MOBIDATALAB

Labs for prototyping future mobility data sharing solutions in the cloud

D3.2

Data sharing market technological developments monitoring

23/01/2023
Author(s): Louis-David Benyayer (HOVE)

Summary sheet

Deliverable Number	D3.2
Deliverable Name	Data sharing market technological developments monitoring
Full Project Title	MobiDataLab, Labs for prototyping future Mobility Data sharing cloud solutions
Responsible Author(s)	Louis-David Benyayer; Didier De Ryck
Contributing Partner(s)	HOVE, HERE, ICOOR
Peer Review	CNR, F6S
Contractual Delivery Date	31-07-2021
Actual Delivery Date	16-07-2021
Status	Final
Dissemination level	Public
Version	V1.0
No. of Pages	82
WP/Task related to the deliverable	WP3/T3.2
WP/Task responsible	ICOOR/HOVE
Document ID	MobiDataLab-D3.2-DataSharingMarketTechnologicalDevelopments Monitoring-v1.0
Abstract	This document describes the market in terms of the supply of products and services for transport data sharing.

Legal Disclaimer

Project partners

Organisation	Country	Abbreviation
AKKA I&S	France	AKKA
CONSORZIO INTERUNIVERSITARIO PER L'OTTIMIZZAZIONE E LA RICERCA OPERATIVA	Italy	ICOOR
AETHON SYMVOULI MICHANIKI MONOPROSOPI IKE	Greece	AETHON
CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	CNR
HOVE	France	HOVE
HERE GLOBAL B.V.	Netherlands	HERE
KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	KUL
UNIVERSITAT ROVIRA I VIRGILI	Spain	URV
POLIS - PROMOTION OF OPERATIONAL LINKS WITH INTEGRATED SERVICES	Belgium	POLIS
F6S NETWORK IRELAND LIMITED	Ireland	F6S

Document history

Version	Date	Organisation	Main area of changes	Comments
0.1	13/04/2021	HOVE	Table of content	Initial version
0.2	25/05/2021	HOVE	all	Draft version
0.3	28/06/2021	F6S, ICOOR	all	Peer Review
0.4	06/07/2021	HOVE	all	Rework
1.0	16/07/2021	AKKA		Quality check and submission

Executive Summary

This document presents a description and analysis of the main products, services, and platforms used in transport data sharing. Specifically, 37 products, services, and platforms have been positioned according to the data they provide or aggregate and the components of the value chain they offer.

They have been described according to their mobility domain focus, revenue sources, geographical footprint, data providers and users, onboarding processes, data re-use terms, data storage location, GDPR compliance.

The dimensions addressed to describe the solutions are:

- level of integration of the offerings,
- scope of data provided,
- scope of mobility services,
- revenue models,
- competition and collaboration dynamics.

The study has identified the 9 data types with high potential of impact on the creation of innovative digital services (vehicle location, environment, maps, payment, vehicle usage, static infrastructure, dynamic infrastructure, ticketing, user-generated) and the 4 main components of the mobility data sharing value chain (generation, collection, analysis, and exchange). Relevant conclusions and insights to consider are the following:

- Data generators (e.g., telecommunication companies, connected device manufacturers, mobility service providers) use various simultaneous distribution channels to share their data.
- Detailed information on data sources and price is mainly confidential.
- Data generators compete with each other to be a proxy for mobility.
- Aggregators are becoming distributors of mobility services.
- Some data generators aggregate other data to limit the competition from aggregators within both the mobility data-sharing market and the mobility market.

Table of contents

List of figures

List of tables

Abbreviations and acronyms

Abbreviation	Meaning
EU	European Union
N	No
MaaS	Mobility as a service
ODS	Opendatasoft
OEM	Original Equipment Manufacturer
OSM	OpenStreetMap
PTA	Public Transport Authority
PTO	Public Transport Operator
SaaS	Software as a service
TaaS	Telecom as a service
UC	Use Case
WP	Work Package
WW	Worldwide
Y	Yes

1. Introduction

1.1. Project overview

There has been an explosion of mobility services and data sharing in recent years. Building on this, the EU-funded MobiDataLab project works to foster the sharing of data amongst transport authorities, operators, and other mobility stakeholders in Europe. MobiDataLab develops knowledge as well as a cloud solution aimed at easing the sharing of data. Specifically, the project is based on a continuous co-development of knowledge and technical solutions. It collects and analyses the advice and recommendations of experts and supporting cities, regions, clusters, and associations. These actions are assisted by the incremental construction of a cross-thematic knowledge base and a cloud-based service platform, which will improve access and usage of data sharing resources.

1.2. Purpose of the deliverable

This deliverable is part of Work Package 3 (WP3) *"New data sharing services and business models".* The overall WP3 goal is to analyse the market's state-of-the-art and enhance the potential impact of digitalization and data sharing on different actors and on different areas of mobility and transport (economic, social, environmental, etc.).

The purpose of this deliverable is to define the current market potential in terms of supply of new products and services and in terms of potential improvements in transport flows efficiency.

This deliverable synthesises the actions and learnings of task 3.2 which objective is to identify which type of data and which related products and services have the highest positive impact on the creation of innovative digital services and, therefore, providing an ex-post assessment of the impact of the data sharing culture on transport flows.

Given the MobiDataLab use cases, this task monitors the market in terms of the supply of related products and services for transport data sharing and identifies those with the highest impact in terms of innovative digitalised services creation, as well as their impact on travellers and transport services.

After having identified the type of products and services with the highest potential impact, a market analysis is performed in order to define their characterising elements.

1.3. Intended audience

The dissemination level of D3.2 is 'Public' and contributes to the decision-making processes of data-owners, data-users, and data-aggregators regarding opportunities to trade, share or use mobility data.

1.4. Structure of the deliverable and its relation with other work packages/deliverables

Section 2 describes the methodology used to perform the market study: how products, services, and platforms have been selected, and how data has been gathered and analysed.

Section 3 presents a description of the market according to the following dimensions: level of integration, scope of data managed, scope of transport services included, competition and collaboration dynamics, revenue models.

Section 4 presents a detailed description of each of the 37 products, services, and platforms analysed.

