ITS PROGRESS REPORT 2020
BELGIUM

DIRECTIVE 2010/40/EU

Abstract
Progress made in the deployment of the actions referred to the national activities and projects regarding the priority areas. Period 2018-2020

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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 governments of the four Belgian 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

1.1.2.1   *Brussels Vision for Mobility in line with ITS*

A new regional mobility plan, entitled "*Good Move*", was developed and validated in 2019. This plan, both strategic and operational, provides a vision for the next ten years.

To provide an innovative and coherent response to the challenge of mobility, the Brussels-Capital Region has chosen to direct the reflections on the development of its mobility plan on the user, in order to provide him with adapted, facilitated and integrated solutions allowing him to opt for the most efficient mode of travel each time he travels. Mobility in Brussels cannot be reduced to infrastructure challenges congested by traffic.

As an urban region, the objectives focus on themes such as dynamic flow management, logistics, parking, security and even reducing noise and pollutants.

Intelligent transport systems, and more broadly intelligent mobility solutions, play an important role in supporting this mobility plan centred on the user and quality of life. Among the six identified action programs, three are particularly impacted:

- Mobility networks: optimization of the use and operation of the network.
- The offer of mobility services: MaaS, optimization of services.
- Development of knowledge and monitoring: data collection, data sharing, innovation.

1.1.2.2 *Federal vision for mobility in line with ITS*

In a context of increasing digitalisation, ITS are one of the keys to meeting the challenges of mobility in Belgium.

Our vision is based on a model of sustainable mobility that is not limited to ITS but fits in with a more comprehensive mobility policy. The strategic approach « AVOID-SHIFT-IMPROVE » (A-S-I) aims at reducing unnecessary travel needs, promoting multimodality and intermodality, and improving transport efficiency of each transport mode. This applies to the transport of both passengers and freight. The expected results are in line with each of the aspects of sustainable mobility: improve energy efficiency, reduce emissions, increase operational efficiency, safety and accessibility (with particular attention to target groups such as persons with reduced mobility), and reinforce the Belgian economy.
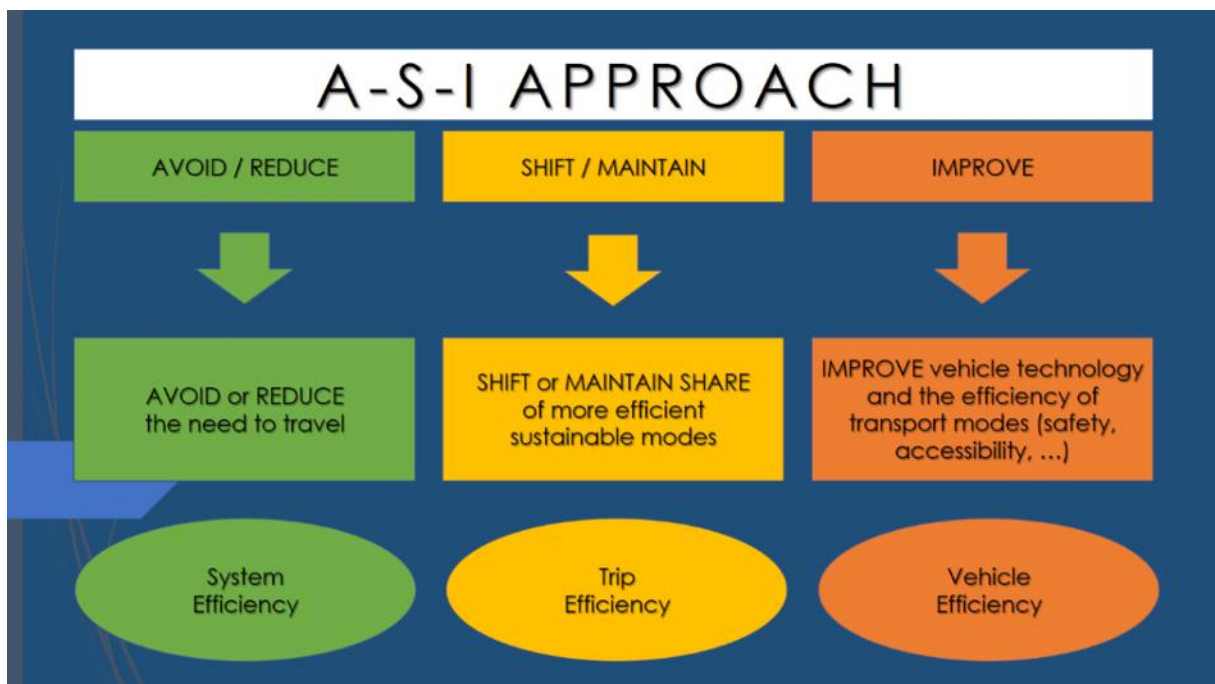
Source: GIZ (2011)[1], own adaptation.

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[1] GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (2011). *Sustainable Urban Transport: Avoid-Shift-Improve (A-S-I).* Here.

The 'A-S-I' model was co-developed for the first time by GIZ, the German Corporation for International Cooperation[2]. From then, the model has appeared in many policy documents, including those of the International Transport Forum[3].

Thanks to ITS, the quality of the mobility experience will improve, with services that are important for the elaboration of a 'shift' and 'improve' policy. Therefore, the Federal Government wants to seize every opportunity to successfully implement such innovative solutions to the congestion problems, to the issues of traffic safety, and to a negative environmental impact of the transport sector.

In this 'shift' perspective, priority is given firstly to active modes (walking and cycling) and then to public or shared transport (bus, rail, car sharing, carpooling, etc.). Applied to ITS, it concerns actions such as supporting the development of information services on multimodal travel. We invest in financial and human resources to successfully develop the Belgian National Access Point, as we follow the strategy of the European Commission, which states that the NAPs will be the backbone of European digital transport data. They can also play a role in MaaS, which we study with great interest.

In terms of 'improve', ITS can be found in the transition to connected, automated, and autonomous transport, presenting another great potential for more sustainable mobility. In the short term, several Advanced Driver Assistance Systems (ADAS) will be available to an increasing number of drivers. In the long term, 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.

While from a federal perspective, 'shift' is particularly important for the Belgian railway undertaking SNCB-NMBS and for the Belgian Federal Public Service Mobility and Transport, 'improve' actions are spread over several institutions, including the Belgian Federal Police, and there is close collaboration with Vias, a research institute.

