



City of Things - MoDi

Third-party payment system for MaaS

Partners

Municipalities, cities, Intercommunals

- › City of Leuven – coördinator
- › City of Deinze
- › City of Genk
- › City of Hasselt
- › Municipality of Schoten
- › Municipality of Wevelgem
- › Intercommunal Leiedal
- › Intercommunal Interleuven

Strategic partners

- › City of Antwerp
- › De Lijn
- › ITS.be

Support

- › The New Drive (project management)
- › IMEC (software development)

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Intro third-party payment & MaaS

Definitions



Third-party payment

A third-party payment system or arrangement means that the mobility provider receives an allowance directly from a third party, such as a government agency, for a trip. The traveler only pays any remaining amount for the trip.



MaaS (Mobility as a Service)

A service in which different mobility services are offered to the user through one application (app). In this way, the user has access to the various mobility services. By using this application, the user can plan his transport modes.

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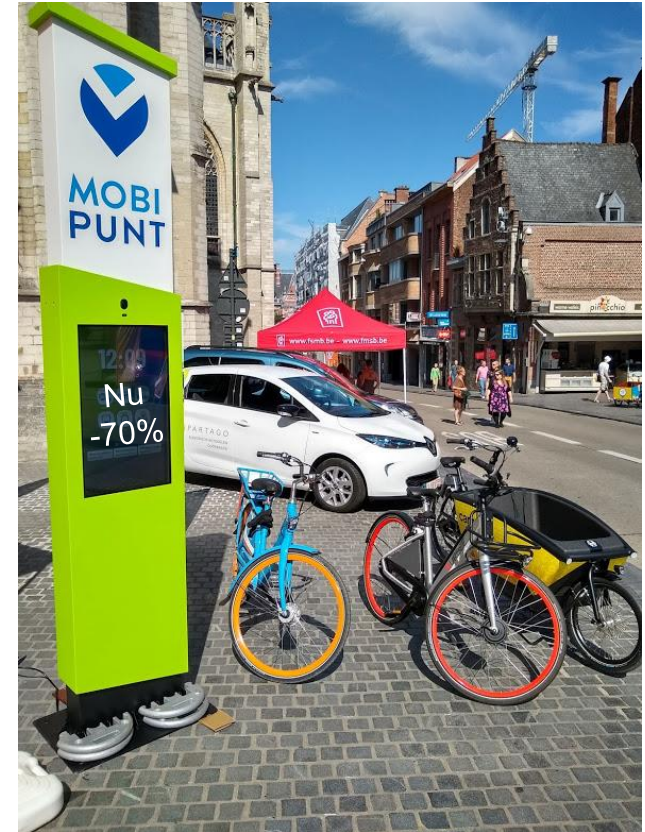
› **Why** introduction via MaaS-app?

› **How** to implement via MaaS-app?

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Why introduction via MaaS-app

- › To stimulate shared mobility (temporarily)
- › Local accents in a generic system
- › To stimulate the business model B2C shared mobility
- › Uniform applicable via MaaS applications



Third-party payment systems are currently ad-hoc and mono-modal

Genk

- › Free payment cards for new inhabitants / discount for inhabitants

Deinze

- › Free Blue-Bike rides

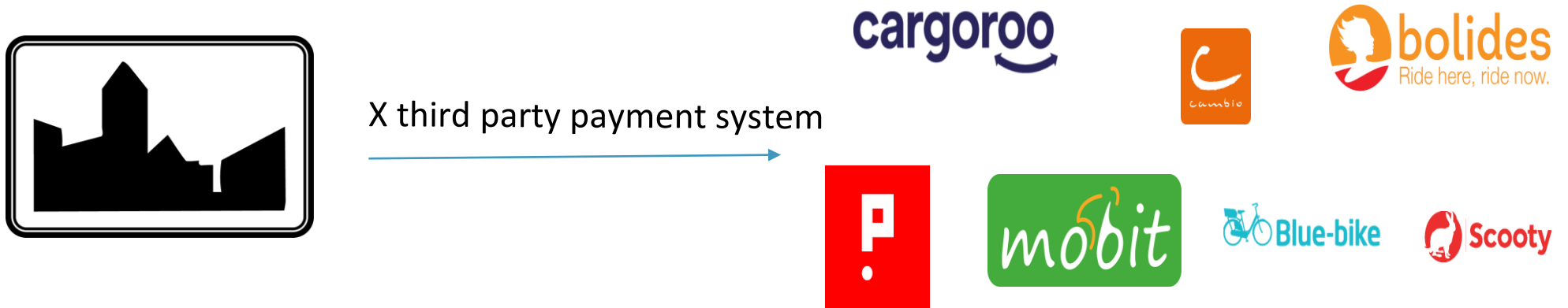
Schoten

- › Mobit-coupon for events (discount for 10 rides of 20mins)

Leuven

- › P + Bus parking system: per parking ticket you receive a ticket for 4 people to take the bus

Increasing number of transport providers → silo-effect and a lot of administration



How to describe and validate multi-modal rules in a uniform manner?

