

# Programme of Requirements

## as part of the

### Framework Agreement for the implementation of

### 7 regional, nationally scalable MaaS Pilots

## 1 Introduction

### 1.1 Purpose and structure of Programme of Requirements

This Programme of Requirements (PoR) is part of the tender dossier and the MaaS Framework Agreement (Framework Agreement) for the implementation of 7 regional, nationally scalable MaaS Pilots. This PoR sets out the requirements that MaaS Service Providers (Service Providers) must meet in order to qualify for the Framework Agreement. The aim of the Framework Agreement is for the public authorities to create scope for experimentation and remove obstacles, and for the Service Providers and Transport Providers to cooperate and share data with each other and with the Public Authorities.

Additional goals, wishes and requirements for a specific Regional MaaS Pilot (Pilot) are stated in an additional Pilot PoR requested per pilot after concluding the Framework Agreement for the respective Pilot.

The PoR consists of the following parts:

- Chapter 1: Introduction. In addition to the reason for the pilots, the objectives of the **Framework Agreement** are described here, as well as the relevant data flows for this PoE and the context for the functional requirements included in chapter 2.
- Chapter 2: Functional requirements. This chapter describes the requirements imposed on the parties in the Framework Agreement.
- Chapter 3: Description of the **MaaS Learning Environment**
- Chapter 4: Specification of data sets and data exchange for access to MaaS Learning Environment

Should there be any conflict between the chapters of this PoR, chapter 2 will prevail above chapters 1, 3 and 4.

### 1.2 Terms and definitions

The terms and definitions used in this PoR, insofar as they start with a capital letter, are included in the glossary associated with this PoR and are presented in bold upon first appearance in this PoR.

### 1.3 MaaS Framework Agreement

Government authorities, together with the Service Providers, **Transport Providers** and other parties in the MaaS chain, want to learn from the pilots.

The purpose of the Framework Agreement is:

- to allow Service Providers to (jointly) develop and roll out good MaaS services under their own steam in line with agreed conditions, whereby the government helps to create the right (legal) conditions for the development of MaaS;
- to create a cooperation between Public Authorities and market parties (Transport Providers and MaaS Service Providers) in order to learn together, to develop knowledge, to define standards and to create conditions for the step-by-step development of MaaS;
- to create conditions for data sharing within the MaaS chain and make this accessible to a learning environment for monitoring and evaluation for national and local and regional authorities.
- to be the legal basis for regional pilots with financial support from the government.

The Framework Agreement gives framework partners the right to participate in mini-competitions for regional pilots. And must include the market parties that want to become Service Providers, in the sense that these parties want to be the driving force behind integrated MaaS services, which they want to test in one or more regional pilots. The Framework Agreement sets out requirements for the Service Provider with regard to

- the integration of the **MaaS Functionalities** mentioned in chapter 1.7 in a so-called MaaS service for the qualification for the Framework Agreement; and
- the integration and data exchange with Transport Providers and with the **MaaS Learning Environment**.

The Framework Agreement only contains the requirements for Service Providers, which means that the desired data can be accessed from the Service Provider by means of this PoR. This data access consists of access to the M&E Learning Environment in accordance with the format described in chapter 6 of this PoR. In addition, the Service Providers declare that they will use the agreements, standards and APIs established by I&W during the Pre-competitive Dialogue within the framework of the Service they will develop. Agreements will be made with Transport Providers in other ways.

## 1.4 Aim of the Pilots

The aim of the project is to accelerate the development of MaaS services in the Netherlands and to gain insight into the effect of MaaS, by means of implementing nationally scalable regional pilots. It identifies obstacles that block or delay the successful development of MaaS services, so that policies can be developed to remove these obstacles. Through the MaaS Pilots and the associated learning environment, more knowledge about MaaS is created for all parties.

## 1.5 Realisation of Pilots

The purpose of the Framework Agreement is the springboard to the joint learning process and upscaling of MaaS along with offering support to local and regional authorities in the execution of Pilots by offering uniform working methods, standard tendering procedures and a selection of qualified Service Providers for implementation. The idea is for the authorities to create scope for experimentation during the pilot period and to remove obstacles, and for the Service Providers and Transport Providers to work together and share data with each other and with the Public Authorities.

The realisation of the Pilots consists of two steps, first the Qualification of Service Providers for the Framework Agreement by means of, among other things, meeting the requirements set within this PoR and then the tendering out and execution of the Pilots by local and regional authorities (**Principals**) by means of mini competitions.

## 1.6 Pilot PoR

With regard to the execution of the Pilot, this PoR provides the minimum functional requirements. In a Pilot PoR, the Principals describe the objectives to be achieved and the applicable preconditions, the realisation of the parameters from the PoR and the additional requirements applicable to the PoR. The Pilot PoR together with this PoR will constitute the PoR to be used for the tendering procedure.