The authorities have an important role to play in stimulating this development, promoting market introduction, and subsequently accelerating deployment. In addition, the authorities have a regulatory role to play, i.e. to prevent potential abuses of a dominant position by the major digital actors, to safeguard the right to consumer protection, and to monitor cyber security.

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[2] The A-S-I approach was initially developed in the early 1990s in Germany and first officially mentioned 1994 in the report of the German parliament´s Enquete Commission. The approach serves as a way to structure policy measures to reduce the environmental impact of transport and thereby improve the quality of life in cities. In the development community, the A-S-I approach was first embraced by international NGOs, as well as multilateral and bilateral development organizations working on transport. It was considered a worthwhile alternative to the predict–provide–manage approach. The A-S-I approach is focused on the demand side and offers a more holistic approach for an overall sustainable transport system design. Here.

[3] ITF – International Transport Forum (OECD) (2015). A New Paradigm for Urban Mobility. How fleets of shared vehicles can end the car dependency of cities. Here.

At the same time, it is essential that these ITS services are interoperable throughout the country in order to avoid creating new barriers to traffic. We therefore attach great importance to consultation between all actors that can promote smart mobility in Belgium.

1.1.2.3   Flemish vision for mobility in line with ITS

Flanders created a **multimodal, long term strategic vision and operational action plan** to guide in the decision making of the future implementation of Intelligent Transport Systems (ITS). The ambition of the strategic vision and operational action plan, with time frame **2030 - 2050**, is to *"change the way Flanders moves itself".* Together with other governmental institutions, the private sector and the academic sector, we define intelligent transport services and implement ITS within the triple helix context.

We've structured our vision around five basic values: sustainability, safety, accessibility, social inclusion and intelligence. Furthermore, we've defined **six strategic clusters**, that shape, guide and steer the development of our ITS-action plan. The six strategic clusters on which Flanders will focus are:

1. Multimodal Traffic Management 3.0
2. Cooperative, Connected and Automated Mobility (CCAM)
3. Mobility as a Service (MaaS)
4. Dynamic road charging with smart services
5. Physical Internet
6. Smart maintenance and asset management

For each of these clusters we've set out a vision, and we've defined actions in order to implement this vision. For each action we've estimated the necessary effort, impact, time frame and budget and prioritized accordingly. Examples of actions are the creation of a legal framework, setting up a digital infrastructure, the roll-out in physical infrastructure, setting up pilot projects …

Our main priorities lay within the first three domains whereas in 2019 the political decision has been taken to put on hold all preparatory work related to a potential implementation of a road charging system applicable to personal vehicles.

Some of the measures that we will work upon by 2030 relate to

- Creation of a concerted legal framework for CCAM deployment
- Determine the role of local governments
- Invest in pilots
- Inform the public and create a support base for MaaS and CCAM
- Integrate NAP database systems
- Work on common standards
- Encourage alternative modes of transport
- Connect data, travel information services between road, water and railways
- Invest in research for example on reliability of technology, impact on road safety, perception, multimodal traffic models and information systems …
- …

Our multimodal, long term strategic vision and operational action plan with time frame 2030 - 2050 is publicly available on the following website:

https://www.vlaanderen.be/mobiliteit-en-openbare-werken/slimme-mobiliteit.

1.1.2.4   *Walloon Vision for Mobility in line with ITS*

Wallonia wants to improve the real-time management of its transport networks in order to ensure their efficiency and thus contribute to the development of the Region as well as to the reduction of CO_2 emissions and other pollutants.

The focal point of the ITS policy is PEREX, the traffic centre. A major project for the development of centre (PEREX 4.0), including both upgrading of road networks management and extension to waterways management, started in 2017 and will be continued in the coming years.

The new centre develops 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.

The dynamic management of infrastructures 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 to secure the network during incidents, works, etc.; installation of additional control cameras; replacement of obsolete meteorological stations.

In addition, Wallonia wants to promote pilot projects in order to assess intelligent solutions for a green mobility.

All these investments constitute the Walloon ITS Plan, which will enable to achieve ambitious new objectives: a better knowledge of traffic related events and an increase of control points, the possibility of acting in real-time on traffic and major incidents; 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 2017

1.2.1   Brussels

Since 2017 main developments consist in:

A. Extending the connected infrastructure

- connection of traffic lights to the central system
- connection of detectors to the central system

B. Extending the network of cameras

- implementation of a low emission zone
- connection of ANPR cameras used for limited access zones

C. Renovation of tunnels

- installation of new equipment's
- more efficient remote control

D. Improving Open Data

- new datasets have been published
- participation to the National Access Point

E. Regulating new mobility systems
- regulation for micro-mobility operators

1.2.2 Federal

Firstly, related to governance, significant progress has been made thanks to the **ITS Steering Committee,** which was launched as an official concertation body in April 2017. It consists of a rotating presidency, 4 out of 16 members from federal institutions, and a secretariat administered by the Federal Public Service Mobility and Transport.

Secondly, in our support to **multimodal travelling** (i.e. decrease of car use, and especially of single-occupant cars), we highlight:

- The preparation and deployment of a National Access Point for multimodal travel information services: project in cooperation with regional authorities that resulted in www.transportdata.be;
- Several projects undertaken by the Belgian railway undertaking SNCB-NMBS which lead to a considerable progress in passenger comfort, especially regarding (real-time) travel information and multimodal e-ticketing.

Thirdly, highlights from the **automated and connected mobility** part of ITS:

- Implementation of the Delegated Regulation on eCall by the Federal Public Service Health, the Federal Public Service Home Affairs, and the Belgian Institute for Post and Telecommunications;
- Belgium has the ambition to be a trendsetter for testing automated vehicles:
  - the Federal Government has allowed exemptions to be granted within the framework of testing automated vehicles, including use cases with a remote operator;
  - numerous pilot projects have been running on Belgian public roads, with first tests of completely autonomous shuttles by Vias institute in cooperation with the Federal Public Service Mobility and Transport.

