

Kilometre Charge System for the Flemish Region, the Walloon Region and the Brussels-Capital Region

Final architecture document for the Interregional kilometre charge system

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Fairway Consortium

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Abbreviations and Definitions

Abbreviations

ANPR	Automatic Number Plate Recognition.
DBFMO	Design, Build, Finance, Maintain, Operate
DIV	Dienst voor Inschrijving van Voertuigen - Vehicle Registration Service
DSRC	Dedicated Short Range Communication
EETS	European Electronic Toll Service
FRSE	Flexible Road Side Equipment
FRSEV	Flexible Road Side Equipment Vignette
GNSS	Global Navigation Satellite System (e.g. GPS, Galileo, Glonass)
GVW	Gross Vehicle Weight or Maximum Authorized Mass (MMA)
IPR	Intellectual Property Right
KPI	Key Performance Indicator
OBU	On Board Unit
RASA	Regional Administrative Sanctioning Authority
REA	Regional Enforcement Authority
RCI	Road Charging Interoperability
SRSE	Stationary Road Side Equipment
SRSEV	Stationary Road Side Equipment Vignette
SSP	Single Service Provider
VAS	Value Added Services

Driver	The driver of a vehicle subject to the charge.
Concessionaire	Organisation, commissioned by the authorities, which operates part of or the entire road network.
EETS provider	Definition of the 'service provider' in the EETS.
User	The owner or, where applicable, the economic owner of a vehicle subject to the charge. Usually the same person the number plate is registered to. The User may operate directly or indirectly (e.g. through a Driver).
Region	The Flemish Region, the Walloon Region or the Brussels-Capital Region, being each of the three federated entities with legal personalities which are recognised as federated entities of the Federal State on the basis of their individual socio-economic profiles and having material powers expressly granted to them in the Constitution and pursuant to the (special) laws enacted in the Constitution, such powers being limited to their respective territories.
Guaranteed payment methods	Payment methods enabling the SSP to collect the User's future costs without repeated authorisation from the User, who cannot reverse the payment. Guaranteed payment methods include credit cards, fuel cards and advance payments.
Road network subject to the charge	The entire Belgian road network, regardless a nil or higher rate applies.
Interoperability Decision	Commission Decision 2009/750/EC of 6 October 2009 on the definition of the European Electronic Toll Service and its technical elements.
Interoperability Directive	Directive 2004/52/EC of the European Parliament and of the Council of 29 April 2004 on the interoperability of electronic road toll systems in the Community.

Interregional entity	The joint agency or institution established with a view to jointly exercising its own regional competences via a cooperation agreement jointly established and managed by the Regions. Within the framework of a joint mission, the Interregional entity also acts on behalf of the Concessionaire(s).
Key process for the kilometre charge system	The key process for the kilometre charge system involves registering the number of kilometres driven up to the collection and remittance of all driven 'kilometres times the applicable tariff'.
Mobile telecommunications	The telecommunication method used to exchange data between the OBU and proxy server. These include mobile phones, GPRS, EDGE, UMTS and future standards based on 4G+.
Service Provider	Any organisation offering a service to invoice Users, collect tolls and transfer tolls to the Regions and to Concessionaire(s) by virtue of kilometre charging based on data recorded by an OBU.
Single Service Provider	A service provider that will be contracted, through a tendering process, to provide services as described in this architecture document.
Toll Charger	Definition of the owner of a toll domain within the EETS. In this context this is, respectively, the Flemish Region, the Walloon Region and the Brussels-Capital Region and/or any Concessionaire(s).
Toll Network	The part of the road network subject to the kilometre charge where a tariff higher than nil applies.
Toll Directive	Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999 on the charging of heavy goods vehicles for the use of certain infrastructures, as amended by Directive 2006/38/EC and Directive 2011/76/EU.

Introduction

Background

The three Regions have decided to introduce a kilometre charge for lorries. The intention is to introduce a 'smart ecologically modulated' kilometre charge which can be differentiated according to location, time, driving behaviour and the vehicle's environmental characteristics.

The charge will be introduced primarily for national and foreign light and heavy goods vehicles. Over time the charge could be extended to cover other types of vehicles, such as light vehicles. The kilometres driven will be registered using GNSS technology.

Users will be obliged to participate in the system when they use the roads in the three Regions, the road network subject to the charge, by possessing a valid contract with the SSP and an operational OBU. When the system is introduced, a part of the road network will have a nill rate. For all other roads which are part of the Toll Network, Users will also have to possess Guaranteed Payment Methods. The User will be responsible for the proper functioning of the OBU at all times. If a User does not possess Guaranteed Payment Methods it means that he or she will no longer be able to use the Toll Network. If he or she does not possess a valid contract with the SSP / OBU, it means that he or she will no longer be able to use the road network subject to the charge. Any violations in either case may result in a fine.

To underpin the architecture for the kilometre charge a number of draft decisions have been taken regarding the system's operational and technical requirements outlined in the underlying document, the architecture document. These draft decisions form the basis for the system's architecture.

This document is the final architecture document.

Objective

This document provides a comprehensive outline of the architecture for the kilometre charge system in the Flemish Region, the Walloon Region and the Brussels-Capital Region.

Document structure

This document consists of three chapters (see table below). The first chapter focuses on the basic principles, conditions and requirements at the *strategic* level. The second chapter then deals with the basic principles, conditions and requirements at the *tactical* level. The third chapter builds on the tactical level and outlines the basic principles, conditions and requirements at the *operational* level.

	Legal framework	Market and organisational model	Functional and technical system requirements	Financing, funding and remuneration
1. Strategic level	1.1 Vehicles subject to the charge 1.2 Geographic scope 1.3 Legal framework 1.5 Pricing model 1.11 Fundamental legal relationships between players	1.7 Role of the market 1.8 Role of the Users 1.10 Role of the Regions	1.4 Planning 1.6 Technology 1.10 Enforcement	1.12 KPIs 1.13 SSP revenue model 1.14 Value Added Services
2. Tactical level	2.3 Key interfaces 2.4 Legal protection for Users in the payment recovery process 2.11 User –Service Provider relationship	2.9 SSP organisation	2.1 Key Process 2.2 On Board Unit 2.5 Customer care 2.6 Enforcement 2.7 OBU Management 2.8 Registration and installation	2.10 SSP Financial requirements 2.12 Definition of KPIs 2.13 Performance Reporting
3. Operational level			3.1 Kilometre charge system 3.2 OBU registration and installation 3.3 Kilometre registration 3.4 On Board Unit 3.5 Back Office 3.6 Enforcement 3.7 Interfaces 3.8 Customer Care 3.9 Key Performance Indicators	

1 Strategic level

1.1 Basic principles for the definition of vehicle types submitted to the kilometre charge

1.1.1 *The kilometre charge applies to lorries with a GVW (Gross Vehicle Weight) of more than 3.5 tonnes*

The Eurovignette will be repealed at the federal level at the moment of introduction of the kilometre charge. Combining a toll charge such as the kilometre charge with a right of use such as the Eurovignette, for the same category of vehicles on the same route is not permitted. The Regions will therefore have to sign agreements with the federal authorities to repeal the Eurovignette charge.

- The following conditions apply to the kilometre charge for lorries:
 - Infrastructure costs will be billed in an infrastructure charge in accordance with the rules defined in the 2011/76 Toll Directive on all roads subject to the charge.
 - Possibility of differentiating the infrastructure charge according to the vehicle's GVW.
 - Possibility of differentiating the infrastructure charge according to the level of congestion (time and location) and to EURO emission classes, with a maximum difference of 100% between the highest and lowest class.
 - Differentiation according to EURO emission classes is compulsory for roads which are not subject to any external cost charge.
 - External costs related to air quality and noise pollution will be billed in the form of an external cost charge based on the rules defined in the Toll Directive. In principle the external cost charge will only be applied to roads not under concession.
 - Compulsory differentiated external cost charges according to EURO emission classes
 - Possibility of differentiating external cost charges according to time (day or night) or location (suburban roads and trunk roads).
- The application of other regulatory charges on all roads in urban areas is still permitted, including roads in the trans-European network through urban areas in order to counteract time and location-related congestion or to counteract environmental damage.

1.1.2 *In principle no exemptions to the kilometre charge will be granted*

In principle, no exemptions to the kilometre charge will be granted. *Theoretically* an exemption will still be possible in exceptional cases, as defined in Article 7.4 of the Toll Directive. Furthermore, any exception must be adequately and substantially justified.

1.1.3 *The tariff will not be adjusted according to social status*

The tariff will not vary according to the number plate owners social status.

1.2 **Basic principles for the geographic scope**

1.2.1 *The kilometre charge applies to the road network subject to the charge, whereby a nil tariff may apply to part of the road network; from introduction a tariff higher than nil will apply to roads that are part of the Toll Network (the extended Eurovignette road network).*

The term 'extended Eurovignette road network' refers to the road network as described under the Eurovignette's current application area.

Tariffs will be digitalised in the form of tariff zones. Each zone will be assigned a particular tariff per kilometre driven, which may also be influenced by the time of day, static vehicle characteristics and driving direction. The exact form of these interdependencies can vary per zone. It must also be possible to periodically adjust these zones, with regard to both form and applicable tariff. The owner/Concessionaire of the toll domain in question, as defined in the EETS Directive, will determine the form of the zones and level of the applicable tariffs.

1.2.2 *The kilometre charge will be based on area-wide detection*

The kilometre charge will be based on area-wide detection in which the entire territory of the three Regions can legally be subject to the scope of the charge.

Within this scope it is possible to first opt for a selective road network. Nevertheless from the outset all roads will be subject to the kilometre charge but a nil tariff will be established for some of the roads.

1.3 Basic principles of the legal framework

1.3.1 *The kilometre charge will be introduced as a non-Regional tax on the road network not under concession and as a fee on the road network under concession (the so-called 'mixed model')*

The introduction of the kilometre charge as a non-Regional tax on the road network not under concession requires the Federal legislator's cooperation. The Federal legislator will introduce the tax by establishing the taxable nature of the matter at hand, determining its essential elements and including it as a non-Regional tax in the Special Finance Law for Regions and Communities. He will then provide for a cooperation agreement that the Regions are obliged to conclude.

1.3.2 *Furthermore, it must be advocated that the federal authorities amend the law to guarantee the deductibility of the kilometre charge as a business expense in all cases of the mixed model*

In accordance with the current (federal) Income Tax Code, in its capacity as a non-Regional tax the kilometre charge is in principle deductible as a business expense for personal income tax and corporate tax. With regard to the deductibility of the kilometre charge for business purposes as a retribution for corporate tax, legal certainty can only be obtained via a (federal) amendment to the law.

The rules relating to deductibility as a business expense for income tax purposes will continue to fall under federal jurisdiction after the introduction of the kilometre charge and can be amended by the federal authorities via an ordinary law.

1.4 Basic planning principles

1.4.1 *In principle the kilometre charge will be introduced in 2016*

In the period leading up to the *go-live* date the authorities will organise media campaigns to inform future Users and Drivers. All Belgian and foreign Users that wish to use the Belgian road network after the *go-live* date will be requested in a timely manner to conclude a contract with the SSP, after which they can obtain an OBU and, if necessary, provide a Guaranteed Payment Method. The entire system will *go-live* at the same time. When the first lorries have been equipped with OBUs, all the tariffs will still be set to zero and it will be possible to perform large-scale end-to-end integration tests.

The SSP must perform layered test methodologies and end-to-end tests leading to an initial installation of OBUs six months before *go-live*, as well as end-to-end tests no later than two months before *go-live*.

1.5 Basic principles for the pricing model

1.5.1 *The kilometre charge will be calculated on the basis of the distance travelled in kilometres and may depend on the time, location, driving direction and static vehicle characteristics*

In accordance with the Toll Directive the maximum rate of the tariff may be established at the level of the applicable infrastructure costs for goods vehicles and/or of the external costs resulting from air quality and noise pollution. Within an established range, different tariffs per kilometre may apply for the three Regions and Concessionaires.

The level of the external cost charge can be calculated independently but it is limited to a maximum per Euro-emission class which can be found in the Toll Directive 2011/76. These amounts vary from EUR 0.00 to EUR 0.16 per goods vehicle-km. If several Euro-emission classes are included in one tariff the lowest maximum applies. There are also maximum amounts for noise pollution, between EUR 0.002 and EUR 0.020 per goods vehicle-km.

In principle all movements will be recorded and charged in the event of a tariff greater than nil.

1.5.1.1 *The system must allow tariff differentiation to be applied according to the time of day (peak/off- peak and day/night)*

1.5.1.2 *The system must allow tariff differentiation according to location*

1.5.1.3 *The system must allow tariff modulation according to driving direction*

1.5.1.4 *The system must allow tariff modulation based on static vehicle characteristics (specifically Euro- emission standards and gross vehicle weight)*

The static vehicle characteristics used for the pricing model can be verified by comparing them with data included in the vehicle registration certificate. If the static vehicle characteristics are not specified on the vehicle registration certificate then the heaviest static tariff category will be applied to the vehicle.

1.5.1.5. *The system must also allow a nil tariff to be applied*

It must be possible to apply a nil tariff for a tariff zone. The use of a nil tariff zone will not appear on the invoice but it must be possible to use this data anonymously for traffic analysis, traffic management and policy- making.