The Pilot PoR may contain additional requirements that may not conflict with or exceed the requirements of the PoR. In the event of a conflict, the requirements of this PoR prevail.

## 1.7 MaaS Definition

The provision of multimodal, demand-driven mobility services, offering customised travel options to **Customers** via a digital platform (e.g. **Mobile app**) with real-time information, including payment and transaction processing.

## 1.8 MaaS Functionalities

The **MaaS Functionalities** relevant to a **MaaS service (Service)** and therefore necessary for the Framework Agreement:

1. **Personal aspects, preferences and restrictions:** The MaaS service should support the user's introduction of 'personal settings', so that the most 'appropriate' travel options are offered and only travel options that are applicable to the individual concerned and that are perceived as attractive/usable are recommended.
2. **Plans:** A multimodal travel planner that allows Customers to plan a trip based on current departure and arrival times and on current departure and occupancy information with regard to the travel modality(s) offered by the Transport Providers, based on a location of origin and/or destination and times. In addition to rental and share bikes, this also includes rental and share cars, (part)taxis, buses, trams, trains, metro, voluntary transport, target group transport, water taxi services, ferries, etc.
3. **Booking:** Functionality offered that allows Customers to reserve a planned trip with different modalities at once with, or purchases from, the Service Provider.
4. **Travel:** Possibility for Customers to travel with a ticket offered by the Service Provider (e.g. e-ticket or unlock code for a share bike).
5. **Support:** Support offered by the Service Provider to Customers in Planning, Booking, Travel, Customizing and Paying for the Travel (e.g. by Mobile app or telephone).
6. **Modification:** Service Provider takes care of matters for Customers if, as a result of a calamity or unforeseen event, one or more travel modes offered by the Participant cannot be delivered or need to be adapted, or if the Customer himself (during the trip) requires an adjustment of the travel mode.
7. **Payment:** The possibility offered by the Service Provider to have the Customers pay for the entire trip using one existing payment facility and/or mobility card/subscription, which acts as a means of payment and/or admission ticket for all parts and modalities of the trip.

## 1.9 Primary MaaS chain

In order to provide insight into the primary data streams, this PoR refers to the simplest representation of the MaaS data chain for the Pilots as shown in Figure 1.

In reality, the MaaS chain will be more complex, with many players in particular in the midfield between the MaaS Service Provider and the Transport Providers. Examples include data aggregators, connectivity platforms, etc., each of which has a specific function and adds value to the MaaS chain. This creates a so-called MaaS ecosystem.

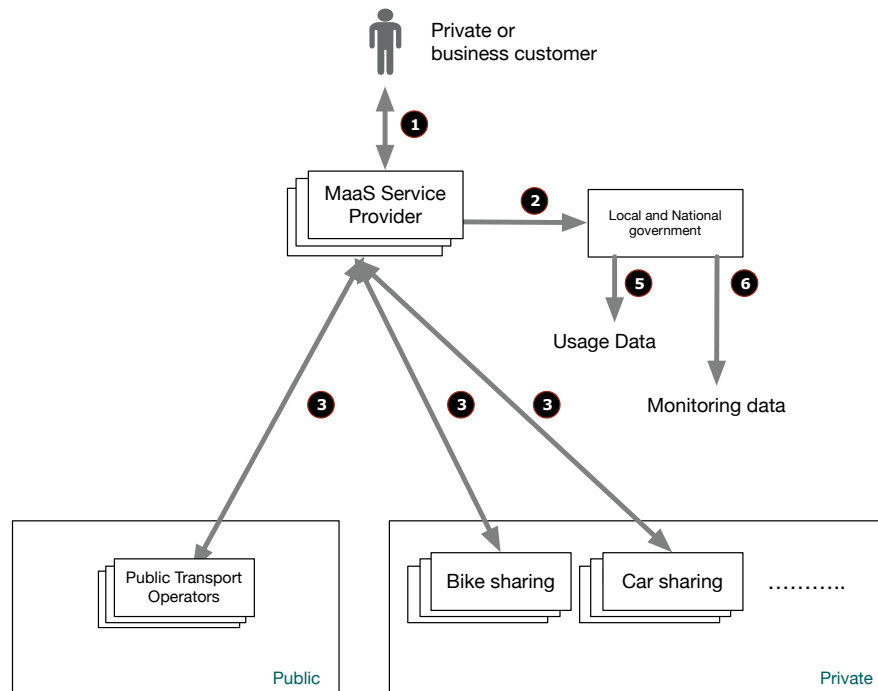


Figure 1.