Finally, **the Smart Mobility Call** was highly successful in subsidising innovative mobility projects: 4 million euros were invested to support 15 projects. By the end of 2019, project deliverables were presented in three areas:

- MaaS solutions, moving ahead in multimodal travelling;
- Creation and visualisation of open data, e.g. for commuting and businesses;
- First and last mile solutions, with several projects related to (e-)bikes and scooters.

1.2.3 Flanders

The list below highlights the work undertaken regarding multimodal ITS-services on a Flemish level. This list is not exhaustive. Each half year we update the overview of all ITS-projects within our policy domain, including information on staff allocation and budget.

1. Multimodal Traffic Management 3.0
   a. Active participation in setting up the NAP for Multimodal Travel Information Services for which Flanders provides the project leader
   b. Flanders is involved in the European Data Task Force on SRTI where we are in contact with the private sector to share the SRTI-data and investigate business models.

    c. Installation of variable message signs

    d. Static truck parking data is available on the European Open Data Portal and we have a pilot project funded by CEF for which 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.

    e. The use of the traffic lights coordination centre in Antwerp since 2018

    f. The installation of Waze beacons in tunnels

    g. The realisation of physical real time information boards by PTO De Lijn

    h. Dynamic traffic management (more information in the project sheet)

    i. Participation in several European projects/fora such as Socrates2.0, TM2.0, Arc Atlantique III

    j. River information services

    k. …

2. CCAM

    a. Autonomous shuttles by PTO De Lijn (to be operational in 2021)

    b. Smart shipping & automatic operation of locks and bridges

    c. Participation in numerous European (deployment) projects/ fora

        i. C-Roads platform & C-Roads pilot

        ii. CONCORDA / Smart Highway

        iii. InterCor

        iv. EU CCAM Single platform

        v. EU Data Task Force initiative (MoU & public-private co-operation in data sharing)

    d. Mobilidata

        i. Co-investment of C-ITS services

        ii. Roll-out of intelligent traffic light control systems

        iii. Policy supporting applications

        iv. Research & development (services for vulnerable road uses & truck guidance system in the port of Antwerp)

    e. Setting up POC such as: investigating in vehicle data and whether this data is useful to identify dangerous locations…

3. MaaS

    a. Mobility central for demand responsive transport

    b. Oslo standard for shared mobility

    c. Account based ticketing by De Lijn

    d. Soft legislation/ setting up an ecosystem for open data within a MaaS-context

    e. Setting up a MaaS architecture

4. Road charging

    a. a network-wide scheme applicable to freight transport has been implemented

5. Physical internet

    a. Participation in Alice to develop the roadmap for physical internet

6. Smart maintenance & asset management

    a. Digital twin - Building information management, asset information management (cfr. project sheet)

7. Other
    a. Extending the network of camera's
    b. Improvement of the open data portal which is available on http://opendata.mow.vlaanderen.be/nl/data-register
       or on the Flemish Open Data Portal (www.opendata.vlaanderen.be)
    c. Data science projects
    d. Participation in TN-ITS within the CEF project TN-ITS GO to provide updates of ITS spatial road data
    e. The realisation of the 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.
    f. …

1.2.4 Wallonia

In Wallonia, the project for the development of the traffic centre started in 2017 with a study on functionalities and integration of the various infrastructures, in parallel with the construction and equipment of the building.

The new centre opened in spring 2019. Several related projects have been launched and are still under development:

- Operational aid system for road operators of the traffic centres, integrating the various information sources and providing scenarios of intervention;
- TRADEMEX, which will enable the processing of the data collected through the new sensors covering the motorway network, the integration of external data and the dissemination by means of a DATEX node;
- weigh in motion for the automatic control of heavy goods vehicles overloads;
- Intelligent lighting with variable levels according to place and time;
- In addition, pilot-projects in the field of intelligent mobility have also been launched;
- C-Roads Wallonia, which aims at testing a C-ITS service comparing cellular G4 technology and roadside units (ITS G5);
- use of the hard shoulder for car-pooling based on recognition of the number of vehicle occupants.

Most of these projects were undertaken within the framework of European projects (Arc Atlantique 2 and 3 – C-Roads Wallonia), which not only provided significant financial support but also gave the opportunity to benefit from the other partners' experience and to ensure coordinated deployments.

1.3 Contact information

1.3.1 Brussels

Service public régional de Bruxelles (SPRB) - Bruxelles Mobilité

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1.3.2   Federal

Federal Public Service Mobility and Transport

DG Sustainable Mobility and Rail Policy

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1.3.3   Flanders

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1.3.4   Wallonia

Service public de Wallonie (SPW)

Direction générale Mobilité et Infrastructures

Direction de l'Exploitation des Réseaux routiers

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1.3.5   Belgian ITS Steering Committee

Chairwoman 2020: Julie MARIËN: julie.marien@mow.vlaanderen.be

Secretary: Stéphanie VANDENDRIES et Philippe DECAP: its@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 <u>appendix</u>).

2.1.1.1 *Brussels*

The main projects concern the collection and the publication of traffic data, bike data, and public transport travel information. Another important focus is the management of works.

2.1.1.2 *Federal*

Apart from the National Access Point for multimodal travel information services (a joint project with the regional authorities managed by the Belgian ITS Steering Committee), this area mainly concerns the Belgian railway undertaking SNCB-NMBS.

2.1.1.3 *Flanders*

- Flanders is one of the partners in the PSA project IDACS (ID and Data Collection for Alternative Fuels in Europe) which started in 2019 and runs until the end of 2021. Currently, Flanders and the other regions of Belgium are exploring the national implementation of data collection requirements of IDACS in relation with the existing NAP and ITS requirements, in collaboration with relevant stakeholders and market players.
- In the meantime, Flanders is further deploying a basic network of publicly accessible charging points through concessions organized by the DSO of Flanders (Fluvius). Currently, Flanders has 3,818 publicly accessible charging points in operation, of which 89 fast charging points (50kW or higher).
- Collection and publication of traffic data by the Flemish Traffic Centre:
    - The Flemish Traffic centre publishes real-time traffic information through a Datex II feed.
    - Online traffic indicators: statistical information on traffic on Flemish main roads.
    - Minute values traffic measures:

        The data of the project "measuring in Flanders" contains the minute values of the traffic measurements that the Traffic Center carries out on the Flemish main roads. These measurements are carried out on the basis of double measuring loops in the road surface and concerns the number of vehicles and average driving speed.

