VIANOVA

Better managing future mobility

THE DATA PLATFORM TO MANAGE THE PUBLIC REALM IN THE MAAS ERA

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POLIS WORKING GROUP 10/03

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DISCLAIMER

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It may not reflect the opinions or policies supported by municipalities Vianova is contractually engaged with.

POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

WHO IS VIANOVA ?

VIANOVA

- BtoG startup specialised in mobility management and data science
- Created end of 2018, now has **9 employees**, from 5 different countries
  - 20 years experience in transport strategy, product management and innovation
- Based in **Paris and Zurich,** we support **6 european cities**

Thibault Castagne, CEO

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Giles Bailey, head of Policy

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BETTER INTEGRATING NEW MOBILITY IN THE PUBLIC REALM

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Providing cities the tools and data they need to manage future mobility

CITY-LED DATA PLATFORM FOR MOBILITY MANAGEMENT

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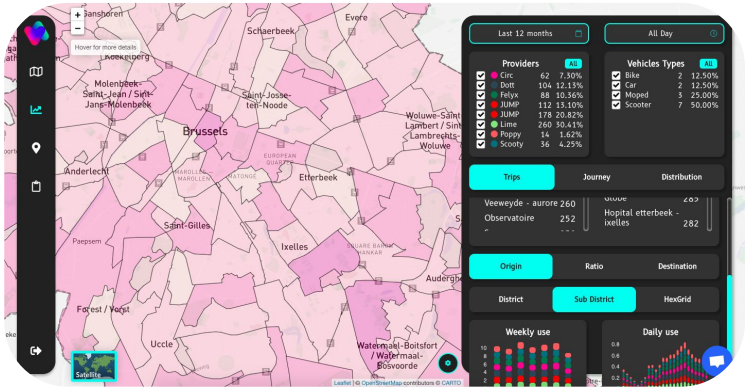
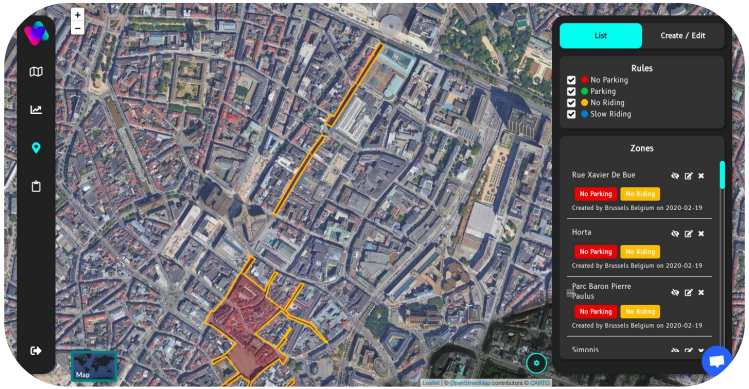
Active control & mobility analytics



Policy management & compliance



OPERATORS

Mobility API
(GPS, Vehicles)

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Policy API
(Regulation, infrastructure)