In Figure 1, the following data exchanges are distinguished for illustrative purposes:

1. **Between MaaS Service Provider and Customers:** The relationship with the Customer and the related data exchange is exclusive to the domain of the Service Provider and the data exchanged must be considered as Private Data.
2. **Between MaaS Service Provider and Public Authorities:** The structured and standardised access to M&E data for the M&E Learning Environment is essential within the Pilots, and the Service Providers are therefore obliged to make these data accessible in accordance with the format described in Chapter 4.
3. **Between the MaaS Service Provider and the Transport Providers:** In the **Pre-competitive dialogue**, market parties, Transport Providers and Public Authorities jointly make agreements and establish data formats and APIs. In order to achieve the desired standardisation, these agreements, standards and APIs laid down by the Ministry of I&W on behalf of the Pilots must be applied by Service Providers in the Service.

The data **exchange** can consist of dialogues, such as the purchase of Travel ticket, in which the dialogue consists of several consecutive actions: check availability, reserve, pay and deliver a Travel ticket. Data exchange can also consist of a repetitive exchange of data from one actor to another, such as the supply of M&E data by the MaaS Service Provider to the M&E Learning Environment.

Figure 1 expressly concerns a schematic representation of a possible blueprint that is being targeted via the Pilots. More specifically, chapters 3 and 4 on the M&E learning environment and data exchange describe how the first steps towards a final picture are taken. Nothing has yet been established. Principals expressly wish to enter into this process together with Service Providers and with the involvement of Transport Providers.

### 1.10 Monitoring & Evaluation (MaaS Learning Environment)

The main objective of the Pilot's M&E is to gain insight. To this end data from the Service providers is essential. It is not only about the size of any effects, but also - or above all - how these effects can be explained and what control possibilities (from both the government and the market side) there are to allow MaaS to develop and be used as effectively as possible.

This has been elaborated in the following objectives for the M&E of the Pilots:

- Gain insight into the social effects of MaaS;
- Gain insight into the business cases for MaaS;
- Gaining insight in buttons/control possibilities: MaaS preconditions/obstacles/models. This concerns both the buttons in a broader context and the buttons that make it possible to optimise the results of the pilots.

This means that the effects that occur must be measured at the level of the Service (so that they can be explained in terms of the characteristics of the users of this Service and the characteristics of the Service itself), but also at the level of the pilot region (and the Netherlands as a whole, of course): what effects occur as a result of the various MaaS services that are active in the pilot area. The input from Service providers will be automated as much as possible.

By jointly creating frameworks for M&E, the Pilots will collect as much comparable data and information as possible, which will form the input for the M&E Learning Environment. With the extensive data collection, data analysis and evaluation, the regional questions are also covered, so that the regions are relieved of the M&E of MaaS. The main objective of the Pilots is to learn, the M&E process is geared to this and therefore explicitly does not serve to call the Pilots to account on their effectiveness afterwards or to test pilots beforehand for possible benefits.

I&W is owner and principal of the MaaS Learning Environment, together with the regions. TNO and Ecorys (the **Evaluator**) carry them out, i.e. they provide output on the basis of the input provided by the regions and the Service Providers and obtained from others (including public sources and surveys).

On the basis of these data, the MaaS Learning Environment:

- the information required for reporting in relation to the objectives and for answering the research questions is compiled and published for the Public Authorities and stakeholders in the MaaS chain; and
- Usage data are compiled and published as Open Data; and
- data for policy monitoring are made available to the authorities.

The Usage data consists of anonymised Travel Data, which in particular must enable the Transport Providers to optimise the Transport Services offered by them.

Chapter 3: Description of the M&E Learning Environment, explains how the M&E Learning Environment is structured and what the products will be.

Chapter 4: Specification of datasets for the purpose of access to M&E data by the Service Provider to the M&E Learning Environment.

### 1.11 Fraud control and preventing Errors

Given the complexity of a MaaS chain, the various financial flows between the actors in combination with co-financing by, and the involvement of, the authorities, attention must be paid to preventing **Fraud** and **Errors** with regard to the interaction of the Service Provider with Customers and with the parties within the MaaS chain created by the Service Provider.

The Principal will include in the Pilot PoR for the purpose of a mini-competition a requirement to draw up a **Fraud Control Plan** consisting of a description of the risks and control measures relating to the prevention, detection and settlement of Fraud and Errors, tailored to the Pilot. This fraud control plan can then form the basis for the assessment of the fraud control criterion when bidding for a mini-competition.

### 1.12 Privacy

Within the legal framework for Pilots, the processing of personal data and the requirements of the General Data Protection Regulation (GDPR) play an important role. In order to give the parties a practical handle on ensuring that all activities and developments with regard to the implementation of the Pilots are in accordance with applicable privacy legislation, the Ministry of I&W has drawn up the so-called "Guideline for the Handling of Personal Data" (**Guideline**). [This Guideline can be downloaded from the Beter Benutten website.](#)

In order to qualify for the Framework Agreement, the Service Provider must demonstrate, by means of a Privacy Plan, that it meets all the requirements of the Guideline, has ensured privacy by design in the corporate culture and sees data protection as a 'licence to operate'.

