for people with reduced mobility to participate in social life. Other major social benefits await us: fewer road accidents, less pollution, less need for enforcement.

Currently we are experiencing a *transitional period* within which a driver is increasingly assisted by the vehicle during the performance of the driving tasks. During this transitional period, the introduction of automated vehicles is facing many obstacles.

Communication between automated vehicles, infrastructure and other road users (especially vulnerable road users) will contribute to their safer integration into the global transport system, especially in the transition phase in mixed traffic (vehicle equipped and non- equipped with new technologies).

In fact, *automation, connectivity and cooperative ITS* must be brought together to make the system work. They are not just complementary technologies: they are mutually reinforcing and will probably ultimately merge. Truck platooning, which consists of trucks that communicate in order to follow automatically and securely at very short distances, arise a good example of this – albeit theoretically at the moment.

In the short term, some Driver Assistance Systems (ADAS) will be available to an increasing number of drivers. Consider applications such as *Intelligent Speed Adaptation* (ISA) that prevent the driver from exceeding maximum speed.

In the medium term, we are at the beginning of road *tests of semi-autonomous vehicles* with quite some automated functions.

1.1.2.2 Brussels Vision for Mobility in line with ITS

This strategic ITS vision of Brussels is divided in 4 steps.

1. Collect data : with the help of
    a. Sensors
    b. Loop-based counting systems,
    c. Cameras
    d. Ask to the users to report incident with mobile application : Fixmystreet

2. Analyse and detect specific incident.
    a. Automatic Incident Detection (AID)
    b. Aid to decision
3. Manage and interact with infrastructure
    a. Intelligent Traffic Lights
4. Inform the users
    a. Website of “Brussels Mobility”
    b. Message on VMS
    c. Share the data with others: OTAP
    d. Parking Guidance

1.1.2.3 Flanders Vision for Mobility in line with ITS

ITS Backbone of Mobility today and tomorrow.

ITS has in no time evolved from a novelty to a main item in our daily life and the mobility sector.

Flanders was from the start active with the traffic centre and RIS, but there is a need to switch one or more gears higher. We need to restructure our thinking: *from ITS as part of the solution to ITS as a backbone for a lot of solutions.*

In concrete terms, the government must be fully committed to it as the norm.

Flanders has launched a public tender on the 2nd of august 2017 to make a *long term vision on ITS* and to develop a *strategic ITS action plan* by mid of 2018. This strategic ITS action plan will contain the following important topics:

- To invest in ITS on its own and use the possibilities in own applications
    - Traffic guidance: by land, at sea and inland waterways and in the air
    - Make available/offer multimodal travel information in real-time
        - Offer on own platform
        - Make data available for private developments
        - Government data is open data
    - Make smart infrastructure.
        - Make traffic lights and other infra (drip) really dynamic
        - Make Roadside equipment Smart (Traffic Signs)
        - Active participation in smart cities (from the user's viewpoint)
        - Communication between vehicles/infrastructure: V2V, V2I, I2V, I2I ...
    - Provide frameworks for innovation in vehicles and infrastructure
    - Communication between infrastructure and road users
    - Structuring logistics chain requires active commitment to ITS:
        - Exchange data in logistics chain
        - Various platforms (ports and waterways) should talk to each other
        - Logistic building blocks need to be smart
- Encourage and promote the innovation in ITS
    - Active role in ITS.be, the Belgian ITS coordination player
    - Government offers experimental pilots
    - Allow pilot projects to enable autonomous vehicles

- To take a leading role in ITS on a European level
  - The platooning project Concorda
  - EU consultation of autonomous vehicles: Flanders as a leading partner
- Looking at the future with an open look and thinking
  - What do we not know yet?
  - Organization of bootcamps and innovation hackathons

1.1.2.4 Walloon Vision for Mobility in line with ITS

The main project for the next years in Wallonia is the implementation of PEREX 4.0, *the new traffic centre for both roads and waterways*.

The Walloon Government recognizes the role of new technologies in improving the safety of users and the fluidity of traffic.

In May 2016 a project to modernize the PEREX, the Walloon traffic centre has been validated. The objective is to modernize completely the equipment in the centre itself and also the one installed on the road network and at the same time to extend its activity to the management (monitoring and control) of the waterways network and of its hydraulic structures (locks, dams, elevators).

