

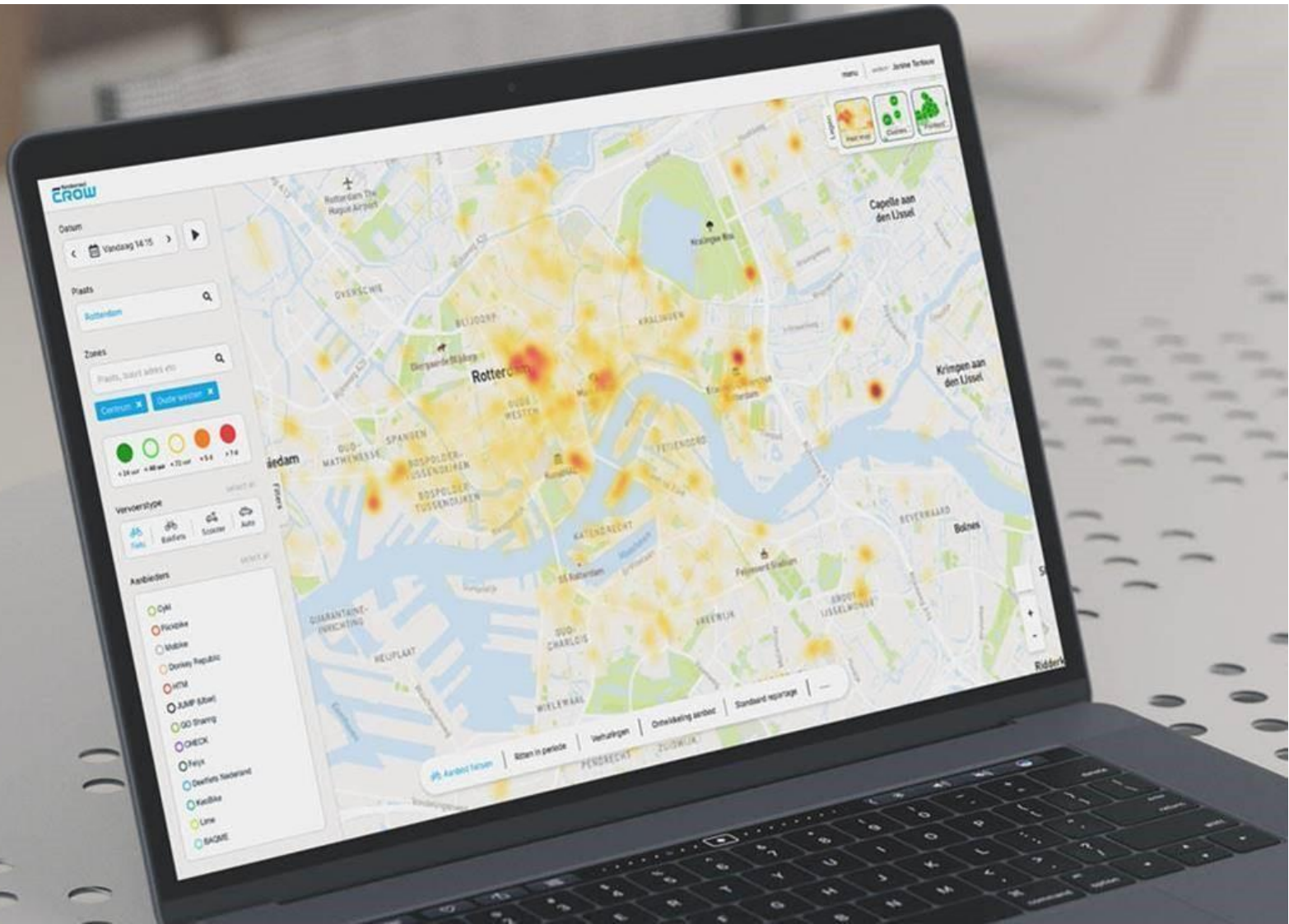
Presentaties

Gebruikersbijeenkomst

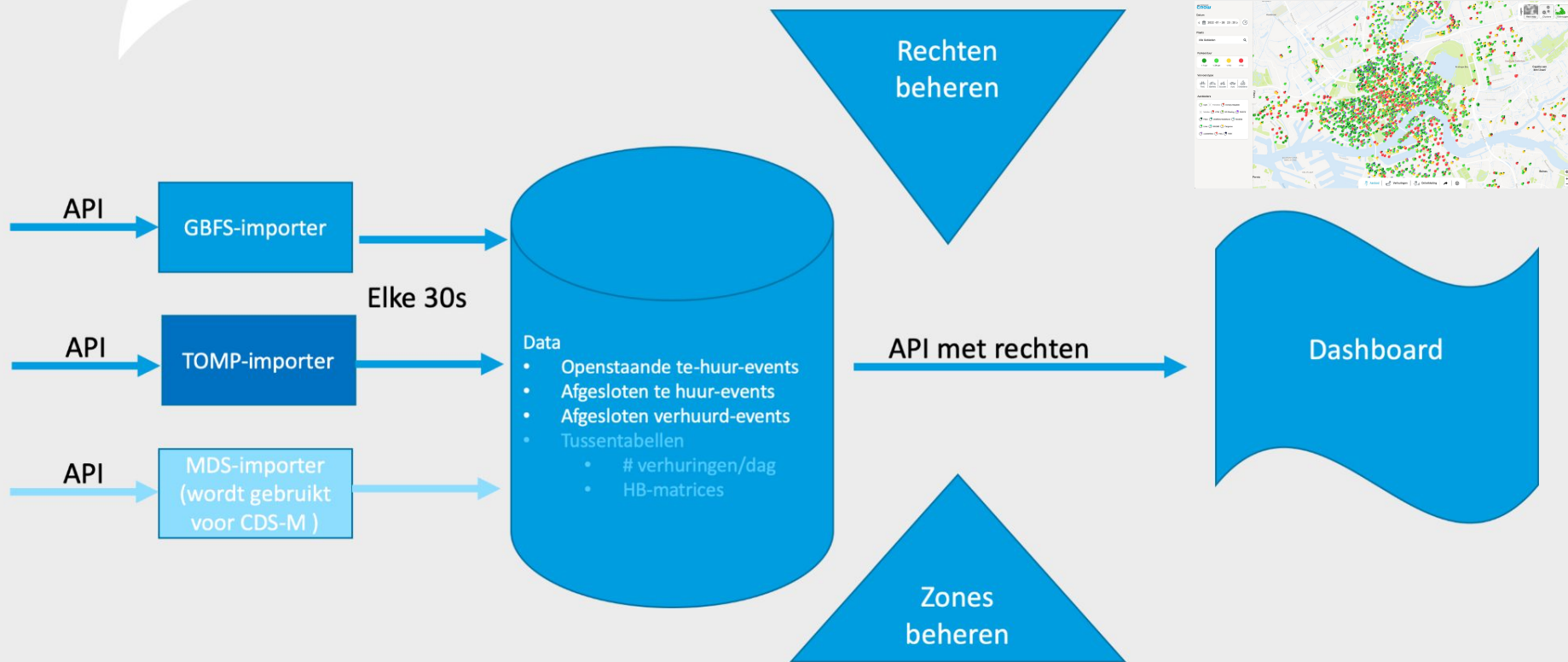
Dashboard Deelmobiliteit

Presentaties van

- Sven Boor
- Guusje van de Vossen



Hoe komt de data in het
dashboard?



Deelauto's

Deelauto's in het dashboard

- Pilot gemeenten (Delft, Den Haag, Rotterdam, Groningen, Amersfoort)
- Technisch klaar voor
 - Standaard vervoerstype per aanbieder. (TIER is enige aanbieder die technisch klaar is voor meerdere modaliteiten)
 - Technisch ook mogelijk om onderscheid te maken tussen elektrische en niet elektrische voertuigen en snor- en bromfietsen.
- Toegang verkrijgen tot data verloopt stroperig:
 - Gesprekken gehad met enkele aanbieders.
 - Terughoudendheid vanwege ontbreken urgentie en onduidelijkheid rondom CDS-M.
 - Vergunningseis in voortrekker gemeente kan domino effect veroorzaken.