1.5.2 *The system must allow tariff change implementation every six months*

1.6 Basic principles related to the technology used to establish the tariffs for the kilometre charge system

1.6.1 *The kilometre charge system uses GNSS positioning to determine location, time, driving direction and movement*

A GNSS-based system is the most appropriate for the three Regions due to the density of the road network, the required coverage of the entire road network and the flexibility to add roads. Equipment will have to be placed along roads for the enforcement function and equipment will have to be installed in the vehicle for the registration function.

The Regions/Concessionaires will, each within their toll domain, divide their territory into tariff zones with varying degrees of granularity. Total distances will be calculated by adding up the distances between successive GNSS positions. This is due to the requirement that it should be possible to subject all roads in Belgium to a kilometre charge.

Where mandatory (e.g. tunnels and parallel roads in different zones) location augmentation beacons can be used. For start-up problems (for example, time to first fix) the SSP will have to make provisions using *assisted GNSS* methods.

The SSP may propose an alternative approach to that outlined above provided it fulfils all the established requirements.

In all cases the proposed solution must comply with all the established requirements.

1.6.2 *The system uses CEN 5.8 GHz DSRC as a communication channel between OBUs and enforcement equipment*

For communication with enforcement equipment, the CEN 5.8 GHz DSRC standard will be applied. The communication protocol between the OBU and the enforcement equipment must comply with CEN ISO 12831. Therefore, in order to add (EETS) providers, the enforcement equipment will have to be interoperable with the CEN 278-based communication protocols of the Service Provider in question. The SSP will have to make provisions so that its enforcement equipment can also be modified for communication with the OBUs of future Service Providers.

1.6.3 *The system uses wireless technology for communication between the OBU and the proxy server (within the front end)*

The OBU must be able to communicate wirelessly and without Driver intervention with the necessary SSP functions such as transmitting kilometre declarations and tariff *updates*. This must be two-way communication (upload from the OBU and download to the OBU). Selecting suitable technology is the SSP's responsibility.

There are requirements for the frequency of communication between the OBU and the back office to ensure that the data is transferred on a sufficiently regular basis. Therefore, the technology used must be suitable for transmitting data at least every minute and provisions must be made for lorries in Belgium approaching Belgian borders to transmit their data before crossing the border. The one-minute requirement applies as long as there is coverage from mobile data networks. When there is no coverage all registered user data must be stored in the OBU.

1.6.4 *The OBU can easily be obtained and installed by inexperienced Users/Drivers*

Each User/Driver must be able to obtain an OBU at a service point. The entire process of obtaining and installing the unit must be able to be completed in a relatively short period of time. A deposit will be required for the OBU.

1.6.5 *The system must allow a lump-sum fee to be imposed if a vehicle moves at least X metres, but never less than technically possible (approximately fifty metres), within a zone with a maximum of Y lump-sum fees per vehicle per twenty-four hours*

The values X and Y are determined by the Regions/Concessionaire(s) and may vary per zone.

1.7 Basic principles related to the role of the SSP

1.7.1 *The design, development, and implementation of the kilometre charge system will be carried out by a (Single) Service Provider on behalf of and under the control of the Interregional entity.*

A Single Service Provider (SSP) model has been chosen, which means that the Interregional entity, in its capacity as the joint regional institution and designated contracting authority, will jointly conclude a DBFMO (Design, Build, Finance, Maintain, Operate) agreement with one Service Provider for the participating Concessionaire(s) of the combined mission. In its role as SSP, this Service Provider will be responsible for financing the necessary investments, i.e. developing and providing the necessary products and services that must comply with all the applicable certification and required standards. The SSP will also be responsible for billing, collecting and transferring funds to the Regions and where

appropriate to the Concessionaire(s).

- 1.7.2 *The SSP will be appointed following a competitive tendering process and will supply an end-to-end service to the User; the SSP will act as single point of contact for the User as well as for the Regions and Concessionaire(s)*

The SSP will provide an end-to-end service to the User, the Regions and where applicable the Concessionaire(s). This integrated solution must consist of at least the following:

- Supplying OBUs through various channels (service points, post);
- Registration, monitoring and processing in a back-office of the displacement data sent by OBUs;
- Calculating the charge due per User;
- User invoicing and collection using Guaranteed Payment Methods;
- Transferring the invoiced charge to the Regions and Concessionaires on behalf of the User;
- Registering and supplying user data for enforcement purposes.

The SSP will also manage the relevant support processes (customer care) for registering Users, handling problems related to the functioning of the OBUs, handling queries or complaints related to invoicing, providing road users with information about the system, etc. Moreover, the SSP will provide support to the Interregional entity, for example by making details available for monitoring payment transfers and compliance with the KPIs, by cooperating during periodic audits, etc.

- 1.7.3 *The SSP will be responsible for providing and managing the enforcement equipment, including the enforcement centre and data communication between the various components. This involves combining the enforcement of the road charge vignette and the kilometre charge*

With regard to enforcement it has been decided to limit the role of the SSP to providing data, providing the 'infrastructure' and recognising license plates, including manual recognition. Each of the Regions will take responsibility for carrying out enforcement tasks on its respective territory.

The SSP will supply and manage an operational kit of enforcement equipment. This kit will consist of at least the following:

- Fixed roadside equipment and mobile roadside equipment;
- Communication and enforcement equipment for the mobile enforcement teams;

- Vehicles for the enforcement teams (this is optional: each Region will decide on this matter depending on its requirements);
- Portable OBU reading equipment;
- An enforcement centre including a back-office, specifically equipped work stations for staff from the Regions, and communication equipment;
- Data transmission between the various components.

1.7.4 *The kilometre charge system must be prepared for the EETS*

An open market will come into effect whereby multiple EETS providers will be able to supply the end-to-end service to Users if they have concluded an agreement based on the 'EETS domain statement'. The current architecture takes this situation into account by employing an open market model. It may also be decided, from the beginning of the project (go-live), to allow access to other (certified) Service Providers who wish to offer their services. The difference with EETS providers is that these Service Providers do not necessarily offer their services in all toll domains in the European Union.

The Regions and the Concessionaires will act as Toll Chargers through the Interregional entity in negotiations with any other Service Provider who wishes to operate in the respective toll domains. The architecture applied (see point 1.7.11) has been prepared for this situation thanks to the 'zip-on zip-off principle'.

1.7.5 *The kilometre charge system must be prepared to be extended to light vehicles*

The kilometre charge system for lorries will be introduced on the condition that the implementation will take into account the system's possible extension to include light vehicles. This will be achieved by having the architecture include the possibility (see point 1.7.11) to 'connect' multiple Service Providers to the open interfaces. In this model Users will be free to select their Service Provider. The tender in question for assigning an SSP will, however, be limited in scope to lorries with a GVW over 3.5 tonnes.

Furthermore, it must be possible to adapt the enforcement equipment (as defined in point 1.6.2) for future passenger vehicle Service Providers.

To assess whether the system can be adequately extended to light vehicles the SSP will cooperate in three tests:

- A positioning accuracy test – completeness: this will assess the completeness of the measured data, measured as the total number of kilometres driven. The results must provide an insight into whether the OBU can deliver the required accuracy for light vehicles;

- A positioning accuracy test – specific location: this test must determine whether there are specific locations such as tunnels, dense high-rise buildings, etc. that can pose problems for positioning accuracy;
- A user interface test: the objective of this test is to determine the requirements of private users for the OBU user interface.

1.7.6 The SSP guarantees the Regions revenues equal to the total registered 'kilometres times the applicable tariff'

These revenues relate to the corrected registered kilometres as described in section 2.1.1.

1.7.7 The full credit risk for collecting the kilometre charge from its affiliated Users lies with the SSP

The fundamental principle here is that the SSP is obliged to accept any User that provides a Guaranteed Payment Method and pays the deposit for use of the OBU.

The SSP reserves the right to request a deposit from Users to cover non-payment of the amounts due as a result of exceeding credit card or fuel card limits. The amount of this deposit will correspond to the toll fee for a fictitious journey (2 x 150 km x tariff).

The SSP will bear the default risks for its Users up to the point at which the SSP informs the enforcement centre that a User is no longer fulfilling his/her obligations or is committing fraud (actively interfering with the operation of the OBU and/or the system). At this point the responsibility of the SSP to collect the kilometre charge due for this User will terminate.

In principle the SSP must accept all current fuel and credit card companies active on the Belgian market. If the SSP wishes to refuse a particular fuel or credit card company, it has to be in consultation with and after the agreement of the Interregional entity.

1.7.8 The legal ownership of, and the associated liability for, the OBU lies with the SSP

The SSP will not be obliged to ensure its system is designed such that it can be fully transferred to another Service Provider at the end of the contract's duration. The SSP is, however, expected to fully depreciate all OBUs over the DBFMO's duration.

1.7.9 The SSP will be subject to requirements pertaining to its obligations upon termination of the DBFMO contract (whether prematurely or as scheduled)

Upon termination of the DBFMO contract a transfer must take place to the Regions and/or Concessionaire (s) or to the new Service Provider. This includes the transferral of the user database, transitional measures for use of the OBUs, use of the IP, enforcement equipment and service points.

1.7.10 *The SSP must finance the investments and operating expenses for the system components and services it provides*

1.7.11 *The kilometre charge system's architecture will be functionally, technically and legally designed in such a way that the role of the Service Provider is defined as 'zip-on' and 'zip-off' so that OBUs belonging to Users of other (EETS) certified Service Providers can be monitored by the enforcement equipment of the SSP without the system requiring any fundamental adjustments*

Other Service Providers' OBUs must be able to communicate with the enforcement equipment. This will be possible since the interface must be based on an open standard and the SSP must make provisions for its enforcement equipment to be adaptable such that it can communicate with the OBUs of future Service Providers.

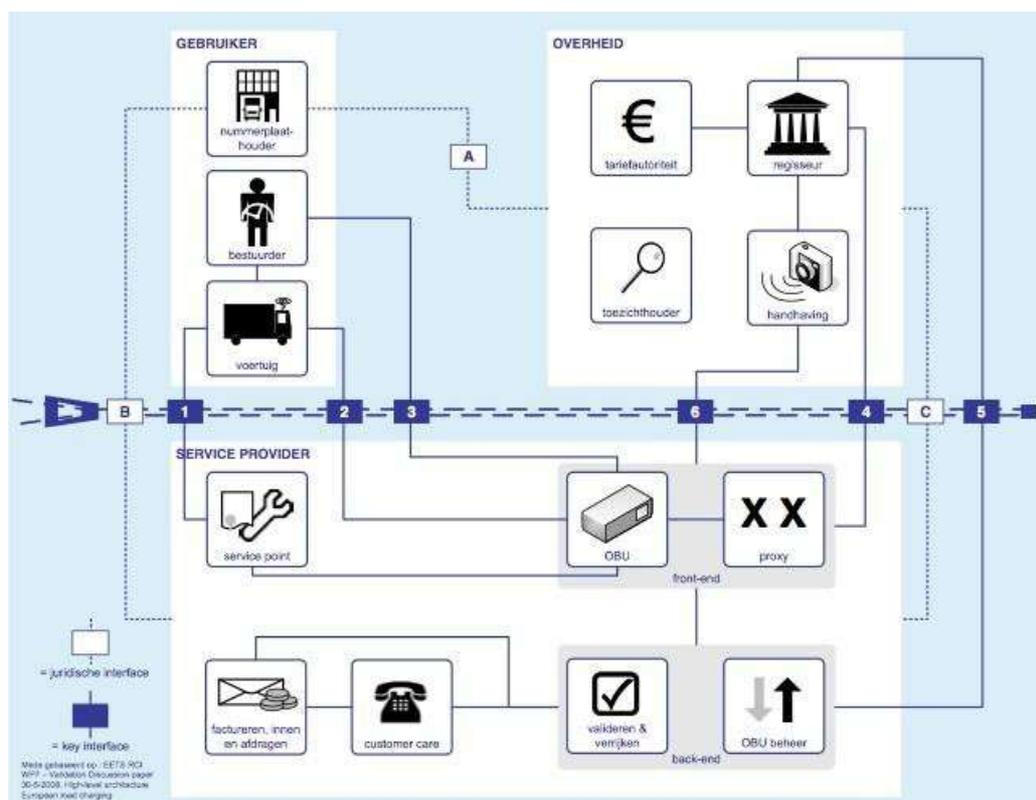


Figure 1 – Diagram of the kilometre charge's high-level architecture

USER – license plate owner – driver – vehicle – AUTHORITY – tariff authority – administrator – supervisor – enforcement – SERVICE PROVIDER – service point – OBU – front-end – proxy server – legal interface – key interface – billing, collection and transfer of funds – customer care – validation and enhancement – back-end – OBU management – Partly based on: EETS RCI WP7 – Validation Discussion Paper 30-05-2008. High-level architecture European road charging

1.7.12 *The duration of the DBFMO contract with the SSP spans 12 years from the time the system goes live, with the option to extend the contract by 3*1 year*

1.7.13 *The SSP is responsible for the integrity, authenticity, incontestability and confidentiality of the information flows and systems involved in the core process and the essential support processes*

Poor performance as a result of malicious intrusion into the system will be covered by requirements which will determine the penalty points and fines incurred by the SSP. The reason behind for intrusion or the location where the intrusion occurred is irrelevant.