The new centre will develop in a modern and efficient way a concept of "intelligent networks" to manage road and waterways infrastructure in real-time, having as priorities the improvement of safety and mobility as well as the information for users. It will be expanded, renovated and "upgraded" in depth, in terms of functionality and especially through new equipment, software and systems.

PEREX 4.0 will host the services in charge of infrastructure (roads and waterways) management and also police services. The new traffic management room will bring together all of these services and will include an operational control post in the event of a crisis. It will also be equipped with a new centralized computer park, with tools to better manage, control and secure in real-time the road and waterway networks as well as to monitor equipment status and to check automatically their working in order to maintain a constant level of service.

This new dynamic management will also imply to renovate the equipment on the networks, particularly on the road network: modernization of dynamic equipment, new variable-message signs allowing better communication with users; implementation of dynamic signing for lane assignment in order to secure the network during incidents, works, etc.; installation of additional control cameras; replacement of obsolete meteorological stations.

Those ITS deployments will enable to achieve ambitious new objectives: the possibility of acting in real-time on traffic or on a major event; better information on traffic related events and increase of control points (cameras); a wider dissemination of information to the outside world (operators and users); increased communication speed, especially through the optical fibre network; creation of an operational control post for any emergency or crisis on the networks.

1.2 General progress since 2014

1.2.1 Brussels

Since 2014 main development consists in extending the *connected infrastructure* to the centralized system:

1. More than 500 cameras are now available and permanently analysed to deliver counting.
2. The Central traffic control systems for the traffic lights is connected with a few less than 100 traffic lights controllers.

1.2.2 Federal

Since 2014 the Federal Government has taken initiatives to support technological developments. The technical progress in the design of vehicles leads to a better road safety, more fluent traffic and a reduced ecological footprint.

In this domain, the Federal Government has adopted in September 2016 the *Code of Practice on Autonomous Vehicles*, to facilitate testing with automated vehicles in Belgium (in collaboration with the other Belgian entities).

Advancing the evolution towards higher level of automation, the Federal Government supports as well the further development of ISA, the *Intelligent Speed Adaptation* (in concertation with several stakeholders, such as the other entities).

Concerning *eCall*, the Federal Government has undertaken several actions towards the implementation of eCall.

1.2.3 Flanders

Setting up a *National Access Point* (NAP)

Since 2014, the Flemish region has further implemented its open data vision. The results are a growing number of datasets available for reuse. The mobility datasets are regrouped on our own open data portal (http://opendata.mow.vlaanderen.be/) but also linked to the central Flemish open data website or other relevant open data portals.

It is important to make open data as widely available as possible to users, not only pursuant to the priority actions of the European ITS Directive (delegated act), but also to the Flemish Open Data vision. It is also important to look further than the strict obligations to make available data accessible. The future developments are, after all, data-driven, such as Mobility as a Service (MaaS), Intermodal route planners and Intermodal travel advice.

This data is not only available from the government but also from private parties who have considerable amounts of data available. In order to create, certainly for mobility, a broad and widely accepted platform of open data, it is crucial to have a transparent partnership between the authorities and private parties.

Only by making the available data accessible as widely as possible can we guarantee a dynamic and innovative market mechanism which can support mobility. In this way, a new market for Flemish entrepreneurs can also be created for the provision of mobility solutions making use of this data.

1.2.4 Wallonia

Since 2014 main developments, undertaken by PEREX (the traffic management centre of Wallonia), consist in improving the *collection of traffic data* in order to have a better knowledge of traffic conditions and events on the road network. This improvement is two-folded. On the one hand, *sensors* installed by the Road Administration on the network have been upgraded and the coverage has been completed in order to have a view on every section of motorway. And on the other hand, new sources of information in relation with the big data have been tested in the frame of various projects using different kinds of *floating car data*.

Another field of actions has been the implementation of *traffic management equipment*. Investments have been made for the acquisition of mobile equipment in order to manage forecast traffic events, especially road works, sport events and also heavy snow falls in winter. Studies have been made on traffic management around major Walloon cities and equipment plans have been established. But the main concern has been the upgrade and the renewal of existing equipment. Various options have been investigated with corresponding business plans aiming at ensuring a satisfactory level of performance on the long run with sustainable financing.