    - Data for dynamic lane signalisation
- We also collect bicycle data through amongst others "Geoloket Fiets" in which we provide information on the state of the supra-functional cycling route network
- Launch of the Mobilidata project in which we will improve the quality of our existing data that is considered as a useful source for the implementation of the selected use cases.
- Participation within the CEF project TN-ITS GO to provide updates of ITS spatial road data.
- New variable message panels

- Creation of standards, for example a Flemish standard for shared mobility
- Visual and audio stop announcement on buses of PTO De Lijn (+ preparation for multimodal integration)

2.1.1.4 Wallonia

In the frame of PEREX 4.0, data management is a key activity. The project includes the implementation of a data centre centralizing all data available from collecting equipment installed on the transport networks.

TRADEMEX is a huge project aiming at collecting traffic data produced by road equipment but also at integrating external data in order to process them and disseminate traffic information through a DATEX node.

Moreover, the Public Service of Wallonia goes on with the production of basic traffic information services, through RDS-TMC, variable message signs, dedicated website "trafiroutes" and testing C-ITS services.

2.1.2 Progress since 2017

Description of the progress in the area since 2017:

2.1.2.1 Brussels

The last 3 years, the main progress concerned the installation of cameras, sensors, new information boards and intelligent detection systems, as well as creation of API for sharing data.

2.1.2.2 Federal

See enclosed project sheets from SNCB-NMBS.

2.1.2.3 Flanders

- A real-time RTTI and SRTI service is available (open data) on DATEX II from the Traffic Management Centre. An RDS-TMC service is also running. The DATEX II feed is also accessible through www.transportdata.be (the National Access Point on Multimodal Travel Information Services).
- Real-time info is being presented directly to road users via VMS along the road network as well as website and traffic info trough radio broadcast.
- Public transport travel information (API, app De Lijn)
- Installation of cameras, sensors, new information boards and intelligent detection systems, as well as creation of API for sharing data
- 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.
- Flanders is participating in the European Socrates 2.0 project with a Flemish pilot focusing on cooperation between public and private parties in order to realize interactive traffic management.

2.1.2.4 Wallonia

In Wallonia, main achievements are:

- Elaboration of the concept of a data centre in the frame of PEREX 4.0;
- Launching of the TRADEMEX project consisting of 3 parts: implementation of a system for collection, storage, analyse, processing and transfer of counting data and traffic measures (real-time and consolidated); statistical model for the production of socio-economic data; provision of a system for the exchange of traffic data in Datex 2.

2.1.3 Delegated Regulation (EU) 2017/1926 on the provision of EU-wide multimodal travel information services (priority action a)

The following is a collective status for the four entities (Federal, Brussels, Flanders, Wallonia).

Status of the Belgian National Access Point on MMTIS

Taking into account the price, time, quality and the possibility of monitoring and control by representatives from the public sector, the Belgian ITS Steering Committee decided on January 15th 2019 to work with the scenario below for the Belgian National Access Point on MMTIS:

- Business model: Single Point of Access with option '*engage and assist stakeholder*'.
    - Single Point of Access
        - main characteristics: register of links to existing data sets and data services; repository + discovery functionality; interface that allows registration and completion of standardized metadata;
        - was chosen because of the tight timing; In the course of time, things can possibly be added, and migration could be made to a more complex scenario.
    - Option 'engage and assist stakeholder'
        - for the NAP to function properly, stakeholder engagement is needed; this also entails a certain form of communication.
- Appoint an institution that will manage that National Access Point
- Including assessment of compliance

By mid-September 2019, a first version of the Belgian NAP was available in a test environment. In the second half of September and the first half of October 2019, the different administrations and public transport operators in Belgium have performed User Acceptance Tests on the NAP.

The next step was the signing of a cooperation agreement between the Belgian state, the Flemish region, the Walloon region and the Brussels Capital region, and the selected institution for the development and management of the NAP, the National Geographic Institute (NGI/ING). The NAP has been operational since 14th February 2020: https://www.transportdata.be/.

Stakeholder engagement

A first stakeholder workshop has been organized in Brussels on December 10th, 2018. About 32 persons participated in this workshop. Around two-third of them were from the private sector.

During the ITS.be congress, that took place in Brussels on October 3th 2019, we've approached and informed stakeholders about the obligations following the delegated act 2017/1926 and the future NAP MMTIS.

A second workshop was organized with the stakeholders in Brussels on February 14th 2020 in which the newly launched NAP was presented. Turnout for the workshop was large with more than 70 participants from a variety of backgrounds (government services, public and private transport organisations, research institutes and sector organisations). The presentations of the workshop can be found here.

Legal part

It was decided that it is highly advisable to supplement the delegated act in the course of 2020 with federal and regional regulations. Therefore, the Belgian ITS Steering Committee decided that a legal task force will be set up that will examine the opportunity to prepare a draft of the regulations for operationalization and further elaboration of the delegated act 2017/1926.

2.1.4 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:

At the moment, data concerning RTTI from public authorities is uploaded on the NAP MMTIS, which is operational since 14 February 2020 : www.transportdata.be

- In Brussels real-time traffic information is currently available through the OTAP-node of the traffic centre (Mobiris). Access is provided directly or through the Belgian NAP.
- In Flanders real-time traffic information is currently available in DATEX II format (open data). This information is also available through www.transportdata.be and https://opendata.vlaanderen.be. We've contributed to the survey on the revision of the delegated regulation. PTO De Lijn also provides Real-time traffic information.
- In Wallonia real-time traffic information is currently available through the OTAP-node of the traffic centre (PEREX). Access is provided directly or through the Belgian NAP.

Where relevant, the list of motorways not included in the comprehensive trans-European road network and identified priority zones:

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Additional information (e.g. which data types are being provided? Have metadata catalogues been implemented? Are quality requirements being checked?):

Public datasets regarding RTTI are included in the NAP for MMTIS. A Belgian working group has been set in place to extend the NAP for RTTI, SRTI and TP. This is work in progress.

2.1.5 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:

In Flanders a DATEX II information link is available for SRTI data by the Traffic Management Centre. This information is also available through www.transportdata.be and https://opendata.vlaanderen.be.

The Flemish Traffic Centre also participates in the EU data task force on SRTI.