Section 5 concludes on the main outcomes of the study and the future steps within the MobiDataLab project.

Relation with other work packages / deliverables:

- This deliverable depends on task *2.6: Use case definition*
- This deliverable will be used in task 3.3: Gap analysis between the needs and the market

2. Methodology

The market research addressed in MobiDataLab has followed the following steps:

- **Use cases definition:** the 8 use cases identified in task 2.6.
- Products and services with highest potential identification: literature review and consortium members' expertise.
- **Sample composition and dimensions of the analysis:** literature review and consortium members' expertise.
- **Information collection:** desk research and survey with companies.
- **Analysis and synthesis:** document reviewed with WP3 and consortium members.

2.1. Use cases definition

The use cases addressed in MobiDataLab are clustered in two main types: use cases (UC) "for operations" and the use cases "for research".

The Use cases for operations are defined in relation with operational situations lived by mobility stakeholders or data providers (transport organising authorities, public operators, associations, etc.) and will be refined during the project according to feedbacks received by the project's stakeholders. At the time of the deliverable 3.2 writing, the MobiDataLab UCs for operations are:

- UC1: Optimisation of Transport Flow and ETA (Estimated Time of Arrival)
- UC2: Emission Reporting
- UC3: Analytics & Learning
- UC4: Re-use of transport data for journey planners / digital services
- UC5: Mobility as a service

The use cases for research have been defined based on the results of previous European projects and initiatives. The UCs for research are:

- UC6: Geodata sharing applied to Transport, OpenStreetMap for inclusive transport
- UC7: Geodata sharing applied to Transport, environmental data for sustainable transport
- UC8: Transport data sharing within the Linked Open Data Cloud

2.2. Products and services with highest potential identification

Given the use cases, we identified the products and services with highest potential. We assumed that if a product, service, or platform is listed in the literature or in reports on mobility data sharing, it would qualify as having sufficient impact in terms of innovative digitalised services creation and on travellers and transport services.

To identify the relevant products, services, and platforms, we first identified in the literature the types of products and services which compose the data sharing value chain. Then, we reviewed recent reports on mobility data sharing to extend the list of products, services, and platforms. Lastly, we discussed during several meetings the results of this analysis to collect feedback from consortium members.

In the academic literature, four main parts of the data sharing value chain are described and the associated products and services listed (Faroukhi, 2020). This description of the value chain provides us with a first list of products and services required for data sharing.

Generation	Collection	Analysis	Exchange
• Vehicle • Infrastructure • Environment • User	• Data acquisition • Pre-processing • Storage	• Models • Visualisation	• Data sharing and monetization
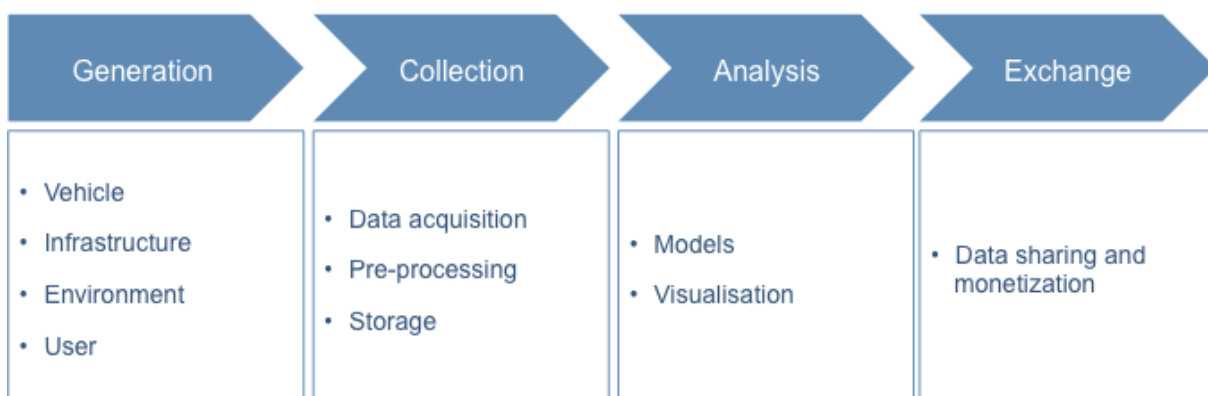
Figure 1: Data sharing value chain (Faroukhi, 2020)

To complete this first list, we analysed recent reports on mobility data sharing. UITP, for example, identifies three main stakeholders in the mobility data sharing value chain (UITP, 2020):

MOBIDATALAB

MOBIDATALAB – H2020 G.A. No. 101006879

Funded by the European Union

- Data generators
- Data aggregators
- Data analytics service providers

These types of stakeholders are consistent with the value chain description in the literature and express that some companies position themselves specifically on one value chain component whereas others position themselves on several value chain components.

Based on this, we held several meetings with consortium members to discuss the types of products and services we would need to analyse in the market study. After several meetings we decided to include in the scope of analysis the products and services identified in the literature review and the stakeholders identified in the reports.

2.3. Sample composition and dimensions of analysis

In the process of the market study, we quite rapidly concluded that it was difficult to give an exhaustive and complete view on the market, both in terms of the number of companies analysed and in terms of the level of information for each. First, the list of companies active in the field is significant and changes frequently: new companies are created, others terminated, and others change their positioning. Second, the information available on each company is not homogenous – indeed, some, having strict confidentiality concerns, are reluctant to provide detailed information on their activities.

Consequently, we decided to analyse a sample of companies to describe the market. We identified the companies to be described through several meetings and discussions within consortium members. We also searched the web using keywords (Mobility data sharing, data sharing platforms). Lastly, we analysed previous reports which described use cases ((UITP, 2020) (WBCSD, 2020)). We aimed to have sufficient products and services for each of the use cases identified. After this step we identified 37 organisations to analyse in the market study.

The table below presents the number of products and services analysed for each use case, and appendix 7.1 lists the companies analysed and the connection with the use cases for each of them.