When registering for a mini-competition, the Service Provider must submit an update of the Privacy Plan, detailing how the Pilot meets the GDPR. Submitting the Privacy Plan submitted with the qualification for the Framework Agreement is not sufficient. The Service Provider must take all the requirements set out in the Pilot PoR into account and be able to justify why certain choices have been made with regard to fulfilling these requirements..

### 1.13 Traffic safety

Road safety is one of the government's main concerns, and the use of mobile apps in traffic demonstrably leads to an increase in the number of traffic accidents. It is therefore essential that the Service to be offered by the Service Provider does not have a negative effect on road safety. If specific guidelines and/or legal provisions with regard to road safety are drawn up in due course, these will be included as additional requirements in this PoR or in the Pilot PoRs.

### 1.14 Service accessibility

There is a growing group of elderly people who do not have access to the internet or who are unable to use a Mobile App. For this group and for Customers who temporarily have no access to the Internet, the Service Provider must offer alternative interfaces to the Service.

It is desirable that the Service to be offered by the Service Provider should be accessible to travellers with impaired sight and mobility.

### 1.15 Talking Traffic

In order to stimulate the use of the services and functionality developed within Talking Traffic, such as interaction with intelligent traffic control installations (intelligent traffic lights) or information regarding road works and incidents, it is desirable that the Service Provider integrates these into the Service.

## 2 Description of functional requirements

### 2.1 General

1. Service Provider must develop a MaaS service (Service).
2. As a human-machine interface, the Service Provider must have at least one **MaaS app** available for the Service, in which the MaaS Functionalities are supported in an integrated manner.
3. By means of the Maas app, the Service Provider must enable the user to carry out the actions associated with the Service in an accessible and user-friendly manner.
4. Service provider must set up the MaaS app as the primary medium for interaction with the Customer.
5. Service Provider must have a back-up facility (e.g. a Web app) available during periods of unavailability of the MaaS app to ensure uninterrupted availability of the Service.
6. Service provider must ensure that the MaaS app and the backup facility, apart from registering Travel Data, support the same functionalities and display identical information.
7. The Service Provider must make the Service accessible to travellers who temporarily or structurally have no access to the Internet.
8. Service provider should use the MaaS app to bind and motivate the Target Group to maximum effect.

### 2.2 Open standards and non-discriminatory cooperation

1. The Service Provider must accept and apply the agreements, standards and APIs laid down by the Ministry of I&W on behalf of the Pilots in the Service.
2. In the event that a Transport Provider is part of its partnership, the Service Provider must ensure that the Transport Provider:
  - facilitates the resale of the most frequently used Tickets of the Transport Provider by other Service Providers on a non-discriminatory basis;
  - facilitates the automated generation of Tickets by other Service Providers;
  - supports travel with (digital) tickets generated by third parties.

### 2.3 Personal aspects and preferences

The Service must support user input of personal settings, preferences and restrictions, so that the most appropriate travel options are offered and only those travel options that are applicable to the individual concerned and that are perceived as attractive/usable are advised.

A number of Pilots have been provided that focus (partly) on target groups with physical (motor, visual, auditory) impairments and social support (WMO) indication, but in fact an accessible MaaS app is required for each Pilot.

1. The Authority must support the input, storage, and management of the personal aspects, preferences and limitations.
2. The Service must use the 'personal aspects and preferences' entered as input for the other MaaS Functionalities..

## 2.4 Plannen

A multimodal travel planner that enables Customers to plan a trip based on current departure and arrival times and on current departure and occupancy information regarding the travel modalities offered by the Transport Providers, based on a location of origin and/or destination and times. In addition to rental and share bikes, this also includes rental and share cars, (share)taxis, buses, trams, trains, metro, voluntary transport, target group transport, water taxi services, ferries, etc.

1. The Authority must include an integrated multimodal trip planner.
2. The Service must enable Customers to plan a trip in direct dialogue with the Customer on the basis of the origin and/or destination location and times entered, in combination with the personal aspects and preferences stored, on the basis of current departure and arrival information and current availability information regarding the travel modalities offered.
3. The Service must support at least the following travel modalities accessible to the public:
  - Public transport (train, tram, metro, bus, water taxi, and ferries);
  - Share and rental bicycles;
  - Share cars and rental cars;
  - Taxis and share taxis.
4. When registering for mini-competitions for Pilots that contain WMO components, the
  - Service must support at least the following (currently) not publicly accessible travel modalities:
    - Volunteer transport;
    - Group-specific transport.