Vervoerstype



Fiets



Bakfiets



Scooter



Auto



Onbekend

Toekomst

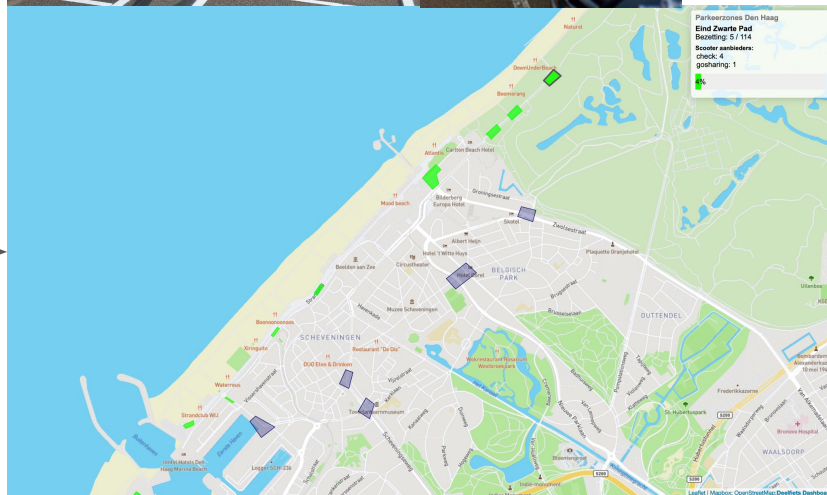
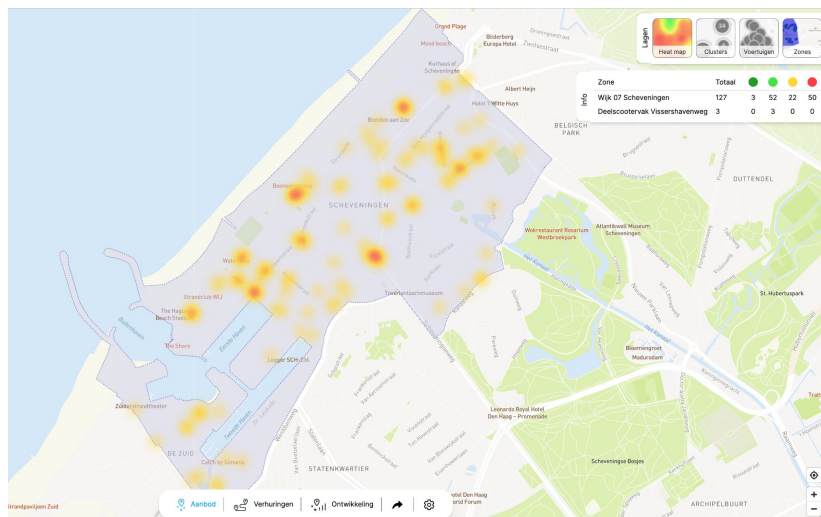


Nieuwe visualisaties

- Bijvoorbeeld: geaggregeerde herkomst / bestemmingen kaart.