Table 1: Number of products and services analysed by use case

Use case	Number of products and services of our sample
UC1: Optimisation of Transport Flow and ETA (Estimated Time of Arrival)	29
UC2: Emission Reporting	16
UC3: Analytics & Learning	31
UC4: Re-use of transport data for journey planners / digital services	20
UC5: Mobility as a service	19
UC6: Geodata sharing applied to Transport, OpenStreetMap for inclusive transport	8

MOBIDATALAB

Funded by the European Union

UC7: Geodata sharing applied to Transport, environmental data for sustainable transport	14
UC8: Transport data sharing within the Linked Open Data Cloud	11

The methodology we used to identify the companies of our sample is adapted to the lack of structured information on the market. However, as it relies on experts' views and is not systematic, some companies active in the field may have been overlooked. We limited this risk by identifying several categories of products, services, and platforms, and finding companies in each of these categories.

In addition, it is very likely that after the delivery of the report new initiatives will emerge, and existing initiatives will grow (or disappear). Monitoring the state of the art will be a continuous activity and all partners involved agreed on maintaining the document live by updating its content even after the delivery to the Commission. The content of the report as well as the insights gained from it will be included in the MobiDataLab knowledge base as soon as it will be created and deployed.

2.3.1. Analysis dimensions

The objective of this deliverable is to describe the market from a business perspective, as the technical perspective is addressed in WP2. As the market study is used to identify potential gaps in the market compared with the needs identified in task 3.1, we aimed at analysing dimensions useful for this gap analysis and in particular the scope of the companies in terms of services offered and data used or offered. Finally, we wanted to better understand the current state of data sharing practices and business models.

To meet these objectives, we built a template with the following main blocks (we refer the reader to Appendix 7.2 for the detailed version):

- **Company corporate information** (legal form, revenue sources, pricing structure, mobility domain focus, data providers and consumers)
- **Product functional scope** (product description, scope of service, onboarding process, usage limitations)
- **Data available, sources and quality process** (for each of the 9 data categories identified in Table 2: List of data included in the survey)

The list of data presented in the survey has been identified using previous reports' lists, in particular the data identified in the Data Stakeholder framework by WBCSD (2020), see Figure 2: Data stakeholder framework (WBCSD, 2020).

MOBIDATALAB
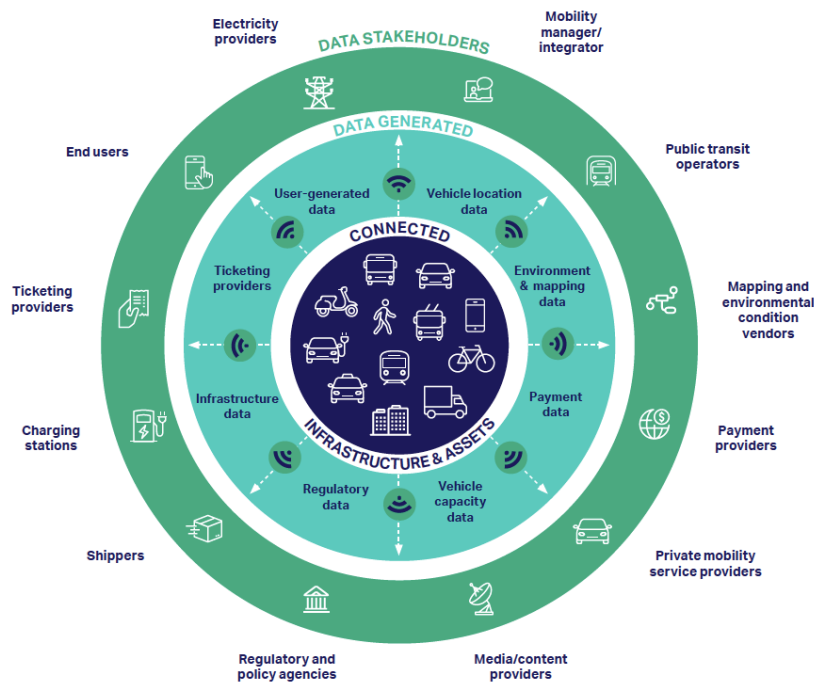
Figure 2: Data stakeholder framework (WBCSD, 2020)

Table 2: List of data included in the survey

Data managed
Vehicle location
Environment
Cartographic
Payment
Vehicle usage
Static Infrastructure
Dynamic infrastructure
Ticketing
User-generated

2.4. Information collection

To gather the information on each company we performed desk research on publicly available information (i.e., company websites and reports). In order to improve the level of detail of information available we decided to interview experts and managers of some companies and to send a survey to others to collect more detailed information.

MOBIDATALAB

**Funded by the
European Union**

The information sources for each company analysed is presented in Appendix 7.3. The data collection took place between April and May 2021.

2.5. Analysis and synthesis

After the information was collected, it was synthesised as presented in appendix 7.4, 7.5, 7.6 and in the section that follows.

Then, an analysis was conducted to provide answers to the questions we had identified at the beginning of the study. The results have been discussed and enriched during meetings with consortium members. They are presented in the section that follows.

3. Current trends of the transport data-sharing market

In this section, we first present the main outcomes of the market study and then go through an analysis of each dimension that we have decided to consider, namely:

- The level of integration of the offerings: how is the market structured between data generators, aggregators, and analytics service providers? Are the companies integrated or specialised?
- The scope of data provided: how broad is the scope of data available? Are all type of data (as listed in Table 2: List of data included in the survey) available in one place or scattered across several platforms?
- The scope of mobility services: is the market organised by mobility service type (e.g., cars vs trucks vs public transport vs micro-mobility)? Are some players aggregating several mobility services?
- The revenue models: how are the services and software priced?
- The competition and collaboration dynamics: which are the competition territories? Are some collaborations observable? If so, on which terms?

3.1. Main results of the market study

Through the analysis of recent reports on mobility data sharing and the description of 37 products, services, and platforms of mobility data-sharing, the study reached the following results:

- **Identification of 9 data types** with high potential of impact on the creation of innovative digital services (vehicle location, environment, maps, payment, vehicle usage, static infrastructure, dynamic infrastructure, ticketing, user-generated).
- Identification of 4 main components of the mobility data sharing value chain: generation, collection, analysis, and exchange.

- **Positioning of 37 products, services and platforms** according to the data they provide or aggregate and the components of the value chain they offer.
- **Detailed description of 37 products, services and platforms**: mobility domain focus, revenue source, geographical footprint, data providers and users, onboarding process, data re-use terms, data storage location, GDPR compliance.