CITIES

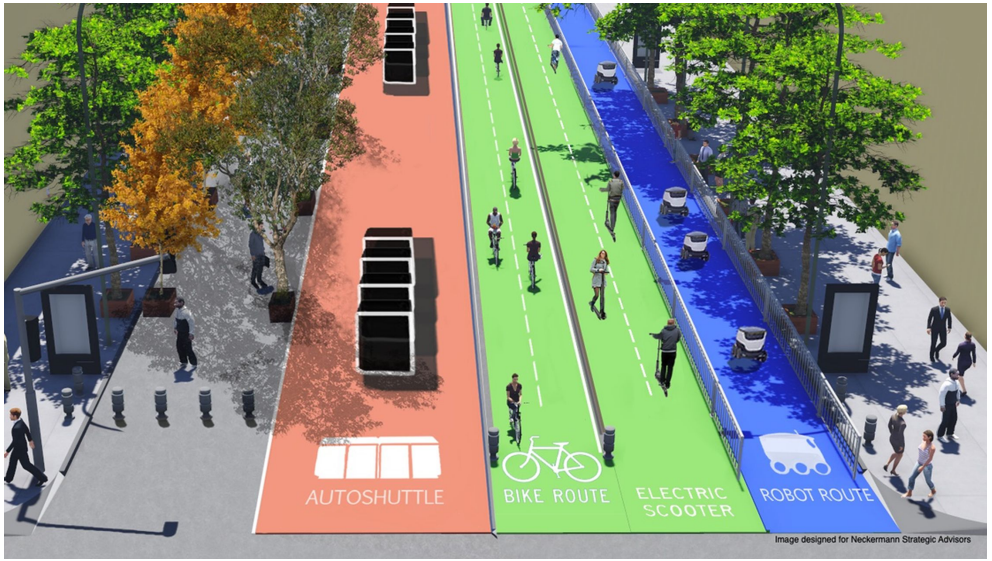
BILATERAL AND SECURE DATA SHARING

USE OF PUBLIC SPACE → PERMIT → DATA REQUIREMENTS

DATA SHARING

WHAT CAN CITIES DO WITH THE RIGHT MOBILITY DATA ?

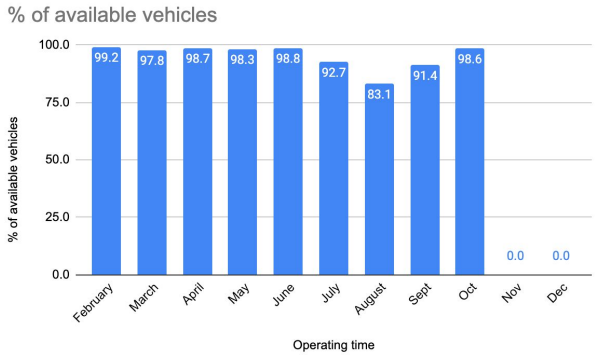
DATA SHARING



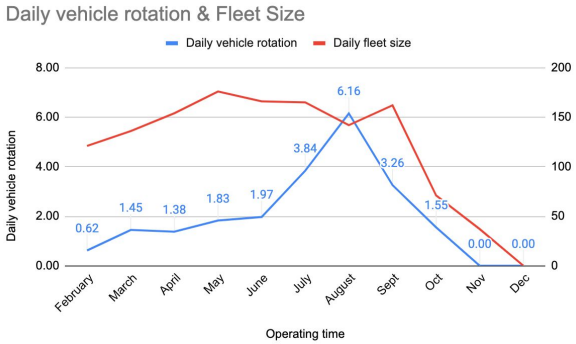
1. Craft informed policies based on data-driven insights
2. Enforce policies *(fleet size, speed, parking)*
3. Measure & ensure progress toward city goals *(safety, sustainability, equity)*
4. Support urban planning decisions
5. Monitor daily activity *(deployments, incidents)*

WHAT CAN CITIES DO WITH THE RIGHT MOBILITY DATA ?

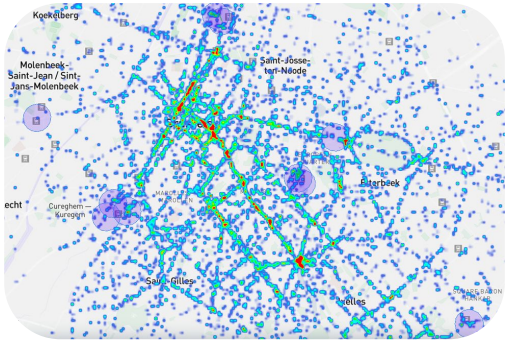
DATA SHARING



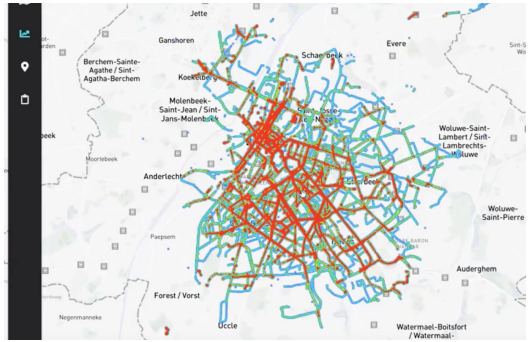
Evaluate operational efficiency of operators



