



Ministry of Infrastructure
and Water Management

How can access to fare data be enabled?

6th Florence Intermodal Forum
"Towards EU-wide Multimodal Ticketing and
Payment Systems"

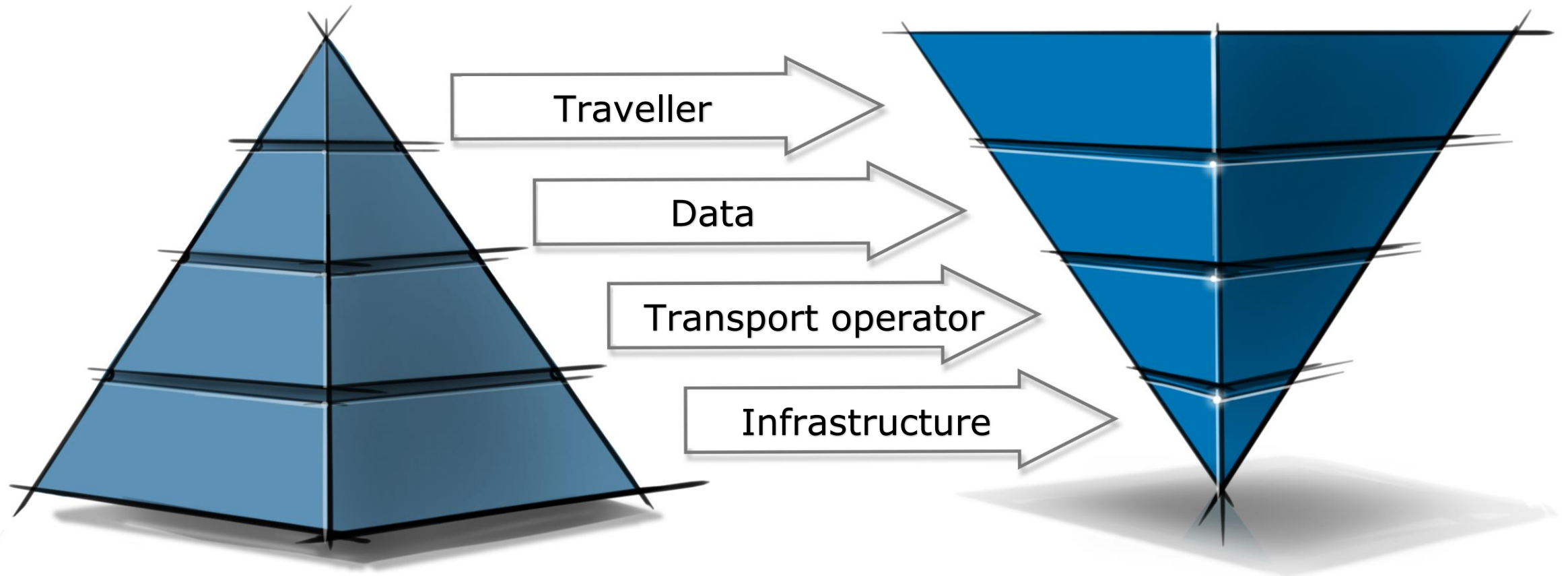
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Program manager MaaS
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13 September 2019

 **MaaS**
Mobility as a Service



Necessary new approach for mobility





Ministry of Infrastructure
and Water Management

Optimising mobility

 **MaaS**
MOBILITY AS A SERVICE

The logo icon consists of a stylized black line representing a path or road that curves and ends in a blue location pin with a white dot in the center.