3.2. Level of integration

MobiDataLab aims at prototyping new mobility data sharing solutions and the level of integration of partners and solutions is among the numerous questions associated with this endeavour. The analysis of the level of integration of the products and services present in the market contributes to the reflection of the possible partners and relevant integration level for MobiDataLab.

The table below presents an aggregated view of the integration level of the companies in our sample based on the four parts of the value chain we described in section 2.2 (generation, collection, analysis and exchange). The level of integration of each organisation analysed is described in appendix 7.4

Table 3: Distribution of the sample according to the value chain parts covered

Parts of the value chain covered				Number of companies in our sample
Generation	Collection	Analysis	Exchange	
■	■	■	■	6
■	■	■		19
■	■			0
■				3
	■			1
		■		6
			■	0
	■	■		1
■		■		1
Total				**37**

Here are the main conclusions:

- The majority of organisations we analysed cover each of the first three parts of the value chain (generation, collection and analysis).
- Few of them position as marketplaces and enable their data providers to monetize their data with data consumers (e.g., Carto, Convex, Here, Moovit and Vianova).
- Some organisations act as technical enablers to support data sharing (e.g., Shared Streets and vis.gl).
- No companies choose to specialise in the first two parts only (generation and collection).
- We didn't analyse any company specialised in providing a marketplace for data without offering the other parts of the value chain.

3.3. Scope of data managed

The value of aggregating and sharing data of multiple types and from multiple sources is one of the founding hypotheses of MobiDataLab. Identifying the current scope of mobility data aggregation and sharing is useful to identify gaps and opportunities for wider data sharing.

The table below lists the distribution of our sample according to the data type offered (as described in Table 2: List of data included in the survey). For six of the organisations analysed this dimension is not relevant, as they limit themselves to technical components and do not offer data or platforms. The data offered by each organisation is synthesised in appendix 7.5.

Table 4: Distribution of our sample according to the type of data offered

Type of data	Number of companies owning or offering the data through partner	Number of companies not providing the data but accepting it	Number of companies not providing the data and not accepting it	Total
Vehicle location data	21	8	2	**31**
Environment data	7	8	16	**31**
Cartographic data	17	7	7	**31**
Payment	6	5	20	**31**
Vehicle usage data	13	7	11	**31**
Static Infrastructure data	19	7	5	**31**
Dynamic infrastructure data	8	7	16	**31**
Ticketing	3	6	22	**31**
User-generated	7	6	18	**31**

Below are listed the main conclusions on this dimension of the analysis:

• Vehicle location data, cartographic data and static infrastructure data are the most commonly available data. On the contrary, payment, ticketing, environment, and dynamic infrastructure data are less easily available.
• Some organisations act as intermediaries of, and are agnostic to, the data used through their platform (e.g., AKKA data hub), while others leverage proprietary data to build standard data services (e.g., Uber Movement).
• Few companies are specialised in a limited set of data and act as aggregators of multiple sources of the same type of data (e.g., Fluctuo for micro-mobility).
• Those companies which have built data services around proprietary data they have access to through their own connected devices (e.g., Uber Movement, Geotab) usually have a limited offer regarding other data types.

MOBIDATALAB

Funded by the European Union

3.4. Scope of mobility services

Similarly to the scope of type of data managed, having a clearer view on the current scope of aggregation and sharing of data according to the mobility service concerned is useful to understand which data are currently shared and which are the opportunities for a wider data sharing between mobility services (e.g., cars, trucks, public transport and micro-mobility).

The table below lists the distribution of our sample according to the data type of mobility service data managed. For 8 of the organisations analysed, this dimension is not relevant, as they do not offer data or platforms but technical components or only cartographic data. The data offered by each organisation is synthesised in appendix7.6.

Table 5: Distribution of our sample according to the type of mobility service managed

Type of mobility service data managed	Number of companies owning or offering the data through partner	Number of companies not providing the data but accepting it	Number of companies not providing the data and not accepting it	Total
Cars	17	7	5	**29**
Trucks	8	6	15	**29**
Public Transport	9	7	13	**29**
Micro-Mobility	7	8	14	**29**

Below the main conclusions on this dimension:

- A strong business ecosystem has developed around connected car data with some players specialising on this data source to develop digital services or analytics solutions. For the clients of these organisations the possibility to aggregate other vehicles data is limited. A similar trend can be observed in the context of public transport data (e.g., Navitia).
- Organisations aggregating multiple types of vehicles (cars and public transport, for example) are of two types: mapping services which provide journey planning with data they own, access, or buy (e.g., Google Maps, Moovit) and software which do not provide data but allows users to aggregate their data and build customised data services (e.g., Opendatasoft, AKKA data hub, Vianova).
- A limited number of companies have a mixed approach combining software and provision of data (e.g., Convex).

3.5. Competition and collaboration dynamics

MobiDataLab aims at fostering data sharing in transport sector. Identifying the current competition territories and collaboration practices is a valuable complement to the analysis held in task 3.1 on the levels and conditions for the stakeholders to enter into data sharing.

MOBIDATALAB

**Funded by the
European Union**

As we started from the use cases and used a value chain approach to define the scope of our analysis, we observed several different competition arenas. Through the detailed analysis of the companies, we were also able to observe some collaboration dynamics.

The first arena we observed is intra value chain component competition. Within each of the value chain component some companies are competing. Data generators compete with each other. For example, OEMs and Telecommunication companies compete on mobility data. Similarly, cartographic data providers compete on the mapping offer (OpenStreetMap, Google Maps, Map Kit). Analytics software providers also compete on a similar value proposition for the same type of clients (AKKA data hub, Opendatasoft, Vianova).

The second competition arena we observed is between companies having an integrated approach on several value chain components. These companies own or have access to relevant data for mobility and offer standard or customised data and analytics services. Some choose to rely on a proprietary and exclusive data source (for example, Geotab), while others blend their proprietary data with other data (Here), while the remaining ones source different mobility data and aggregate them into a service (Map Box, Carto and Inrix).