Monitor market evolution for policy making



Deploy mobility hubs based on drop-offs insights



Monitor road safety & plan cycling lanes

LEGAL BASIS

DATA SHARING

EU law itself provides useful **legal bases** for the collection of full-fledged mobility data by municipalities:

- Directive 2010/40/EU of 7 July 2010 encourages Member States to develop Intelligent Transport Systems (ITS) such as digital maps.
- Commission Delegated Regulation (EU) 2017/1926 of 31 May 2017 enables the collection of both static and dynamic data, such as individual trip plans.
- Directive (EU) 2019/1024 of 20 June 2019 (the “Open Data Directive”) deems mobility data a “ high-value dataset ”, the free reuse of which is imposed on Member States.

Up to the state and cities to **reflect them in their national & local laws**

LOI MOBILITÉS

LOM in France

Ordonnance du 29 novembre 2018
publié le 04 décembre 2018

Ordonnance relative à l'utilisation de modes de transport partagés en flotte libre alternatifs à l'automobile

Ordonnance in Bruxelles

GUIDELINES FOR CITY-LED DATA PROJECT

DATA SHARING

1. Define **city objectives** in the collection and processing of mobility data
   - Broad enough / May evolve in the future

2. Include **data sharing requirement in operators permits** (part of a tender or license)
   - Communicate the city objectives
   - Precise data format, ask for granular data, historical & real-time

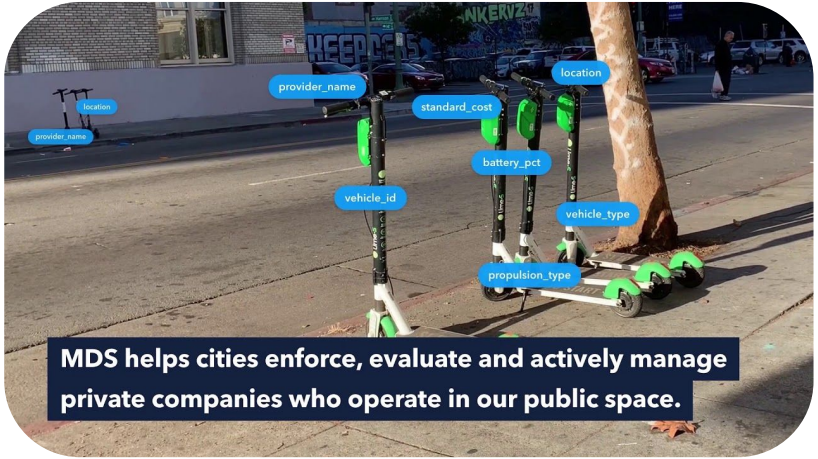
3. **Plan kick-off meeting** to transparently communicate project purposes and expectations

4. Set and sign **standardised** license agreements:
   - **Bi-party license agreement** between the city and the operators
   - Specify the **city objectives** and precise Use Cases
   - Ask for **specific international format,** MDS or GBFS (**historical** and real-time)
   - Containing **vehicles ID** for enforcement and other use cases
   - **Responsibilities** regarding **GDPR compliance & confidentiality**

5. **Provide list of Authorised Users** with defined access and rights

MOBILITY DATA SPECIFICATION

MDS DATA



Endpoint: `/trips`
Method: `GET`
Required/Optional: Required
Schema: `trips` schema
`data` **Payload:** `{ "trips": [] }`, an array of objects with the following structure