There is also a pilot C-Roads project running in Flanders, which will bring SRTI information in the car. The aim of this project is to agree on and produce interoperable specifications for C-ITS 'Day 1' Services, to test & demonstrate interoperability of C-ITS pilot deployments in participating Member States with focus on ITS-G5 and to realise & evaluate a cloud-based provision of C-ITS Services in Flanders, building on cellular communication infrastructure.

In Wallonia, a service covering the motorways is currently provided through "PEREX" RDS-TMC service, transmitted by the public broadcaster RTBF.

A C-ITS pilot-project has been launched in 2017 and is currently deployed in order to test the provision of SRTI using 4G and ITS-G5.

Results of the assessment of compliance with the requirements set out in Articles 3 to 8 of Delegated Regulation (EU) No 886/2013:

Discussions are ongoing in order to identify the competent authority in matter of assessment of the compliance or to appoint an independent body on behalf of the different authorities involved.

The intention is to make use of the declaration of compliance template elaborated in the frame of the EU ITS platform.

Where relevant, a description of changes to the National Access Point:

Datasets regarding STTI are included in the NAP for MMTIS. A Belgian working group has been set in place to extend the NAP for RTTI, SRTI and TP. This is work in progress.

Additional information (e.g. sources of data used for the provision of safety related traffic information):

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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:

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

Our truck parking data is available on the website of the EU Open data Portal: https://data.europa.eu/euodp/en/data/dataset/etpa

2.2.1.1 Flanders

- Several projects to enhance traffic fluidity have been realised (see project Dynamic Traffic Management).
- Flanders is also involved in a CEF project with the aim to provide a dynamic information service about the parking occupancy rate of truck parking places (intelligent truck parking) on a pilot corridor on the TERN network in Flanders. The task of the Intelligent Truck Parking is to optimise the use of the existing parking infrastructure and to exchange relevant information with the European truck drivers, transport companies, etc. (See project sheet on 'Real-time information on truck parking')
- With the Flemish policy framework for urban logistics, the Flemish government 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.
- VIL, the Flemish Institute for Logistics – which is appointed by the Flemish government as the single point of contact for the logistics sector – conducted a pilot project in which autonomous shuttles delivered packages in the city centre of Mechelen in order to decrease traffic related to the transport of goods in the city centre. This pilot took place in May 2018. More info: https://vil.be/2018/primeur-vil-laat-zelfrijdend-voertuig-pakjes-leveren-in-centrum-mechelen/#.XvxTim0zbIU.
- 5G Blueprint: project to test tele-operation on a 5G corridor in three test areas in Flanders and the Netherlands: the port area of Vlissingen, the border area near Zelzate and the port of Antwerp. This project is scheduled to start the 1st of September 2020.
- Within the Mobilidata programme we've also selected use cases that are relevant for freight transport, such as prioritisation of a group of trucks.
- We participated in the European Truck Platoon Challenge in 2016 and we participate in the European Truck Platooning Community (EUTPC) in which the development of multi-brand truck platooning is facilitated.
- We've included the cluster physical internet within our ITS action plan and the Flemish Waterways are involved in a working group of the European Technology Platform Alice which is working on a roadmap to realise physical internet. Flanders is looking into setting up a POC within the cluster physical internet.
- VisuRIS: VisuRIS presents all fairway information on a map or in a chart, with information on up-to-date traffic on fairways (positions of various vessels with additional information on the route), water levels, information on the dimensions of the waterway, bridges and locks, … You can also calculate your trip with an application that takes into account the average travel time on the waterway, operating times of bridges and locks etc.
- Weigh in motion (WIM): WIM-systems were installed at ten locations in Flanders. By using WIM, the interception efficiency of overloaded heavy goods vehicles has increased from 20% when intercepts were done on a visual basis to 83% using the WIM-system.

2.2.1.2 Wallonia

The upgrade of PEREX, the Walloon traffic centre has been the most important project for the last 3 years. Located at the heart of the motorway network near Namur, PEREX manages and monitors traffic on the motorways and the main Walloon roads, as well as the operation of electromechanical and telecommunications equipment. Most of the equipment, software, databases and applications were installed when it opened almost 20 years ago. Even if updates and adaptations were made over the years, the system no longer met current IT standards, which had repercussions on traffic management and mobility.

In addition to completely modernizing the equipment of the road traffic centre and that installed on the road network, it was decided to create a similar centre to ensure control and surveillance of the condition of the rivers and waterways network and its hydraulic works (locks, dams, elevators, ...). This new centre for rivers will be an integral part of the PEREX 4.0 centre in Daussoulx. IT and electromechanical equipment will therefore be partly shared.

Truck traffic management is also a major challenge in Wallonia, which is situated at the heart of important transport flows. The aim is first to have a good knowledge of the number of heavy goods vehicles but also of their characteristics and loads. This will make possible the deployment of appropriate means to ensure the management of truck traffic, especially in cases of border closures but also in difficult winter conditions (heavy snowfall).

The improved knowledge of the occupancy rate in truck parking places is also essential. Availability of parking spaces constitutes a category of data which will enable the deployment of a specific case to be included in information services.

Finally, ITS is also used in order to support the extension of the capacity of the motorway by using the hard shoulder. A pilot project has been set up aiming at opening a special lane for vehicles with minimum 3 occupants.

2.2.2 Progress since 2017

Description of the progress in the area since 2017:

2.2.2.1 Flanders

DATEX II information available for static truck parking data is also available through www.transportdata.be and https://opendata.vlaanderen.be.

Flanders is also involved in a CEF project with the aim to provide a dynamic information service about the parking occupancy rate of truck parking places (intelligent truck parking) on a pilot corridor on the TERN network in Flanders. The task of the Intelligent Truck Parking is to optimise the use of the existing parking infrastructure and to exchange relevant information with the European truck drivers, transport companies, etc. This POC will end 31.12 2020.

2.2.2.2 Wallonia

The implementation of PEREX 4.0 is a large project spanning several years and which will also depend on the deployment of specific equipment on the network. The 1st phase includes the definition of the functionalities of the centre leading to the implementation of a new operation aid system as well as the development of a new traffic database aiming at integrating existing counting data (loops) and

complete them with data from external sources. The new traffic centre has been inaugurated in April 2019.