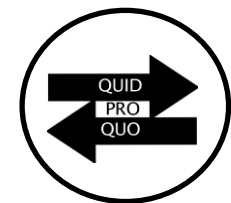
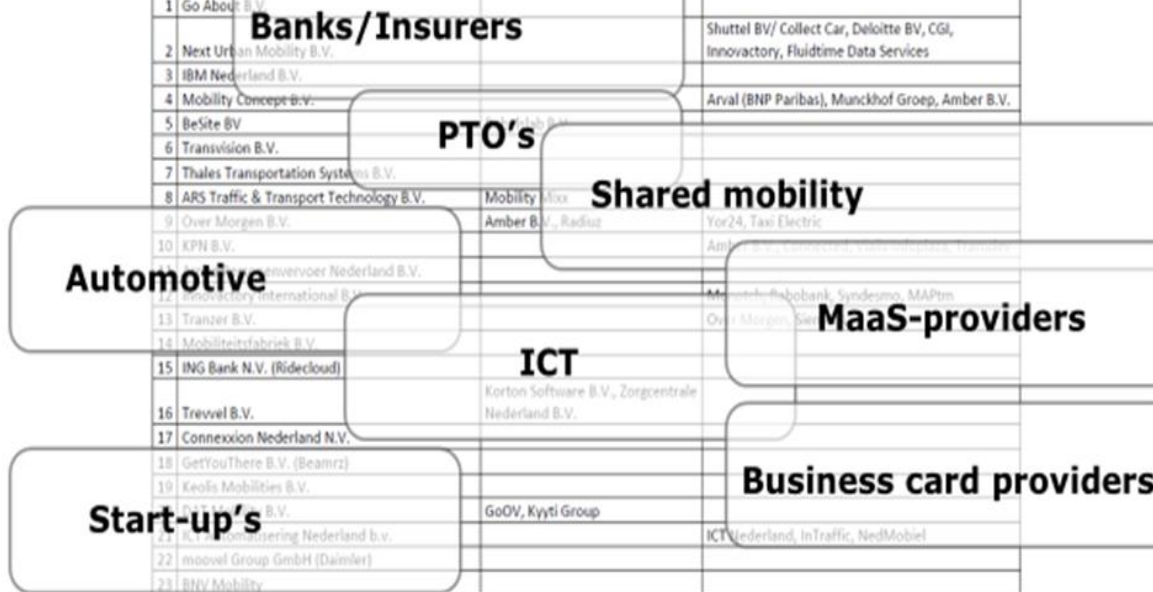


24 MaaS-providers in Framework agreement for MaaS-pilots

For 7 national pilots to be awarded after mini-competitions

hoofdin	consortiumpartners	gemeende onderaannemers
1 Go About B.V.		
2 Next Urban Mobility B.V.		Shuttel BV/ Collect Car, Deloitte BV, CGI, Innovactory, Fluidtime Data Services
3 IBM Nederland B.V.		
4 Mobility Concept B.V.		Arval (BNP Paribas), Munckhof Groep, Amber B.V.
5 BeSite BV		
6 Transvision B.V.		
7 Thales Transportation Systems B.V.		
8 ARS Traffic & Transport Technology B.V.	Mobility Mixx	
9 Over Morgen B.V.	Amber B.V., Radius	Yor24, Taxi Electric
10 KPN B.V.		Amber B.V., Connexxion, Connexxion Transpo
11 Connexxion vervoer Nederland B.V.		
12 Connexxion International B.V.		Mobility, Rabobank, Syndesmo, MAPtm
13 Tranzor B.V.		Over Morgen
14 Mobiliteitsfabriek B.V.		
15 ING Bank N.V. (Ridecloud)		
16 Trevel B.V.	Korton Software B.V., Zorgcentrale Nederland B.V.	
17 Connexion Nederland N.V.		
18 GetYouThere B.V. (Beamrz)		
19 Keolis Mobilities B.V.		
20 PAT Mobility B.V.	GoOV, Kyyti Group	
21 Technocommiserieng Nederland b.v.		ICT Nederland, InTraffic, NedMobiel
22 moovel Group GmbH (Daimler)		
23 BNV Mobility		
24 West Tech Solutions B.V.		