Field	Type	Required/Optional	Comments
`provider_id`	UUID	Required	A UUID for the Provider, unique within MDS
`provider_name`	String	Required	The public-facing name of the Provider
`device_id`	UUID	Required	A unique device ID in UUID format
`vehicle_id`	String	Required	The Vehicle Identification Number visible on the vehicle itself
`vehicle_type`	Enum	Required	See vehicle types table
`propulsion_type`	Enum[]	Required	Array of propulsion types; allows multiple values
`trip_id`	UUID	Required	A unique ID for each trip
`trip_duration`	Integer	Required	Time, in Seconds
`trip_distance`	Integer	Required	Trip Distance, in Meters
`route`	GeoJSON `FeatureCollection`	Required	See Routes detail below
			The approximate level of accuracy,

- **Open-source, collaborative,** mobility data format
- Governance by non-profit Open Mobility Foundation
- Management of **scooters, dockless bikes, ride-hailing services, buses & delivery vehicles**
- Adhere to best practices of privacy standards
- 80 cities using the standard, and more than 30 operators
  - Europe: Zurich, Helsinki, Bruxelles, Lisbon, Lyon, Marseille, etc.

PROVIDERS API:

- Historical & granular data
- Trips information & vehicles status

POLICY API:

- Standardised data for geo-fenced regulation

https://github.com/openmobilityfoundation/mobility-data-specification

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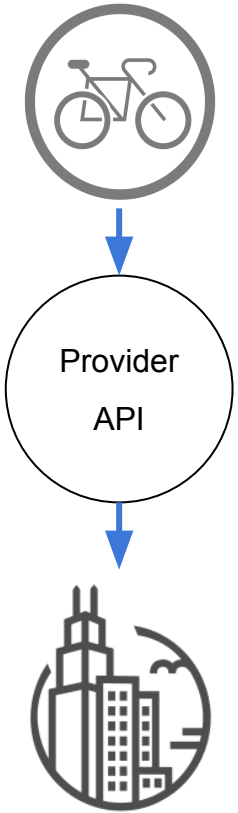
PROVIDER API — HISTORICAL VEHICLE AND TRIPS INFORMATION

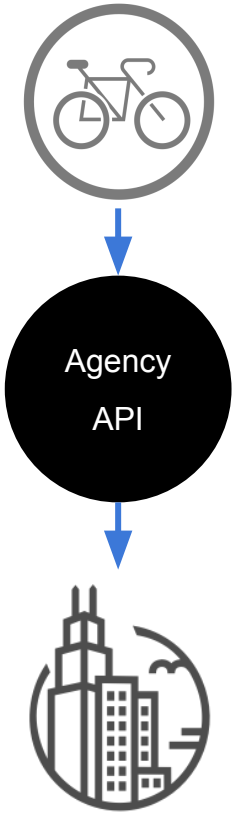
MDS DATA



- The **Provider API** enables cities to request **historical data** directly from mobility providers.
- The city receives **2** main **data types**:
  - **Status changes** *(e.g. trip start or end, user reserved or removed for maintenance)*
  - **Trips** (time, route, etc.)

AGENCY API — REAL-TIME VEHICLE & TELEMETRY DATA

MDS DATA



- The **Agency API** enables mobility providers to send **real time data** about their vehicles to cities and/or 3rd party service providers.

- The city receives **2** main **data types**:

  - **Vehicle information** *(e.g. IDs, real time events and/or status changes, etc.)*

  - **Telemetry data** *(e.g. GPS coordinates, speed, etc.)*

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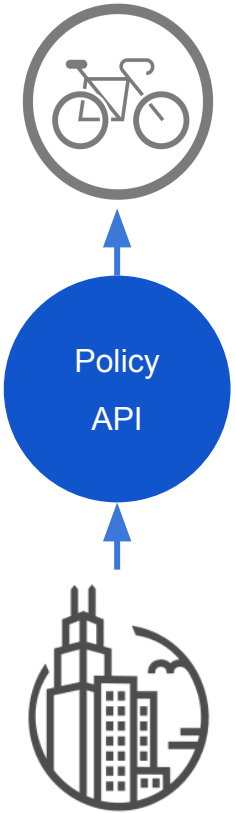
POLICY API — TIMEFRAME, RULE TYPES & GEOGRAPHIES INFORMATION

MDS DATA



- The **Policy API** enables providers to get information about **local rules** that may affect the operation of their mobility service or which may be used to determine **compliance**.