1.3 Contact information

1.3.1 Brussels

Service public régional de Bruxelles (SPRB) - Bruxelles Mobilité

Gewestelijke Overheidsdienst Brussel (GOB) – Brussel Mobiliteit

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1035 Bruxelles-Brussel

+32 800 94 001

bruxellesmobilite@sprb.brussels

1.3.2 Federal

Federale Overheidsdienst Mobiliteit en Vervoer (FOD MV)

Service Public Fédéral Mobilité et Transports (SPF MT)

Vooruitgangstraat 56 Rue du Progrès

1210 Brussel-Bruxelles

- DG Wegvervoer en Verkeersveiligheid
  DG Transport routier et Sécurité routière
  David Schoenmaekers: david.schoenmaekers@mobilit.fgov.be
- DG Duurzame mobiliteit en Spoorbeleid
  DG Politique de Mobilité durable et ferroviaire
  Simon Derauw: simon.derauw@mobilit.fgov.be

1.3.3 Flanders

Departement Mobiliteit en Openbare Werken (MOW)

Koning Albert II laan 20 bus 2

1000 Brussels

Joke LIEVENS: joke.lievens@mow.vlaanderen.be

1.3.4 Wallonia

Service public de Wallonie (SPW)

- DGO1 – Direction des Routes et des Bâtiments
  Direction de la Gestion du Trafic routier
  Rue Del'Grète, 22 – 5020 DAUSSOULX
  Caroline POURTOIS : caroline.pourtois@spw.wallonie.be
- DGO2 – de la Mobilité et des Voies hydrauliques
  Direction de la Réglementation et des Droits des Usagers
  Boulevard du Nord, 8 – 5000 NAMUR
  Nathalie MAYEUX : nathalie.mayeux@spw.wallonie.be

1.3.5 Belgian ITS Steering Committee

- Chairwoman
  Joke LIEVENS: joke.lievens@mow.vlaanderen.be
- Secretary
  Stéphanie VANDENDRIES: stephanie.vandendries@mobilit.fgov.be
  Philippe DECAP: philippe.decap@mobilit.fgov.be

2 Projects, activities and initiatives

2.1 Priority area I. Optimal use of road, traffic and travel data

2.1.1 Description of the national activities and projects

Description of the relevant initiatives, their objective, timescale, milestones, resources, lead stakeholder(s) and status.

The main activities of each entity are described in the project sheets (see appendix).

2.1.1.1 Brussels

The objective is to collect data, to analyse and to manage and inform thanks to the infrastructure ITS.

2.1.1.2 Federal

The main federal projects concern travel information (SNCB the Belgian rail operator).

2.1.1.3 Flanders

Besides activities for priority actions b and c, there is a large project ongoing for the delivery of real-time information for public transport (De Lijn). Already 381 real-time information panels have been placed, and there is a new tender for an additional 500 panels running.

2.1.1.4 Wallonia

Main activities are described in the project sheets. For the coming years, the Walloon road administration intends to improve the collection and the processing of dynamic traffic data, especially counting data and to put them available together with static data related to traffic, infrastructure and equipment. On the other hand, the aim is also to develop and improve the quality of basic information services, especially through RDS-TMC, variable message signs and dedicated website "*trafiroutes*".

2.1.2 Progress since 2014

Description of the progress in the area since 2014.

2.1.2.1 Brussels

The last 3 years, the administration works on the installation of cameras and intelligent detection systems.

2.1.2.2 Federal

See project sheets from SNCB in appendix.

2.1.2.3 Flanders

- A real-time RTTI and SRTI service is available on DATEX II from the Traffic management Centre. It also includes a real-time information service of signalling systems on the motor way.