1.7.14 *The SSP is integrally responsible for compliance with all applicable privacy legislation*

Compliance with all applicable privacy legislation must be guaranteed at all times. All damages, including those associated with loss of income (whether they are retroactive or not), arising as a result of adjustments to or replacements of (parts of) the system made pursuant to negative judicial verdicts after delivery based on legislation in force at the time of delivery will be borne by the SSP. Based on existing privacy laws the SSP will be required to complete the necessary declarations and obtain and maintain the required authorisations for executing the contract, for example from the Privacy Commission regarding the intention of processing personal data or from the competent Sector Committee for access to certain databases.

The Regions / Interregional entity also reserve the right to ensure the SSP's compliance with privacy laws. The SSP must cooperate in this matter.

1.7.15 *The SSP may subcontract certain services provided that their quality and continuity are guaranteed by contractual provisions*

The SSP may, under its own responsibility and liability, subcontract services if desired or necessary for its business operations. In those cases it must ensure that quality and continuity are guaranteed at all times. It must inform the principal of any subcontractors and present the related provisions in the agreements to the principal for approval.

1.7.16 *The SSP will supply user data, stripped of privacy-sensitive information, free of charge to the Flemish Region for information related to Flanders, the Walloon Region for information related to Wallonia and the Brussels-Capital Region for information related to the Brussels-Capital Region*

The SSP will provide user data related to the road network subject to the charge (including nil tariff roads), as far as possible in real time but at least every five minutes, stripped of privacy-sensitive information and free of charge, to the Regions for policy purposes, traffic management, traffic information, the optimisation of traffic models, etc. The five-minute interval has been chosen to

allow enough time for the correct traffic data to be extracted from the user data on the one hand and is short enough to ensure effective traffic management on the other.

- 1.7.17** *The SSP must ensure that Users and Drivers are adequately informed about the obligation of the User to conclude a valid contract with the SSP and to carry a functioning OBU in the vehicle, as well as to possess Guaranteed Payment Methods when necessary*

The SSP must ensure that potential Users and Drivers of the road network subject to the charge are adequately informed about the User's obligation to enter into a valid contract with the SSP and carry a functioning OBU in the vehicle, as well as pay the kilometre charge using a guaranteed payment method on the Toll Network.

1.8 Basic principles related to the role of Users and/or Drivers in the kilometre charge system

- 1.8.1** *All vehicles subject to the kilometre charge must possess a valid agreement and a functioning OBU when using roads subject to the charge, irrespective of the tariff that applies to that road*

- 1.8.2** *Furthermore, the User must also possess Guaranteed Payment Methods when using any road subject to a tariff greater than nil*

- 1.8.3** *The Driver is responsible for ensuring the OBU is operating correctly before and during use of the road network subject to the charge*

Under the responsibility of the User, the Driver must verify that the OBU is operating correctly before and during his or her journey and that he or she possesses Guaranteed Payment Methods if necessary (on the Toll Network). In this respect the SSP must provide the Driver with the appropriate technical resources. If it appears that such resources are no longer available the Driver must, under the responsibility of the User, immediately take the steps described below.

- 1.8.4** *All those subject to the charge must use the kilometre charge system*

All Users can obtain an OBU by paying a deposit and providing a Guaranteed Payment Method. The deposit will then be reimbursed when the OBU is returned correctly. Users can order one or multiple OBUs from the SSP or collect OBUs from a service point. The OBUs can, if they are no longer needed, be returned at the service points or via the post. Service points are installed in Belgium and also at strategically selected locations along the Belgian border so that foreign Users are able to obtain an OBU before entering Belgium and return it again when leaving the country.

Users do not have to return the OBU when leaving Belgium. They can keep the OBU to use next time they enter the country.

1.8.5 *Users must provide Guaranteed Payment Methods*

Guaranteed Payment Methods are payment methods that guarantee payment collection to the SSP for the registered kilometres driven (e.g. credit cards, fuel cards, advance payments).

1.8.6 *Users that do not or no longer possess Guaranteed Payment Methods may not use roads with a tariff greater than zero*

This may occur if the credit card is no longer authorised by the credit card company or if the credit limit has been reached. The Driver must, via a message on the OBU, be immediately informed when the minimum balance has been reached and the payment method is no longer valid. In this case the Driver, under the responsibility of the User, must contact the helpdesk and receive instructions to drive to the nearest service point.

In case of an advance payment the Driver will be informed when the User's credit reaches a specific minimum amount. This value will be established in such a way that the User has enough time to top up the balance. The OBU installed in the vehicle of a User that continues to unlawfully use the road network (by not taking any action despite having received a message) can send positioning data to the back-office to identify and apprehend the fraudulent or unlawful User/Driver.

1.8.7 *Users with a defective OBU or without a Guaranteed Payment Method must immediately contact the SSP*

A Driver acting under the responsibility of a User whose OBU no longer displays the 'OK' status must immediately contact the SSP. She/he may as necessary (i) provide a new Guaranteed Payment Method on behalf of the User, (ii) receive instructions from the SSP to drive to the nearest service point or (iii) obtain authorisation to pay a fixed amount on behalf of the User to reach his/her final destination.

1.9 **Basic principles for enforcement**

An enforcement system for an autonomous toll system must comply with the requirements to offer sufficient resistance against abuse so that the 'leakage', i.e. the number of Users that succeed in avoiding payment of the Toll network, is as low as possible. Furthermore, an autonomous free-flow system can never totally exclude abuse and without adequate enforcement at least 10% of Users will try to abuse the system¹. For this reason the enforcement

¹ Rothengatter, University of Groningen

system relies on several pillars:

- An adequately high perceived risk of detection;
- Appropriate punishment for any detected abuse of the system;
- Any gain resulting from abusing the system must be perceived as relatively insignificant compared with the perceived punishment.

1.9.1 Responsibility for public enforcement tasks lies with each of the three Regions

A Region only enforces infringements in the context of its regulations on its own territory. There will be no cross-border enforcement between the three Regions. A User that commits an infringement in the three Regions commits a separate offence in each Region that may be the subject of enforcement procedures in each Region.

The cooperation agreement between the Regions includes arrangements on the minimum enforcement efforts to be made, coordination aspects for dealing with offenders and the exchange and dissemination of information.

1.9.2 Implementation of the enforcement tasks requires a coordinated approach for all the parties involved

The main stakeholders include:

- Single Service Provider (SSP);
- Regional Enforcement Authority (REA);
- Regional Administrative Sanctioning Authority (RASA);
- Regional Enforcement Official (part of the REA);
- FRSE(V) operator;
- Enforcement Centre staff (part of the REA).

The SSP is responsible for developing and managing the enforcement equipment that supports the inspections and is used to generate evidence for prosecuting violators. The SSP is also responsible for recognising license plates, including manually recognising license plates that have not been recognised automatically. The detection, prosecution and sanctioning of potential violators is the responsibility of the Regional enforcement officials.

Enforcement officials will perform physical roadside inspections. The Regions will equip a specific department to organise mobile enforcement activities. The RASAs will be responsible for imposing administrative sanctions.

1.9.3 The geographical enforcement approach involves fixed and flexible stations and mobile enforcement teams

The effectiveness of enforcement activities for the kilometre charge will be optimised by the use of targeted enforcement resources. Surprise inspections will be carried out using camera units that can be quickly relocated. Mobile teams will primarily be used to apprehend non-payers (of the kilometre charge and the vignette). In order to optimise the threat of enforcement, vehicles used for this purpose will be clearly identifiable as enforcement teams for the kilometre charge and the vignette.

Enforcement equipment used for the kilometre charge must also be able to enforce the vignette system.

1.10 Basic principles related to the role of the Regions in the kilometre charge system

1.10.1 *The kilometre charge is organised and supervised by the Regions*

The Regions are responsible for:

- The Regional regulatory framework;
- Establishing an ombudsman function;
- Control at the strategic and tactical level;
- Determining the list of roads subject to the charge and the amendment thereof;
- Establishing the applicable tariffs and the amendment thereof;
- Determining any exemptions;
- The registration, recognition of and/or admission of other (EETS) providers;
- Monitoring agreements with the SSP and any other (EETS) providers, including achievement of the KPIs and related remuneration, where applicable;
- The communication strategy related to the kilometre charge;
- Monitoring technical innovations and any developments in VAS;
- Enforcement: detecting infringements, proposals for settlement agreements and imposing and collecting any fines;
- Setting up facilities that can be used to communicate with the (EETS) provider via ISO 12855 in due course;
- Handling objections and complaints.

1.10.2 The Regions may involve Concessionaire(s) of (parts of) their road network in the implementation of the kilometre charge

The Regions will ensure that the associated required provisions are legally anchored in a legislative framework on the level of the Regions and in the concession agreements with the Concessionaires concerned.

1.10.3 The Regions will enter into a cooperation agreement in which they agree on the matters related to the role of public authorities in the kilometre charge system and that must be jointly organised and/or managed for the system to function properly

The DBFMO agreement will be concluded between the SSP and an Interregional entity with a legal personality established by the Regions for that purpose.

Concessionaires will conclude a public-public cooperation agreement with the Interregional entity to which is assigned the authority / delegation to conclude a contract with the SSP for a joint mission.

More specifically the agreements included in the cooperation agreement involve:

- Consultation on the general regulatory framework and management at the strategic and tactical level;
- Consultation on the Regional tariffs to be defined and establishing a range for them;
- The tender for the SSP and management and monitoring of the contractual collaboration;
- The recognition and/or admission of other (EETS) providers to the Regional toll domains and contract management for those parties;
- Consultation and establishment of a joint communication strategy for the kilometre charge;
- Consultation on technical innovations and the development of VAS if appropriate;
- Consultation on the strategy for enforcement and operational coordination in the enforcement centre;
- The establishment of an Interregional entity with a legal personality through which a number of these competences and tasks will be jointly exercised.

1.10.4 The Regions will set up an Interregional entity with a legal personality that will be charged with executing joint tasks and competences

Periodic alignment via a consultative structure should suffice for matters such as consultation on the regulatory framework, the range for applicable tariffs or the communication strategy. For other tasks, however, such as the management and monitoring of the contractual collaboration with the SSP and the recognition/admission/registration and monitoring of other (EETS) providers, a single management channel, and therefore a more intensive collaborative structure with permanent staff, is necessary. To this end an Interregional entity with a legal personality will be set up and it will also be responsible for the consultation tasks.

1.10.5 *The DBFMO agreement with the SSP will be tendered and monitored by the Interregional entity*

The cooperation agreement between the three Regions will safeguard the payment of the availability fee by the Interregional entity to the SSP. In this context, each Region will respectively make the necessary funds available to the Interregional entity.

In the framework of the joint mission the Regions will, insofar as necessary, take the required initiatives (or have such initiatives taken) in relation to the SSP so that Concessionaires meet their payment obligations.

The decision to involve Concessionaires in the tender and other tasks of the Interregional entity has been made for consistency and efficiency purposes. A Service Provider (an SSP as well as other Service Providers) is recognised throughout the whole territory and subsequently monitored and managed by a single authority, i.e. the Interregional entity.

1.11 **Requirements of the legal framework involving the fundamental legal relationship between the players involved**

1.11.1 *The Toll Charger – User relationship: the User is legally considered to be the debtor of the charge and is also obliged to use the services of a Service Provider in order to comply with the charge*

The User of a vehicle subject to the kilometre charge who uses the road network subject to the charge is considered by law as a debtor of the kilometre charge. The User is also legally obliged to pay the charge to the Toll Chargers of the respective road networks (the Regions and Concessionaires, where applicable) by duly concluding a (legally regulated) agreement with an authorised Service Provider, under which the latter guarantees payment to the Toll Charger on his/her behalf as a creditor. A User therefore does not have a contract with the Toll Charger.

The User must stay duly affiliated with a Service Provider and his/her legal and contractual obligations must continuously be in order at all times. Failure to do so means that the Service Provider may terminate the agreement and inform

the enforcement centre that it no longer guarantees payment for the User concerned. These legal and (legally regulated) contractual obligations pertain to the procurement of a functioning OBU, the timely reporting and replacement of a defective OBU, fulfilling payment obligations to the Service Provider (including providing the SSP with Guaranteed Payment Methods such as for example topping up an advance payment in a timely manner), refraining from interfering with the OBU's operations, etc.

A User who meets and continues to meet his/her obligations benefits from a primary legal relationship with his/her Service Provider. The User remains the formal charge debtor but does not have any contract with the Toll Chargers. His/her payment obligations to the Toll Chargers are borne by the Service Provider.

A User who does not fulfil his/her obligations forfeits or loses the legal grounds to call on the Service Provider to act as creditor on his/her behalf. As a debtor to the charge he/she is (once more) directly liable for paying the charge. Since he/she is in violation, he/she is exposed to the Regions' enforcement system.

The Toll Charger–User relationship therefore makes an important distinction between the standard collection process for Users that meet their obligations and the enforcement measures for Users that do not.

The standard collection process is fully managed for the three Regions and where applicable, the Concessionaires, by the Service Providers.

Enforcement measures regarding Users who do not meet their obligations fall within the remit of the Regions. This is legally set out in a dual enforcement system consisting of a main administrative sanction procedure applicable to all infringements and a possible criminal procedure for certain violations (e.g. infringements committed with fraudulent intent or with the intent to harm or intentionally obstruct the Regional officials' enforcement activities).

The Regions themselves therefore directly collect the (fixed) evaded charge and any potential administrative sanctions and/or criminal fines as legally defined for the Users in violation that have been detected by enforcement equipment and/or are apprehended by the Regions' mobile teams. The role of the SSP is mainly limited to providing the infrastructure that supports these enforcement processes.