## 2.5 Booking

Functionality that allows Customers to book a planned trip with different modalities at once with, or purchase from, the Service Provider.

1. The Service must contain the functionality to enable the following steps to be taken with regard to the planned journey:
  1. Checking availability of the Transport Service to be booked; and
  2. If available, reserve this and generate and deliver the Ticket (e.g. e-tickets) to the Customer; or
  3. If not available, provide feedback to the Customer in addition to offering possible alternatives.
2. Service Provider must offer the Customer the option through the MaaS app to book the planned trip in its entirety in a single action.
3. The Service Provider should automatically send the booking requests for the segments of the planned journey to the relevant Transport Providers.
4. Service Providers must collect the Tickets received from the Transport Providers in the MaaS app and make them available to the Customer so that the Customer can easily undertake the planned trip.

## 2.6 Travel

Possibility to travel physically with a Ticket offered by the Service Provider (e.g. e-ticket or unlock code of a share-bike).

1. The Service Provider will make the Tickets corresponding to the booked trip available to the Customer.
2. If the journey consists of several **Legs**, the Service Provider must offer the Tickets in order based on the start and end times of the Legs within a **Journey Chain**.
3. The Service Provider must offer the Tickets in such a way that their use is in line with the access method used for the applicable Transport Service..

## 2.7 Support

Pro- and reactive support offered by the Service Provider to Customers in planning, booking, travel, modifying and paying for the trip

Because it concerns comprehensive MaaS services, Service Provider must offer extensive support in various forms to Customers in planning, booking, travel, adapting and paying for the trip.

In order to provide optimum information and support to Customers, the Service Provider must set up a customer contact centre and keep it operational for the Duration of the service period.

Although the Service Provider will be given as much freedom as possible to achieve the required result, the Principal will take great care to ensure that the Principal and the Ministry of I&W are not discredited by the actions of the Service Provider.

Customer friendliness and the correct provision of service, but also the safeguarding of privacy and the prevention of fraudulent actions and the making of Errors must therefore actually be the priority of the Service Provider.

1. To provide support to the Customer during the Planning, Booking, Travel, Modification and Payment of the Travel, the Service Provider must set up a customer contact centre where the Customer can obtain answers to their questions and requests and make requests and submit any complaints.
2. The Service Provider must be able to use the customer contact centre to inform potential Customers and other interested parties about the Pilot and to register reports, requests and possible complaints.
3. The Service Provider must set up the customer contact centre in such a way that at least the following requirements are met:
  - The customer contact centre should be accessible via multiple communication channels, including at least the Internet, e-mail, telephone and normal mail;
  - The customer contact centre should be available at least by e-mail 24 hours a day, seven days a week;
  - On average, 90% of incoming e-mail must be answered within one working day, with a maximum response time of 2 working days.
  - The customer contact centre must be accessible by telephone and must lead to an operator's response on Working Days between 9 a.m. and 5 p.m;
  - The employees of the customer contact centre must be fluent in Dutch and have a good command of English in both word and writing.

## 2.8 Modification

The Service Provider will take care for customers of one or more of the travel modes offered by the Service Provider as a result of a calamity or unforeseen event, if one or more cannot be delivered or must be modified, or if the customer himself (during the trip) wishes to change the travel mode.

1. Immediately after the Customer is made aware of any problems with the booked trip, the Service Provider must inform the Customer and offer a proposal with possible alternatives.
2. Before and during the trip, the Service Provider must offer the Customer the opportunity to modify the booked trip.
3. The Service Provider must offer the Customer the opportunity to assess the alternatives proposed and the modifications made in relation to the planned journey and to accept the selected alternative.
4. Service Provider must process the changes and provide the Customer with new Tickets in accordance with the requirements of 2.5 Travel.

## 2.9 Payment

The option offered by the Service Provider to have the Customers pay for the entire trip using one existing payment facility and/or mobility card/subscription, which serves as a means of payment and/or admission ticket for all parts and modalities of the trip.

Given the obstacles in the current public transport system, the Customer will initially have to pay in advance for e-tickets for the booked journey, but the objective is that the Customer can subsequently pay for the actual journey by means of a payment method of his own choice.

1. The Service Provider must support at least the following payment facilities:
  - iDeal, Credit Card and PayPal; and
  - OV chip card; and
  - mobility cards issued by company card providers.
2. The Service Provider must enable the Customer, using existing payment facilities, to pay retrospectively for the actual trip made.

## 2.10 MaaS Learning Environment

### 2.11 Journey Data (input MaaS Learning Environment – see also ch. 3)

1. The Service Provider must make journey data accessible throughout the entire Duration.
2. Service Provider must prepare the journey M&E data daily at 24:00 (CET) on an FTP server that is sufficiently secure and managed by Service Provider, where the journey data can be retrieved by the MaaS Learning Environment in an automated manner.
3. Service Provider must set up an authorisation process that makes use of at least the user name and password assigned to the MaaS Learning Environment.
4. Service Provider must provide the journey data on the travel of all its Customers.
5. Service Provider must remove the journey data no earlier than 3 months after the journey data has been placed on the FTP server.