Van monitoren naar sturen

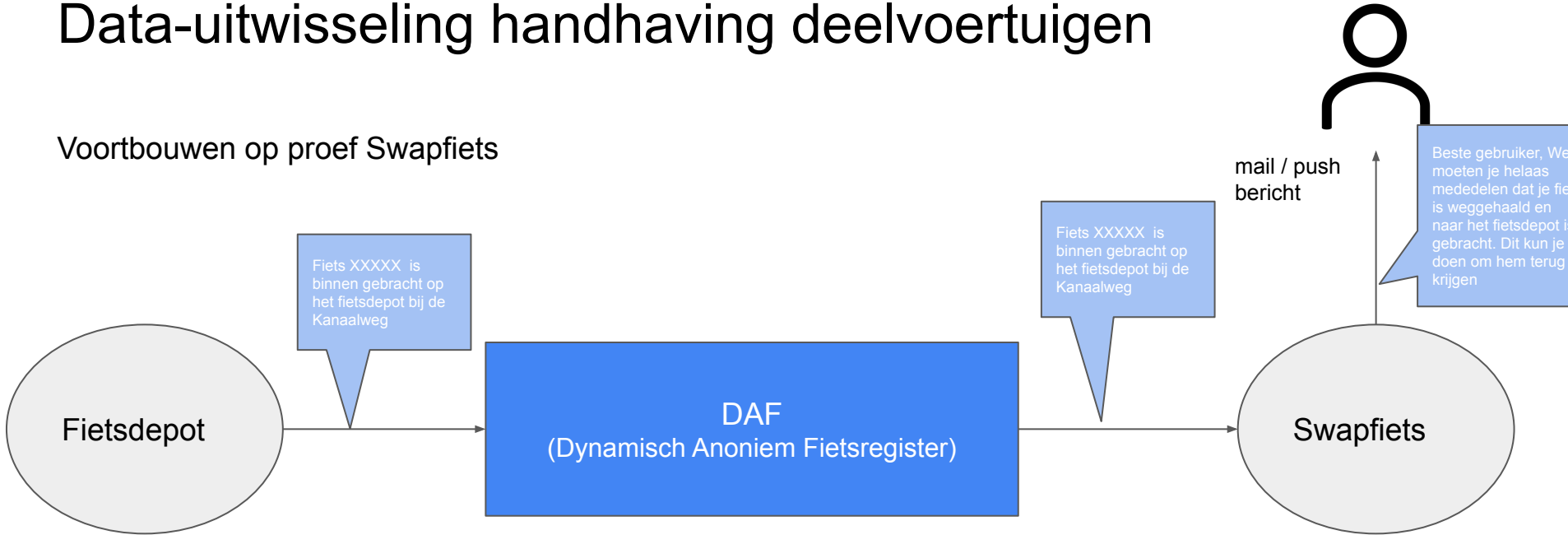


<https://deelfietsdashboard.nl/public/den-haag/>

experiment zomer 2021 - Den Haag

Data-uitwisseling handhaving deelvoertuigen

Voortbouwen op proef Swapfiets



Details huidige werking

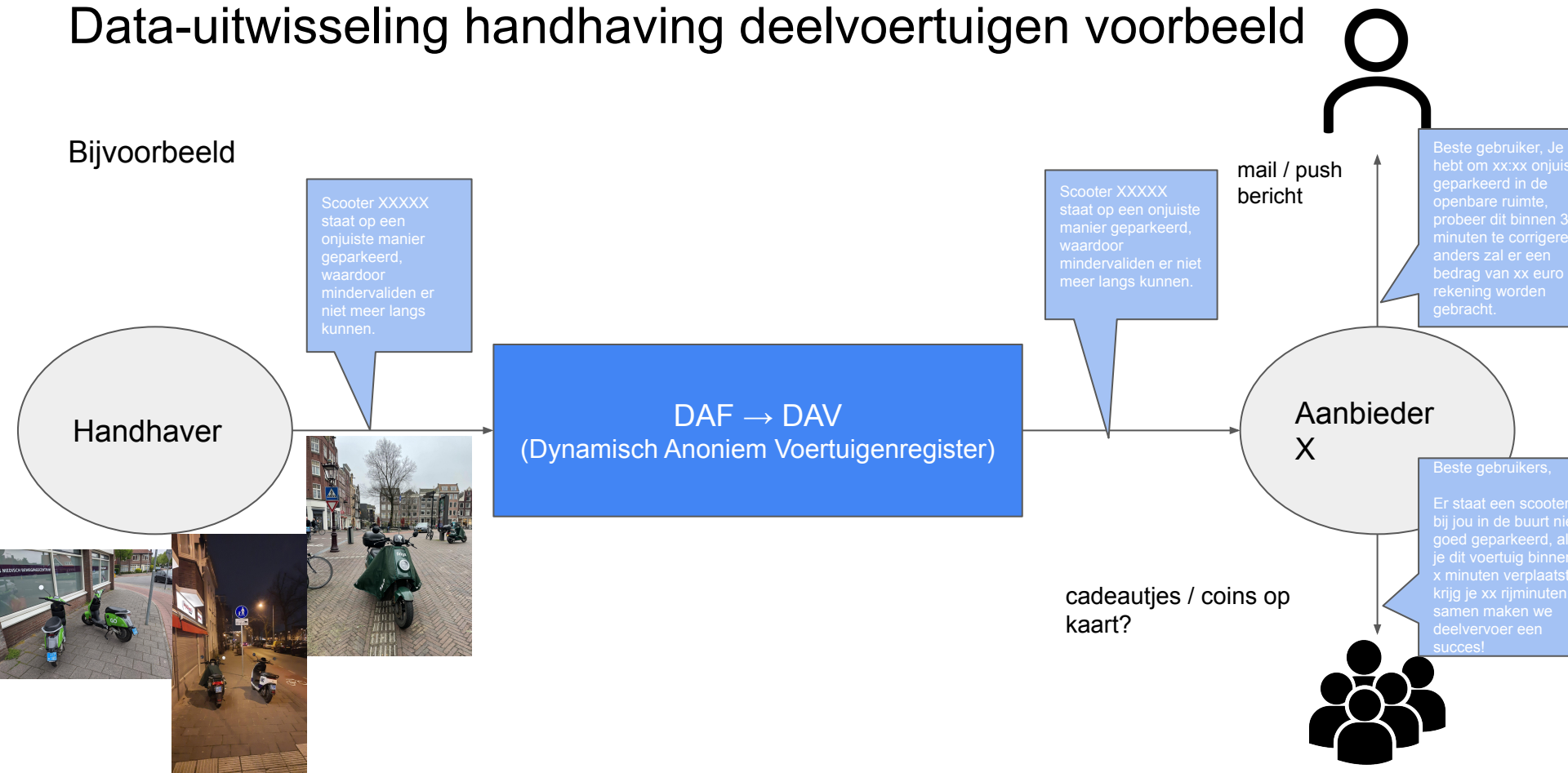
https://www.youtube.com/watch?v=xl0Sfj32urg&ab_channel=Fietsberaad

Mooie eerste stap, maar

- Fiets / voertuig is al afgevoerd
- Kunnen we niet een stap eerder informeren?
 - Wanneer handhaver iets op straat constateert.
- Doel: Minder overlast, overlast sneller verhelpen en minder voertuigen weghalen.
 - gemeente blij → minder kosten
 - bezitter / gebruiker voertuig blij → fout kunnen corrigeren, geen boete hoeven betalen / naar afgelegen industrieterrein moeten om voertuig op te halen.

Data-uitwisseling handhaving deelvoertuigen voorbeeld

Bijvoorbeeld



Verder nadenken over uitwerking

- Vorige slide was hoe het mogelijk zou kunnen werken.
 - Eerst moet het een en ander onderzocht worden.
 - Hoe kunnen we data van de handhavers bij het DAF krijgen.
 - gesprek met Sigmax
 - Wat willen gemeenten precies en wat zien aanbieders
- Stapje voor stapje

Feedback of suggesties?

Mail info@deelfietsdashboard.nl (nog wel, wordt aan gewerkt 😊)

City Data Standard – Mobility

why, how, what

A standard European framework
around data sharing



27-1-2022



Today

- Hoe is de City Data Standaard – Mobiliteit ontstaan?
- Waar bestaat CDS-M uit?
 - Processflow
 - Playbook
 - Use case store
- Samenwerking met CROW, nationaal beleid deelmobiliteit en DEMS project Min I&W
- Tijd voor vragen

MaaS Basic API's:
Standards and
APIs that are
(largely) ready

Private law
domain

Public law
domain

Government
National Local

Mobilabs

Learning from data MaaS pilots
LO API + datastrring →

Deployment of assets in cities
← CDS-M standard

MaaS and Laas
Counters, physically,
network and
up to date

← TOMP API →

MaaS
Service
Providers

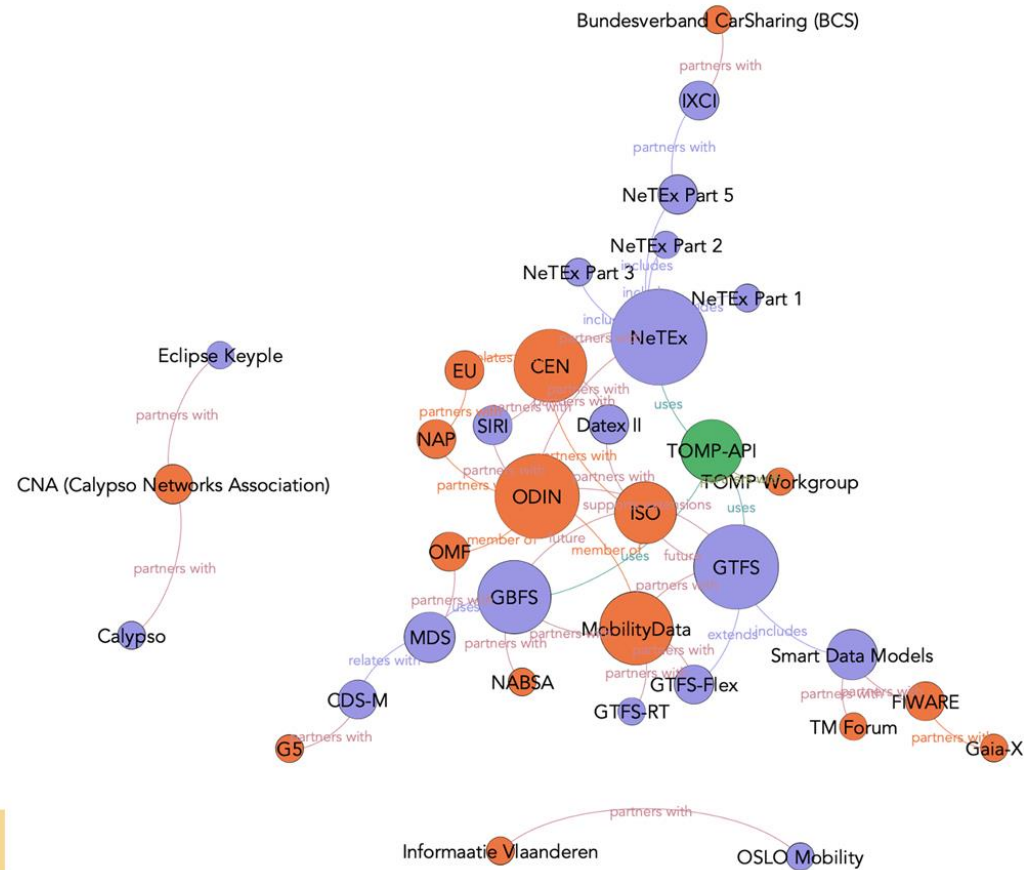
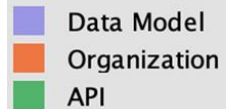
Shared
Mobility
Operators

Multimodal travels MaaS

Existing standards



MaaS Data Model Ecosystem



Existing standards

**No single specification fits
all use cases**

CDS-M our purpose

City Data Standard - Mobility

The aim is to work towards a standard European framework around data sharing supported by mobility operators and public authorities.