NB: de volgorde van deze lijst is bepaald op basis van het tijdstip van indienen van de inschrijving en niet op basis van de beoordeling





options Booking

Time	Mode	Duration
12:01	Car	26 min. ride-share
12:27	Metro	12 min. metro
12:39	Bicycle	8 min. cycling
12:47	Car	

plan book travel pay



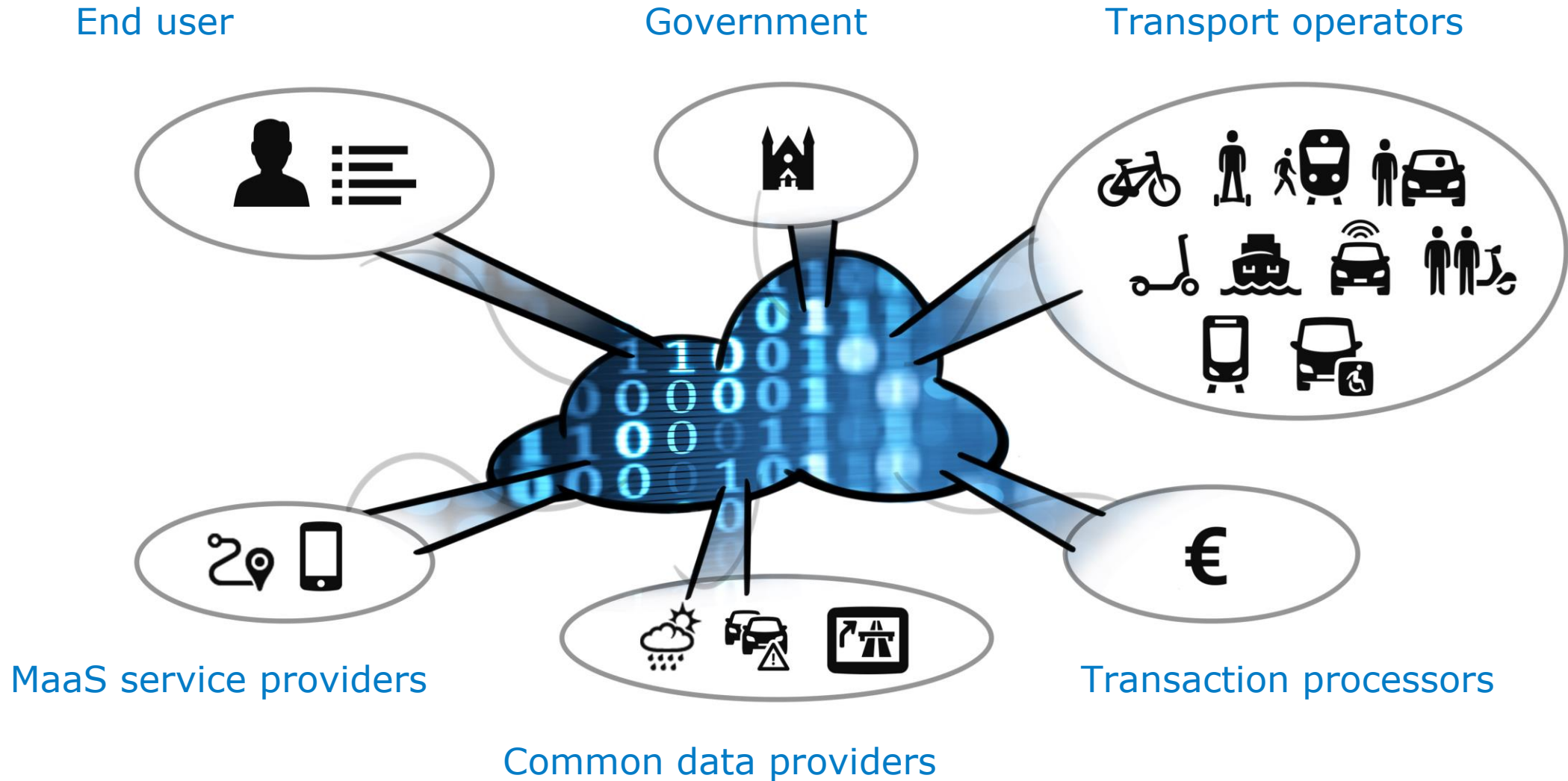


MaaS is a means, not an end

- › IT is not the issue
- › Data-sharing and trust is key (reciprocity)
- › **Schemes** are essential
- › Public-private co-operation to standardise and create necessary schemes such as:
 - TOMP-API
 - International ticketing
 - ID's