- For the real-time Truck Parking information a European funded pilot project is ongoing. The aim is to provide a dynamic information service about the parking occupancy rate of truck parking places (intelligent truck parking) on a pilot corridor in the TERN network in Flanders.
- A study is made to update the strategic network plan for the service areas along the motorways in Flanders so that this network plan meets the changing contextual factors and new demands: capacity, safety, new technologies (ITS) and alternative fuels.
- Visual and audio stop announcement on De Lijn buses (+ preparation for multimodal integration) is planned for the end of 2018.
- Real-time info is being presented on physical info boards. 381 installations realised, and another 500 installations planned for the end 2019.
- Flanders has 2 traffic sign databases, which contain all traffic signs along public roads in Flanders:
    - one database contains all traffic signs along the motorways, main roads and regional roads in Flanders;
    - one database contains all traffic signs along the other roads in Flanders, namely local and secondary roads maintained by municipalities and cities.
- Further to this activity, two projects are currently under way:
    - Activity 4.7 'Provision of updates of ITS spatial road data' within the CEF project EU EIP. In this project, a pilot TN-ITS services will be implemented in Flanders, alongside the other member states involved, to provide updates of ITS spatial road data.
    - Project snelheid.vlaanderen [speed.flanders], in which the MOW department and AWV will collaborate on making 1 application for recording traffic signs for all road managers in Flanders.
- Data on Parking places for people with disabilities: this project is intended to enrich and make available data about parking places for people with disabilities as open data and via APIs, with the aim of it being reused by app developers.
- Data on Electric charging infrastructure at carpool parking areas and Park & Rides.

The Agency for Roads and Traffic, in collaboration with the Environment Department (previously Living Environment, Nature and Energy), is introducing a measure as part of the Flemish Climate Fund. This measure offers the market the possibility of installing and operating a charging infrastructure on the existing P&R and carpool parking areas owned by AWV. The first stage is in progress (5 locations), the second stage is under preparation. All locations are offered to the market (to the extent that no changes to the location in question are planned). A subsidy will be offered from the climate fund to stimulate the roll-out of electric charging infrastructure on P&R and carpool parking areas.

Making the data about parking areas (carpool, P&R, concessions) with charging points available (via the Flemish Open Data Portal) is an enabler for ITS and electric driving (route planning).

- Innovative data flow: towards smarter inland shipping

An example of new technology is the 'blockchain', whereby that data stream follows the goods, as it were, thus allowing for better data security. This could also prove of added value to the reliability of data within inland shipping. In addition to the identification of new technologies, we must see what added value can be offered to the inland shipping sector, tests should be conducted of how these can be applied, etc.

2.1.2.4 Wallonia

Recent achievements deal mainly with the collection of data. Sensors, mainly counting loops, have been renewed and the coverage of the network has been completed in order to have a view on every section of the motorway network. New sources of information have been tested in the frame of different projects based on floating car data from mobile (GPRS) communication, from connected vehicles or from the toll system for trucks.

2.1.3 Reporting obligation under Delegated Regulation (EU) 2015/962 on the provision of EU-wide Real-Time Traffic Information Services (priority action b)

Measures undertaken, if any, to set up a National Access Point and on the modalities of its functioning: The National Access Point should be a website redirecting to platforms managed by the Regions. Implementation will be supervised by the Belgian ITS Steering Committee.

2.1.3.1 Brussels

In Brussels, real-time traffic information is also available through the OTAP-node of the traffic centre (Mobiris).

2.1.3.2 Flanders

In Flanders a DATEX II information link is available for RTTI data by the Traffic Management Centre. A RDS- TMC service is also running.

2.1.3.3 Wallonia

In Wallonia real-time traffic information is currently available through the OTAP-node of the traffic centre (PEREX). The possibilities to upload the data on the overall open data platform of the Region http://opendata.digitalwallonia.be/ are investigated.

- Where relevant, the list of motorways not included in the comprehensive Trans-European Road Network and identified priority zones: In Wallonia, Information is provided for the motorway network.
- Additional information: -

2.1.4 Reporting obligation under Delegated Regulation (EU) No 886/2013 on data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users (priority action c)

Progress made in implementing the information service, including the criteria used to define its level of quality and the means used to monitor its quality.

2.1.4.1 Brussels

In Brussels, a RDS-TMC service is also used covering main regional roads.

2.1.4.2 Flanders

In Flanders a DATEX II information link is available for SRTI data by the Traffic Management Centre.

There is also a pilot C-Roads project running in Flanders , which will bring SRTI information in the car by a standard LTE – link.

2.1.4.3 Wallonia

In Wallonia, this service is currently provided through “PEREX” RDS-TMC service, broadcasted on RTBF network and covering motorways and main regional roads. Quality level will only apply for motorways.