1.11.2 *The User – Service Provider relationship: Users have a (legally-regulated) private legal agreement with their Service Provider*

The Service Provider–User relationship is a private legal relationship within a clear, legally-defined framework. The User calls on the Service Provider to provide him/her with an OBU, keep the latter up-to-date, collect movement data and pay the charge on his/her behalf.

The Service Provider has contractual recourse with regard to the User for the kilometre charge due and must use instruments of civil law for the recovery of this payment.

The SSP will, in contrast to any other Service Providers, have the obligation to accept all Users as long as they can provide the legally defined Guaranteed Payment Methods. The Service Provider must handle any User complaints or disputes. If a dispute cannot be resolved a party acting as an ombudsman will intervene. Disputes that cannot be resolved by other means will fall under the jurisdiction of the ordinary courts and tribunals.

1.11.3 *The Toll Chargers–Service Provider relationship: Toll Chargers will conclude, with the intervention of the Interregional entity, an agreement (within a legal framework) with the Service Providers. However, the Service Providers are legally considered as (third party) payers of the charge due for the kilometres driven by their Users*

The SSP, as well as other Service providers, are on the one hand obliged to conclude an agreement (within a legal framework) with the respective Toll Chargers to exercise their activities in a toll domain. On the other hand all Service Providers are legally considered as (third party) payers of the charge due for kilometres driven by their Users.

1.11.4 *The legal framework for the introduction of the kilometre charge according to the mixed model (non Regional tax on roads not under concession and, where applicable, a fee on the road network under concession) is created with the cooperation of the federal government and cooperation between the Regions and their Concessionaires, where applicable. This will all be finalised in various legal instruments*

These legal instruments to create a mixed model are (including the deductibility of the kilometre charge as a business expense in all cases) a special law, a standard law, a decree/ordinance in each of the three Regions (including implementing decisions) and a cooperation agreement between the three Regions.

1.12 Basic principles for determining the KPIs for the SSPs

1.12.1 *KPI indicators provide an insight into the effectiveness of the SSP's system and processes*

Setting performance indicators in a free-flow, GNSS-based system requires an approach based on the monitoring of journey sections. For example, a statistically valid representation of the system's registration accuracy can be obtained by determining beforehand the distance between specific points on motorways and then comparing them with actual registration data on large numbers of vehicles on the same route.

At the very least the following indicators will be monitored:

- Quality of OBU registration
- Quality of enforcement equipment
- Quality of reporting of non-regulatory vehicles
- Incorrect reporting of non-regulatory vehicles

1.13. Basic principles of the SSP's earnings model

1.13.1. *The SSP receives a fee based on the service provided*

An SSP model based on the DBFMO contract form has been chosen, which means, for example, that the SSP puts up all the necessary funds and receives a fee at the point when the agreed service is provided. The SSP will establish a Special Purpose Vehicle (SPV) for this purpose. The SSP will receive a periodic (frequency still to be determined) fee for each of the three components of its contract, i.e.:

- The kilometre charge component: see below;
- The road charge vignette component: see architecture note on road charge vignette;
- The enforcement component: an availability fee for matters such as infrastructure management, flexible enforcement station staffing and the processing and communication of data gathered.

The contract with the SSP specifies the requirements for the capacity and service it is obliged to provide to its Users.

The fee for the kilometre charge component must consist of two components, i.e. a fixed and a variable component:

- The fixed component will reimburse the SSP for the costs incurred for the kilometre charge system. The amount for this component will depend on the number of Users for which the SSP must provide an OBU. The principal will communicate the number of Users. This means that the bidder will be required to provide a price (i.e. fixed fee) for various different scenarios regarding the number of Users in its tender. The bidder will determine the various prices for each scenario as based on the proportion of the SSP's overheads, which includes the number of OBUs to be provided. Moreover, the bidder will also need to provide a price list in its tender to cover the added fee per additional User for which an OBU must be provided for each of the above-mentioned scenarios (i.e. over and above the number of Users indicated by the principal). The principal may require the SSP to provide for additional Users of OBUs during a period of [6] months before the go-live date. The SSP must then be able to have the requested OBUs available within [3] months.
- The variable component concerns the fee covering the SSP's variable costs (e.g. data communication, etc.) per active OBU. This means that the bidders will be required to indicate a price (i.e. variable fee) in their tender for a

given volume (e.g. number of transactions) indicated by the principal.

A distinction will once again be made between the fixed component, on the one hand, and the variable component, on the other, for the fee for the OBUs used by Users abroad.

- The principal will initially reimburse the fixed component in full, even if (a number of) the OBUs are (partly) used abroad. The principal may possibly recuperate a part of this reimbursed fee by way of the (variable) fee which the SSP receives for the active OBUs abroad (see below).
- The Regions will only reimburse the variable component pro rata based on the number of kilometres driven in Belgium in proportion to the total number of kilometres driven.

As regards the use of the OBUs abroad, the SSP must have the relevant (foreign) authorities / Toll Chargers and/or its Users reimburse it. In this regard it is important to charge a market-based fee representing the (variable and fixed) costs actually incurred. In addition, this fee must at least cover the variable costs incurred, as well as the related fixed costs of purchasing the OBU, so that the principal can recover all or part of the fee for the fixed component (see above). The Interregional entity will first be required to grant its approval before the SSP starts operating with the OBUs abroad and concludes or reviews a contract with (foreign) authorities / Toll Chargers and/or its Users. In this regard, the risk profile of the SPV may not be inherently affected and the financial robustness of the SPV must be guaranteed.

Any profits arising from the fees paid to use the OBUs abroad (i.e. the situations whereby the SSP obtains a fee in excess of the relative variable costs actually incurred) will be shared by the SSP and Regions / Concessionaire(s) according to a formula to be negotiated. The Regions and Concessionaire(s) may demand consultation of the SSP's accounting documents to verify the SSP's actual income abroad.

The total fee, with the exception of the fee for the loan repayments, will be indexed annually according to a specific formula and a bonus-malus system will be developed for the KPIs.

1.13.2. The fixed components of the fee will be constant and predictable over time

The above-mentioned fixed component of the fee will cover the following costs: (i) repayment and reimbursement of the debt instruments used during the construction period and (ii) the fixed costs associated with the project's management and operation.

The variable component will be applied to a limited number of cost drivers, the objective being to have the fee adjusted automatically. Variable components will be proposed for those cost elements that can change significantly after the contract has been signed or for which no reliable estimate can be made when the contract is signed.

Tenders will be assessed on the basis of different scenarios of the SSP's market share and traffic assumptions to ensure that the fee contains sufficient flexibility to accommodate changes in the SSP's share of the market further to the development of EETS on the Belgian market. The contract documents will specify that all scenarios be taken into account when the tender is evaluated. In this way bidders can be encouraged to optimise their cost structure accordingly.

1.14. Value-Added Services (services of added value)

- 1.14.1. *The SSP must, adapt its OBU-proxy combination to provide any VA Services, by allowing an open architecture, and will also be obliged to admit government or third-party VA Services on its platform as well as supply the associated OBUs*
- 1.14.2. *The SSP is permitted to provide VA Services over the platform and infrastructure provided the Regions give their express consent and this is done in accordance with the current legislation*

The User will him/herself decide whether to subscribe to services.

It is not certain at this point in time whether the VA Services can be profitable in the short term. The distribution of any revenues from VA Services between the SSP and the Regions / Concessionaire(s) is to be agreed in advance.

- 1.14.3. *Detailed OBU registered travel data remain the property of the User*

The User decides him/herself whether to make his/her travel data available for VA Services. This approval must be given before the SSP uses the data and is to be included in the contract between the SSP and the User. If he/she does not make such data available this may imply that the services are not provided to him/her.

- 1.14.4. *The reliable processing of the charge-per-kilometre function may not be disrupted by a VA Service*

The SSP must design the OBU and central equipment in such a way that a VA Service can never affect the correct processing of the charge-per-kilometre functions. This applies to the functional operation as well as to the security of the processing systems. For this reason every VA Service application will be fully tested in advance in the charge-per-kilometre system.

2 Tactical level

2.1. Functional requirements of the core process of the kilometre charge system

The core process is defined as the process from the registration of a kilometre up to and including collection and payment of all 'kilometres times tariff' on the basis of GNSS positioning.

As described in paragraph 1.13, the Regions and Concessionaire(s) will agree on a service with the SSP which is based on a functional specification; the SSP receives a periodic fee based on service actually provided. The Interregional entity imposes organisational and quality requirements (see 2.9) on the SSP and will measure the actual service provided by means of periodic reporting (see 2.13) through a KPI measurement system at a number of places in the process.

As regards the “registration” process function, it is assumed that the OBU-proxy combination is applied. The SSP itself may choose how it interprets this.

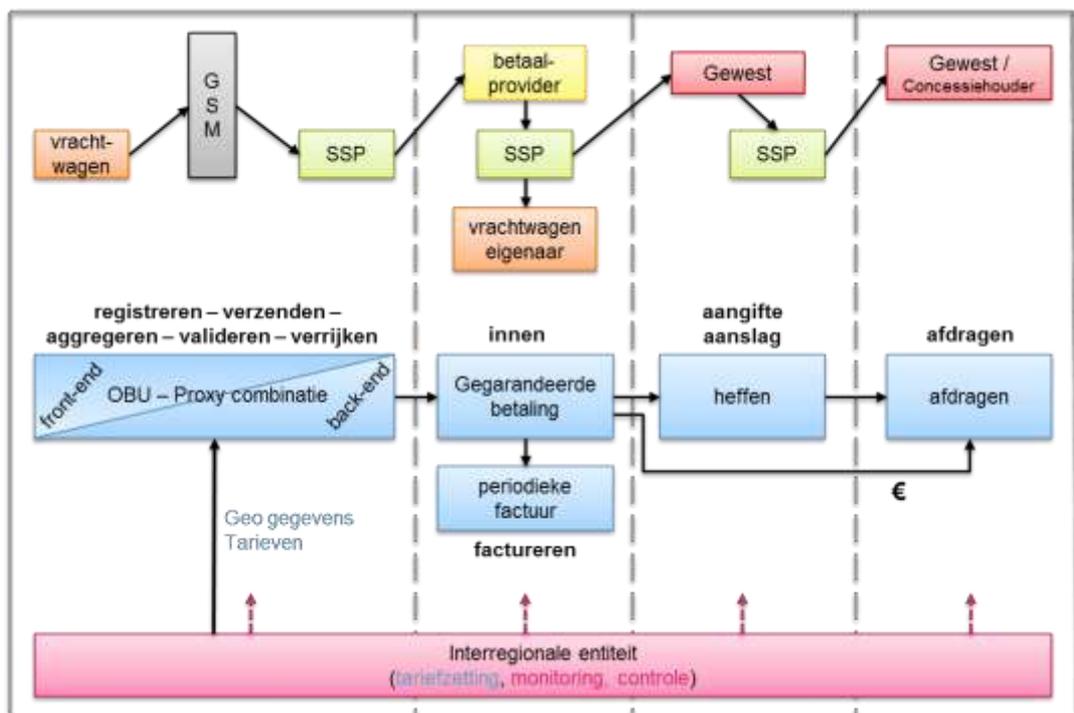


Figure 2 - Core process of the charge-per-kilometre system (schematic). The result shown does not cover all cases of the actual process (payment made later on by fuel card companies).

translation for words in diagram:

truck

Mobile telecommunication

register - send - aggregate - validate - enrich

proxy combination

Geo data

Tariffs

payment provider
truck owner
collection
guaranteed payment
periodic invoice
invoicing

Region
declaration /
assessment
charging

Region/Concessionaire
payment
payment

Interregional entity
(pricing, monitoring, control)

2.1.1. The reliability and continuity of the registration of every kilometre driven must be guaranteed

Reliability and continuity of registration are essential in a kilometre charge system. To this end, the SSP must design a system that registers with sufficient continuity and accuracy the kilometres driven. Aspects such as accuracy of registration, reliability of communication and security of communication are in this matter essential. Nonetheless, functional requirements will only be set at the operational level of the registration process. The SSP is responsible and liable for uninterrupted service provision in accordance with those functional requirements.

Registration inaccuracy due to the use of GNSS is limited to $\pm 1.5\%$. The kilometres actually registered are systematically reduced by 1.5% in order to prevent that, due to this inaccuracy, the User will be charged more kilometres than those he/she in fact drove.. This does not detract from the requirements imposed on the registration function as such (requirement in Chapter 3).

2.1.2. The reliability and continuity of the aggregation and transmission of kilometres driven must be guaranteed

This requires a system in which the OBU-proxy-combination frequently sends the registered kilometres to the back office (several times an hour), as well as a provision that the OBU is, in fact, able to send its data to the proxy several times an hour. A situation to be avoided is one whereby the vehicles of the Users depart for another country (in which communication is not possible) without transferring the accrued kilometres driven to the proxy, so for this reason the OBU-proxy

combination must contain a function in which stored data is sent to the proxy before crossing the border. The reliability and continuity of transmitting data (OBU -> proxy) are guaranteed.

2.1.3. *The reliability and continuity of the validation and enrichment of the data must be guaranteed*

2.1.4. *The reliability and continuity of the declaration (SSP
→Regions/Concessionaire(s)), charge and assessment
(Regions/Concessionaire(s) -> SSP) are guaranteed*

All Users are required to provide the SSP with Guaranteed Payment Methods. The SSP will also make a daily declaration of all kilometres registered within the Regions and Concessionaires.