- The provider notably receives information about:

  - Period
  - Rule types *(e.g. count, time, speed, etc.)*
  - Geographies

THE DIFFERENCE BETWEEN GBFS & MDS

MDS DATA

GBFS	MDS
General Bikeshare Feed Specification, created by **NABSA** in Nov-15	Mobility Data Specification, created by **LADOT** in Sept-2018
Live-feed of bike **locations and availability**	Live- and historical feed of vehicles **locations, trips, routes and status**
Read only API	**Bilateral** exchange of information
Micro-mobility (Bike share)	**All devices** in the MaaS
Open-Data	Confidential information and potentially personal (DPIA, GDPR)
Bikeshare system availability for end-user	**Transport planning and regulation enforcement for government agencies**

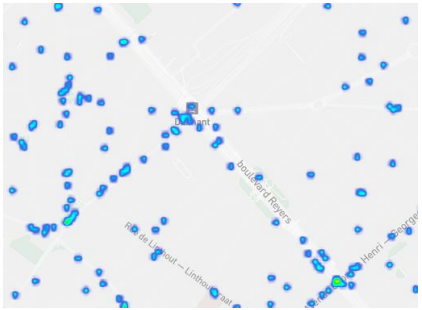
POOR DATA WILL NOT ALLOW CITIES STRATEGIC PLANNING

MDS DATA

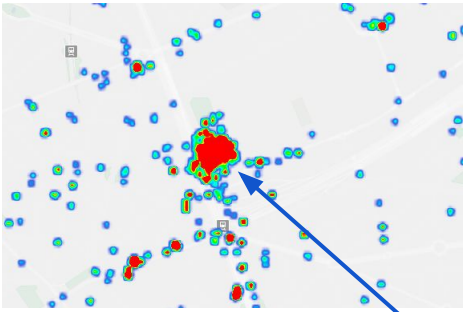
Network of mobility hubs

Bruxelles drop-offs & pickups

Diament District in Bruxelles



Using MDS format



Using GBFS

Provider warehouse

- **No trips data in the GBFS format,** this produces inaccurate mobility insights
- **Wrong investment decisions and misled policies**

Our approach: Building trust with transparent practices

- **Promote transparent business models** for operators and cities
  - Insights and data are for the exclusive use of the municipality purposes
  - License fees of operators to partly finance infrastructure and data lake

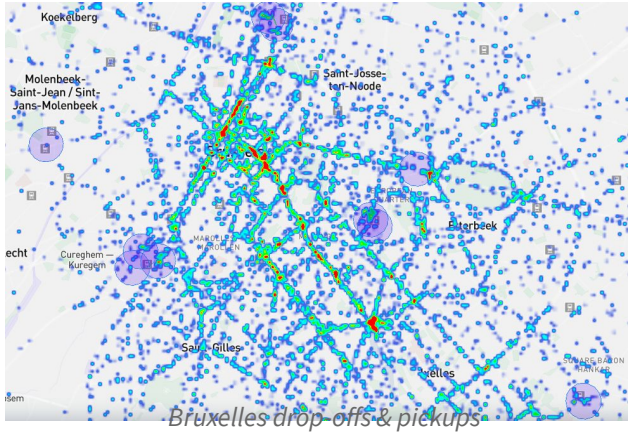
- **Include operators throughout the data project** - quarterly workshop
  - Confront mobility insights & potential issues
  - Present urban planning and policy decisions

- **Provide operators with transparent calculation on mobility metrics**
  - Especially on compliance metrics (fleet cap, distribution requirements, vehicle rotation)

- **Communicate privacy and data protection policy (not mandatory but advised)**
  - How we are protecting personal privacy and keeping data secure

DATA FOR THE BENEFITS OF THE CITY, OPERATORS AND CITIZENS: BUILDING MOBILITY HUBS

USE CASE



HOW DOES GDPR COME INTO PLAY ?