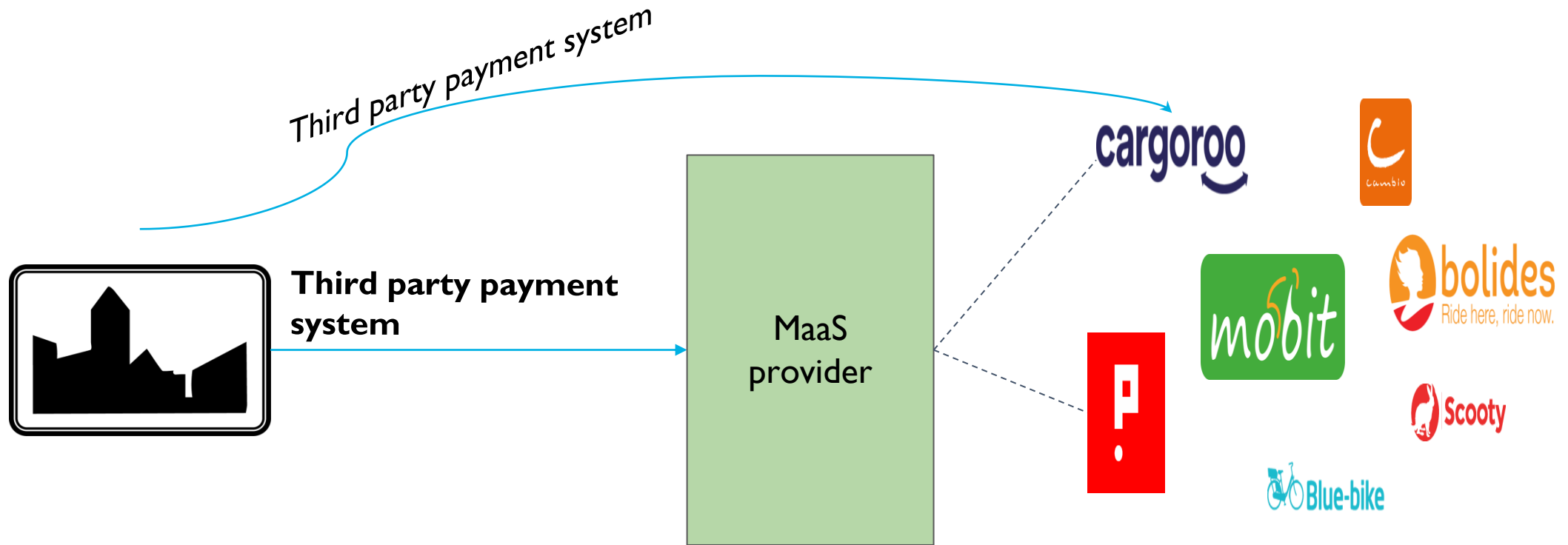


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Example planning: introduction shared mobility with third-party payment system

	Maanden												
	1	2	3	4	5	6	7	8	9	10	11	12	..
Step 1: Introduction license or concession framework Implementation of a license or concession framework to introduce share mobility. Obligation for providers to integrate with at least 1 MaaS app.	Preparation	Preparation	Preparation	Implementation	Implementation	Implementation							
Step 2: Third-party payment system agreement Local government concludes an agreement for third-party payment systems with MaaS providers. Providers meet the MaaS quality framework.					Preparation	Implementation							
Step 3: Publication third-party payment systems (repetitive) Local government publishes third-party payment systems. A machine readable description is generated for MaaS providers.						Preparation	Implementation			Preparation	Implementation		
Step 4: Trip validation and assign discount MaaS providers describe trips according to OSLO-mobility and validate the trip for discount. Discount is assigned immediately.							Preparation	Implementation	Implementation		Preparation	Implementation	
Step 5: Report and payment MaaS providers report monthly trips with discount and get paid (travellers part and expense allowance)								Preparation	Implementation	Implementation		Preparation	Implementation