- Results of the assessment of compliance with the requirements set out in Articles 3 to 8 of Delegated Regulation (EU) No 886/2013: Not done so far.
- Where relevant, a description of changes to the national access point: National access point not yet implemented.
- Additional information: -

2.2 Priority area II. Continuity of traffic and freight management ITS services

2.2.1 Description of the national activities and projects

Description of the relevant initiatives, their objective, timescale, milestones, resources, lead stakeholder(s) and status.

2.2.1.1 Flanders

- Several projects to enhance traffic fluidity have been realised. (see Project Dynamic Traffic Management).
- A project to develop smart traffic lights in Antwerp and Ghent (see detailed project description).
- At the moment Floating Car Data is used within the ITS environment of the Traffic Management Centre in Antwerp.
- A Flemish Truck Route Network is developed. This truck route network (VRN) determines the desired journey routes for all transit freight traffic and to a certain degree for destination traffic at Flemish level, both locally and regionally.
- Flanders is participating in the European Socrates 2.0 project.
- With the Flemish policy framework for urban logistics, the Government of Flanders seeks to lay the basis for a comprehensive horizontal and integrated policy for urban logistics. This policy framework focuses on Flanders and smooths the path to low carbon and economically affordable urban logistics, as proposed in the Government of Flanders'.

2.2.1.2 Wallonia

The most important project in Wallonia for the next 4 years is the implementation of PEREX 4.0, which will be a shared traffic management centre for roads and waterways. The traffic management equipment for the roads will be updated with new tools especially operating aid system and monitoring of sensitive areas as well as the renewal and extension of the roadside equipment. For waterways dynamic information and remote operation of equipment will be introduced.

ITS equipment of truck parking places will go on with implementation of counting systems and monitoring at strategic points, especially at the borders.

2.2.2 Progress since 2014

Description of the progress in the area since 2014:

2 fully secured truck parking places have been opened in Wallonia on the A4 (Wanlin) and on the A15 (Bierset), with pay access. Even if there is a need for truck parking spaces, the demand remains low. Therefore, road authorities have decided to rather equip existing strategic free parking places with cameras.

2.3 Priority area III. ITS road safety and security applications

2.3.1 Description of the national activities and projects

Description of the relevant initiatives, their objective, timescale, milestones, resources, lead stakeholder(s) and status.

2.3.1.1 Brussels

The installations of Radar section in some tunnels are in progress.

2.3.1.2 Federal

In February 2015, the Belgian Minister of Mobility J. Galant presented her ISA action plan at the Parliament. The plan aims towards a progressive introduction of intervening ISA systems. It describes the obstacles and solutions to investigate, both on the technical side (digital map of speed limits and the integration to the in-vehicle system) as on the social side (public acceptability, costs and liability issues). Finally, it suggests a way towards a gradual implementation, including pilot projects and incentives for frontrunners.

2.3.1.3 Flanders

There were several implementations of average speed control on the TERN. Flanders seeks to expand considerably the number of average speed control installations on the main road network. The road sections: E313 Antwerpen-Oost -> Ranst and E40 Sint-Stevens-Woluwe -> Heverlee are high on the list of priorities.

The implementation is temporarily on hold. The Federal police are planning a national area-wide ANPR network on the main roads. First stage, the country borders has been implemented. A framework contract has been tendered for the remaining installations.

It is the shared ambition of both competent ministers to deploy this network, initially with its intended policing finality, and ultimately to be used as far as possible for average speed control. Specifically, this means that a large number of ANPR installations from this work will be the starting, end or intermediary points for average speed control.

2.3.1.4 Wallonia

Focus will still be put on speed limit enforcement with the installation of new fixed radars and the equipment of some sections with average speed control based on ANPR. Another priority will be the control of trucks in overload for road safety reasons and for protection of the infrastructure through a new system of weigh-in-motion, with sufficient reliability to enable automatic fining.

An intelligent lighting system with energy-saving devices taking into account traffic circumstances will be implemented.

2.3.2 Progress since 2014

Description of the progress in the area since 2014.

2.3.2.1 Wallonia

Many efforts have been put on speed limit enforcement, especially at sensible spots and during road works with the implementation of control devices fixed automatic radars, average speed calculation based on ANPR and also warning mobile VMS.