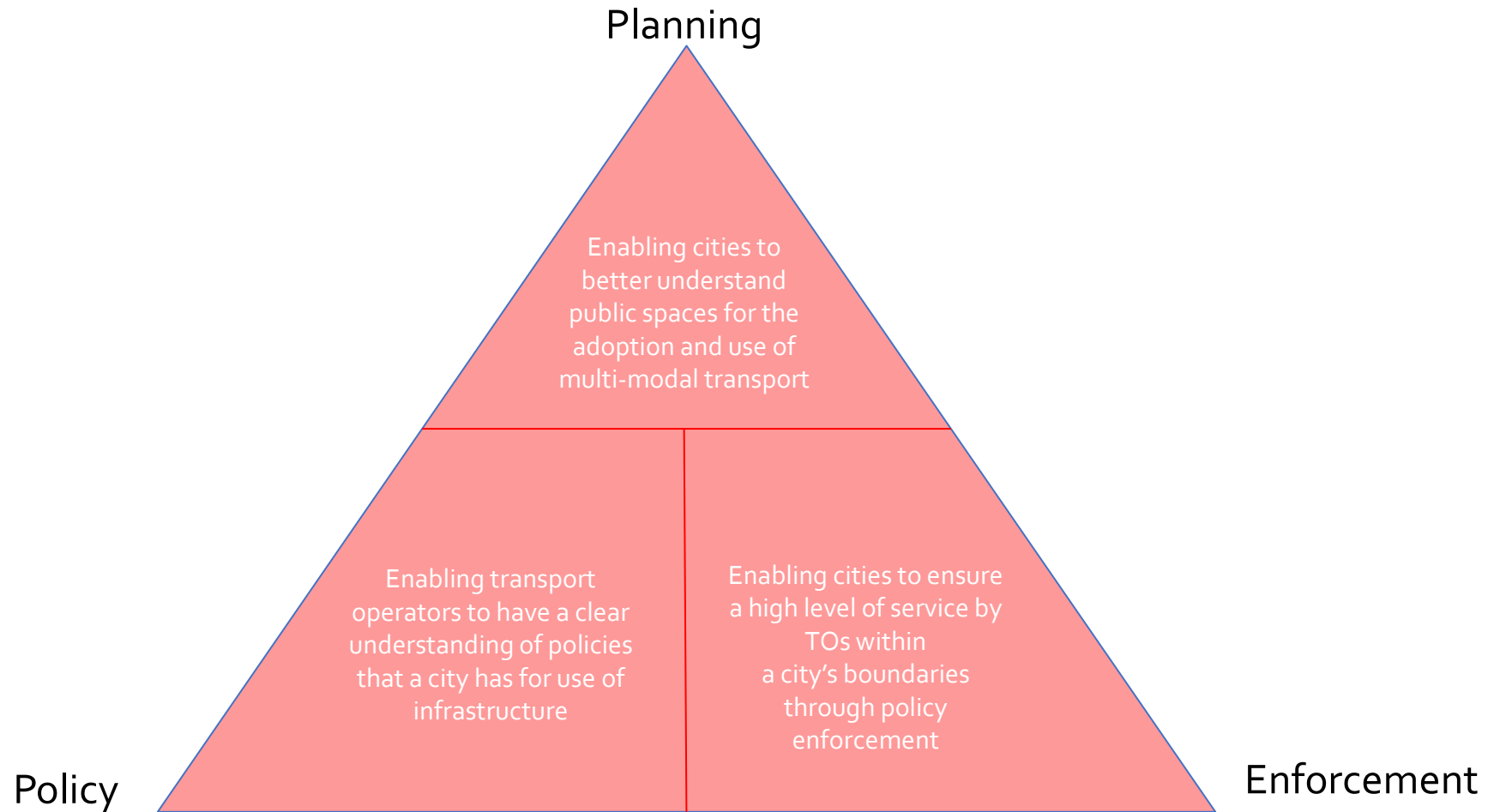
A framework that strengthens cooperation among actors and enables scale up of new mobility solutions in a sustainable way.



Why?

- A single CDS-M will clarify which data may be processed for which purpose/use case in terms of privacy;
- and how data should be processed, stored and exchanged safely.
- The CDS-M framework is a standard way of handling data, resulting in delineated data requirements per use case. It also clarifies which data can be used for which policy purpose.
- By linking the data requirements to the use cases, it is possible to compare data from different cities with the same use cases and learn from each other.
- Because the CDS-M framework requires policy-makers to think about which metrics achieve which use cases and policy goals (purpose reasoning), research into the effect of shared mobility on the city is done in a focused way.

Why data sharing?



Why data sharing?

- **Policy**

- Clustering – sidewalk management
- Dynamic vehicle caps/ distribution requirements
- Car reduction analysis and transit impact analysis (modal split)
- Parking pressure analysis
- Event management (dynamic policy)

- **Planning**

- Urban planning on basis of Demand/Usage
- Modality specific route development
- Dedicated pick-up/drop-off/charging/parking zones
- Parking space performance

- **Enforcement and contract management**

- Vehicle caps and permit area compliance



Enforcement of what?

Monitoring the operator's
performance and compliance,
not the behaviour of citizens

CDS-M is a requirement for the next permit round.

A marriage of convenience



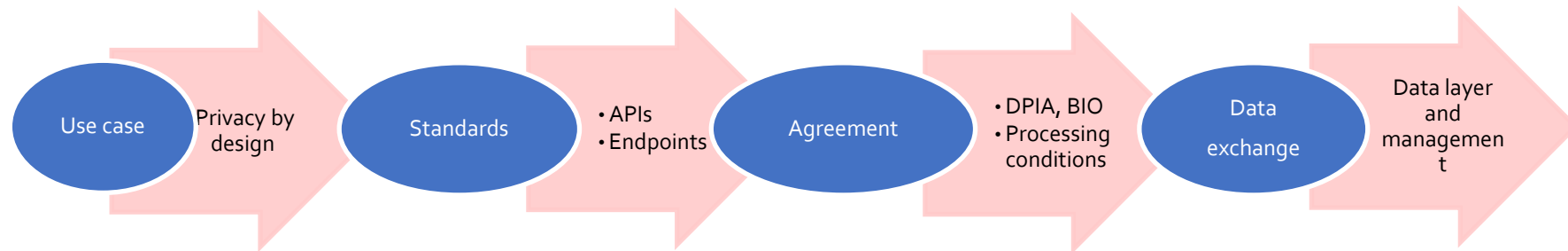
- Requires city infrastructure
- Collects data
- Provides mobility services
- Requires insights

- Provides city infrastructure
- Requires data
- Requires mobility services
- Creates insights

- Share data and insights
- Create better infrastructure
- Ensure high level services
- Improve policy

Can be hosted by a 3rd party processor

Proces flow CDS-M



Design CDS-M

The Standards

There are a range of APIs on the market, all of which can send different types of data. The selection of standards consist of a selection of APIs and Endpoints that are relevant to mobility and comply with European requirements. The standards are linked to suitable use cases.

The Agreement

The agreement' consists of the principles and arrangements governing cooperation and measures between parties. Part of this process consists of privacy and security tests. Hereby CDS-M supports the secure processing of data from mobility users.