The integrity, confidentiality and authenticity of each (batch) declaration must be guaranteed

2.1.5. *The reliability and continuity of payment must be guaranteed*

The length of a charge period is one day

The Regions / Concessionaire(s) send the “assessment” relating to the declarations for the previous day to the SSP every day.

In its tender for the basic scenario of [15] value days, i.e. the period between the moment of registration, on the one hand, and the moment of payment, on the other, the bidder must propose a price which reflects its anticipated cost to be able to meet this deadline. The bidder must also provide a price for two additional scenarios where the periods between registration and payment amount to [30] and [45] value days, respectively.

Therefore, the SSP will pay electronically into the bank account(s) of the Regions /Concessionaire(s) the assessment for the registered kilometres within the period ([15], [30] or [45] value days) set by the principal. This means that the SSP will remit payments made by Guaranteed Payment Methods for the “assessment” within a period of [14], [29] or [44] value days of the date stated on the assessment.

All Users’ payments must be paid into a separate bank account from which only transfers into the bank account(s) of the Regions / Concessionaire(s) can be made or from which User reimbursement payments (e.g. rectification of incorrect collection) authorised by the Regions / Concessionaire(s) are permitted.

Separate bank accounts must also be opened for Users’ deposit payments for OBUs and fictitious journeys through Belgium.

2.1.6. *The reliability and continuity of invoicing and collection must be guaranteed*

2.1.7. *The Service Provider may terminate the service of fulfilling the charge on behalf of*

the User if there are no more Guaranteed Payment Methods available (for example, no credit on the credit card, complete utilisation of the advance)

The Driver will be warned of this via the OBU in a manner that is attributable to the User and will no longer be able to use the Toll Network until an alternative method of payment has been submitted by the User.

- 2.1.8. The SSP must be able to demonstrate, even after the fact, that its receipt, processing and reporting of data was prompt, correct and complete*

Reporting a User charge declaration to the Regions can be traced to the source data received for this User (originating from the OBU registered to this User). This is the so-called audit trail.

2.2. Functional and technical requirements of the OBU

- 2.2.1. The driver must be able to obtain an indication of the tariff applicable at his/her location and the cumulative charge for the journey in a safe and simple manner that is attributable to the User*

The SSP must ensure that the tariff applicable at the location and the cumulative price for the journey is clearly visible to the Driver on the OBU as of 0.00 hours on that day.

- 2.2.2. The Driver must be able to simply and safely take due note, in a manner that is attributable to the User, of the fact that the OBU is not functioning and that he or she no longer has a Guaranteed Payment Method at his or her disposal*

The Driver must be alerted by means of clear and specific audio-visual signals of a malfunction of the OBU and/or any loss of availability of Guaranteed Payment Methods.

- 2.2.3. The installation and operation of the OBU may not hamper the operation of the vehicle or jeopardise road safety and it may not affect the guarantee of the vehicle or any of the vehicle parts*

2.3. Key interfaces

- 2.3.1. Interfaces 4 to 6 inclusive are based on open standards. Insofar as the SSP contributes intellectual property or supplies physical products to these interfaces they are to be released by the SSP*

See figure 1. This also applies to all the documentation, manuals and suchlike relevant to these objects.

- 2.3.2. The SSP must release its design, including IP, for interfaces 1 to 3 inclusive to the*

Regions / Concessionaire(s)

- 2.3.3. *The SSP is not permitted to apply interfaces or techniques which hamper the zip-on zip-off principle or make it impossible*

2.4. Functional requirements relating to the legal protection of Users in respect of the normal collection process

- 2.4.1. *The SSP will process any complaint by the User as regards the application of the kilometre charge*

This complaint falls within the context of the (legally enshrined) contractual relationship between the Service Provider and the User.

- 2.4.2. *A User complaint does not release the User from his/her obligation to pay the Service Provider unless the Service Provider suspends this obligation*

- 2.4.3. *A User complaint does not release the Service Provider from its obligation to pay the Toll Chargers unless the Toll Chargers suspend this obligation*

- 2.4.4. *In the case of a dispute between the User and the Service Provider that cannot be otherwise resolved, the dispute will fall within the jurisdiction of the ordinary courts and tribunals*

At the interregional level an ombudsman function will be created based on the model used in other regulated sectors. The existence of this channel will not, however, prevent Users from initiating legal proceedings.

2.5. Functional requirements for customer care

- 2.5.1. *Customer care provides a function whereby Users are able to change and cancel the service.*

The SSP must provide the necessary guarantees regarding the correct registration and updating of customer details.

- 2.5.1.1 *Customer care must provide a function whereby the authenticity of a reported defect can be established with sufficient certainty*

Authenticity may, for example, be established through a combination of the OBU number and the vehicle registration certificate number.

- 2.5.1.2 *Customer care must provide a function through which the status of every OBU can be changed*

- 2.5.1.3 *Every reported defect must be logged and confirmed to the User through a User-chosen channel (e-mail, personal portal)*

- 2.5.1.4 *The SSP immediately passes on every reported defect, including the agreed solution for the defect, to the enforcement centre*

2.6. Functional requirements with regard to enforcement

- 2.6.1. *The enforcement function must be set up in such a way that the average perceived risk of being caught (APRC) per trip, combined with the penalty (P), is such that fraud is perceived not to be rewarding*

The enforcement concept must be set up so that the perception exists that, in general, avoidance of the kilometre charge is never worth the risk.

- 2.6.2. *All enforcement stations on the road network subject to the kilometre charge must register all vehicles*

Passing vehicles will be registered on all roads on which enforcement stations are placed. Their number plate numbers will be automatically recognised. A comparison of these number plate numbers against the enforcement databases will quickly verify whether the vehicle in question is effectively registered with a Service Provider. The data of vehicles duly registered with a Service Provider are immediately removed by enforcement. The data of vehicles not registered with a Service Provider are sent to the enforcement centre for further evaluation. For this purpose, each enforcement station has at its disposal a list of number plate numbers and OBU data of registered and compliant vehicles (a whitelist) and a list of number plate numbers and OBU data of previously detected offenders (blacklist). Depending on the severity of the infringement and/or whether the vehicle in question has already been registered as an offender, further action may be taken which may consist of issuing a sanction or penalty, or of dispatching a mobile team by way of direct contact between the enforcement station and the mobile teams.

- 2.6.3. *Enforcement consists of stationary road side equipment (SRSE), flexible road side equipment (FRSE) and mobile enforcement teams*

The SRSE will be used primarily on motorways. The FRSE can be placed flexibly, beside or above roads (on bridges, for example) on which the kilometre charge is applicable.

Vignette enforcement stations (SRSEV and FRSEV) can also be set up to enforce the kilometre-charge.

The flexible enforcement equipment will be moved around and installed by specially trained SSP officials who have specially equipped vehicles. The use and installation of flexible enforcement equipment will be under the supervision of the Regions.

All enforcement equipment must be capable of real-time communication.

The mobile enforcement teams will respond to reports by the enforcement stations of repeat offenders and carry out spot checks on the road network subject to the kilometre charge.

2.6.4. *The Regions are responsible for definitively obtaining the required permits to set up the enforcement equipment in good time*

The SSP is responsible for duly drawing up all the required documents for this in good time and for complying with the imposed permit terms and conditions once they have been issued. The Regions are also responsible for establishing servitudes in the public interest.

2.6.5. *All requirements set for the functions of the enforcement equipment and for processing the data generated by the enforcement equipment must, by and large, apply for all prevailing weather conditions in Belgium*

2.6.6. *The enforcement equipment on the motorways is fitted in such a manner that 95% of any transit passage through Belgium is likely to be checked*



Figure 3 - Indicative locations for stationary enforcement equipment specifically for the enforcement of the kilometre charge.

2.6.7. *Vehicles found to be in violation will be blacklisted until payment for the violation in question is received*

Vehicles detected by stationary or flexible road side equipment and identified as offenders by the enforcement centre are sent an administrative sanction and blacklisted. They will not be removed from the blacklist until subject sanction has been paid.

2.6.8. *Blacklisted vehicles which are detected by the enforcement stations will be*

immediately reported to the mobile teams

The mobile teams can, depending on their position with respect to the offender, pursue and apprehend the vehicle in question. To this end, the vehicles will contain a shortlist of “blacklisted vehicles” detected in the immediate vicinity of the mobile team in question. The mobile teams will have facilities in the vehicles so that they can personally choose from which enforcement stations they wish to receive reporting.

2.6.9. The vignette enforcement equipment will also be used to enforce the kilometre charge

This roadside equipment, which consists of cameras for the road vignette, also records the number plates of all passing trucks. This information can be used to check whether or not a truck is registered.

2.6.10. Flexible enforcement stations will be set up to increase the perceived risk of being caught

Flexible enforcement stations will be set up in such a way that they can be quickly deployed at strategic points. Making these stations easily visible and recognisable should increase the perceived threat. Alternating their positions frequently creates a feeling of unpredictability such that the perceived threat is increased and drivers are less inclined to try and avoid the charge.

2.6.11. The mobile enforcement teams will carry out visual checks and apprehensions

Mobile enforcement teams have the ability to read the number plates of passing vehicles and check the database to see whether the vehicle in question is registered and has a correctly functioning OBU account.

Mobile enforcement teams can receive reports on repeated offenders detected within the radius of the fixed and flexible enforcement stations and take targeted action to apprehend the vehicles concerned.

Mobile enforcement teams will operate from the following centres: 1 in Brussels, 3 in Wallonia and 5 in Flanders (Aalst, Bruges, Antwerp, Hasselt and Leuven).

The mobile teams can be deployed to enforce both the kilometre charge and the road vignette.

2.6.12. The enforcement centre will process any offenders detected, generate and maintain the blacklist and manually identify any non-identified number plates

The enforcement centre will be staffed by personnel employed by the Regions. The SSP is responsible for the timely provision of a given quality of identified number plates, including the manual identification of non-automatically identified number plates. As regards manual identification it may be necessary for the SSP to be

accredited as a security services company.

Workstations will be set up in the enforcement centre that can be configured for each of the three Regions. The three Regions will work jointly in the centre and it will be endeavoured to exchange information with one another.

2.6.13. The SSP will design, provide and maintain the enforcement centre

This includes, for example, infrastructure, processes, hardware, software and interfaces required to be able to perform the operations of the enforcement centre, as well as the workstations, training and support for the personnel employed by the Regions.

The following are some of the enforcement centre's operations performed by the Regions:

- Documenting all detected suspected violations for further treatment by the REA or RASA;
- Checking and confirming or removing suspected violations and documenting them;
- Addition or removal of number plates to the blacklist and automatically sending the whitelist and blacklist to the enforcement equipment and mobile teams;
- Sending voluntary settlements and penalties;
- Rounding off procedures for voluntary settlements and penalties;
- Checking whether fines have been paid and updating the administrative matters regarding violations for which a voluntary settlement or fine has already been paid, and updating the blacklist;
- Exchanging data with the mobile team enforcement officials;
- Exchanging the required data with the relevant Belgian authorities;
- Requesting data from the DIV;
- Updating the list of exempted vehicles;
- Managing fraud and avoidance behaviour, supervising the number of non-registered kilometres and developing and implementing a suitable strategy.

Whenever possible competent officials must be able to implement these processes automatically.

The SSP must also ensure that there are provisions guaranteeing that (changes to) data and particulars are correct and traceable.

2.6.14. The settlement for non-payment of the kilometre charge will be at least EUR 500.

A User / Driver will have the choice of paying a voluntarily settlement. This amount will vary according the severity of the violation and amount to a minimum of EUR 500. This sum is considered an adequate deterrent to potential offenders. The amount of the settlement does not differ from settlement amounts for similar violations in neighbouring countries that operate kilometre charge systems. After the sanction has been imposed, the User / Driver will have one month in which to appeal. If he/she refuses to settle voluntarily, he/she risks an administrative sanction that can amount to twice the settlement sum.

- 2.6.15. *All violations committed in one Region with one and the same vehicle subject to the kilometre charge within a period of 3 hours will be treated as a single violation*

One and the same violation detected again within 3 hours will be treated as the same violation in that Region. The figure of 3 hours is used because it is possible for trucks to cross a Region within 3 hours, even in heavy traffic. If such User / Driver has committed a violation, he/she may be sanctioned for a new violation after 3 hours.

- 2.6.16. *SSP staff will be responsible for training and supporting staff from the authorities, maintaining the equipment and rectifying any shortcomings (e.g. the incorrect recognition of number plates), the intention here being to improve the system's performance*
- 2.6.17. *The Regions for their part will assign enforcement teams, staff the enforcement centre and perform the actual enforcement tasks (apprehending vehicles, imposing sanctions, undertaking enforced recovery procedures, organising appeals, etc.)*

2.7. Functional requirements of OBU management

- 2.7.1. *The OBU is administratively linked to the number plate*
- 2.7.2. *The SSP must use a flexible tariff system*

The tariff structures defined in the OBU-proxy combination must be flexible enough to support the tariff structures envisaged at the present time as well as future tariff structures.

The tariff system and communicating the tariff system to the Toll Charger(s) must comply with ISO 12855.