Preparation

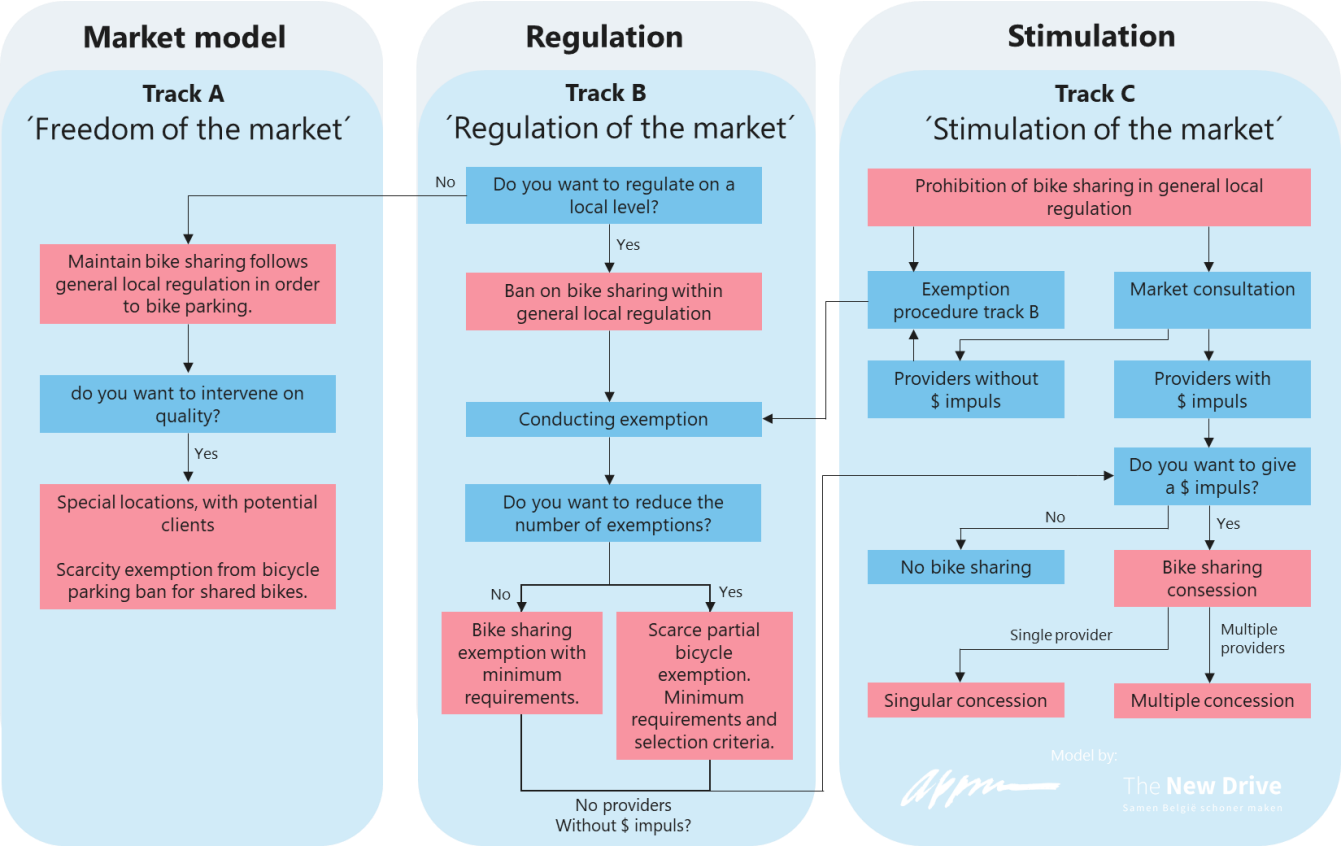


Implementation

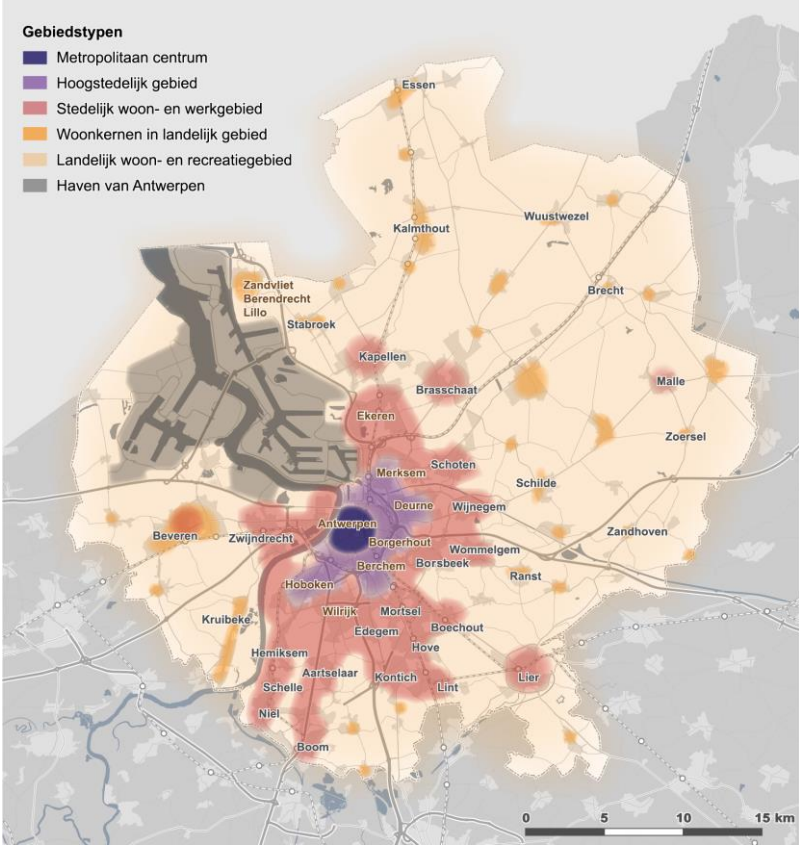


Step 1: Introduction license or concession framework

Three different models..