Traffic management in winter conditions has also been a major priority with the improvement of weather information system “météoroutes” and the acquisition of mobile devices for the operation of the “Plan Neige” (restriction of truck traffic by heavy snow falls).

2.3.3 112 eCall (priority action d)

National eCall PSAPs Infrastructure ready by 1st October 2017: NO.

If NO, please explain: Belgium is not yet ready on October 1, because the network is not yet eCall-proof and the central infrastructure is not yet completely installed.

Authorities that are competent for assessing the conformity of the operations of the eCall PSAPs:

LAST NAME	FIRST NAME	ORGANISATION	TELEPHONE	EMAIL
CORNET	**Serge**	**Federal Public Service for Public Health.**	**+32 2 524 96 40**	serge.cornet@gezondheid.belgie.be
CROEN	Fabian	Federal Public Service for the Interior.	+32 2 500 25 82	fabian.croen@ibz.fgov.be
DE DECKER	Bob	Federal Public Service for the Interior.	+32 2 642 64 32	Bob.DeDecker@police.belgium.eu
SMET	Rudi	Belgian Institute for Post and Telecommunication.	+32 2 226 87 56	rudi.smet@bipt.be

- Additional information:

In accordance with the delegated act, the Belgian State has laid down the legal framework for the implementation of eCall (final approval: March 2017) in the public version (public eCall) and in the version provided by the private sector (private eCall).

In future, the eCall service will allow any motorist to reach emergency services by car if necessary. The alarm can be done in two ways: either automatically via a sensor (e.g. after activation of the airbag), either manually via a button (by pressing). The alarm occurs by sending a message (MSD = Minimum Set of Data) and generating a call between the vehicle and an eCalls management centre.

Private eCall is granted by the private sector. In Belgium it was decided that every supplier of this service should filter received calls through a recognized filtering centre. After this recognized filtering station has confirmed the urgency of the situation, the call and data will be forwarded to the appropriate emergency centre.

Public eCall is a minimum service that will be granted to all persons with a new M1/N1 vehicle model from April 2018 or to all persons who have installed a disposable eCall in their M1/N1 vehicle from the same date. A public E-Call filtering centre will receive the call and data, confirm the urgency of the situation and alert the fastest emergency services.

The technical system for managing eCall in Belgium is developed and managed by Astrid NV under the leadership of the FPS Home Affairs, Public Health and the Federal Police. Astrid provides two phases to manage the eCall data by the relief centres.

The first phase, scheduled for October 1, 2017, consists of reusing the POC developed at Heero 2 with the installation of public eCall modems and the connection with the recognized TPSP. The VPN connections (Internet) will be protected and use the Communication Protocol EN16102.

The second phase, scheduled for March 2018, consists in fully operationalizing the software of our rescue centres by connecting them to the TPSP's telephony. The PBX connection (telephony) based on SIP or H.323 is required to receive the Caller Line Identification (CLI) used for the automatic linking of the data. All this guarantees a quality service.

All public and private eCall data are filed (after filtering) in a central database that is available to public authorities in accordance with applicable eCall, Emergency and Privacy laws. This database contains monitoring tools and allows to make statistics and to draw conclusions from the figures obtained.

In addition to the transposition of the European directives in Belgian law (ITS Framework Act and Implementing Decision), 3 Royal Decrees (RD) are elaborated on the terms and conditions for the private providers of eCall services to gain priority access to public emergency services.

- One RD defines the standards that call taking centres must meet to be recognized as eCall Filter Centres.
- One RD identifies the process for identifying, managing and transferring an eCall to emergency services;
- One RD defines the training that the eCall call management operators must follow.

2.3.4 Reporting obligation under Delegated Regulation (EU) No 885/2013 on the provision of information services for safe and secure parking places for trucks and commercial vehicles (priority action e)

Number of different parking places and parking spaces on their territory:

- Percentage of parking places registered in the information service:

	PARKING PLACES (NB)	REGISTERED	PARKING SPACES (NB)
FLANDERS	72	100 %	2.459
BRUSSELS	0	100 %	0
WALLONIA	107	100 %	3.395

- Percentage of parking places providing dynamic information on the availability of parking spaces and the priority zones:

2.3.4.1 Flanders

There is a pilot project ongoing to deliver real-time information of truck parking spaces, especially for occupancy. This project is also funded by the EC.