In addition to these competition dynamics, **we observed many collaborations between the companies** analysed. Open data, free and open-source products aim at being widely shared and used. Not surprisingly, many of the companies which position as aggregators or analytics service providers use OpenStreetMap (MapBox, Mobi-iti, Navitia, Opendatasoft Soft, PTV) or open data released by transport authorities, municipalities, and governments (Chouette, Mobi-iti, Moovit, Navitia, Opendatasoft).

Collaboration occurs also between companies when some sell data to others. We only had a partial view on these practices as this information is not public and some companies declared using other data without explicitly naming their partners (Here, Moovit, TomTom, Urban SDK, Wejo). We were however able to collect some examples of these collaborations, i.e., TomTom data is used by Carto and PTV while Here data is used by Carto and PTV.

Interestingly, some data exchanges between organisations are not monetized. Some collaborations are settled by barters, for example, the Waze for Cities program by Waze (Waze trades data from its users with dynamic infrastructure data from the cities, https://www.waze.com/en/wazeforcities/). In other cases, some companies provide data as a way for their service to be better distributed. For example, when micro-mobility service providers transfer data to Fluctuo, which makes such data available in *mobility as a service* offers.

3.6. Revenue models

We identified 5 main types of revenue models:

- **Pay-as-you-go**: the data and analytics service is sold through API call pricing, usually with a free offer (i.e., below a certain number of calls/day or a limited number of days).
- **Customized licence fee** per client / user of the software with monthly or yearly subscription.
- **Software-as-a-Service (SaaS)** with variable monthly or yearly subscription according to the scope of service and volume.

- **Data-as-a-Service (DaaS)** with prices per unit or per transaction.
- **Free / open source**: the usage of the software is free; it is maintained by individual or corporate voluntary work.
- **Service**: project-based solution development (data services).

Some companies privilege one single revenue model (e.g., API calls) while others combine several models (e.g., service fee + monthly subscription).

4. Detailed description

We present below the results of the data collection as described in section *2.4* Information collection. The information presented is either provided by the companies that were contacted, or excerpted from the companies websites and edited (the data sources used for each company are presented in appendix 7.3).

When the information couldn't be retrieved or wasn't communicated by the companies, we used the sentence *"Information non-disclosed or non-available".* When a dimension analysed was not relevant for a given organisation, we used the acronym *n/a* (non-applicable).

4.1. AKKA datahub

Product description *(provided by the company) //* https://akkadatahub.com/datalab/portal/

AKKA has developed a Big Data platform, based on open-source components. It is based on open-source tools, recognised by experts as being the market standards in Big Data technologies and data sciences.

The added value provided by the AKKA team lies in the integration of the various tools and the automation of the data processing chain: the proof of value can be directly deployed in production.

The AKKA platform is an integrated platform, immediately available:
- It makes it possible to collect heterogeneous data on a massive scale.
- It offers great flexibility in the visualisation and exploration of data.
- It also natively integrates machine learning tools.

In a public transport project, it allows:

- to have a repository of mobility data.
- to integrate any type of exogenous data.
- to develop predictive and / or prescriptive use cases (analysis of the theoretical transport offer, analysis of the quality of service, predictive maintenance of equipment).
- to ensure governance and sovereignty in the management and administration of mobility data.
- to provide new services to partners and users.

Company information

- AKKA datahub is a product by AKKA, a private company.
- **Mobility domain focus**: public Transport, Mobility platform as a service.
- **Revenue sources :** service or SAAS mode.
- **Pricing structure**: Information non-disclosed or non-available.
- **Other resources**: Information non-disclosed or non-available.
- **Geographical footprint**: Information non-disclosed or non-available.
- **Data providers:** Information non-disclosed or non-available.
- **Data users**: Information non-disclosed or non-available.

Product information

Scope of service	Y/N	Comment
Provision of data	N	possible for open data
Data collection and storage	Y	in the cloud or on premise
Data processing and analysis	Y	data analysis & data science environment
APIs	Y	
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: customised agreements.
- **Prohibited / limited usage of the platform**: *Information non-disclosed or non-available.*

Data information

- **Data accepted in the platform**: vehicle location, environment, maps, vehicle usage, static infrastructure data, dynamic infrastructure data, ticketing, user generated.
- Data not accepted: payment.
- Storage location: France.
- **Data quality:** data quality process & data enrichment/transformation embedded in the platform.
- **GDPR compliance**: Information non-disclosed or non-available.
- **Data sharing options for the data providers**: *Information non-disclosed or non-available.*

4.2. ArcGIS

Product description *(source: website slightly edited)* // https://www.esri.com/en-us/arcgis/about-arcgis/overview

ArcGIS offers capabilities and flexible licensing for applying location-based analytics to business practices. Greater insights are obtained using contextual tools to visualise and analyse data. Collaboration and sharing are made possible via maps, apps, dashboards, and reports.

- **Spatial Analysis & Data Science**: location is used as the connective thread to uncover hidden patterns, improve predictive modelling, and create a competitive edge.

- **Field Operations**: Focused ArcGIS applications can be used stand-alone or in combination to support field workflows and enable office and field personnel to work in unison, using the same authoritative data.
- **Mapping:** Maps help spot spatial patterns in data to make better decisions and take action. ArcGIS gives the ability to create, use, and share maps on any device.
- **3D GIS:** 3D GIS brings real-world context to maps and data. Data is transformed instantly into smart 3D models and visualisations that help analyse and solve problems.
- **Imagery & Remote Sensing:** imagery and remotely sensed data analysis (imagery tools and workflows for visualisation and analysis, and access to imagery collection).
- **Data Collection & Management:** tools to collect, crowdsource, store, access, and share data. Geo-enabling of any data from any source.

Company information

- ArcGIS is a product by ESRI, which is a private company.
- **Mobility domain focus**: not specialised in a specific domain.
- **Revenue sources**: Licence fees, SaaS.
- **Pricing structure:** Information non-disclosed or non-available.
- Other resources: none.
- Geographical footprint: Global.
- **Data providers:** Information non-disclosed or non-available.
- **Data users:** Governments, cities, and businesses.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: Self served and customised.
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	Depends on the data source	N	N	Y	*Information non-disclosed or non-available*		
Environment		N	N	Y			
Cartographic	Global	Y					
Payment	Depends on the	N	N	Y			
Vehicle usage		N	N	Y			

Static Infrastructure	data source	N	N	Y	
Dynamic infrastructure		N	N	Y	
Ticketing		N	N	Y	
User-generated		N	N	Y	

- **Data quality:** Information non-available.
- GDPR compliance: yes.
- Data sharing options for the data providers: n/a.