..for application in different area's.



Step 2: Agreement third-party payment system

Agreement third party payment system

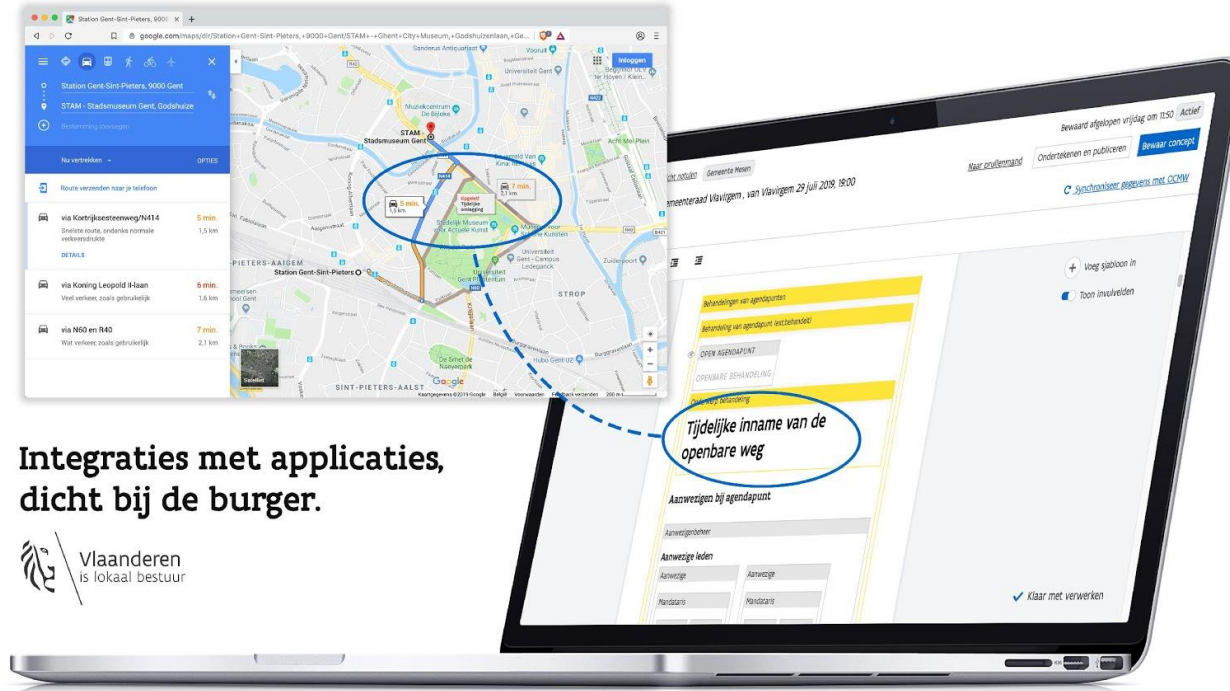
1. **Interference of the city:** conform third-party payment system aligned with open standards (LBLOD subsidies and OSLO-mobility trips and offer)
2. **Preconditions MaaS-app:** conform the criteria from the quality framework MaaS
3. **Report and payment:** monthly afterwards based on assigned discounts, regarding per ride a traveller's part and indemnities



Criteria MaaS quality framework

1. **Multimodal:** at least 3 authorized modi besides PT
2. **Integration with PT:** the app is integrated with De Lijn and NMBS.
3. **Availability mobility solutions:** The availability is displayed real time
4. **Minimal user modalities:** available for B2C, payment minimal pay-as-you-go
5. **Service level:** system for handling complaints, language minimal Dutch and English
6. **Exchange user data:** Aligned with standards LBLOD subsidies and OSLO-mobility trips and offer

Step 3: Publication of third-party payer regulations in accordance with Lokale Besluiten als Linked Open Data (LBLOD)



<https://lokaalbestuur.vlaanderen.be/lokale-besluiten-als-gelinkte-open-data/gelinkte-subsidies>

<https://lokaalbestuur.vlaanderen.be/lokale-besluiten-als-gelinkte-open-data>

Step 3 (PoC): With entry form

Subsidiemaatregel derdebetalersregeling MaaS

Door de velden in het formulier in te vullen wordt een gestructureerde beschrijving gegenereerd, conform het applicatieprofiel Besluit-subsidies van gelinkte besluiten als Linked Open Data (LBDOD). Vul de criteriumvereisten waaraan een reiziger moet aan voldoen aan de linker kant. Kopieer de code-snipper aan de rechterkant en stuur dit door naar de MaaS-partij die hiermee moet valideren vooraleer een korting toe te kennen.