- 2.7.3. *The SSP must have a functionality at its disposal to be able to reconfigure OBUs after issue and remotely with, for example, new kilometre-charge structures, new enforcement software and the like to adapt the OBU so that it can be used within an EETS context in other toll domains if necessary.*

2.7.4. *The SSP must keep an OBU register in which the unique ID of each OBU is linked to all of the data needed to operate the system*

2.7.4.1 *The OBU register must have a functionality by which the status of the OBU can be altered by authorised employees of the SSP*

2.7.4.2 *The OBU register has an interface with all relevant SSP functions*

2.8. Functional and technical requirements with regard to registration and installation

The SSP must enable Users / Drivers to acquire, return or replace an OBU with minimum effort. On the one hand, physical service points will have to be set up in Belgium and abroad and, on the other, it will have to be possible to acquire or return OBUs by post via a website. The SSP must arrange service points and the logistical process in such a manner that sufficient OBUs are always available and that there are no traffic disruptions during the start-up stage or regular operations as a result of Users / Drivers acquiring OBUs.

2.8.1. *The SSP will establish service points operating 24/7 where Users / Drivers can obtain, return or replace OBUs or change their payment methods*

The SSP may use unstaffed machines for this purpose, on the condition that they comply with all requirements and functionalities.

2.8.2. *A User / Driver must be able to obtain an OBU at a service point*

The SSP is responsible for designing and supplying the OBU registration process which is simple and easy to understand and requires a minimum amount of time from the User / Driver. The registration process includes, among other things:

- Inputting the number plate, vehicle class and GVW;
- Scanning the vehicle registration documents. During the process this scan will be sent to the back office to subsequently check the data input against the scan at a later stage;
- Providing a Guaranteed Payment Method;
- Paying the deposit;
- Issuing the OBU to the User / Driver;
- Personalising, by means of a programming function, the OBU with the vehicle data which has been input;
- Creating a personal Internet page on which the User can view and change his / her data.

All activities relating to obtaining the OBU must be logged and available for consultation.

2.8.3. The User / Driver will install the OBU himself / herself

The SSP is responsible for designing an installation process that is simple and easy to understand and requires a minimum amount of time from the User / Driver. The SSP must include an easy-to-understand installation manual with the OBU in at least German, English, French and Dutch.

2.8.4. A User / Driver must be able to return an OBU to a service point

The SSP must provide facilities at the service point by means of which the User / Driver can return the OBU, in doing so terminate the contract with the SSP, and have his/her deposit and guarantee refunded. If the User remitted his/her deposit and guarantee in cash he/she will provide a bank account number on which the SSP can retransfer these amounts.

2.8.5. A User / Driver must be able to replace an OBU at a service point

The SSP must provide facilities at the service point by means of which the User / Driver can easily replace the OBU if it no longer functions.

2.8.6. A User must be able to change a Guaranteed Payment Method at a service point

The SSP must provide facilities at the service point by means of which the User can change his / her Guaranteed Payment Method. This involves, for example, changing a credit card or fuel card, changing from or to a prepaid account and increasing the prepaid balance by means of a credit card, fuel card, bank card or cash payment.

2.8.7. The SSP must provide the User with the possibility of obtaining OBUs by post

For this purpose, the User must be able to submit an application for one or more OBUs simultaneously via the SSP's website. For each request, per OBU the User will present a scan of the vehicle's licensing documents and a valid payment method. The SSP will have to personalise the OBUs before sending them to the User. The SSP must include an easy-to-understand installation manual for the OBU in at least the following languages: German, English, French and Dutch.

2.8.8. The SSP must provide the User with the possibility of returning OBUs by post

The User must first notify the SSP of his intention (via the Internet, by e-mail or telephone). If the deposit was remitted in cash, the User must provide a bank account on which the SSP can refund the deposit. The SSP must then refund the deposit within 5 working days of receiving the OBU.

2.8.9. The SSP must create a website on which each User has a personal page

By logging in to his or her account, the User will, for example, be able to view his or her personal data, change the Guaranteed Payment Method and consult the amounts taken into account until that date, as well as the related registered kilometres per tariff zone and the applied tariff per tariff zone.

This website must provide support in at least the following languages: German, English, French and Dutch.

2.9. Organisational requirements of the SSP

- 2.9.1. *The quality of the SSP's internal management must satisfy a generally accepted quality framework*

Such framework must be in accordance with ISO 9001 or equivalent. The SSP must meet the requirement during the entire course of the DBFMO contract. For this purpose, the SSP must itself have an ISO 9001 certificate or comparable or, alternatively, be compelled to rely on the ISO qualifications of its principal shareholders / subcontractors and, by means of its procedures, be able to demonstrate that it has such qualifications at its disposal. In addition, the SSP must be transparent and must take the according measures necessary to ensure that this quality is obtained on a consistent basis.

- 2.9.2. *The management quality of the SSP's automated Information systems must satisfy a generally accepted management framework*

The quality of internal management must satisfy a generally accepted quality framework, with certification wherever necessary and under surveillance. The most relevant standards are ISO 20000 (IT Service Management) and ISO 27001 (IT Security Management). It is essential in both cases to establish and harmonise the RACI (Responsible, Accountable, Consulted, Informed) elements between the principal and the contractor.

Satisfaction of ISO 20000 does not mean that an ISO 20000 certificate is necessary, but that the SSP demonstrates that it satisfies the requirements that would be set were ISO 20000 to be applied. If the SSP has an implemented management framework this system will be tested against the elements of ISO 27001. Any assessment of the management quality of the automated information systems will take place in the context of the requirements that have been set.

- 2.9.3. *The Interregional entity will be entitled at all times to conduct audits, for which the SSP must provide the necessary cooperation*

A minimum of 20 working days per year for such cooperation is to be included in the SSP's tender.

- 2.9.4. *The SSP must demonstrate that it satisfies the prevailing laws and regulations applicable to the fulfilment of its tasks*

- 2.9.5. *The SSP will bear full responsibility in the event of subcontracting, outsourcing or similar for the services provided by the subcontractor*

The SSP will be responsible for the integral end-to-end service. It must be possible for a supervisor to carry out (or commission) audits of a subcontractor, outsourcing partner or similar where (elements of) the kilometre charge are involved or indirectly affected.

- 2.9.6. *The SSP must report in good time to the Interregional entity any intention to make significant changes to the service or to the supply process*

“Significant” is understood to mean: matters directly affecting the reliability and continuity of the service.

- 2.9.7. *The SSP may not start to provide revamped services before tests and analyses have demonstrated that they satisfy the requirements set and the Interregional entity has granted permission*

For this purpose, the results of these tests and analyses must first be presented to the Interregional entity.

- 2.9.8. *In the event of discontinuity of the SSP's operational management, all objects, systems and other matters essential to the operational management of the kilometre charge will transfer to the Regions and Concessionaires; all knowledge will be placed at the disposal of the Regions and the Concessionaires*

In addition, the Regions and Concessionaires will acquire a perpetual user's right to the intellectual property essential to operating the kilometre charge.

To ensure the continuity of the operation it is necessary, in the event of discontinuity of the operational management (bankruptcy or a strategic decision by the parent organisation(s)) not to compromise the revenue of the Regions and the Concessionaires. To this end, step-in rights must be established in the contract between the interregional entity and the SSP.

Banks will also require certain step-in rights. To this end, a direct agreement will be concluded between the SSP, the financiers and the Interregional entity. This will clarify the steps to be taken in the event of serious problems relating to the fulfilment of the DBFMO contract.

2.10. Financial continuity requirements for the SSP

- 2.10.1. *During the tendering process the tendering authority will aim to achieve a sufficiently financially solid position for the SSP. Proposals must contain a series of sensitivity analyses, indicative subcontracting contracts and term sheets, as well as a proposed guarantee structure*

The (i) sensitivity analyses and (ii) indicative subcontracting contracts and term sheets will be used to carry out quantitative and qualitative analyses, respectively.

Sensitivity analyses will be carried out (i) in one scenario that does not take into account the provisions contained in the relevant subcontracting contracts and (ii) one scenario that does take into account the provisions contained in the relevant subcontracting contracts. These can be used to assess whether the limits imposed in terms of the debt default ratio can be respected by the project company should a number of parameters change. Such changes may include the following:

- Maximum delay in construction;
- Maximum increase in construction costs;
- Maximum increase in operation, maintenance and replacement costs;
- Maximum time span over which the maximum performance discount can be applied.

Minimum results may be imposed for some of these tests. For example, a project company must be able to bear a delay in construction of at least [6] months without taking into account the subcontracting contracts in relation to construction.

2.10.2. The Regions / Concessionaire(s) may demand that the SSP provide a specific guarantee as regards payment of the charges invoiced

The guarantee provided by the SSP will not exceed an amount equal to the total toll income for one month. This guarantee could cover a number of risks not yet covered by the requirements, including:

- Risk of non-payment by Users;
- Collection risk in the event of liquidation/replacement of the SSP;
- Poor management of the financial flows from Users to the Regions/Concessionaire(s).

To ensure the smooth running of the tax and retribution flows, the Regions / Interregional entity will impose a set of guarantee regulations based on the risks identified for tax and retribution collection and on the contractual structure chosen for the project.

Except for a finalisation of the scope of the requirements, it is expected that the following risks will not be covered by a guarantee provided by the parent organisation(s) but rather will be linked to requirements:

- Incorrect calculation of the charge due: this risk will be covered by requirements that determine the penalty points run up by the SSP;
- Poor management of customer details - invoicing mistakes: this risk will be covered by requirements that determine the penalty points run up by the SSP;
- Errors in or disruptions to the information system designed to warn Drivers, in a manner that is attributable to the User, that they do not have

enough credit to continue their journey on the road network.

Aside from a guarantee provided by the parent organisation(s), the project company must provide, either directly or indirectly through one of its subcontractors:

- During construction: a guarantee covering the payment of compensation for losses in the event of delays;
- During the first years of operation: a guarantee covering potential design and construction faults (the guarantee will revert to the SSP if no such defects occur during the first years of operation);
- During operation: a guarantee, 2 to 3 years before the end of the contract, which covers the final maintenance and transfer audit work to be carried out, both independently of each other. The purpose of the audit will be to check whether the equipment and systems can, at the end of the contract, support operation for an additional 1 to 2 years without large-scale investment. The cost of this work will be increased by 10% to 20% by way of a fine imposed on the SSP for failing to correctly maintain the toll system. Finally, the contract will also provide for a mechanism to ensure efficient cooperation and a smooth transfer between the initial SSP and the new Service Provider during the final years of operation.

These guarantees will be first demand bank guarantees. Minimal bank ratings must be established in the contract.

The Region concerned will guarantee the payment obligations of its Concessionaire(s) by granting a general guarantee and/or concluding an agreement for continued payment.

2.11. Requirements for the relationship between the User and the SSP

2.11.1. The SSP must ensure that sufficient vehicles are registered and such awareness exists among potential Users and Drivers before the system commences that there will be no traffic disruption at the service points upon actual implementation, either at the Belgian border or inside Belgium

This will involve placing an adequate number of information signs (in four languages: French, Dutch, German and English) on all roads into Belgium (the SSP is responsible for obtaining the permits necessary for doing so) and organising targeted campaigns on television, radio and other media in Belgium's neighbouring countries. For this purpose the SSP must include a budget in its proposal. The bidder will define in its tender evaluation methods and requirements for raising the necessary awareness among the target groups to be specified.

2.11.2. The contract between the User and the SSP will be legally regulated

2.11.3. The User will be obliged to have a working OBU at all times on the road network

subject to the kilometre charge and also to have Guaranteed Payment Methods on the Toll Network

If the User's OBU stops functioning he/she may no longer use the road network having a tariff greater than nil until he/she has replaced his/her OBU, unless he/she is following the instructions of the helpdesk.

- 2.11.4. The SSP may not charge Users (equipment, labour) for the repair and replacement of non-functioning OBUs unless it can be demonstrated that the unit has been deliberately damaged by the User / Driver*

The SSP will be fully responsible for servicing all OBUs installed for the duration of the contract.

This involves servicing and wirelessly updating the software (application software, operating system, settings), the tariff data, the hardware (the physical OBU and the physical interfaces with the vehicle), as well as the security mechanisms (such as certificates and cryptographic key pairs and any physical media for these). If an OBU no longer functions properly it must be possible for the User / Driver to report this 24/7 to a central telephone helpdesk operated by the SSP, further to which the OBU can be handed in by the User / Driver within an agreed period of time and replaced.

- 2.11.5. The SSP may ask the User for a deposit to cover the equipment provided which represents the cost price of the OBU*

- 2.11.6. The SSP may require Guaranteed Payment Methods plus a guarantee matching the amount of a fictitious journey*

The SSP may only refuse potential Users who cannot present any Guaranteed Payment Methods. If the User presents credit or fuel cards for this purpose, the SSP may require a guarantee in the amount of a fictitious journey of twice 150 kilometres through Belgium multiplied by the tariff applicable to the vehicle in question.

If the User uses advance payment as the Guaranteed Payment Method, the SSP may require the User to make a minimum advance payment that does not exceed EUR 100. The User may, of course, opt to pay a higher advance payment. If at some point the advance payment balance for a User amounts to less than EUR 50 such Driver must be warned by way of a notification on the OBU, and in a manner that is attributable to the User, that the User must increase his or her advance payment balance.

2.12. Definition of the KPIs

- 2.12.1. 15 KPIs have been defined with regard to registration, enforcement, the reporting of non-regulatory vehicles and invoicing*

A non-regulatory vehicle is defined as a vehicle which is not registered with a Service Provider, a vehicle with a defective OBU, a vehicle with no Guaranteed Payment Methods, or a fraudulent User, i.e. a vehicle whose properly functioning OBU has been deliberately disabled.