2.3.4.2 Wallonia

Currently no dynamic information on availability of parking spaces.

- Additional information:

The national access point should be a website redirecting to platforms managed by the Regions. Implementation will be supervised by the Belgian ITS Steering Committee.

- In Wallonia, information is provided by the Road Administration (Service Public de Wallonie) and available on the website trafiroutes.wallonie.be. Currently no dynamic data. Information has been uploaded on DG MOVE European Access Point.
- For Flanders, static data is published on the European Access Point for Truck Parking hosted by DG MOVE.

2.4 Priority area IV. Linking the vehicle with the transport infrastructure

2.4.1 Description of the national activities and projects

Description of the relevant initiatives, their objective, timescale, milestones, resources, lead stakeholder(s) and status:

- Flanders has started in a number of relevant European funded C-ITS projects:
  - C-Roads platform
  - C-Roads pilot project in Flanders
  - INTERCOR

- CITRUS
- CONCORDA
- CHARM-PCP
- P4ITS

Flanders will start an automated shuttle project in the airport of Zaventem to be ready by the end of 2021.

- Wallonia is currently launching a new C-ITS project in the frame of the CEF call 2016. This project affiliated to the C-Roads platform aims at developing a pilot for the exchange of traffic information with the drivers through a dedicated app.

2.4.2 Progress since 2014

-

2.5 Other initiatives/highlights

2.5.1 Description of other national initiatives/highlights and projects not covered in priority areas 1-4:

Description of the relevant initiatives, their objective, timescale, milestones, resources, lead stakeholder(s) and status:

The Federal Government has adopted in September 2016 the *Code of Practice on Autonomous Vehicles*, to facilitate testing with automated vehicles in Belgium. The Code has been established in collaboration with the other Belgian entities, since testing on public roads requires the authorization from the federal as well as the regional administration.

2.5.2 Progress since 2014

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3 Key Performance Indicators (KPIs)

Note: The EC document on "ITS KPIs for the EU" is to be used for comprehensive definitions of the KPIs and further guidance. The EU EIP Activity 5 report on "ITS Deployment and Benefit KPIs definitions" is a complementary document providing in particular estimation methods.

KPI will be reported separately by type of road network/priority zone/transport network and nodes (when appropriate).

3.1 Deployment KPIs

3.1.1 Information gathering infrastructures/equipment (road KPI)

- Length of road network type/road sections (in km) equipped with information gathering infrastructures and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA
CORE NETWORK	470	6	345
EQUIPPED	470	6	345
COMPREHENSIVE NETWORK	468	6	565
EQUIPPED	427	6	475
OTHER MOTORWAYS	81	7	54
EQUIPPED	37	7	27

- KPI = (kilometres of road network type equipped with information gathering infrastructures/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	100	100	100
KPI COMPREHENSIVE NETWORK	91	100	84
KPI OTHER MOTORWAYS	46	100	50

3.1.2 Incident detection (road KPI)

- Length of road network type/road sections (in km) equipped with ITS to detect incident and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA
CORE NETWORK	470	6	345
EQUIPPED	430	6	345
COMPREHENSIVE NETWORK	468	6	565
EQUIPPED	338	6	475
OTHER MOTORWAYS	81	7	54
EQUIPPED	48	7	27

- KPI = (kilometres of road network type equipped with ITS to detect incident/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	91	100	100
KPI COMPREHENSIVE NETWORK	72	100	84
KPI OTHER MOTORWAYS	59	100	50

3.1.3 Traffic management and traffic control measures (road KPI)

- Length of road network type/road sections (in km) covered by traffic management and traffic control measures and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA (F/M)*
CORE NETWORK	470	6	345
EQUIPPED	340	0	0/129
COMPREHENSIVE NETWORK	468	6	565
EQUIPPED	230	0	75.5/130.5
OTHER MOTORWAYS	81	7	54
EQUIPPED	37	0	0

* F/M = Fixed/Mobile equipment

- KPI = (kilometres of road network type covered by traffic management and traffic control measures/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	72	0	37
KPI COMPREHENSIVE NETWORK	49	0	30
KPI OTHER MOTORWAYS	46	0	0