For truck traffic management, the focus has been put on:

- Increase of the number of counting stations on the motorways and implementation of weigh in motion stations in order to measure specific parameters of heavy goods vehicles;
- Calculation of the occupancy rate in truck parking places: in the frame of TRADEMEX project, the equipment of 2 truck parking sites has been completed in order to learn lessons for the deployment in other locations.

Special lane for car-pooling has been open mid-2019 on the A4 motorway before the border with Luxembourg. Vehicles with 3 occupants or more are allowed to drive on the hard shoulder. Enforcement is based on video analyse at control points. Evaluation will take place in 2020.

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:

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

2.3.1.1 Brussels

The installation of Radar sections has been implemented. The network of ANPR cameras has been extended.

2.3.1.2 Federal

Vehicle automation will be part of the solution for mobility problems: improving road safety of course, but also diminishing congestion and pollution, while at the same time creating new possibilities for the industry, including telecom and mobility service providers. Hence, Belgium aims to be one of the trendsetters in testing automated vehicles.

2.3.1.3 Flanders

The implementation of speed limit enforcement is ongoing. The federal police is rolling out a national ANPR network on the main roads. This network – initially intended for police purposes – can also be used for average speed control.

Within the Mobilidata project we will co-invest in C-ITS applications that send information on safety related information services. The programme runs from 2019 until the end of 2023.

We are involved in the European Data Taskforce in which we investigate a business model for sharing SRTI-data.

Other measures that have a strong impact on road safety are speed control, WIM, intelligent lighting which might increase visibility but also saves energy, the Mobilidata programme wants to implement certain SRTI-related C-ITS services, data task force SRTI, tests with autonomous vehicles for which safety is an important KPI, etc.

2.3.1.4 Wallonia

Focus is still put on speed limit enforcement with the installation of fixed radars and the equipment of some sections with average speed control based on ANPR. Another priority is the control of trucks in overload for road safety reasons and for protection of the infrastructure. The goal is also to get to automatic fining by means of a reliable weigh in motion system.

Intelligent lighting systems with energy-saving devices that take account of traffic conditions should also help to improve road safety for drivers and for the emergency and road services operating on the network.

2.3.2 Progress since 2017

Description of the progress in the area since 2017:

2.3.2.1 Brussels

Installation of fixed radar was continued; radar sections were implemented and new ANPR cameras have been installed.

2.3.2.2 Federal

In 2018, the Federal Government amended the Highway Code in order to allow that within the framework of testing automated vehicles, exemptions can be granted from the rules of the Highway Code itself, for example granting an exemption from the minimal distance rules between trucks during truck platooning tests, allowing a remote operator, etc.

Numerous pilot projects have been running on Belgian public roads, with first tests of completely autonomous shuttles by Vias institute in cooperation with the Federal Public Service Mobility and Transport. More details can be found on the website of Vias institute[4].

2.3.2.3 Flanders

There were several implementations of average speed control on the TERN. Flanders expanded the number of average speed control installations on the main road network.

Weigh in motion has been implemented. We now have 10 WIM systems in place: 2 on the E40, 2 on the E17, 2 on the E313 and installations on the N16, R0, E34 and N19g.

We've expended the trajectory control systems for speed limit enforcement and continued to digitalise our speed camera's.

System to measure slippery roads: we have an IT application in place that registers the meteorological conditions and the conditions of the road surface (black ice …). In addition to other data sources it supports the management of the winter service.

We've signed the MoU on - and participate in the PoC regarding exchange of safety-related vehicle data (European data task force)

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[4] Description of the very first test on Belgian public roads with an autonomous shuttle in September 2018: https://www.vias.be/en/newsroom/shuttle-bus-drives-for-the-first-time-on-public-roads-in-belgium-/

2.3.2.4 *Wallonia*

Installation of fixed radars has been continued with the processing of data by the Police in Regional Treatment Centre located in PEREX.

New stations for weigh in motion have been implemented in order to measure specific parameters and to make a preselection of heavy goods vehicles in overload.

A Private Public Partnership for intelligent lighting has been started with a 3-year term for the upgrading of the equipment.

2.3.3   112 eCall (priority action d)

Information on any changes regarding the national eCall PSAPs Infrastructure:

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

The eCall service allows any motorist to reach emergency services by car if necessary. The alarm can be triggered in two ways: either automatically via in-vehicle sensors (e.g. after the airbag has been activated) or manually by pressing a button. The alarm is communicated by sending a message MSD (Minimum Set of Data) and generating a call between the vehicle and an eCall 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[5] are being forwarded to the appropriate emergency centre.

Public eCall is a minimum service that is granted to all persons with a new M1/N1 vehicle model from April 2018 onwards or to all persons who have installed a disposable eCall in their M1/N1 vehicle from the same date. A public eCall filtering centre receives the call and data, confirms the urgency of the situation, and alerts the fastest emergency services.

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

The first phase started in October 2017 and consisted in reusing the POC developed at Heero 2 with the installation of public eCall modems and the connection with the recognized the 'Third-Party Service Provider' (TPSP). The VPN connections (Virtual Private Network - Internet) have been protected and use the Communication Protocol EN16102.

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[5] For the Minimum Set of Data, this is not the case yet. Every "Third-Party Service Provider" (TPSP) received an offer to connect to our infrastructure, but no answer (despite reminders). So none of the TPSP's are now sending the MSD data towards our "Public Safety Answering Points" (PSAP's).

The second phase started in March 2018 and consisted in fully operationalising the software of our rescue centres by connecting them to the TPSP's telephony. The PBX[6] connection based on standard 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[7] 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 the information in order to compile statistics.

In addition to the transposition of the European directives in Belgian law (ITS Framework Act and Implementing Decision), 3 Royal Decrees (RD) have been published 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 recognised 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.