API's/standardization results in (efficient) ecosystem





Standardisation is necessary

(success of PPP, need for pragmatism, TOMP-API, international ticketing, ID's)

```
1 openapi: 3.0.0
2 # Added by API Auto Mocking Plugin
3 servers:
4 - description: SwaggerHub API Auto Mocking
5   url: https://virtserver.swaggerhub.com/efel85/GBFS/1.0.0
6 info:
7   description: General Transport Operator API Specification
8   version: "1.0.2"
9   title: General Transport Operator API Specification
10 contact:
11   email: edoardo.felici@ndw.nu
12 license:
13   name: Apache 2.0
14   url: 'http://www.apache.org/licenses/LICENSE-2.0.html'
15
16 tags:
17 - name: general information
18   description: general information about the system
19 - name: asset availability
20   description: general information about asset availability
21 - name: pricing
22   description: general pricing information
23 - name: booking
24   description: general information about the booking process
25
26 GET /bookings/
27
28 POST /bookings/
29
30 GET /bookings/{id}
31
32 POST /bookings/{id}
33
34 LISTING
35 GET /bookings/options
36
37
38 MODELS
39 MODEL system_information
40 MODEL station_information
41 MODEL system_hours
42 MODEL free_asset_status
43 MODEL system_calendar
44 MODEL system_regions
45
46 /information/system_information:
47   get:
48     tags:
49       - general information
50     summary: describes the system
51     description: Describes the system including System operator,
52       contact info, time zone
53
54 responses:
55   200:
56     $ref: '#/components/schemas/system_information'
57   400:
58     description: bad input parameter
59
60 /information/station_information:
61   get:
```

The diagram illustrates the central role of standardisation in a transport system. A central cloud icon is connected by blue arrows to six distinct icons, each representing a key area of standardisation: user profiles, system information, asset availability, pricing, booking processes, and currency (Euro). The background features a Swagger API specification for a 'General Transport Operator API', with several sections highlighted in blue to correspond with the icons: 'ASSET AVAILABILITY', 'PRICING', 'BOOKING', 'LISTING', and 'MODELS'. The API spec includes details like endpoints (e.g., /availability/free, /bookings/), methods (GET, POST), and metadata (description, version, license).



TOMP-API

Based on open GBFS: now applicable for all transport operators and MaaS providers

- > Operator information
- > Registration/privacy
- > Planning
- > Booking
- > Trip execution
- > Payment
- > Support



International adoption of blueprint for API...





Open, open, open (within 3-6 months for BLX/Limburg-pilot)

- › Develop with trust and cooperation in mind:
 - Open source
 - Open specifications
 - Open standards
- › Systems at cost (e.g. transaction router)
 - Start with happy flow (plan-book-travel-pay)
 - Not for profit
 - Joint Research and Development