3.1.4 Cooperative-ITS services and applications (road KPI)

- Length of road network type/road sections (in km) covered by C-ITS services or applications and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA
CORE NETWORK	470	6	345
EQUIPPED	0	0	0
COMPREHENSIVE NETWORK	468	6	565
EQUIPPED	0	0	0
OTHER MOTORWAYS	81	7	54
EQUIPPED	0	0	0

- KPI = (kilometres of road network type covered by C-ITS services or applications/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	0	0	0
KPI COMPREHENSIVE NETWORK	0	0	0
KPI OTHER MOTORWAYS	0	0	0

3.1.5 Real-time traffic information (road KPI)

- Length of road network type/road sections (in km) with provision of real-time traffic information services and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA
CORE NETWORK	470	6	345
COVERED	470	6	345
COMPREHENSIVE NETWORK	468	6	565
COVERED	468	6	565
OTHER MOTORWAYS	81	7	54
COVERED	81	7	54

- KPI = (kilometres of road network type with provision of real-time traffic information services/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	100	100	100
KPI COMPREHENSIVE NETWORK	100	100	100
KPI OTHER MOTORWAYS	100	100	100

3.1.6 Dynamic travel information (multimodal KPI)

- Length of transport network type (in km) with provision of dynamic travel information services & Total length of this same transport network type (in km): -
- Number of transport nodes (e.g. rail or bus stations) covered by dynamic travel information services & Total number of the same transport nodes: -
- KPI = (kilometres of transport network type with provision of dynamic travel information services/total kilometres of same transport network type) x 100: -
- KPI = (number of transport nodes with provision of dynamic travel information services/total number of same transport nodes) x 100: -

3.1.7 Freight information (multimodal if possible or road KPI)

- Length of road network type/road sections (in km) with provision of freight information services and Total length of this same road network type (in km):

	FLANDERS	BRUSSELS	WALLONIA*
CORE NETWORK (ROADS)	470	6	345
COVERED	470	0	345
COMPREHENSIVE NETWORK (ROADS)	468	6	565
COVERED	468	0	475
OTHER MOTORWAYS (ROADS)	81	7	54
COVERED	81	0	54

* static information only

- Number of freight nodes (e.g. ports, logistics platforms) covered by freight information services & Total number of the same freight nodes: -

- KPI = (kilometres of road network type with provision of freight information services/total kilometres of same road network type) x 100

	FLANDERS	BRUSSELS	WALLONIA
KPI CORE NETWORK	100	0	100
KPI COMPREHENSIVE NETWORK	100	0	100
KPI OTHER MOTORWAYS	100	0	100

- KPI = (number of freight nodes with provision of freight information services/total number of same freight nodes) x 100 : -

3.1.8 112 eCalls (road KPI)

N.A. – will be provided through the COCOM 112 questionnaire

3.2 Benefits KPIs

3.2.1 Change in travel time (road KPI)

- KPI = ((travel time before ITS implementation or improvement – travel time after ITS implementation or improvement)/travel time before ITS implementation or improvement) x 100 : No consolidated data available.

Wallonia : The implementation of traffic management measures (including mobile ITS equipment) in order to reduce consequences of traffic disruptions in case of temporary/seasonal and predictable problems has led to a benefit estimated to 7.000 vehicle lost hours/year.

3.2.2 Change in road accident resulting in death or injuries numbers (road KPI)

- Number of road accident resulting in death or injuries before ITS implementation or improvement: -

- Number of road accident resulting in death or injuries after ITS implementation or improvement: -

No data available in relation with ITS implementation.

3.2.3 Change in traffic-CO2 emissions (road KPI)

- KPI = ((traffic CO2 emissions before ITS implementation or improvement – traffic CO2 emissions after implementation or improvement)/traffic CO2 emissions before ITS implementation or improvement) x 100 : -

No data available in relation with ITS implementation.

3.3 Financial KPIs

ITS includes any types of systems and services altogether.

- Annual investment in road ITS (as a % of total transport infrastructure investments): -

No consolidated data available

- Annual operating & maintenance costs of road ITS (in euros per kilometre of network covered): -

No consolidated data available