4.3. Carto

Product description *(source: website slightly edited) //* www.carto.com

CARTO is a location intelligence platform, enabling organisations to use spatial data and analysis for more efficient delivery routes, better behavioural marketing, strategic store placements, and much more. Data Scientists, Developers and Analysts use CARTO to optimise business processes, and predict future outcomes.

Company information

- Carto is a private company.
- **Mobility domain focus:** Transport: Traffic Management/Road Safety Analysis/Mobility Planning/Citizen Services. Logistics: Route Optimisation/ Pick Up & Drop Off Site Planning/ Fleet Management.
- **Revenue sources:** SaaS subscription; software development services; and data subscription sales.
- **Pricing structure:** Free for 12 months (trial offer with limited featured). Monthly/bimonthly subscription for individual use. Specific "enterprise fee" (prices vary according to requirements).
- **Other resources:** H2020 funding received in 2020 (Data, private investments received through CrunchBase).
- Geographical footprint: US and Europe.
- **Data providers:** Road traffic data provided by: Tom Tom (121 data sets), WorldPop (2543) Michael Bauer International (1813), Weather Source (1482), CARTO (523), Precisely (500), Experian (386), American Community Survey (279), Foursquare (250), OpenStreetMap (249), HERE (236), Transparent (201), Bureau of Labor Statistics (123), TomTom (121), Lifesight (83), Mastercard (79), Unacast (72).
- **Data users:** Cities' mobility planners, public transport companies, delivery companies, airport management companies.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	Wide range of data through the CARTO Data Observatory (a marketplace for spatial data).
Data collection and storage	Y	Available on premises or in the cloud.
Data processing and analysis	Y	Wide range of spatial analysis functions available
APIs	Y	Info on APIs available here: https://docs.carto.com/
Exchange (monetization)	Y	Data generators can sell their data through the Data Observatory, but CARTO is selective about the data of partners onboarded.

- **Users' entry requirements and onboarding process:** Self-service or customised depending on chosen level of support.
- Prohibited / limited usage of the platform: *Information non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	N	Tom Tom	Y	Premium data	*Information non-disclosed or available*	N (historical data)
Environment	WW	N	WeatherSource	Y	(1) below	GCP-EU	N
Cartographic	WW	Y		Y		GCP-EU	N
Payment	US, Canada, UK, Australia	N	Mastercard	Y	(2) below	GCP-EU	N
Vehicle usage	WW	N	TomTom	Y	(3) below	GCP-EU	N
Static Infrastructure	WW	N	Foursquare, Precisely, HERE	Y	(4) below	GCP-EU	N
Dynamic infrastructure	*Information non-disclosed or non-available*						
Ticketing							
User-generated	US and UK	N	Spatial.ai, Dstillery	Y	(5) below	GCP-EU	N

- **Data quality:** Revision of sources, method, completeness, and accuracy.
- GDPR compliance: yes.
- **Data sharing options for the data providers:** the datasets provided by partners of the spatial data catalogue are shared with members, depending on their premium of free membership,

MOBIDATALAB

MOBIDATALAB – H2020 G.A. No. 101006879

Funded by the European Union

through CARTO platform interfaces, Google BigQuery, AWS S3, Snowflake, and Azure Blob
Storage
(1) https://weathersource.com/company/legal/terms-of-service/
(2) https://drive.google.com/file/d/10BYh1tr3W3imQJovgk6GBxb0gwjPe24w/view?usp=sharing
(3) http://tomtom.com/en_gb/thirdpartyproductterms
(4) https://legal.here.com/en-gb/terms/end-user-license-agreement
    https://www.pitneybowes.com/content/dam/pitneybowes/us/en/license-terms-of-use/software-
    and-data-end-user-license-agreement/shrink-wrap-eula-01-2018.pdf
    https://www.foursquare.com/eula
(5) https://drive.google.com/file/d/1NB9YpPtVjcseZ4EkqfSJ2UqiwlfhA77b/view?usp=sharing
    https://drive.google.com/file/d/1sKeFWiamq-u-pOJdiFrIivr3AYGqi88H/view?usp=sharing

4.4. Chouette

Product information // https://enroute.mobi/fr/ and https://enroute.mobi/produits/chouette/

enRoute develops and operates two software platforms dedicated to the management of mobility
data:
- Chouette SaaS is dedicated to schedule mobility data management, in GTFS / NeTEx.
- Ara SaaS is dedicated to real-time mobility data management, in GTFS-RT / SIRI.

Both platforms can operate independently or in sync.

Company information

- Enroute SAS is a private company.
- **Mobility domain focus:** (1) Public Transport Networks (Rail, Bus, Subway etc.), (2) Micro-
  mobility Services, (3) Carpooling, Demand Responsive Transport.
- **Revenue sources:** SaaS Subscription + Support Services.
- **Pricing structure:** Monthly subscription pricing based on 2 parameters: (1) Number of Trips in
  Aggregated Offer (Chouette) / Number of Daily Trips (Ara) (2) Update Frequency of static
  Dataset (Chouette) / Number of real time data feeds set up (Ara).
- Other resources: none.
- Geographical footprint: France.
- **Data providers:** Public Transit Authorities, Public Transport Operators, other Mobility Service
  Providers.
- **Data users:** Clients' own Transit Management & PIS, Regional Transport Platforms, Google
  Transit, MaaS Platforms.

Product information

Scope of service	Y/N
Provision of data	Y

MOBIDATALAB

Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: Customised SLAs based on Clients' needs:
  - User entry under provision of affiliation with Client or Partners
  - Onboarding and Support Process through active support (Training sessions, Open channel) & self-service (Documentation).