The Standards

Location assets in
non-booked state



— Trip start location
aggregated per hour
and location



— Number of
unique users
aggregated per
hour

— Trip duration
and distance
aggregated per
hour

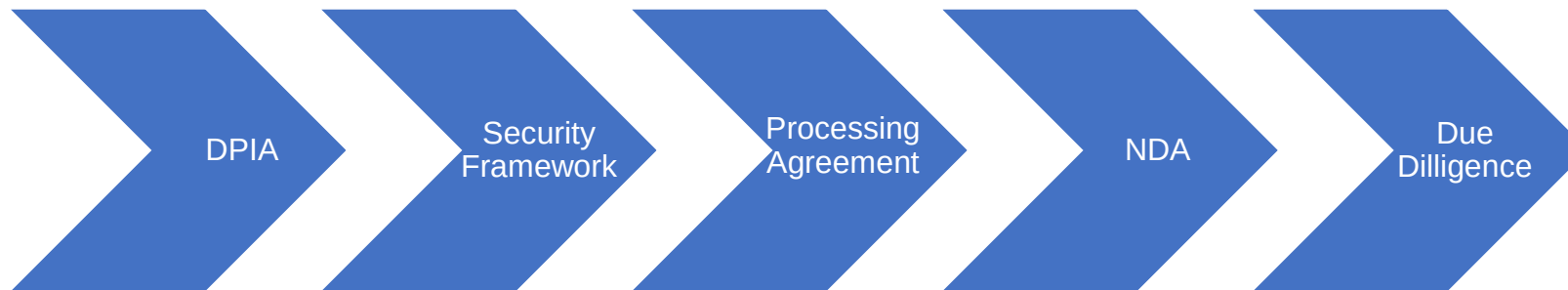
— Trip end location
aggregated per hour
and location



- TOMP-API
- GBFS
- MDS provider – trips and vehicles endpoint
- MDS metrics
- SIRI (NeTEx)
- GTFS
- DATEX II

The Agreements

- The Agreement arose from European requirements and legislation.
- It describes documenting steps that must be undergone in order to achieve a **high quality and secure exchange of data**
- The Agreement consists of a DPIA template, a Security Framework consisting of a Baseline Information Security (BIO) test template and minimum security measures, Processing Agreement, Non Disclosure Agreement and a Due Dilligence (comparative test) with respect to internal operations of mobility providers.



Why Privacy and Security by design?

- Researchers at MIT20 recently analyzed a pseudonymised dataset consisting of 15 months of spatial-temporal mobility coordinates of 1,5 million people on a territory within a radius of 100 km. They showed that 95% of the population could be singled-out with four location points, and that just two points were enough to single-out more than 50% of the data subjects (one of such points is known, being very likely “home” or “office”) with very limited space for privacy protection, even if the individuals’ identities were pseudonymised by replacing their true attributes [...] with other labels.



AUTORITEIT
PERSOONSGEGEVENS

Home

News

Publications ▾

The Dutch DPA issues recommendations for smart cities

News message / 30 July 2021

Category:

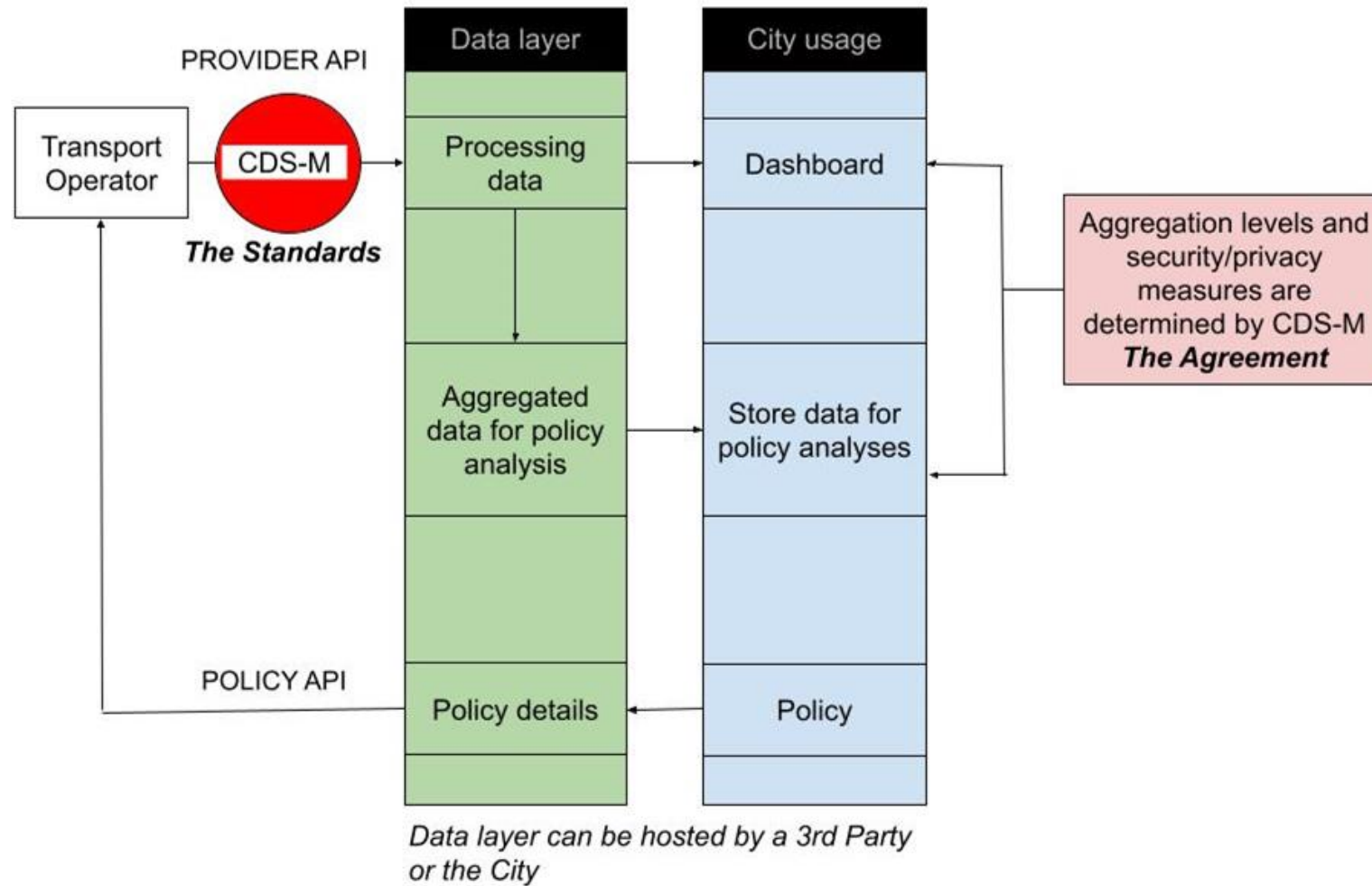
[Internet en telecom](#), [Gemeenten](#)