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 Health.	+32 2 524 96 40	serge.cornet@gezondheid.belgie.be
CROEN	Fabian	Federal Public Service Home Affairs.	+32 2 500 25 82	fabian.croen@ibz.fgov.be
DE DECKER	Bob	Federal Public Service Home Affairs.	+32 2 642 64 32	Bob.DeDecker@police.belgium.eu
SMET	Rudi	Belgian Institute for Postal Services and Telecommunications.	+32 2 226 87 56	rudi.smet@bipt.be

Numbering aspects of eCall services

The numbering plans are continuously reviewed and adapted to foster innovation in the electronic communications market. In 2017, based on the responses to the consultation regarding the numbering aspects of the eCall services and their analysis by BIPT, the Institute prepared a draft decision to amend the M2M decision regarding numbering to allow the use of the 077 series for eCall and the "Connected Car" applications, as well as a draft Ministerial Order authorising the extraterritorial use of E.212 and E.164 numbering resources for eCall, M2M applications and "Connected Car" applications. A circular letter of 6 October 2017 was then adopted by the Minister responsible for telecommunications. BIPT's decision of 10 January 2018 laid down the numbering plan regarding IoT33 and eCall communications. This process also led to the Ministerial Order of 29 May 2018 allowing an exception for eCall to the principle in Article 8 of the Royal Decree of 27 April 2007 on managing the national numbering space and the grant and withdrawal of number user rights. The extraterritorial use of E.164 and E.212

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[6] Private automatic Branch eXchange (which manages interconnection of the telephone network).

[7] For the Minimun Set of Data from Third-Party Service Provider, this is not the case yet.

numbers and of supranational numbering resources of the ITU for eCall in Belgium is authorised. The 077 series of E.164 numbers have been chosen as the national solution for IoT and eCall services.

- Consultation 31 January 2017 regarding the numbering aspects of eCall services: https://www.bipt.be/operators/publication/consultation-of-the-bipt-council-on-the-draft-decision-of-29-august-2017-relating-to-the-determination-of-the-numbering-plan-for-iot-and-ecall-communication
- Synthesis and analysis of the reactions to the consultation of 31 January 2017 regarding the numbering aspects of e-call services: https://www.bipt.be/operators/publication/synthesis-and-analysis-of-the-reactions-to-the-consultation-at-the-request-of-the-bipt-council-of-31-january-2017-regarding-the-numbering-aspects-of-e-call-services
- Consultation on the draft Decision of 29 August 2017 relating to the determination of the numbering plan for IoT and eCall communication: https://www.bipt.be/operators/publication/consultation-of-the-bipt-council-on-the-draft-decision-of-29-august-2017-relating-to-the-determination-of-the-numbering-plan-for-iot-and-ecall-communication
- Circular letter of 6 October 2017 regarding the extraterritorial use of foreign numbering means in Belgium - Implementation of Article 8 of the Royal Decree of 27 April 2007 on managing the national numbering space and the grant and withdrawal of number user rights https://www.bipt.be/operators/publication/circular-letter-of-6-october-2017-regarding-the-extraterritorial-use-of-foreign-numbering-means-in-belgium-implementation-of-article-8-of-the-royal-decree-of-27-april-2007-on-managing-the-national-numbering-space-and-the-grant-and-withdrawal-of-number-user-rights-belgian-official-gazette-28-june-2007
- Decision of 10 January 2018 relating to the determination of the numbering plan for IoT and Ecall communication: https://www.bipt.be/operators/publication/decision-of-the-bipt-council-of-10-january-2018-relating-to-the-determination-of-the-numbering-plan-for-iot-and-ecall-communication
- Ministerial Order of 29 May 2018 allowing an exception34 for eCall to the principle in Article 8 of the Royal Decree of 27 April 2007 on managing the national numbering space and the grant and withdrawal of number user rights
    - Dutch: http://www.ejustice.just.fgov.be/eli/besluit/2018/05/29/2018012488/justel
    - French: http://www.ejustice.just.fgov.be/eli/arrete/2018/05/29/2018012488/justel

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:

	PARKING PLACES (NB)	REGISTERED	PARKING SPACES (NB)
WALLONIA	107	100 %	3.395
FLANDERS	72	96%	2.574

Percentage of parking places registered in the information service:

See table above.

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

- Flanders

Currently no dynamic information on availability of parking spaces.

- Wallonia

Currently no dynamic information on availability of parking spaces.

Additional information: (e.g. has a National Access Point been set up to provide truck parking data? Does it include dynamic data? What is the source of data (public / private)? Is data published on the European Access Point for Truck Parking hosted by DG MOVE? If not, is there any intention to do it in the future?)

- Flanders:

Our static truck parking data is available on the website of the EU Open data Portal: https://data.europa.eu/euodp/en/data/dataset/etpa.

There is currently no dynamic information on availability of parking spaces. There is a pilot project ongoing to deliver real-time occupancy information of truck parking places along a corridor on the E17 between Kalken and the border including 5 rest areas (in the direction of France). This project is partially funded by the EC.

- Wallonia:

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.

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: in particular, provide information on the C-ITS deployment initiatives and their technical specifications.

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

- Flanders participates in / contributes to a number of relevant European funded C-ITS projects:
  • C-Roads platform
  • C-Roads pilot project in Flanders (ongoing)
  • INTERCOR (ended February 2020)
  • CITRUS (finalised except for the final event – planned in October 2020)
  • CONCORDA
- Flanders will start an automated shuttle project in the airport of Zaventem for which the pilot phase will end in 2021 (see project sheet 'autonomous shuttle Zaventem').
- 5G Blueprint – project to start on 01.09.2020
- With the Mobilidata program (2019-2023) the Flemish government wants to provide all road users with real or near-real time relevant mobility information. The program aims at co-creation with private partners and is based on a digital infrastructure, smart traffic lights and high quality, sustainable data sources.
  o Main targets are traffic safety, traffic throughput and sustainability for every road user.
- From 2017, Wallonia is also implementing a C-ITS pilot, C-Roads Wallonia, affiliated to the C-Roads platform.

2.4.2   Progress since 2017

Description of the progress in the area since 2017:

- Flanders:

For Flanders we will start deploying C-ITS services through the Mobilidata program (2019-2023). We will take the lessons learned from pilot projects.

- Wallonia:

The deployment of the Walloon pilot has started. After considering the development of a specific app based on cellular communication, the focus has been put on the ITS - G5 technology. 5 Roadside Units (RSU[8]) have been installed as well as a C-ITS messages server. Communication tests have been performed successfully.

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[8] UBR in French (Unités de Bord de Route).

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 main activities of each entity are described in the project sheets (see <u>appendix</u>).

<u>CEF co-funded ITS Corridors: EU ITS Platform (EU EIP) and Arc Atlantique ITS corridor</u>

The harmonised deployment of ITS across the TEN-T and its Core Network Corridors to improve their sustainability is the main mission of the CEF co-funded ITS Corridors (Arc Atlantique, etc.) and the EU ITS Platform (EU EIP).