6. Service Provider must inform Customers that the Evaluator has been appointed to process the data provided by the Customer.
7. Service Provider enter into a processing agreement with the Evaluator.

### 2.11.1 Interviews, Surveys and Monthly Reporting

1. The Service Provider should fully cooperate with an annual interview by the Evaluator, providing truthful information on at least the following topics:
  - business case relating to the execution of the Service;
  - provision of Transport Services;
  - conditions and success factors;
  - functional operation of the Service.
2. Service provider must point out the startup survey drawn up by the Evaluator no later than 1 working day after a traveller has indicated that he wishes to participate in the Pilot, and make every effort to complete the startup survey no later than 4 weeks after the start of the participation by the Customer.
3. The service provider must point out the exit survey drawn up by the Evaluator no later than 1 working day after the Customer has indicated that he no longer wishes to participate in the Pilot, and make every effort to complete the exit survey no later than 4 weeks after the end of the participation by the former Customer.
4. If the Service Provider wishes to add questions to the start and/or exit survey for his own use, he must coordinate this with the Evaluator, in which case the Evaluator will not unreasonably refuse to cooperate.
5. The Service Provider must provide the Evaluator with a monthly management report in a standard format.

### 2.12 Safeguarding privacy

1. The Service Provider must have a Privacy Plan in which it is demonstrated how the GDPR is being complied with, based on the individual requirements in the Guidelines.
2. In particular, the service provider should describe in this respect:
  - Who is the person responsible for the processing;
  - How the legitimacy of the purpose and basis has been determined;
  - How data minimisation is safeguarded;
  - How privacy by design and by default is designed;
  - How it is ensured that data is only shared with third parties if there is a legitimate basis for doing so;
  - How the rights of the data subjects are safeguarded;
  - How the information is protected;
  - How long the data will be stored and when it will be destroyed.

### 2.13 Security

1. The Service Provider must have a security plan that demonstrates that the Service Provider, the Service and the MaaS app at least comply with the SSD security requirements as defined by the [Centre for Information Security and Privacy Protection \(CIP\)](#).

#### 2.14 Talking Traffic

1. The Service Provider must make an effort to integrate the Talking Traffic functionality relevant to the Service into the Service.

#### 2.15 Traffic safety

1. The Service Provider must ensure that the Service does not have a negative effect on road safety.

## 3 Description of the MaaS Learning Environment

### 3.1 The MaaS Learning Environment

MaaS is a relatively new activity with potentially major consequences for the Netherlands and beyond. The 7 pilots and this Framework Agreement therefore have the primary goal to gain knowledge about what MaaS means and what impact MaaS has. What can we learn to give MaaS in the Netherlands an optimal chance to succeed?

The MaaS Learning Environment has been set up with this aim in mind, to gather knowledge about the impact and functioning of MaaS. With this knowledge, the Learning Environment wants to alleviate the concerns of all parties within this Framework Agreement and the Cooperation Agreement with Regions. By setting up the Learning Environment centrally and by working as much as possible with standardised overviews, it is possible to combine and analyse data from different pilots and from different situations on a national level.

The MaaS Learning Environment is the responsibility of the Ministry of I&W. There is a role for Service Providers and Regions in the governance. The privacy requirements (GDPR) and the requirements of a balanced market organisation are met.

### 3.2 Data input requirements for MaaS Service Provider (explanation 2.10.1)

In order to fulfil this role, the Learning Environment primarily works with standardised data input requirements that fit in with the operational process of MaaS (see chapter 4). For the data provision requirements see 2.10.

The MDV is asked to provide data for both the S0 (scheduled trip) and S1 (booked trip). See the following simplified examples for the trips of 2 customers.

Example 1: Hans travels by rental bike from Fietshandel Van de Ven from Mercurystraat to Zwarteweg on 14 June 2018 from 15:12 - 15:34:

S0: Share transport . Bicycle . Hans . Van de Ven #3 . location Mercurystraat (lat.long.) . 2018/06/14;15:00:00 - location Zwarteweg (lat.long.) . 2018/06/14;15:35:00 (€ 2,95)

S1: Share transport . Bicycle . Hans . Van de Ven #3 . location Mercurystraat (lat.long.) . 2018/06/14;15:12:51 - location Zwarteweg (lat.long.) . 2018/06/14;15:34:10 (€ 2,95)

Example 2: Marije is taken by Grevelingen Target Group Transport from Hanzestraat to Hospital on 3 July 2018 from 09:09 - 09:21.