Pragmatic approach: structure follows strategy

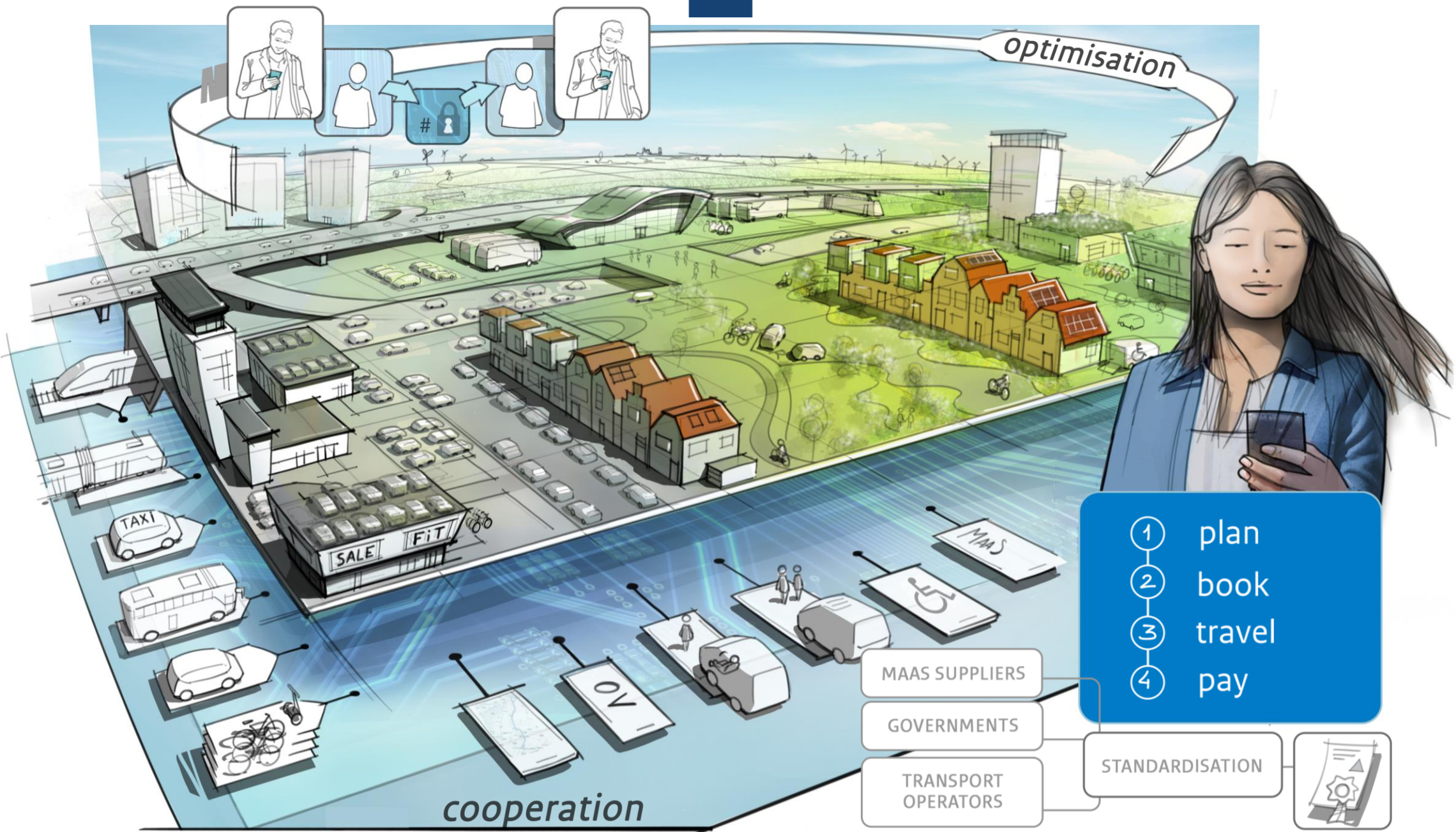
If TOMP-API and international ticketing (largely) adopted by governments and market then an independent authority is needed

- › 'Rules of the Game' regarding roles and responsibilities serving
 - Interoperability
 - Integrity
 - Trust
- › Technology based on common architectural principles
 - ID issuance
 - Message routing via open API's



Future governance (EU-MaaS authority?)

- › (Public) Transport Operators
 - › MaaS Service Provider
 - › End User representative bodies
 - › Government
-
- › language specifications
 - › ID-issuance
 - › messaging router



optimisation

- ① plan
- ② book
- ③ travel
- ④ pay

MAAS SUPPLIERS

GOVERNMENTS

TRANSPORT OPERATORS

STANDARDISATION



cooperation



Discussion



Further information:

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