GDPR

- **GDPR** = General Data Protection Regulation (applicable as of May 25th 2018)

- Promotes **protection of personal data** and the free flow of said data
  → No general prohibition on the processing of personal data!

- One-fits-all regulation + little to no official EU guidance on micro-mobility data (**shared vehicles VS personal vehicles**)

  → **Collective thinking** (cities + operators + 3rd party platforms such as VIANOVA) to build innovative, cooperative solutions that **comply with GDPR** while allowing cities to make the most out of mobility data

WHAT IS PERSONAL DATA IN THE SENSE OF GDPR ?

GDPR

- What is personal data? Art. 4.1 **GDPR**:

  “Any information relating to an identified or identifiable natural person”

- The *“Reasonable Re-identification Test”* (Recital 26 **GDPR**): means *“reasonably likely to be used, such as singling out, either by the controller or by another person to identify the natural person directly or indirectly”*
  - The 2016 ECJ Breyer case law (IP address): combination with other datasets owned by 3rd parties may allow for reidentification → personal data

- (Very) extensive application by EU authorities, **BUT** still a crucial prerequisite for **GDPR** application

GDPR APPLIES TO CERTAIN MOBILITY DATA

GDPR

- MDS data, including vehicle IDs, does **not allow for direct identification** of users of mobility services.

- We consider **vehicle IDs** to be ***indirect*** **personal data** (Art. 4.1 GDPR)
    - A city could have the authority (e.g. with a court order) to ask mobility operators with the corresponding name, thereby allowing for re-identification of users
    - Responsibility of mobility operators to have the process in place to handle that request

  → That's why we comply with GDPR

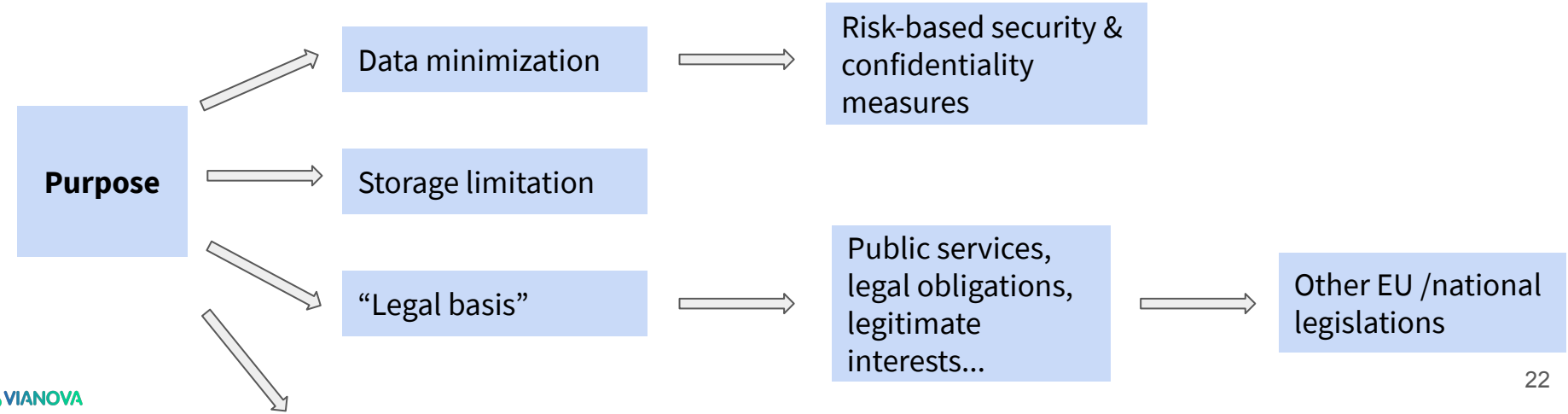
- However, risks of user re-identification in the context of our services are **very low**