The following KPIs are involved here:

- Quality of OBU registration: accuracy of the total kilometre registration (3.3.1), too many registered kilometres, (3.3.2) too few registered kilometres(3.3.3);
- Quality of the enforcement equipment: detection performance (3.6.25), vehicle classification performance (3.6.26), ANPR performance (3.6.27), DSRC linked performance (3.2.24);
- Quality of reporting of non-regulatory vehicles: non-registered vehicles (3.6.31), blacklisted vehicles (3.6.32), fraudulent Users (3.6.33);
- Incorrect reporting of non-regulatory vehicles: non-registered vehicles (3.6.34), blacklisted vehicles (3.6.35), fraudulent Users (3.6.36);
- Quality of the invoicing: incorrect invoice amount (3.3.17), incorrect invoice address (3.5.14).

2.12.2. The SSP is obliged to provide the Regions with a viewing function for all the system's functions and data flows

2.13. Reporting requirements regarding verification of the service provided

2.13.1. The SSP will report to the Interregional entity, monthly and cumulatively annually, in digital form and according to a predefined format and channel (through tables, graphs and notes), regarding the agreed KPIs and performance requirements

3 Operational level

3.1 Kilometre charge system

3.1.1	Capacity	The system must be set up to process transactions for 1.5 million Users.
3.1.2	Capacity	The system must be set up to process 14 billion registered kilometres per year.
3.1.3	Capacity	The system must be set up to process 70 million registered kilometres per day.
3.1.4	Standard	The system must comply with architecture standard ISO 17573.
3.1.5	Standard	The system must comply with standard ISO 14001 (2004).

3.2. OBU registration and installation

3.2.1	Service points	The maximum travel distance between any point on a motorway in Belgium and the nearest 24/7 service point on the motorway will be 30 km. At least one service point must be located in Brussels.
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3.2.2	Service points	A 24/7 service point must be set up before the border crossing for each inbound motorway into Belgium.
3.2.3	Service points	A 24/7 service point must be set up after the border crossing for each outbound motorway leaving Belgium.
3.2.4	Service points	24/7 service points must be set up at foreign roads other than motorways in such a manner that the maximum additional travel distance or travel time to reach a service point before entering or after leaving Belgium is 10 kilometres or 10 minutes.
3.2.5	Service points	All regular ferries with a point of arrival in Belgium must have a service point on board.
3.2.6	Service points	Every service point must at all times have a sufficient stock of OBUs.
3.2.6	Service points	All service points must be operational no later than 6 months before the scheduled go-live date in order to start issuing OBUs.

3.2.7	Service points	The maximum delivery time for OBUs ordered online is 2 working days if the delivery address is a Belgian address or an address in a neighbouring country, and 5 working days if it concerns another EU country.
3.2.8	Service points	The maximum delay for road users on the main lane due to traffic congestion by Users / Drivers who wish to obtain an OBU is 5 minutes. Such disruption must never exceed a total of 30 minutes per service point per day.
3.2.9	Time	The maximum time to obtain, install or replace an OBU at a service point for an inexperienced User / Driver is 10 minutes when measured from the moment that the truck is parked up to and including the moment at which the OBU is installed.
3.2.10	Personalisation	Personalisation parameters input by the User / Driver must be verified in the back office within 1 working day against the scan of the vehicle registration documents provided by the User / Driver.

3.3. Kilometre registration

3.3.1	KPI: Registration - accuracy	The total number of registered kilometres on journeys, to be specified further, for vehicles with an operational OBU may not deviate from the kilometres actually driven by more than 4% in urban areas and 2% in non-urban areas, the latter including major roads in urban areas.
3.3.2	KPI: Registration - accuracy	The number of vehicles with an operational OBU for which the registered kilometres deviate upwards, in respect of the number of kilometres actually driven, in excess of 1.5% in urban areas and 1% in non-urban areas, the latter including major roads in urban areas, must be less than 0.1%.

3.3.3	KPI: Registrati on - accuracy	The number of vehicles with an operational OBU for which the registered kilometres deviate downwards, in respect of the number of kilometres actually driven, in excess of 4% in urban area and 2% in non-urban areas, the latter including major roads in urban areas, must be less than 2%.
3.3.4	Registrati on - accuracy	The OBU must on average be able to record kilometres driven with the required accuracy in both urban and rural areas.
3.3.5	Tariff zone system	Registered kilometres may never be allotted to a tariff zone having a tariff higher than the tariff of the actual tariff zone.
3.3.6	Tariff zone system	For all registered kilometres in a given tariff zone, all registered kilometres that have been driven more than 25 metres within the outer limits of that zone must be assigned to that tariff zone.
3.3.7	Tariff zone system	A tariff zone may never be shorter than 150 metres and never narrower than 75 metres.
3.3.8	Tariff zone system	The tariff zone system must be able to deal with a minimum of 1,000 tariff categories. This includes Euro classes, GVW classes, and road, time and direction categories.
3.3.9	Tariff zone system	The tariff zone system must support the use of a minimum of 100,000 different tariff zones.

3.3.10	Tariff zone system	The tariff zone system must offer the possibility of being adjusted to new or changed tariff zones and tariff categories (preparation, development, testing, pre-loading, acceptance and activation) once every six months. All new/changed elements in the tariff system must be active on the implementation date.
3.3.11	Registration	All incidents and error reports relating to kilometre registration must be logged and available for consultation to service points and enforcement points.
3.3.12	Registration	The number of cases in which a Driver is incorrectly informed that his/her Guaranteed Payment Method is no longer valid must be less than 0.01% per year.
3.3.13	Sending	All registration data must continue to be stored in the OBU until the User / Driver has given permission for deletion.
3.3.14	Sending	All journeys registered by the OBU, whether or not they have been aggregated, must effectively be reported by the proxy to the back office. All activities relating to the sending of OBU usage data (incoming and outgoing) must be logged and consultable.
3.3.15	Sending	The OBU must transmit all registered data to the proxy before leaving Belgium.
3.3.16	Aggregation	All incidents and error reports relating to aggregation must be logged in the OBU-proxy combination and must be consultable by the SSP.

3.3.17	KPI: Validation / enrichment	All registered journeys must result in a correct kilometre charge for such journeys. The total kilometre charge sum per period may never deviate by more than 0.01% from the effectively applicable kilometre charge based on the registered journeys. All activities relating to validation and enrichment must be logged and consultable by the SSP.
3.3.18	Data viewing	The SSP must give the User the possibility to view any registered data concerning him or her (so including the raw journey data) and save it for his or her own administrative purposes. If the User wishes to be able to view these data he/she must give the SSP permission to actually log such data.

3.4. OBU

3.4.1	Certification	The SSP is responsible for certifying the OBU and the kilometre registration system.
3.4.2	Directive	The OBU must comply with Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC).
3.4.3	Directive	The OBU must comply with Directive 77/649/EEC on the approximation of the laws of the Member States relating to the field of vision of motor vehicle drivers.
3.4.4	Directive	The OBU must comply with Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

3.4.5	Directive	The OBU must comply with Directive 2002/96/EC on waste electrical and electronic equipment (WEEE).
3.4.6	Directive	The OBU must comply with all the standards set out in CE and Radio and Telecommunications Terminal Equipment (R&TTE) Directives.
3.4.7	Directive	The OBU-proxy combination must comply with the ISO 17575 standard.
3.4.8	GNSS	As regards determining its position, the OBU must be able to use GPS and GLONASS and it must be prepared for Galileo. The OBU must also be able to use the EGNOS system.
3.4.9	Identification	The OBU must be equipped with unique and easily legible identification. This identification must be affixed to the housing and must also contain the license number of the vehicle. The telephone number of the helpdesk must also be affixed on the OBU in a position that is clearly legible to the Driver.
3.4.10	Weather / traffic	The OBU must function reliably and in line with the accuracy requirements under all weather and traffic conditions in Europe.
3.4.11	Weather / traffic	The OBU must function correctly in conjunction with the Enforcement Equipment under all weather and traffic conditions in Europe.
3.4.12	Vehicles	The OBU must function in all vehicles subject to the kilometre charge.

3.4.13	First fix	The OBU must be able to reliably determine its position within a maximum of 60 seconds after having been switched off or shielded for an extended period of time and then register the kilometres accurately and reliably as of that moment.
3.4.14	Reprogrammable	The OBU functions such as the enforcement interface, location augmentation interface and the registration functionalities must be remotely programmable.
3.4.15	Personalisation	When issued, it must be possible to personalise the OBU with vehicle data such as Euro class, GVW and the number plate number.
3.4.16	Power supply	The OBU must have an appropriate connection to connect to the vehicle (cigarette lighter) and/or a USB connection (only for power supply).
3.4.17	Power supply	If there is no connection available in the vehicle or if the User wishes to install the OBU permanently, the User will have to provide a direct connection from the OBU to the vehicle's power supply. The SSP must offer sufficient OBUs suitable for this purpose. In this case the requirement regarding the maximum installation time does not apply.
3.4.18	Power supply	The OBU must warn the Driver, in a manner attributable to the User, that the power supply from the truck has been disrupted.
3.4.19	Power supply	After the power supply of the truck has been cut off, the OBU must remain fully operational until the OBU has registered kilometres for a (cumulative) term of at least 4 hours.

3.4.20	Fraud	The OBU-proxy combination must have functions that detect intentional disruption of its correct operation and report this to the back office and to the User / Driver. This includes, for example, but is not limited to, spoofing, jamming, shielding, tampering and opening.
3.4.21	Fraud	The OBU-proxy combination of a User who defrauds or continues unlawfully using the roads must have the possibility to transmit position data to the back office to identify the fraudulent User and apprehend the Driver.
3.4.22	Life span	The OBU must have a minimum life cycle of 7 years.
3.4.23	MTBF	The OBU must have a minimum Mean Time Between Failures (MTBF) of 25 years.
3.4.24	MMI	The man-machine interface may not jeopardise road traffic safety.
3.4.25	MMI	The man-machine interface must be easy to read for all Drivers, including in the case of physical impairments such as colour blindness.
3.4.26	MMI	The man-machine interface must offer support in German, English, French and Dutch.
3.4.27	MMI	The man-machine interface must clearly and unequivocally inform the Driver whether or not the device is functioning.

3.4.28	MMI	The man-machine interface must clearly and unequivocally inform the User / Driver if the device is not functioning and that the User / Driver must therefore report the OBU to the SSP as defective.
3.4.29	Beacons	The OBU must support Location Augmentation in accordance with standard ISO/TS 13141:2010.

3.5. Back Office

3.5.1	Planning	The back office must be partly operational 6 months before the scheduled go-live date at the latest, in order to start testing the subsystems.
3.5.2	Planning	The back office must be fully operational 2 months before the scheduled go-live date at the latest, in order to execute the end-to-end system and acceptance tests.
3.5.3	Collection	All registered kilometres for a particular day must be claimed no later than the following day. If the number of registered but as yet unclaimed kilometres reaches the User's consumption guaranteed amount, the SSP will have to submit an additional claim at that moment. Depending on the Guaranteed Payment Method provided, a claim involves a collection from the credit card or fuel card company or a balance reduction (in the case of prepayments).
3.5.4	Collection	All activities relating to collection must be logged and consultable.

3.5.5	Collection	<p>The system's collection function uses Guaranteed Payment Methods. This must include at least the following means:</p> <ul style="list-style-type: none"> • Credit card and fuel card. • (European) transfer, direct debit and cash (if an advance / balance increase is used). In such a case the User will remain responsible for paying on time.
3.5.6	Collection	<p>The SSP must inform the Driver by means of a notification on the OBU, and in a manner that is attributable to the User, that the User no longer has a valid contract with the SSP due to a lack of Guaranteed Payment Methods.</p>
3.5.7	Declaration	<p>The SSP must declare to the Regions / Concessionaires all the kilometres registered on a particular day on the following day. In cases where in a 1-day period no OBU report has been received from an OBU, the SSP will send in a “no OBU data received” declaration.</p>
3.5.8	Declaration / assessment	<p>All activities relating to a declaration and assessment (ingoing and outgoing) must be logged and consultable.</p>
3.5.9	Payment	<p>The amounts collected for the kilometre charge will be paid from the separate bank account managed by the SSP to the (individual) bank accounts of the Regions.</p>
3.5.10	Invoicing	<p>The SSP must generate an electronic invoice every month and make it available to the User. The invoice rules must be grouped per day and per Region / Concessionaire / (EETS) Toll Charger. The User must be able to determine the extent of the invoice detail. In the meantime, by logging in to his or her account on his or her personal web page, the User can receive an overview of the amounts taken into account until that date and the accompanying registered kilometres per (type of) tariff zone and the tariff per (type of) tariff zone.</p>
3.5.11	Invoicing	<p>The invoice can, at the User's request, be printed on paper and sent by post to the User's address.</p>

3.5.12	Invoicing	The invoice must state at least the full amount of kilometre charge per Region, per Concessionaire and per (EETS) Toll Charger, with a differentiation between infrastructure and external costs, and also clearly distinguish the costs for the SSP's services and the toll charge owed. Value Added Services, if any, are to be listed separately. VAT, if any, is to be listed separately. Furthermore, unless the User decides otherwise, in addition to the composition of the toll charge relevant for the User, the invoice must state at least the time and place of the toll charge.
3.5.13	Invoicing	All activities relating to generating and sending the usage and payment overview must be logged and consultable.
3.5.14	KPI: Invoicing	The number of invoices that were not correctly addressed must be less than 0.01% per year.