Criteriumvereiste

 Trein ▼

+

 Deelfiets ▼

+

City can draw up rules in an intuitive way with fill in form

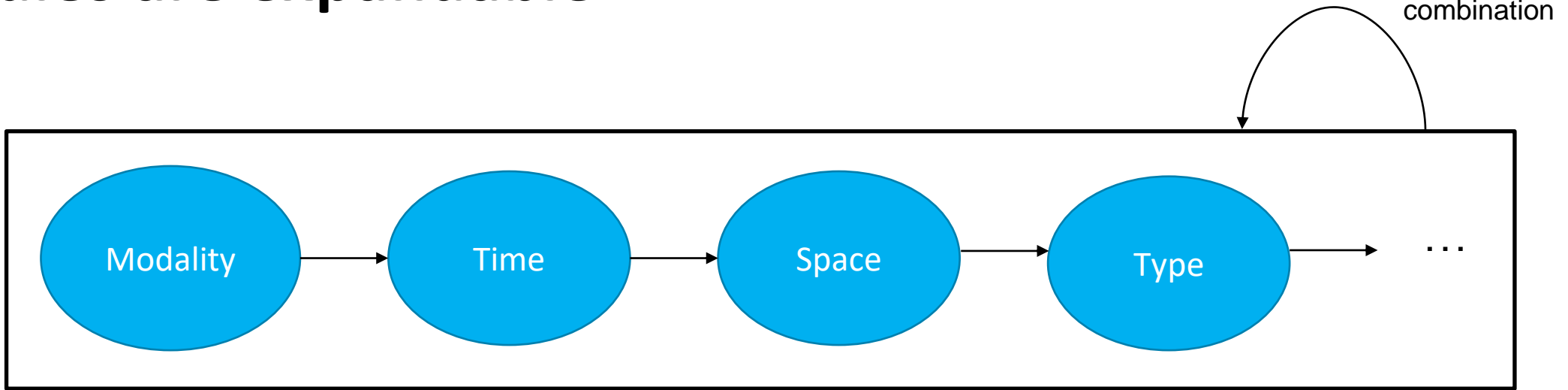
Snippet

```
{
  "@type": "SubsidiemaatregelAanbod",
  "naam": "Subside voor het gebruik van Mobility as a Service (MaaS) diensten",
  "heeftVerantwoordelijke": {
    "@type": "Organisatie",
    "voorkeursnaam": "Gemeente X"
  },
  "heeftCriterium": {
    "@type": "Criterium",
    "naam": "Criterium dat de reis van een reiziger moet aan voldoen zodat deze",
    "isVervuldDoor": {
      "@type": "VereistenGroep",
      "beschrijving": "Groep vereisten waaraan de reiziger moet aan voldoen.",
      "heeftVereiste": [
        {

```

A machine-readable description of the rules is generated automatically. MaaS or transport provider must use this to validate whether a trip qualifies for a discount.

Rules are expandable



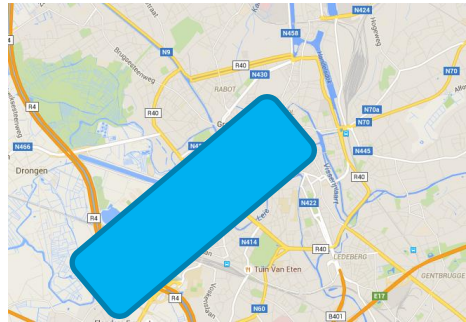
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Every weekday,
from 4 p.m. to 5 p.m.