Dutch DPA fines municipality for Wi-Fi tracking

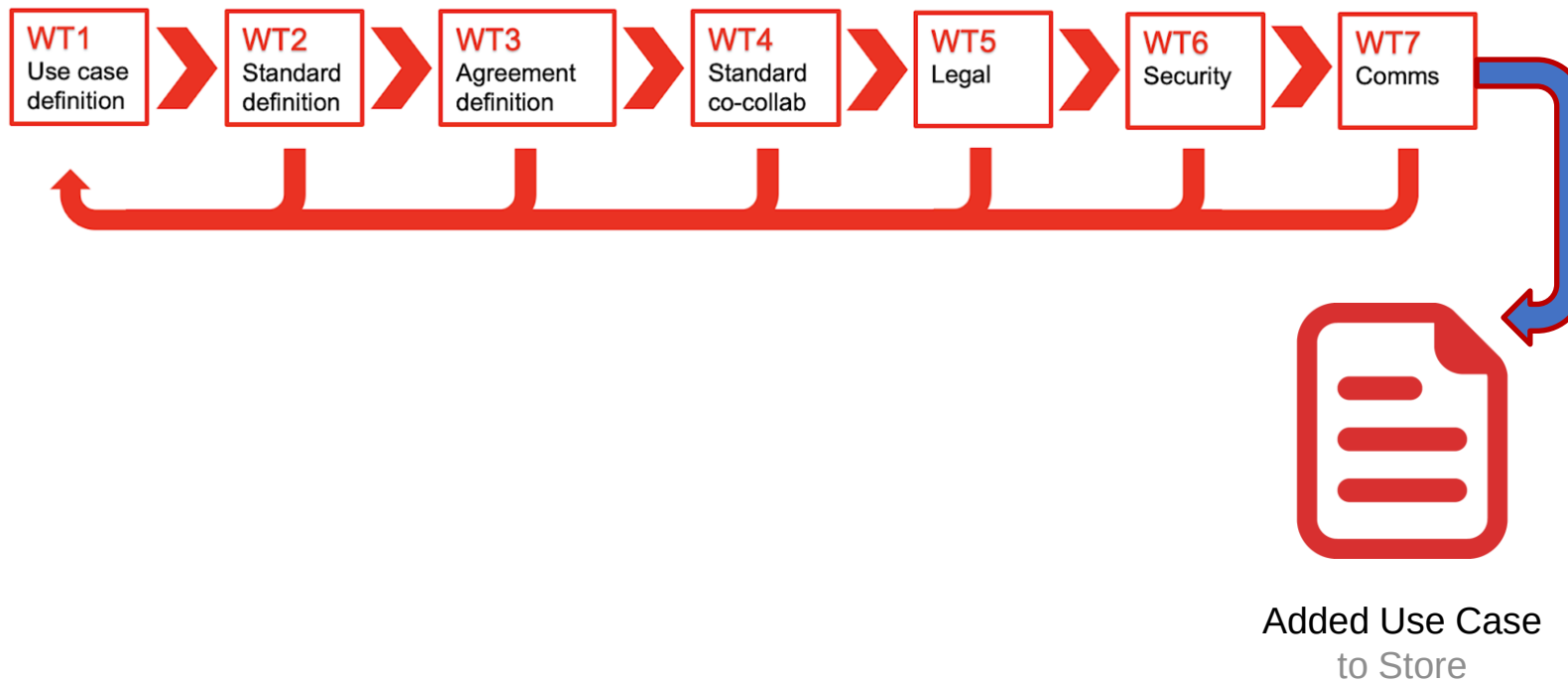
News message / 29 April 2021

The Dutch Data Protection Authority (DPA) has fined the municipality of Enschede €600,000 for using Wi-Fi tracking in the city centre in a way that is prohibited. The Wi-Fi tracking made it possible to track shoppers and people who live or work in the city centre.

Dataflow



Use case store

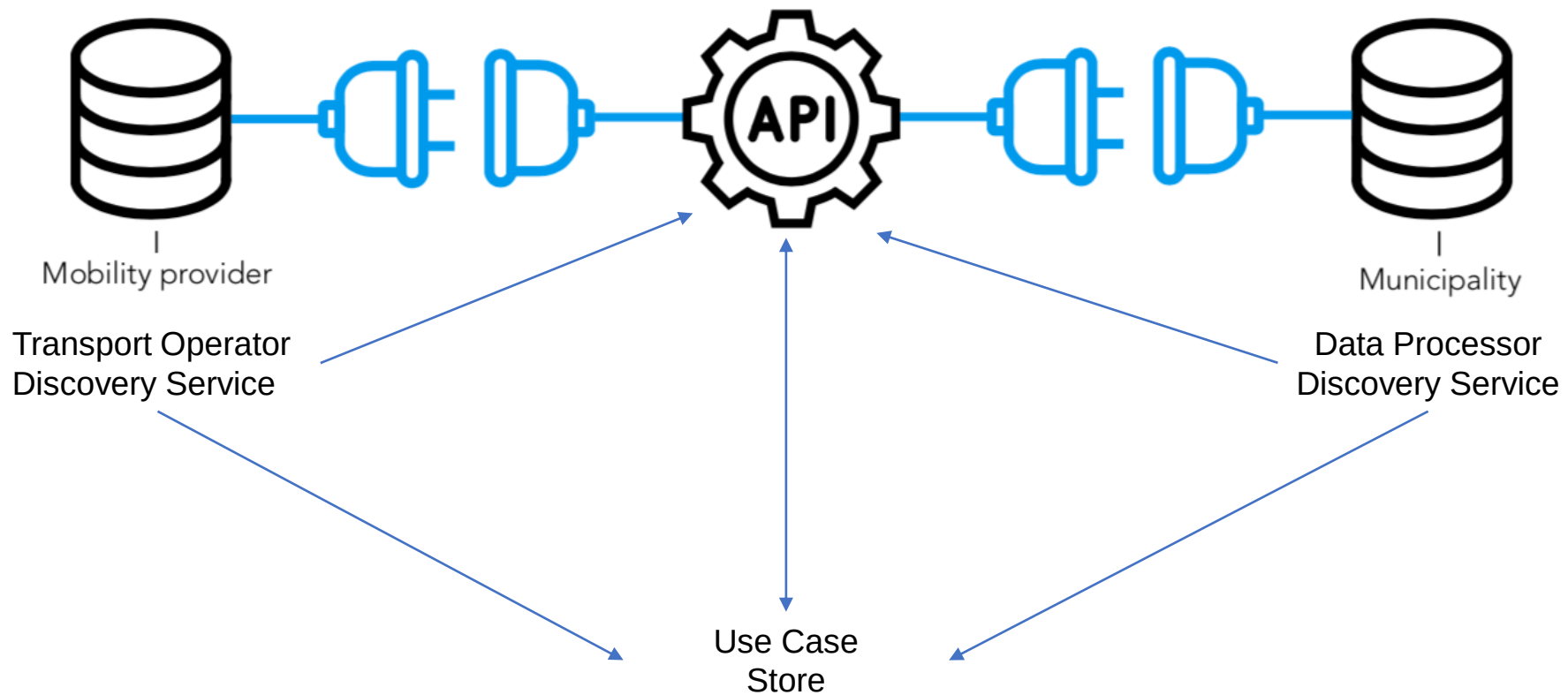


Use case store

Vehicle Caps DETAILS Determine total number of devices per operator in the right of way. APIS Provider GBFS API PARTS Time: Historic CITIES Louisville Los Angeles Washingt	Distribution Requirements DETAILS Ensure devices are distributed according to equity requirements. APIS Provider API PARTS Status Changes CITIES Louisville Santa Monica Los Ang	Daily Permit Fees DETAILS Calculate fees per scooter deployed/ridden per day. APIS Provider GBFS API PARTS Time: Historic CITIES Louisville Portland Miami Bogo	Restricted Area Rides DETAILS Find locations where devices are operating or passing through restricted areas. APIS Provider API PARTS Location: Trip Lines Trips CITIES Louisville Los Angeles Washingt	Top Speed Calculations DETAILS Determine the average speed of a trip and ensure it meets requirements of top speed and slow area requirements. APIS Provider API PARTS Trips Location: Start/End Locati CITIES Louisville Portland Miami Miam
Injury Investigation DETAILS Investigate injuries and collisions with other objects and cars to determine roadway accident causes. APIS Provider API PARTS Trips Location: Start/End Locati CITIES Louisville Washington DC Miami	Infrastructure Planning DETAILS Determine where to place new bike/scooter lanes and drop zones based on usage and demand, start and end points, and trips taken. APIS Provider API PARTS Trips Location: Start/End Locati CITIES Louisville Santa Monica Los Ang	City Council Reports DETAILS Use data to communicate the value, successes, and issues of a mobility policy and allow guidance on safe operations and approval. APIS Provider API PARTS Location: Start/End Location: Trip CITIES Louisville Los Angeles San Franc	Curb Management DETAILS Compare to other curb users and change policy to make better use and remove conflicts APIS Provider Policy Agency API PARTS Time: Real Time Location: Start/E CITIES Louisville Los Angeles Santa Mo	Sidewalk Management DETAILS Ensure devices are not ending or riding on sidewalks and use data to validate. Validate resident reports. APIS Provider GBFS API PARTS Location: Start/End Time: Historic CITIES Louisville Los Angeles Miami IV

- Extended with other modalities, specifications (APIs and Endpoints), agreements and privacy – and security considerations.