3.6. Enforcement

3.6.1	Certification	The SSP must ensure that, when required, all the enforcement equipment it supplies is certified.
3.6.3	SRSE	The SSP must install, maintain and operate stationary enforcement stations (SRSE) on the road sections indicated: 3 in Brussels, 17 in Wallonia and 20 in Flanders.

3.6.4	SRSE	Stationary enforcement stations must contain functions enabling them to identify the classification of vehicles on all lanes of the carriageway from above the road, identify and register the number plate numbers of passing vehicles, query the OBUs of passing vehicles, determine the plausibility of the class measured compared to the OBU and number plate information and, if necessary, after having compared this with a database loaded in the enforcement station, send the results almost in real time to the nearest mobile enforcement teams and to the enforcement back office. Data not yet sent to the back office must be saved.
3.6.5	SRSE	The stationary enforcement stations must have an average up-time of at least 98% (7 days' down-time per year per station), whereby up-time is defined as the time during which all functions of the station (equipment and infrastructure) are available and functioning correctly. It must be possible to repair a faulty enforcement station within 2 hours without disruption of the traffic on the road in question.
3.6.6	SRSE	A stationary enforcement station must be able to correctly process at least 2,500 passing vehicles per lane per hour.
3.6.7	SRSE	A stationary enforcement station must be able to correctly process at least 8,000 passing vehicles per driving direction per hour.
3.6.8	SRSE	A stationary enforcement station must be able to correctly process at least 1,600 passing trucks per driving direction.
3.6.9	FRSE	The SSP must supply, maintain and operate 22 flexible enforcement stations (FRSE): 3 in Brussels, 7 in Wallonia and 12 in Flanders.

3.6.10	FRSE	The SSP must install and operate the FRSE at the locations indicated by the Regions under the supervision of the Regions.
3.6.11	FRSE	It must be possible to install flexible enforcement stations at a location within approximately ten minutes.
3.6.12	FRSE	It must be possible to install the flexible enforcement stations at a different location at least every 4 hours.
3.6.13	FRSE	The flexible enforcement stations must have a battery which enables the station to function autonomously for at least 4 hours.
3.6.14	FRSE	Flexible enforcement stations must contain functions enabling them to identify and register the number plate numbers of vehicles on one lane of the carriageway from above or alongside the road, query the OBUs of passing vehicles and, if necessary, after having compared this with a database loaded in the enforcement station, send the results almost in real time to the nearest mobile enforcement teams and to the enforcement back office. Data not yet sent to the back office must be saved, even if the station's battery has been depleted.
3.6.15	Vehicles	There is an option to have the SSP supply and maintain 40 enforcement vehicles: 5 in Brussels, 13 in Wallonia and 22 in Flanders.

3.6.16	Vehicles	<p>The enforcement vehicles must have detection and communication capability.</p> <p>For this purpose, the vehicles must be equipped with the following functions:</p> <ul style="list-style-type: none"> • Appropriate communication equipment to communicate with the OBU by means of the DSRC interface; • Appropriate equipment to exchange data with the enforcement back office almost in real time; • Communication equipment to receive enforcement data from the nearby enforcement stations almost in real time; the crew must be able to personally choose from which enforcement stations they wish to receive which reports; • Equipment to identify and register vehicle number plate numbers while driving and compare them with the enforcement database; • Manual reading equipment which the crew of an enforcement vehicle can take with them to manually query OBUs, for example on a parking lot, in order to be able to register and identify the number plate number of the associated vehicle and check it against a database stored in the device.
3.6.17	Manual reading equipment	<p>The manual reading equipment must be able to communicate with the enforcement centre by means of mobile telecommunication (GSM) in order to download the whitelist and blacklist and upload the data registered.</p>
3.6.18	Manual reading equipment	<p>It must be possible to download and upload data to the manual reading equipment by means of Wi-Fi.</p>
3.6.19	Manual reading equipment	<p>The manual reading equipment must be fitted with rechargeable batteries that can be recharged by way of the accompanying charger, both through the board network of the enforcement vehicles and by means of the 220-Volt network.</p>
3.6.20	Manual reading equipment	<p>The manual reading equipment must be able to function for a minimum of 4 hours after being fully charged.</p>

3.6.21	Manual reading equipment	The manual reading equipment must be able to function under all prevailing weather conditions in Belgium, if necessary by means of a protective cover.
3.6.22	Manual reading equipment	The minimum life of the manual reading equipment must be 5 years.
3.6.23	Manual reading equipment	The minimum MTBF of the manual reading equipment must be 35 years.
3.6.24	KPI: RSE – DSRC	Of all the vehicles identified by ANPR at an enforcement station, and of which the passage is recorded in the back office (through direct communication from the OBU), at least 99% must be correctly identified through the DSRC link.
3.6.25	KPI: RSE – Detection	Of all the vehicles detected by DSRC at an enforcement station, at least 99% must be detected by the station's other functions.
3.6.26	KPI: RSE - Classification	Of all the vehicles detected by DSRC or ANPR at an enforcement station that are whitelisted, at least 80% must be correctly classified.
3.6.27	KPI: RSE - ANPR	Of all the number plate numbers detected by DSRC at an enforcement station, at least 95%, 96%, 97% and 98% must be correctly identified by ANPR in the 1st, 2nd, 3rd and 4th year of operation, respectively. Thereafter, the requirement will remain at 98%.
3.6.28	RSE - ANPR	Of all the number plate numbers identified by the ANPR, no more than 0.1% may be identified incorrectly.

3.6.29	RSE - ANPR	The reliability of the ANPR system must be indicated on a scale from 0 to 100% for every number plate number identified and for every character of such number plate.
3.6.30	RSE - Manual NPR	Of all the number plate numbers that are detected by DSRC at an enforcement station, at least 99% must be correctly identified by ANPR or by manual identification. This applies to number plate numbers legible for a human.
3.6.31	KPI: Reporting offenders	Of all the vehicles liable for the kilometre charge that are detected by an enforcement station and are not registered, at least 99% must be reported to the enforcement centre within 1 hour.
3.6.32	KPI: Reporting offenders	Of all the blacklisted vehicles that are detected by an enforcement station, at least 99% must be reported to the enforcement centre within 10 minutes and to the mobile enforcement teams within 1 minute.
3.6.33	KPI: Reporting offenders	Of all the detected and possibly fraudulent vehicles (no OBU contact, OBU reports shielding, disruption, tampering / OBU reports "not functioning" or a missing payment method on a road having a tariff exceeding nil) that pass an enforcement station, at least 99% must be reported to the enforcement centre within 10 minutes and to the mobile teams within 1 minute.
3.6.34	KPI: Reporting offenders	Of all the vehicles that are reported as liable for the kilometre charge and that are not registered, this report may be incorrect in no more than 1% of cases.
3.6.35	KPI: Reporting offenders	Of all reports of blacklisted vehicles that are detected, this report may be incorrect in no more than 1% of cases.

3.6.36	KPI: Reporting offenders	Of all the vehicles that are registered with the SSP and reported as possibly fraudulent, the margin of error is limited to maximum 10%.
3.6.37	Capacity	The enforcement system must be able to process at least 2,500,000 vehicle transits a day.
3.6.38	Enforcement centre	The enforcement centre must have the capacity to accommodate 50 staff personnel in order to perform enforcement activities.

3.7. Interfaces

3.7.1	Interface 4: OBU - beacons	The OBU must be ready for location-augmentation according to standard ISO/TS 13141:2010. In practice, this interface runs through the same physical interface as interface 6.
3.7.2	Interface 4: OBU - beacons	The SSP must provide location augmentation beacons which offers the OBU, by means of Interface 4, location data in those areas where the GNSS signal is not sufficiently strong.
3.7.3	Interface 5: toll charger - service	Data exchange over interface 5 must use the EN-ISO 12855:2012 standard.
3.7.4	Interface 5: toll charger - service provider	Communication over interface 5 by both parties must be incorruptible, confidential and irrefutable.
3.7.5	Interface 6: OBU - enforcement	The enforcement interface must comply with standard CEN ISO/TS 12813:2009.
3.7.6	Interface 6: OBU - enforcement	The enforcement device must authenticate itself before the OBU sends data over the interface.

3.7.7	Interface 6: OBU - enforcement	The enforcement interface of the enforcement stations must be reprogrammable in such way that OBUs belonging to future (EETS) providers, which may have different protocols, can also be queried by this interface in the same manner as the SSP's OBU.
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3.8. Customer care

3.8.1	Customer care	The SSP must provide at least the following channels for customer care: website, telephone and e-mail. The SSP must offer the possibility of recording telephone conversations with the helpdesk.
3.8.2	Customer care	Customer care must be provided in at least German, English, French and Dutch.
3.8.3	Customer care	Customer care must be available 24/7 by means of a call centre, e-mail, a website and chat function.
3.8.4	Customer care	Customer care must be reachable from all neighbouring countries by means of a free telephone number and have the same international 00800 number for all countries.
3.8.5	Customer care	The customer care telephone and website menus must contain a function where a non-functioning OBU can be reported on a 24/7 basis.
3.8.6	Customer care	The contact details must be clearly indicated on all correspondence to customers, as well as on the website and in e-mails.
3.8.7	Customer care	The website must comply with the Web Content Accessibility Guidelines (WCAG), version 2.0. The login must comply with European security and privacy regulations and directives.

3.8.8	Customer care	The cumulative telephone response time for at least 90% of contacts may not exceed 60 seconds. and for at least 99% this may not exceed 120 seconds. This time applies to the period until the caller is actually in contact with the correct SSP employee (the employee who can solve his / her problem). Response time to be connected is therefore counted in the maximum response time.
3.8.9	Customer care	A User / Driver who wishes to report a non-functioning OBU or a missing Guaranteed Payment Method must be handled with priority. A separate, free of charge 00800 number can be established for this purpose. The cumulative waiting time for such a contact may not exceed 30 seconds.
3.8.10	Customer care	The percentage of unresolved telephone contacts must be less than 0.5% measured over the total number of telephone contacts per month.
3.8.11	Customer care	The website must be available 99.5% of the time between 08:00 hrs and 20:00 hrs, and 98% of the time outside this period, measured on a monthly basis.
3.8.12	Customer care	Calls may not be blocked due to saturation.
3.8.13	Customer care	The abandon rate for telephone contacts must be less than x% of the total number of telephone contacts, irrespective of the percentage of contacts that are placed on hold. In the first 6 months "x" corresponds with: 8%, after 1 year: 5%, after 2 years: 3%.
3.8.14	Customer care	Every contact - irrespective of the channel - must be registered in a customer relationship management system.
3.8.15	Customer care	Every question or problem of a customer needs to be assigned and registered with a log number.

3.8.16	Customer care	In the case of e-mail contacts or requests submitted through the website, the sender must receive an acknowledgement of receipt which also indicates the anticipated response time.
3.8.17	Customer care	The number of queries or problems resolved through the first call (first call resolution) must be x% or higher. This applies to contacts by telephone, e-mail and post. X corresponds with 60% in the 1st year, 70% in the 2nd year and 80% in the 3rd year.
3.8.18	Customer care	Telephone contacts must be completed within 180 seconds 80% of the time.
3.8.19	Customer care	In the case of e-mail contacts the customer request must be resolved or be in the process of being resolved with corresponding information within 1 working day.
3.8.20	Customer care	For frequently asked questions and problems, call scripts or Intelligent Voice Response Systems must be available to offer the client optimal assistance.

3.8.21	Customer care	<p>Once the customer's question or problem has been resolved, he or she must be asked if his or her question was resolved to their satisfaction. The customer satisfaction will be evaluated on a monthly bases based on this data.</p> <p>The SSP will bear the cost of monitoring customer satisfaction. At the end of a telephone call customers will be given the option of being forwarded to a customer satisfaction survey (automated). Customers who made contact via e-mail will be provided with the necessary information in order toto visit a website where they can complete a customer satisfaction survey. The SSP must incorporate sufficient measures to ensure that the quality and reliability of the data is guaranteed.</p> <p>The following points must be measured and on a scale of 1-10 and may be assessed with a minimum score of 7:</p> <ul style="list-style-type: none"> - General customer satisfaction - Customer friendliness - Employees' knowledge - Speed and efficiency - Efficiency of computer/telephone system - User friendliness of the website, telephone system
3.8.22	Customer care	<p>The number of complaints that arise through customer care assistance must be less than 1,000 complaints per 100,000 registered contacts.</p>
3.8.23	Customer care	<p>Customer Care must monitor the staffing levels required over time and take it into account when preparing the staff schedule.</p> <p>This is particularly the case for the personnel assigned to answer telephone calls and e-mails.</p>
3.8.24	Customer care	<p>The availability and response times of call centres and computer systems must be monitored.</p> <p>The SSP must develop a governance and escalation model in such way that incidents, quality queries and suggested improvements can be dealt with quickly and efficiently.</p>

3.9. Key Performance Indicators

3.9.1	KPI	KPIs are to be reported to the Interregional entity every month within 20 working days of the end of the month.
3.9.2	KPI	If it is clear that a tolerance defined for a KPI is going to be exceeded, then the SSP will have to provide an intermediate report for this event within 24 hours. This is therefore before the agreed periodic reporting.