- **Prohibited / limited usage of the platform:** Fair use policy for real time data management.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	Client's territory	N	N	Y	open data	Europe	Real time
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	Client's territory	N	N	Y	open data	Europe	
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure	Client's territory	N	N	Y	open data	Europe	
Dynamic infrastructure	Client's territory	N	N	Y	open data	Europe	Real time
Ticketing		N	N	Y	open data	Europe	
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** Control and validation processes configurable through Products' Interfaces (Import/collection & Publication/diffusion).
- GDPR compliance: Yes.
- Data sharing options for the data providers: Client's choice.

4.5. CKAN

Product description *(source: website slightly edited) //* https://ckan.org/

CKAN is a tool for making open data websites. It helps users manage and publish collections of data. It is used by national and local governments, research institutions, and other organisations.

Once data is published, users can use its faceted search features to browse and find the data they need, and preview it using maps, graphs and tables – whether they are developers, journalists, researchers, NGOs, citizens.

CKAN is an open-source software, with an active community of contributors who develop and maintain its core technology. CKAN is modified and extended by an even larger community of developers who contribute to a growing library of CKAN extensions.

Company information

- The CKAN Association, via the Steering Group and Technical Team, oversees and manages CKAN on behalf of its broader community of users and contributors.
- **Mobility domain focus:** not specialised in a specific domain.
- **Revenue sources:** no direct revenues.
- Pricing structure: free.
- **Other resources:** voluntary work, donations.
- Geographical footprint: WW.
- **Data providers:** *n/a*, does not gather data.
- **Data users:** all types.

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	N
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: Self-served.
- Prohibited / limited usage of the platform: following open-source licence.

Data information

CKAN does not provide any data.

4.6. Convex Mobility data exchange

Product description // https://convexglobal.io/

Convex offers an open data catalogue and dynamic data exchange service for data providers and consumers that enables the equitable exchange of dynamic data between systems and organisations. Convex is a global commercial Data Exchange facility, enabling the safe, secure, simple, and sustainable exchange of data to facilitate innovation and accelerate the deployment at scale of new solutions and services (such as those enabled by Connected and Autonomous Vehicles (CAVs) and intelligent transport infrastructure).

Company information

- Convex is a product by Chordant (www.chordant.io), a private company based in the UK.

MOBIDATALAB

Funded by the European Union

- **Mobility domain focus:** Mobility overall with road network operator and adjacent domain weighting.
- **Revenue sources:** SaaS subscriptions, solution development, data transformations, data brokering.
- **Pricing structure:** Varies; monthly/q/annual subscription per entity, integration and development fees, etc.
- Other resources: none.
- **Geographical footprint:** currently European centred, although UK has been the starting point.
- **Data providers:** mobility services operators, telecommunication companies.
- **Data users:** smart cities, regions, national public authorities and service providers.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	Ability to ingest data from virtually any source and store it, with focus on dynamic data
Data processing and analysis	Y	Focus on data processing and cleansing, Chordant is not an analytics company
APIs	Y	Multiple APIs to enable flexible data access
Exchange (monetization)	Y	Multiple methods for data pricing as well as data licenses

- **Users' entry requirements and onboarding process**: Self-service available, typically SMEs, universities, trial usage. Customised agreements also available, typically for corporations and large public sector entities requiring tailored offering. Services also available on some public sector procurement portals.
- **Prohibited / limited usage of the platform:** PII data ingestion by a new party requires a specific look at the circumstances to ensure GDPR compliance.

Data information

Convex enables data sharing of any type of data and Chordant declined to give precise information on the type of data gathered in the platform. However, they stated the following:

- Majority of data exchange happens on private / selective sharing basis.
- **Ownership of data:** Chordant does not typically buy data, but brokers it.
- **Re-use terms of data:** License subject to data owner, multiple options available.
- **Data quality:** Data feed monitoring, data cleansing, data processing, etc. as per agreed solutioning scope that sets the requirement for the data (quality).
- GDPR compliance: yes.
- **Data sharing options for the data providers:** Public sharing, selective sharing, private sharing, including pricing and licensing terms as per data owners' choices.

4.7. Fluctuo City Dive and Dataflow

MOBIDATALAB

**Funded by the
European Union**

Product description // *https://fluctuo.com/*

City Dive is a business intelligence tool that tracks the supply and use of shared-mobility services (bikes, scooters, mopeds, and cars) in 80+ European cities. With it, you can:

- Compare the KPIs of 140+ shared-mobility services (bikes, scooters, mopeds & cars).
- Explore European countries & cities to identify markets where you could launch your service.
- Visualise aggregated trip data to make informed conclusions about rider usage and vehicle demand in the cities where you operate.

Dataflow: By using Data Flow API, the user gets real-time access to accurate data from more than 150 shared-mobility services:

- Vehicle ID
- Vehicle type (bike / scooter / moped / car)
- Vehicle location (latitude, longitude)
- Vehicles attributes (battery level)
- Vehicle operator (i.e., Jump, Tier, Coup…)

Company information

- Fluctuo is a private company.
- Mobility domain focus: Micro-mobility.
- **Revenue sources:** Subscription and API requests.
- **Pricing structure:** CityDive: pricing based on the number of users and options activated (250 or 1000€/month). Dataflow: 0,6€ / 1 000 requests.
- Other resources: none.
- **Geographical footprint:** European Union + UK & Norway.
- **Data providers:** shared mobility operators.
- **Data users:** shared mobility operators, public transport companies, urbanist agencies, insurance companies.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: *information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	Europe (80 cities)	N	Y	*Information non-disclosed*	*Information non-disclosed*	Europe (Ireland)	Day +1
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	Europe (80 cities)		Y	*Information non-disclosed*	*Information non-disclosed*	Europe (Ireland)	Day +1
Static Infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** information non-disclosed or non-available.
- **GDPR compliance:** information non-disclosed or non-available.
- **Data sharing options for the data providers:** *information non-disclosed or non-available.*

4.8. GAIA-X

Product   description *(source: website   slightly   edited)   //   https://www.data-infrastructure.eu/GAIAX/Navigation/EN/Home/home.html*

With GAIA-X, representatives from business, science, and politics on an European level create a proposal for the next generation of a European data infrastructure: a secure, federated system that meets the highest standards of digital sovereignty while promoting innovation. This project is the cradle of an open, transparent digital ecosystem, where data and services can be made available, collated, and shared in an environment of trust.