This is why Belgium, through its regional entities, is involved in the ITS corridor "Arc Atlantique". Arc Atlantique is managed as a partnership between 7 National Road Authorities (Belgium, France, the Netherlands, Portugal, Spain, Ireland and the UK) as well as 25 Road Operators and is designed to improve the efficiency of this corridor (see <u>https://arcatlantique.its-platform.eu/</u>).

2.5.2 Progress since 2017

Description of the progress in the area since 2017:

As a knowledge management centre, the EU ITS Platform (EU EIP) allows the creation of tools and processes that are indispensable for our different road authorities and road operators to make ITS operational and harmonised at the European level. The EU EIP enables the stakeholders concerned to meet and thus to create multi-stakeholder collaborations in the ITS community.

Belgium is therefore pleased to have contributed to the main achievements of the EU EIP:

- the European Reference Handbook for harmonized ITS Core Service Deployment in Europe,
- an improved mechanism for Cross Corridor Cooperation,
- KPIs for ITS deployment and benefits,
- the ITS toolkit and the evaluation library,
- the community building on National Access Points (NAP),
- Innovation timelines and deployment roadmaps,
- information services quality frameworks and assessment methods,
- physical and digital infrastructure attributes for automated driving
- good practices how to automate road operator's own ITS
- integrating C-ITS into road operators' day-to-day business.

The overall results of the EU EIP are relevant to all ITS priority areas I to IV (and, in doing so, are also relevant to sections 2.1 to 2.4) and also contribute to the knowledge of ITS corridor-related KPIs.

More information is available on <u>www.its-platform.eu</u>

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)

Figures to be provided by type of network / zone.

Figures to distinguish fixed and mobile equipment.

KPI to be calculated by type of network / zone (when relevant).

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

	WALLONIA	FLANDERS	BRUSSELS
CORE NETWORK	345	470	6
EQUIPPED	345	470	6
COMPREHENSIVE NETWORK	565	468	6
EQUIPPED	475	427	6
OTHER MOTORWAYS	54	81	7
EQUIPPED	27	48	7

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

	WALLONIA	FLANDERS	BRUSSELS
KPI CORE NETWORK	100	100	100
KPI COMPREHENSIVE NETWORK	84	91	100
KPI OTHER MOTORWAYS	50	596	100

3.1.2 Incident detection (road KPI)

Figures to be provided by type of network / zone.

KPI to be calculated by type of network / zone (when relevant).

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

	WALLONIA	FLANDERS	BRUSSELS
CORE NETWORK	345	470	6
EQUIPPED	345	470	6
COMPREHENSIVE NETWORK	565	468	6
EQUIPPED	475	427	6
OTHER MOTORWAYS	54	81	7
EQUIPPED	27	48	7

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

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

3.1.3 Traffic management and traffic control measures (road KPI)

Figures to be provided by type of network / zone.

KPI to be calculated by type of network / zone (when relevant).

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

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

* F/M = Fixed/Mobile equipment

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

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

3.1.4 Cooperative-ITS services and applications (road KPI)

Figures to be provided by type of network / zone.

KPI to be calculated by type of network / zone (when relevant).

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

	WALLONIA	FLANDERS*	BRUSSELS
CORE NETWORK	345	470	6
EQUIPPED	0	0	0
COMPREHENSIVE NETWORK	565	468	6
EQUIPPED	13	0	0
OTHER MOTORWAYS	54	81	7
EQUIPPED	0	0	0

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

	WALLONIA	FLANDERS*	BRUSSELS
KPI CORE NETWORK	0	0	0
KPI COMPREHENSIVE NETWORK	2	0	0
KPI OTHER MOTORWAYS	0	0	0

* C-ITS services will be realised in Flanders through the Mobilidata programme. At the moment there is no roll-out through WIFI-p stations. There will be a roll-out through the cellular network.

3.1.5 Real-time traffic information (road KPI)

Figures to be provided by type of network / zone / node.

KPI to be calculated by type of network / zone / node (when relevant), and if relevant indicate the proportion of services accessible to passengers with reduced mobility, orientation and/or communication.

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

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

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

	WALLONIA	FLANDERS	BRUSSELS
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)

Figures to be provided by type of network / zone / node.

KPI to be calculated by type of network / zone / node (when relevant), and if relevant indicate the proportion of services accessible to passengers with reduced mobility, orientation and/or communication.

- 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)

Figures to be provided by type of network / zone / node.

KPI to be calculated by type of network / zone / node (when relevant), and if relevant indicate the proportion of services accessible to passengers with reduced mobility, orientation and/or communication.

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

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

* 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

	WALLONIA	FLANDERS	BRUSSELS
KPI CORE NETWORK	100	100	0
KPI COMPREHENSIVE NETWORK	84	100	0
KPI OTHER MOTORWAYS	100	100	0

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

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3.1.8 112 eCall (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)

Figures to be provided also include vehicle.km for the route / area considered

KPI = ((travel time before ITS implementation or improvement − travel time after ITS implementation or improvement) / travel time before ITS implementation or improvement) x 100

- Brussels: No data available in relation to ITS implementation.
- Flanders: No data available in relation to ITS implementation
- Wallonia: No consolidated data available.

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

Results shall be provided / aggregated at national level to be representative enough. If possible, distinction can be made between accidents resulting in deaths, serious injuries or slight injuries.

Figures to be provided also include vehicle.km for the route / area considered.

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:

- Brussels: No data available in relation to ITS implementation.
- Flanders: No data available in relation to ITS implementation.
- Wallonia: No data available in relation to ITS implementation.

3.2.3 Change in traffic-CO_2 emissions (road KPI)

Routes / areas where ITS has been implemented or improved should be specified. Length along / area within which the change in CO_2 emissions is calculated should be long / wide enough to be representative.

KPI = ((traffic CO_2 emissions before ITS implementation or improvement − traffic CO_2 emissions after implementation or improvement) / traffic CO_2 emissions before ITS implementation or improvement) x 100

- Brussels: No data available in relation to ITS implementation.
- Flanders: No data available in relation to ITS implementation
- Wallonia: No data available in relation to 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