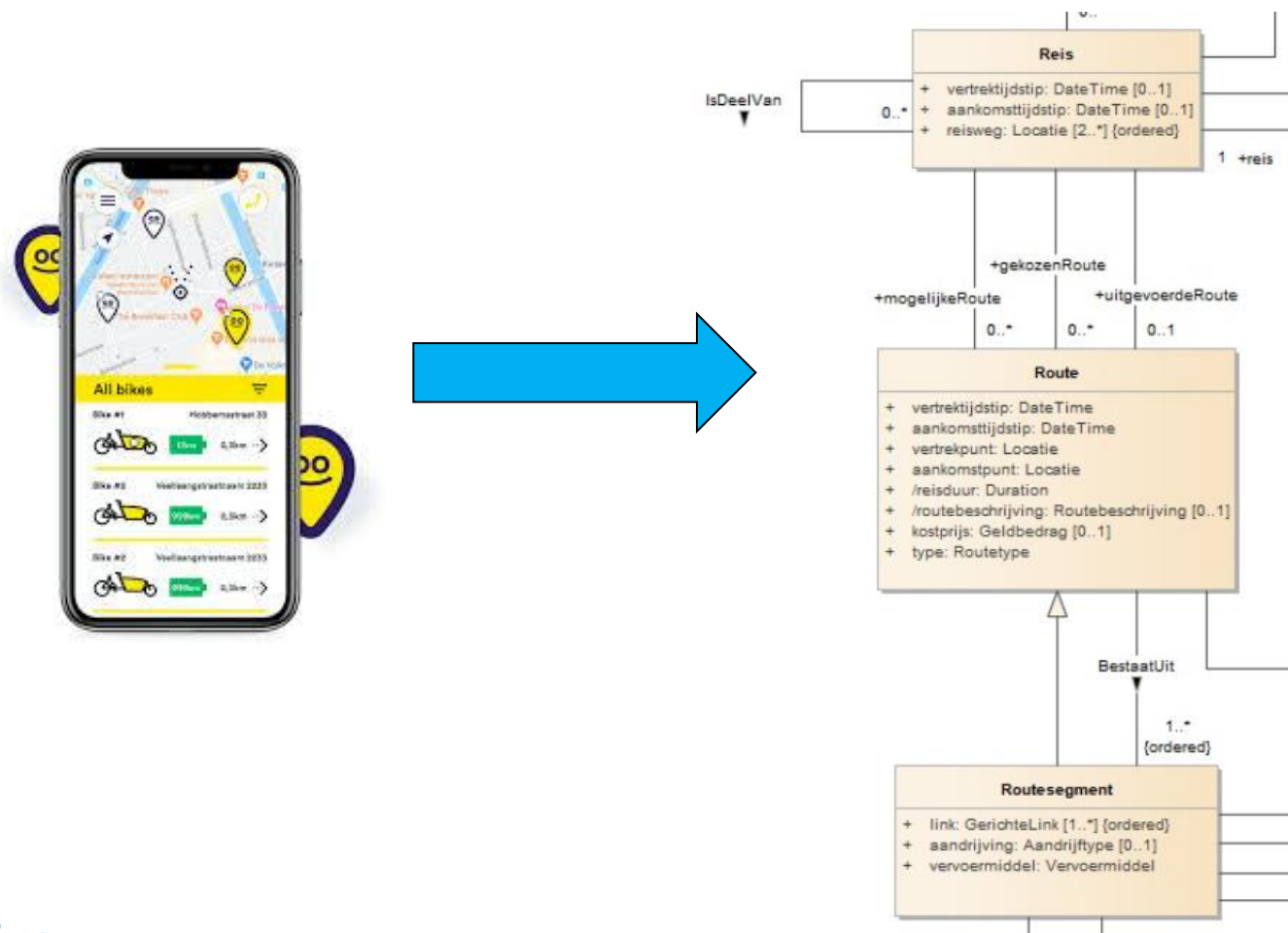
From P&R
to downtown

Fixed or percentage discount
(with ceiling)

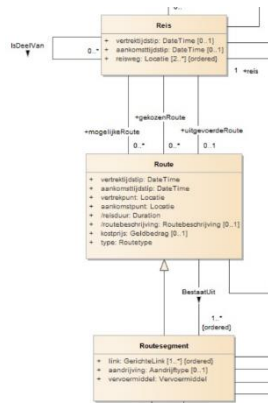


Step 4: Trip validation and assign discount

Providers describe trips according to OSLO-mobility and offer (1/2)



and validate the trip for discount. (2/2)



Snippet

```
{
  "@type": "SubsidiemaatregelAanbod",
  "naam": "Subsidie voor het gebruik van Mobility as a Service (MaaS) diensten",
  "heeftVerantwoordelijke": {
    "@type": "Organisatie",
    "voorkeursnaam": "Gemeente X"
  },
  "heeftCriterium": {
    "@type": "Criterium",
    "naam": "Criterium dat de reis van een reiziger moet aan voldoen zodat deze",
    "isVervuldDoor": {
      "@type": "VereistenGroep",
      "beschrijving": "Groep vereisten waaraan de reis moet aan voldoen.",
      "heeftVereiste": [
        {
          "@type": "CriteriumvereisteVoorMaaSSubsidie",
          "beschrijving": "De reiziger moet de deelfiets genomen hebben",
          "modaliteit": "https://lodi.llabt.imec.be/modi/thesauri/modalit"
        }
      ]
    }
  }
},
"@context": {
```



Open source: managed by both cities as providers

The rule engine is performed at the provider's side.
Based on a trip and subsidy measure the rule engine gives if the trip meets and which subsidy amount can be assigned.