UTILITY & RISK-BASED APPROACH — MOBILITY DATA FOR WHAT USE CASES (“PURPOSE”)

GDPR

- Municipalities are allowed to collect MDS data, as part of their duty performed in the **public interest** (GDPR article 6-1). **Not required to have user consent**.

- Data should only be **processed and stored for the defined purposes**
  - Vehicle ID for enforcement
  - Single Trip information: no need in real-time, but necessary for aggregated routes calculation or O/D matrix



COLLECTING VEHICLE ID FOR SPECIFIC PURPOSES

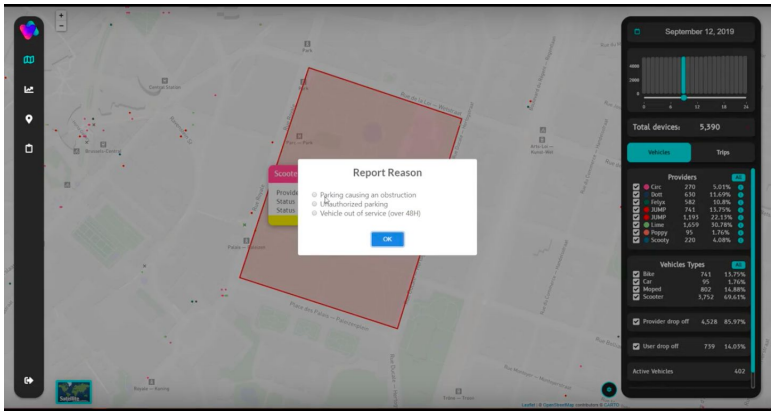
GDPR

Regulation enforcement:

- Support enforcement teams by providing GPS located infringements (targeted approach)
- Provide a legal basis for enforcement

Audit data quality and authenticity:

- Verify vehicle status and trips information provided
- Register vehicle ID for permit
- Enable calculation of vehicle lifespan



PROCESSING PERSONAL DATA FOR REGULATION ENFORCEMENT - IS IT NEW ?

GDPR

Vehicle ID = 

Camera for congestions charges

Parking enforcement in paris with cameras

Personal vehicle vs shared vehicle
Historical vs real-time
Ongoing trips vs parked vehicles