Use case store



Example use case store

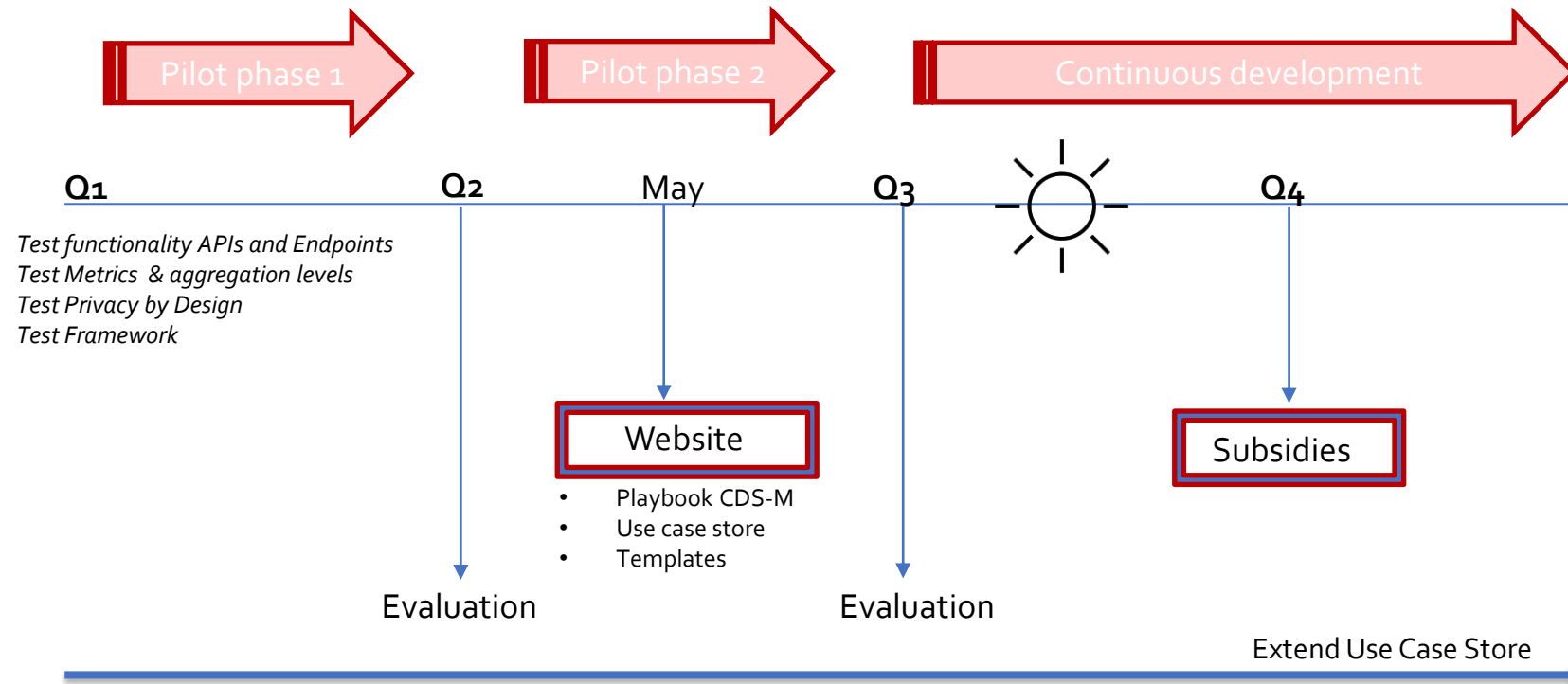
Use Case Template

Use case identifier (Gemeente and ID #)		
Item	Description	Notes
As a...		
I would like...		
In order to...		
The definition of done is...		
The benefits to a City are...	1. <i>Benefit 1</i> 2. <i>Benefit 2</i> 3. <i>Benefit 3</i>	
The benefits to a TO are...	1. <i>Benefit 1</i> 2. <i>Benefit 2</i> 3. <i>Benefit 3</i>	

- AirTable
- Discovery API

```
1 {
2   "id": "POL-UC-001-1", // unique identifier of use case definition (WT1)
3   "story": { // WT 1
4     "asA": "string",
5     "iWouldLikeTo": "string",
6     "inOrderTo": "string"
7   },
8   "benefits": [ // WT 1
9     { "to": "cities",
10      "items": [
11        "string",
12        "string",
13        "string"
14      ]
15    },
16   ],
17   "problemsSolved": [ // WT 1
18     { "to": "cities",
19      "items": [
20        "string",
21        "string",
22        "string"
23      ]
24    },
25   ],
26   "deliveryStandards": [ // WT 2 & 4 => deliveryStandards renamed to requestedStandards
27     {
28       "standard": "GBFS",
29       "minVersion": "2.0",
30       "maxVersion": "2.2",
31       "endpointModifications": [{}], // TO D0, look at https://github.com/openmobilityfoundation/mobility-data-specification/issues/608#issuecomment-889167578
32     },
33     {
34       "standard": "GBFS",
35       "minVersion": "2.0",
36       "maxVersion": "2.2",
37       "endpointModifications": [{}], // TO D0, look at https://github.com/openmobilityfoundation/mobility-data-specification/issues/608#issuecomment-889167578
38     }
39   ],
40   "endpoints": [
41     {
42       "standard": "GBFS",
43       "minVersion": "2.0",
44       "maxVersion": "2.2",
45       "endpointModifications": [{}], // TO D0, look at https://github.com/openmobilityfoundation/mobility-data-specification/issues/608#issuecomment-889167578
46     },
47     {
48       "standard": "GBFS",
49       "minVersion": "2.0",
50       "maxVersion": "2.2",
51       "endpointModifications": [{}], // TO D0, look at https://github.com/openmobilityfoundation/mobility-data-specification/issues/608#issuecomment-889167578
52     }
53   ]
54 }
```

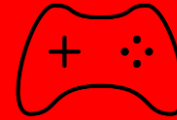
Roadmap CDS-M



Outlook CDS-M

Website with process flow, playbook CDS-M, and use case store

Click and play



We start small, focused on:

Shared mobility

Pilots in the G-5

Dashboarding Vianova & CROW

Pilots

Vision

Goals

Questions

Metrics

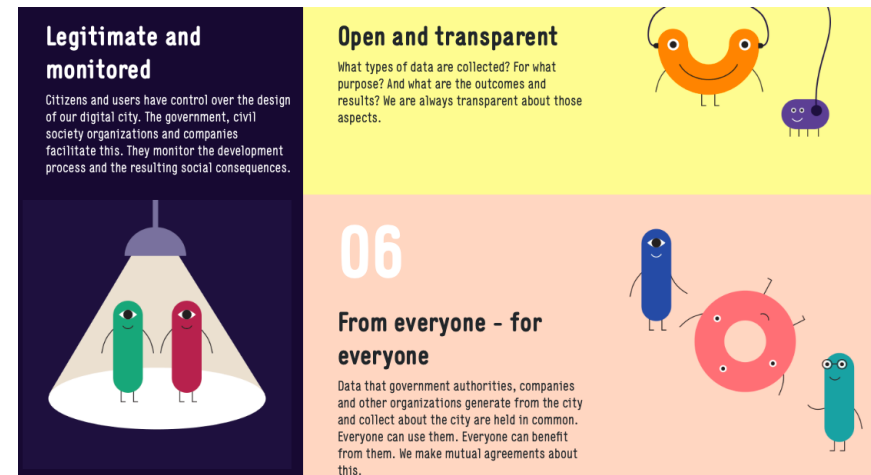
- Cities with a high quality of life and an accessible, sustainable mobility system ↓
- Give shared mobility the right place and role in the mobility system ↓
- How do we organise shared mobility so that it fits in with our vision? ↓
 - Vehicle Cap
 - Service area, parking zones, hubs
 - Usage / Modal split
- Device rotation, clustering, origin-destination matrix, duration and distance trips, number of assets, infringements ←

Learning objectives

- Learn how to work with a **dashboard** for data driven policy analysis and development
- Learn how to bring shared mobility to its highest potential
- Learn how to work with **the CDS-M framework**
- Learn what value we can give back to the operators
- Learn how to communicate findings and publish shared mobility data as open data

'data from everybody for everybody' – Manifest TADA

<https://tada.city/en/home-en/>



Goals pilot phase with Use Cases

- ❑ Experimenting with the use of CDS-M in terms of:
 - (parts of) the existing API's (GBFS v1, MDS Provider)
 - The agreements (DPIA, NDA, etc.)