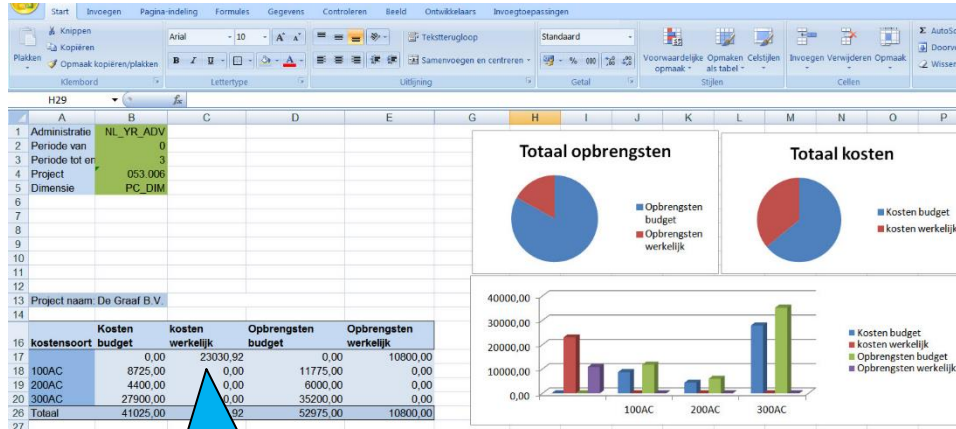
Rule engine

› Command Line Interface (CLI):

```
./rule-engine  
-s exampleSubsidymeasure.jsonld  
-j exampleJourney.jsonld
```

› Next step: validate with Web API and Docker support

Step 5: Report and payment, providers report and get paid



Provider reports number of trips with discount.

Municipality can test to what extent the subsidy measure has worked.



Provider gets paid per trip:

1. Traveller's part e.g. €3,50 (e.g.)
2. Expense allowance e.g. €0,10 (e.g.)

For high amounts the possibility is to work with advance payments.