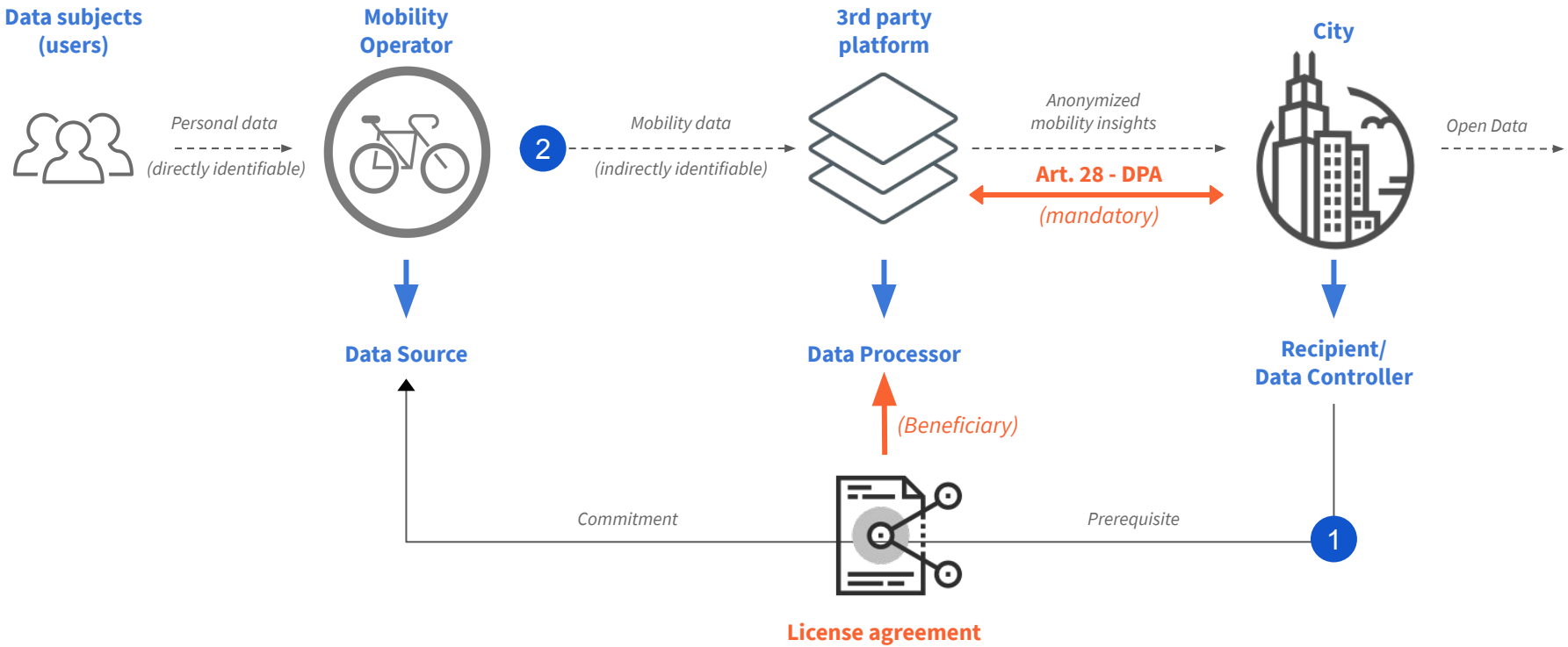
COMPLYING WITH GDPR AS DATA PROCESSOR

GDPR

- Route & trips information only obtainable after the **trip ended**
- Various **aggregation techniques** are used in order to prevent re-identification
- We apply **data minimisation** principles (Article 5.1(c) GDPR) - Retention of Vehicle ID
- Strict access control and **data segregation** are enforced
- We **do not resell data** nor attempt to re-identify individuals

DATA RESPONSIBILITY

DATA SHARING



ROLES AND RESPONSIBILITIES OF ALL PARTIES

GDPR

- **Data Source: Mobility Operators** (Article 14.2(f) GDPR)
  - Controls directly identifying personal data: Name, Credit Card details, etc.
  - Highest risk for privacy protection

- **Data Controller: City** (Article 4.7 GDPR)
  - Determines the purposes of the collection and processing of mobility data
  - Should run a Data Protection Impact Assessment (Article 35) - with the help of Data Processor
  - Inform individuals in relation to the collection of personal data
  - Nominate a DPO

- **Data Processor: Third-party platform** (Article 4.8 GDPR)
  - Advise the Data Controller on data and privacy protection (inc. crafting policy and assisting in carrying out DPIA)
  - Ensure technically the personal privacy protection and data security
  - Nominate a DPO

CONCLUSION

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- **MDS is about much more than e-scooters**
- It is an **international standardised format**, used across the US and now Europe
- Cities **already collect personal data** for enforcement and other purposes
- **Cities shouldn't fear collecting mobility data,** but embrace it to drive forward sustainable new mobility solutions
- Cities/third parties **can work within the GDPR rules** to securely manage this data

What Mobility Data for **Which Purpose**

BUILDING MORE LIVEABLE AND SUSTAINABLE CITIES

Contact me for questions:

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