S0: Target group transport . Taxibus . Marije . Grevelingen #6 . location Hanzestraat (lat.long.) . 2018/07/03;09:10:00 - location Hospital (lat.lung.) . 2018/07/03;09:20:00 (€ 13,60)

S1: Target group transport . Taxibus . Marije . Grevelingen #6 . location Hanzestraat (lat.long.) . 2018/07/03;09:09:32 - location Hospital (lat.lung.) . 2018/07/03;09:21:22 (€ 15,13)

#### **Explanatory notes:**

Every leg or journey of a customer is formed by minimum data (the data string): part of a journey. A trip also includes a zero-ride = parking. A trip ends when the customer changes the

Vehicle Type or Service Type. The data string of the intended trip (S0) and the actual trip (S1) are shared from the MaaS Service Provider:

- Type of transport reflects how people travel: examples of this are partial transport, own transport, public transport, target group transport, such as student transport and that within the framework of the WMO (social support); as well as mutual transport (carpooling) and (shared) service transport such as a taxi, ridehailing, etc., Provision has been made for the Learning Environment to continue working on optimal coding with those involved.
- Type of transport indicates the means by which the leg is organised: such as car, bicycle, boat, aircraft and parking, etc.
- Unique customer number (not traceable)

SOORT			TYPE	INDIVIDU			VOERTUIG				START PLAATS	START TIJD	EIND PLAATS	EIND TIJD	KOSTEN
P	Z	Eigen vervoer	On foot	NL	MDV1	Mobility Number	NL	10	NSNL	Mobility Number	Lat.long	yyyy/mm/dd hh:mm:ss	Lat.long	yyyy/mm/dd hh:mm:ss	€
B	P	Publiek vervoer	Bike	BE	WHIM		BE	48	CXX						
C	G	Leerlingen vervoer	Shared bike	D	PELG		D	12	MYWH						
		Wmo vervoer	Car	FR	...		FR	84	STAP						
		Ride hailing	Shared car	...			...	...	...						

- Unique number belonging to the means (traceable)
- Start and end point of this journey (GPS coordinates)
- Start and end time of this journey (epoch)
- The cost of going from A to B, estimated in the S0 and actually in the S1.
- And perhaps things like GPS coordinates of journeys at intervals of 1 minute (see example diagram).

### 3.3 Other input requirements for the Service Provider (explanation 2.10.2)

#### Survey (in addition to 2.10.2)

The purpose of the survey is to obtain additional information directly from the customer. The MDV is obliged to cooperate with the initial invitation to participate to all its customers. It is then up to the customer to accept this offer. With this opt-in, he will be part of a community within which he may be asked the questions from the Learning Environment, without burdening the MDV. The Learning Environment is also responsible for the questions to be asked and the processing. The MDV gets a say in the content of the extra questions and gets full insight into the survey results of its customers (aggregated).

#### Management reporting (in addition to 2.10.2)

The aim of the management report is to gain insight into active and passive customers every month. What is the frequency in which MaaS is used and what is the relationship between customers who do this often and almost never? Basic customer characteristics (profiles) will be added to this basic overview (to be determined). A standardised format will be made available for management reporting.

### 3.4 Outputs of the Learning Environment

The output of the MaaS Learning Environment consists mainly of standardised overviews. These are intended for the Regions, knowledge institutes and Service Providers. The overviews

to which the Service Providers are entitled in this Framework Agreement will be stipulated in a contract and will not form part of this PoR.

The Learning Environment is not an end in itself, but is there to support others. With the pilot regions, a process was initiated that led to the following fields where there is a need for knowledge from the Learning Environment:

A. The social impact of MaaS. What is the effect of MaaS on:

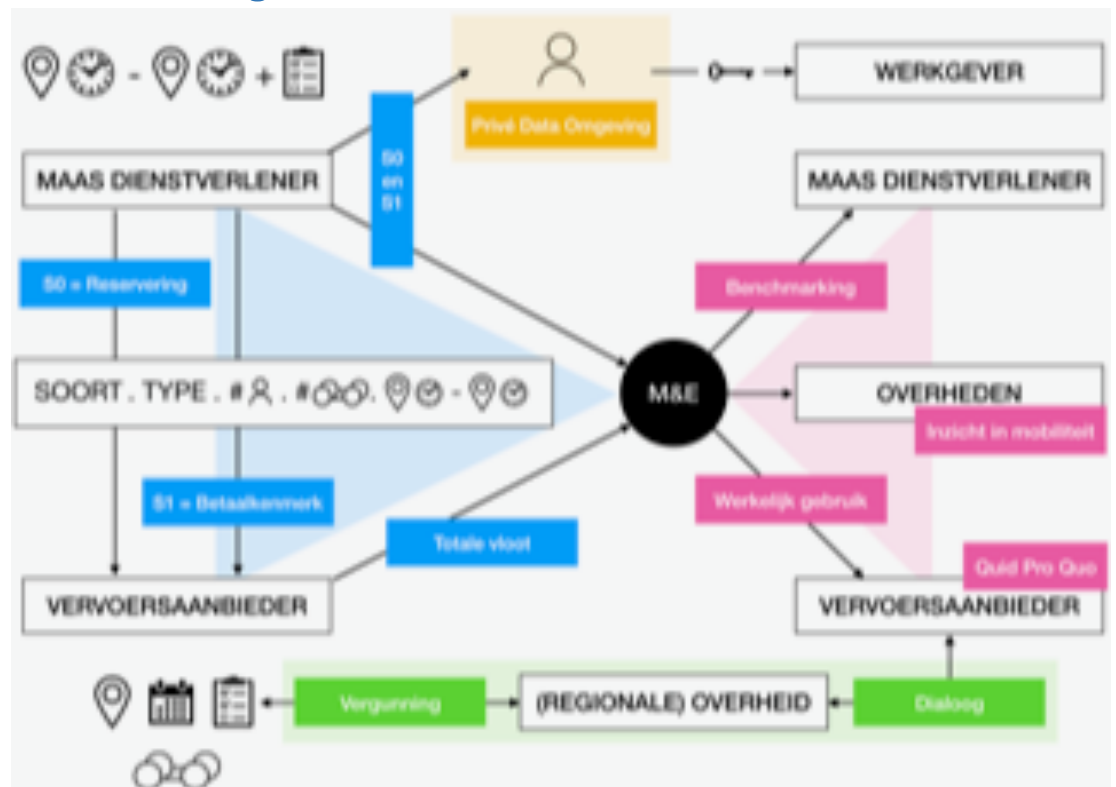
1. Spatial planning Liveability (parked vehicles and vehicles not in use)
2. Sustainability (environmental impact in the broadest sense: modal split and emission);
3. Capacity utilisation of transport systems (car, public transport, bicycle, etc.).
4. Accessibility (the space where people act)
5. Increase social inclusion (mobility needs of groups);

B. The business case and the development of MaaS itself: there is no social impact if MaaS itself does not develop well. This has therefore been named as a separate knowledge topic.

C. The way in which public authorities are directly or indirectly affected by MaaS and its effects, which policy areas are more or less affected?

The basic data input is primarily intended to pass on the effects of MaaS mentioned under A above. The way in which the parties within the Framework Agreement, in which Regions and third parties share in these results, will be further defined and laid down (via Governance Learning Environment).

## 4 Specification of datasets for access to M&E Learning Environment



In a standardised manner, Transport Providers will make data available (to MDV/Learning Environment) relating to the individual means of transport. Depending on how they can access it, this relates to the presence or location of the means, the availability and the competencies. The Transport Provider will do this at the request of the MDV on the basis of a mandate from the **customer/traveller**. Concession operators will always respond to this demand. Private parties with a permit for the use of public space will respond to this demand in principle, with the exception demand from an individual who can be shown to have engaged in illegal use in the past.

The MaaS Service Provider organises the travel by legs in the prescribed manner, according to sort, type, type, user, vehicle, start and end time and place.

The customer's approval of the intended trip can therefore be considered a reservation feature (S0). The actual trip is formulated in the same way, so that it can count as a payment reference between Customer and MaaS Service Provider and MaaS Service Provider and Transport Provider.

The MaaS Service Provider offers these to the Customer for his own insight and to the M&E learning environment.

The Transport Provider that wishes to offer its resources requests the concession grantor or regional authority to register these resources for the purpose of MaaS. In this way, he provides insight into the total resources. If this changes, he will provide a statement to that effect. This is done by one regional provider for each region and stating the competences for each means; in the case of national providers, a single statement will suffice if possible.

Based on this information, the **MaaS learning environment** is able to identify the actual use in the context of MaaS. The M&E learning environment periodically returns the aggregated datasets to the parties, on the one hand to improve the Transport Providers' own operations and on the other hand for Benchmarking (Best Practices) for MaaS Service Providers. The Mobility Data is not open data and will be provided to the respective entitled party. If the parties wish to exchange their own data (for example, before or after a trip), they will do so in reciprocity with other transport providers. This keeps the value of the data for the participants in MaaS.

On the basis of insights into the data, **regional authorities** can enter into a dialogue with Transport Providers about the extent to which they actually strive for use per transport means, so that the least possible burden is suffered by public space.

Concessional requirements such as punctuality will not be measured by public authorities on the basis of these insights. The existing agreements will be respected. However, insights gained from the parties in dialogue may be used for the purpose of interim improvements.

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