Added value

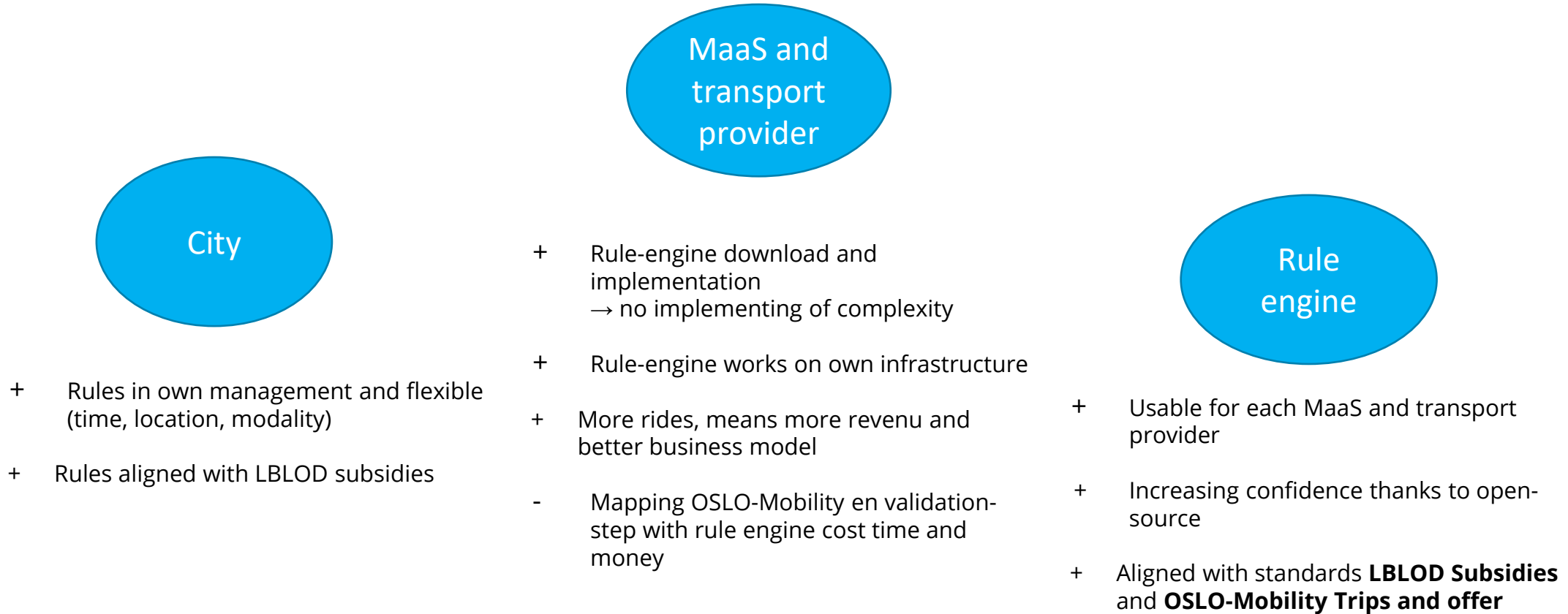
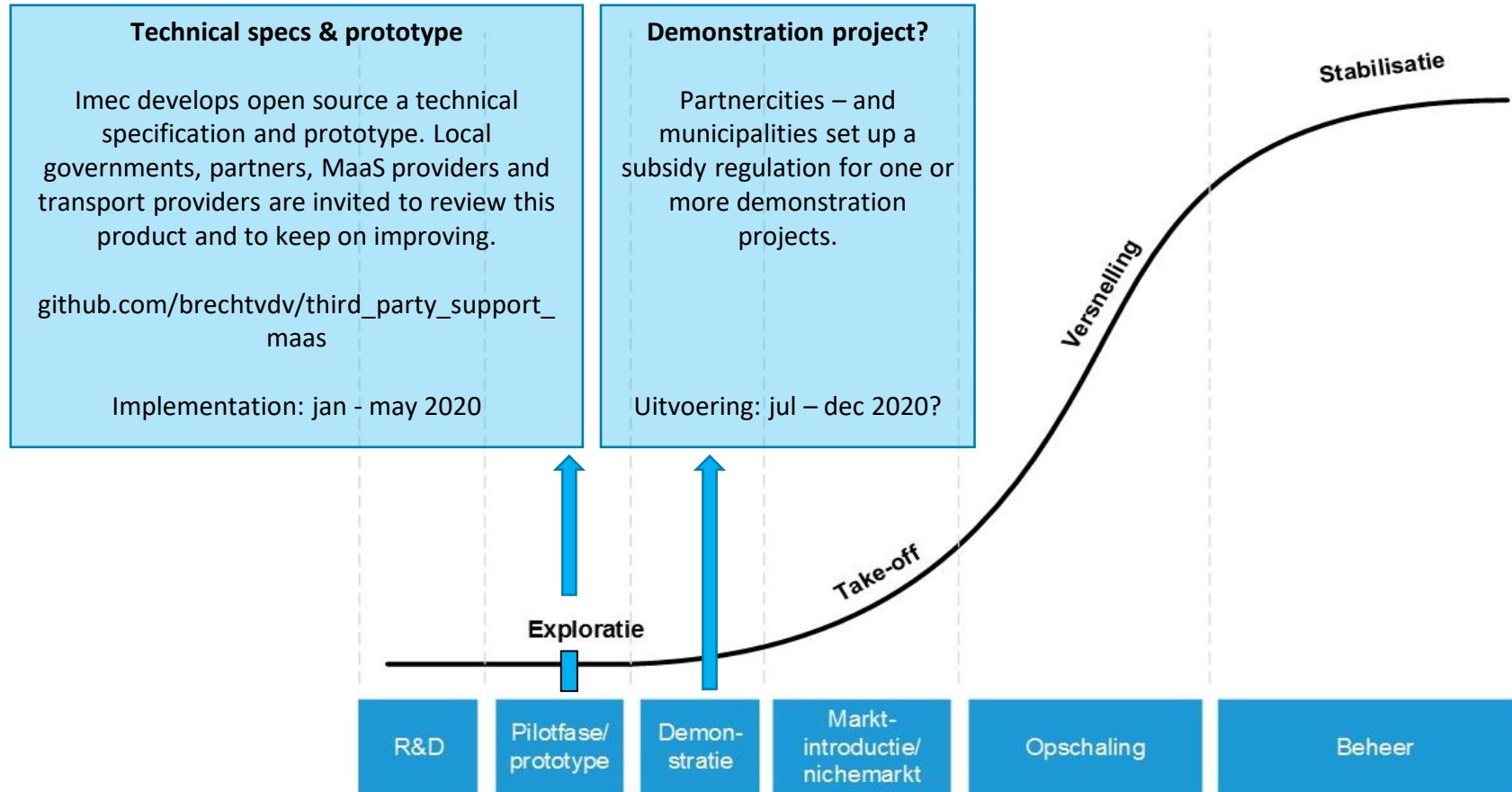


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Implementation within Modi project

Producing technical specifications and prototype



Call to action

Feedback for specification

New issue

https://github.com/brechtvdv/third_party_support_maas

- › Third-party payment system agreement
- › License framework
- › Agency: examples of rules
- › Provider: how to map to OSLO and validate with rule engine

From 15 April 2020 until 30 April 2020

Specific feedback requested from:

- **Mobility providers**
- **MaaS providers**
- **Authorities (local and regional)**

Email: Brecht.VandeVyvere@ugent.be

Q&A



The **New Drive**
Samen België schoner maken



The **New Drive**
Samen België schoner maken