- ❑ Experimenting with mobility platform (Vianova/CROW) to determine
 - How shared mobility moves through the city;
 - What the service area should be;
 - What the vehicle cap should be (dynamic/static);
 - Where to create parking zones;
 - And where to create hubs;
 - **Modal shift.**

- ❑ Gain insight in the impact of data sharing for all involved parties
 - Get to know the benefits and risks of standardizing shared mobility data.
 - Get feedback on the approach.

Dashboarding

Our objective is to make data sharing easier

First steps towards making dashboarding easier:

- Unify data requirements for research, cities and 3rd party processors
- Unify metrics and aggregation levels
- Unify data sharing contract agreements

First in the Netherlands, end of 2022 focused on Europe



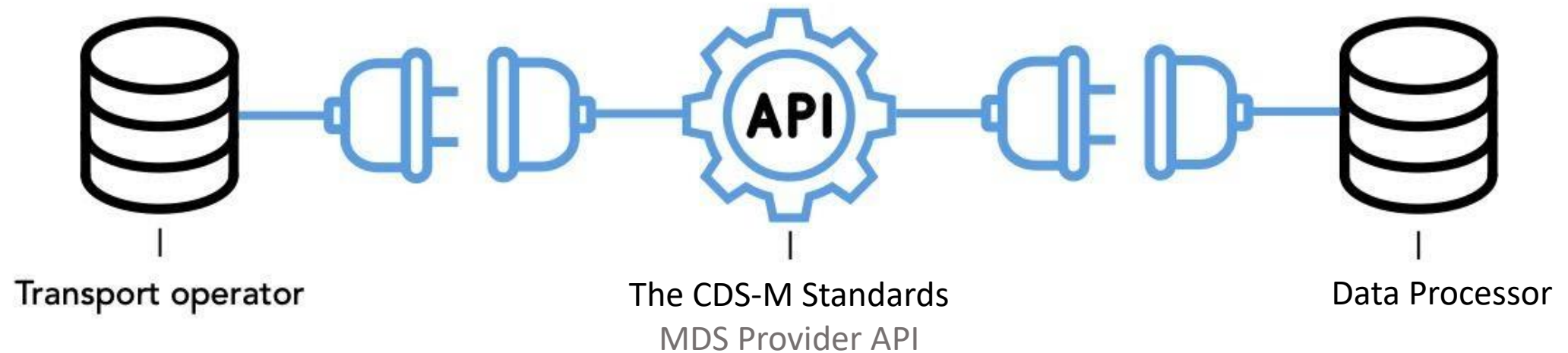
Cities and the CROW shared mobility dashboard unify data requirements on the basis of use cases

- Preferred MDS Provider API with Vehicles and Trips Endpoint
- Optional TOMP/GBFS with static ID

<https://docs.crow.nl/deelfietsdashboard/hr-dataspec/>

Dashboarding

Implement once, deploy often



Collaborating in this pilot phase



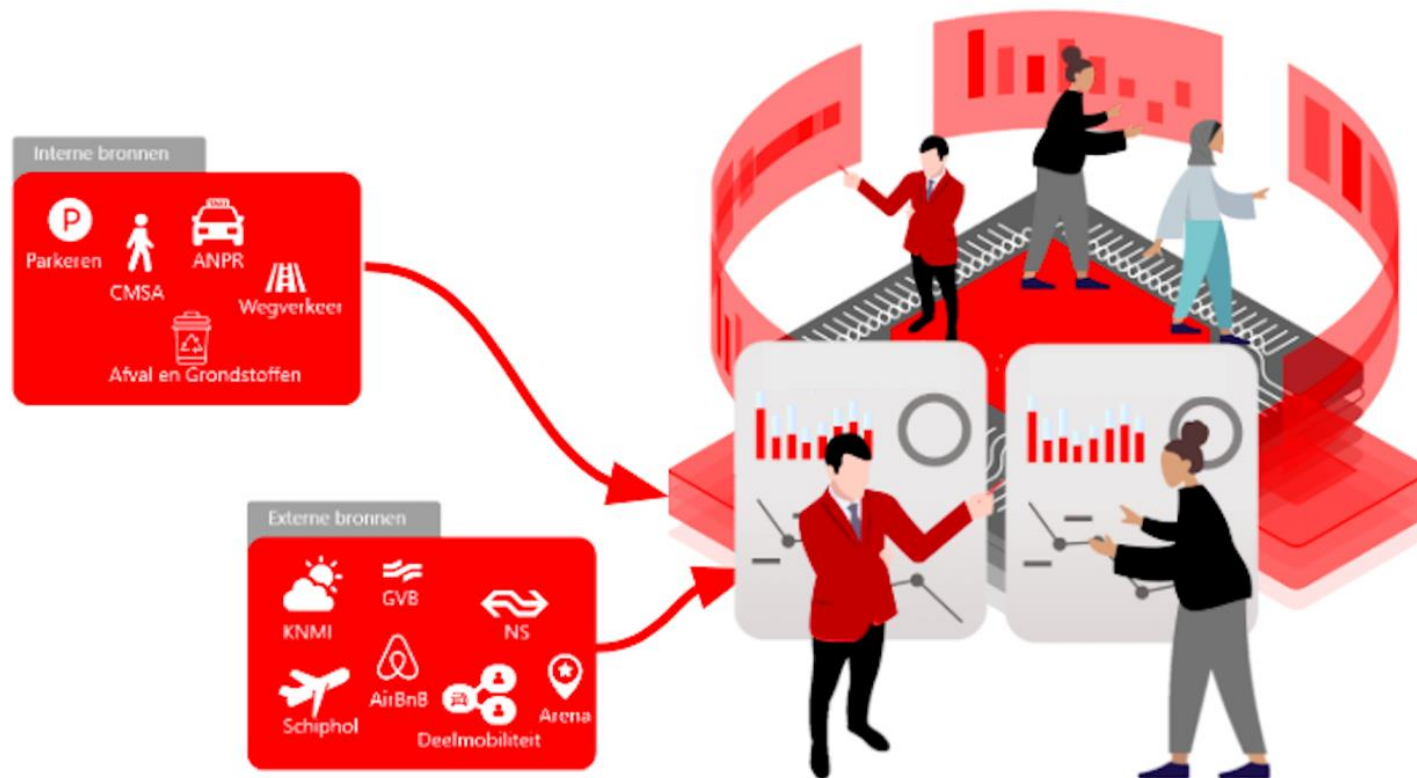
Government of the Netherlands



- Ministry of Infrastructure and Waterways Data Ecosystem Mobility and Smart City (DEMS)
- Three different cities: Amsterdam, Eindhoven and Utrecht.
- Rotterdam starts Pilot Proces 27-01-2022
- Eight different operators: Check, Felyx, TIER, Cargoroo, Mywheels, Greenwheels, Go Sharing and Amber.
- Dashboard parties: CROW as (knowledge) platform and Vianova



Questions / Discussion





Thank you!

Contact

guusje.van.der.vossen@amsterdam.nl

cdsm@amsterdam.nl

National Governance on MaaS Standards

- **CDS-M as part of [DEMS](#)** - Datagedreven Ecosysteem Mobiliteit en Smart City
- **Strategic committee Min I&W on MaaS standards Vervoerregio Amsterdam**
 - Donkey Republic
 - Municipality of Utrecht
 - 9292OV
 - TCA
 - Arriva
- **Change Advisory Board Min I&W**
 - Edwin van den Belt
 - Roel Testroote
 - Ruud Mollema
 - Ross Curzon-Butler
- **Working Groups** (definition, improvement, alignment and dissemination)
 - TOMP
 - CDS-M (opens May 2022)

WG is open for all stakeholders!