GAIA-X is a project initiated by Europe for Europe and beyond. Its aim is to develop common requirements for a European data infrastructure. Therefore openness, transparency, and the ability to connect to other European countries are central to GAIA-X. Representatives from several European countries and further international partners are currently involved in the project.

Company information

- Gaïa X is a non-profit organisation.
- Mobility domain focus: no particular focus.
- Revenue sources: *n/a.*

MOBIDATALAB

MOBIDATALAB – H2020 G.A. No. 101006879

Funded by the European Union

- Pricing structure: *n/a.*
- **Other resources:** public and corporate funding.
- Geographical footprint: Europe.
- Data providers: *n/a.*
- Data users: *n/a.*

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	Y
Data processing and analysis	N
APIs	N
Exchange (monetization)	N

- Users' entry requirements and onboarding process: *n/a.*
- Prohibited / limited usage of the platform: *n/a.*

Data information

Gaïa X does not provide any data directly.

4.9. Geotab Ignition

Product description *(source: website slightly edited) //* https://data.geotab.com/

Geotab captures a vehicle's location, speed, accelerometer data, and other data from the vehicle's computer including seat belt usage, detailed engine diagnostics, etc. Geotab leverages over 40 billion data points processed per day to provide insights and data services.

Company information

- Geotabb ignition is a service provided by Geotab.
- **Mobility domain focus:** automotive (only domain).
- **Revenue sources:** information non-disclosed or non-available.
- **Pricing structure:** information non-disclosed or non-available.
- Other resources: none.
- Geographical footprint: WW (130 countries).
- **Data providers:** cars equipped with Geotab telematics system.
- **Data users:** information non-disclosed or non-available.

Product information

Scope of service	Y/N
Provision of data	Y

MOBIDATALAB

Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: *information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	130 countries	Y	N	N	*information non-disclosed or non-available*		Real time
Environment	Variable	N	Y	N	*information non-disclosed or non-available*		Real time
Cartographic	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	130 countries	Y	*information non-disclosed or non-available*				Real time
Static Infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** internal processes.
- GDPR compliance: yes.
- **Data sharing options for the data providers:** *information non-disclosed or non-available.*

4.10. Google Maps

Product description *(source: Wikipedia slightly edited)* https://www.google.com/maps

Google Maps is a web mapping product developed by Google. It offers satellite imagery, aerial photography, street maps, 360° interactive panoramic views of streets (Street View), real-time traffic conditions, and route planning for traveling by foot, car, air (in beta) and public transportation. In 2020, Google Maps was used by over 1 billion people every month around the world.

Company information

- Google is a private company.
- **Mobility domain focus:** automotive, public transport.

MOBIDATALAB

- **Revenue sources:** API calls billings.
- **Pricing structure:** freemium (free below 25 000 access / day).
- **Other resources:** Google advertising operations.
- Geographical footprint: WW.
- **Data providers:** Google services users, PTA, …
- **Data users:** Cities, businesses, and autonomous car manufacturers.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	N
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: *information non collected.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location data	WW	Y	*Information non-disclosed*				
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	Y	*Information non-disclosed*				
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure	WW	Y	*Information non-disclosed*				
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	WW	Y	*Information non-disclosed*				

- **Data quality:** information non-disclosed or non-available.
- GDPR compliance: yes.
- Data sharing options for the data providers: *n/a.*

4.11. Here Platform

*Product description // * https://www.here.com/platform

MOBIDATALAB

**Funded by the
European Union**

Model & Visualise: Create custom interactive maps, visualise geospatial data and perform ad-hoc analytics – no coding required.

Develop & Execute: Create, deploy, and scale location-centric data services and perform complex analytics – in one collaborative environment.

Exchange & Monetize: Buy, sell, and share a wide variety of location-centric assets, such as data and SDKs – in a secure exchange platform.

Company information

- Here is a product by HERE Global B.V. a private company.
- **Mobility domain focus:** automotive, transport and logistics, public transport, micro-mobility.
- **Revenue sources:** Data licenses, service and software licence subscription, Services license subscriptions (T&L, tracking), PaaS by usage, marketplace.
- **Pricing structure:** Custom & standardised models (pay per use).
- Other resources: none.
- **Geographical footprint:** EMEA, APAC, Americas (close to worldwide coverage).
- **Data providers:** wide range of sources including public and private organisation as well as crowdsourced.
- **Data users:** transport authorities.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	global provider of map data for e.g. Navigation
Data collection and storage	Y	editors and data collection software (e.g. ML software for data extraction)
Data processing and analysis	Y	including spatial data processing and intelligence
APIs	Y	like location-based service, data store, etc.
Exchange (monetization)	Y	on a marketplace

- **Users' entry requirements and onboarding process:** Traditionally focus on individual agreement, increased support for self-serve and Freemium.
- **Prohibited / limited usage of the platform:** By local regulation/laws and license agreements.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	Y	Y	Y	depends on content (mainly proprietary)	cloud multi-region	*Information non-disclosed*
Environment	WW	Y	Y	Y			
Cartographic	WW	Y	Y	Y			
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

Static Infrastructure	WW	Y	Y	Y	depends on content (mainly proprietary)	cloud multi-region	*Information non-disclosed*
Dynamic infrastructure	WW	Y	Y	Y			
Ticketing	selected countries	Y	Y	Y			
User-generated	WW	Y	Y	Y			

- **Data quality:** Map data: manual and automated QA processes, certifications. Other mobility data: individual QA processed per use-case.
- GDPR compliance: yes.
- **Data sharing options for the data providers:** per license models (individual offers) and via marketplace. 3rd party data: fine grained control mechanisms via marketplace.

4.12. Inrix

Product description *(source: website slightly edited) //* https://inrix.com/

Founded in 2005, INRIX pioneered the practice of managing traffic by analysing data from vehicles. INRIX delivers products for the automotive and transportation industries such as real-time parking and traffic information and solutions that facilitate the safe testing and deployment of autonomous vehicles. INRIX also provides new insights to a variety of other industries that can make better business decisions by understanding how people move throughout the day.

INRIX leverages real time, predictive and historical traffic information to determine traffic speed on freeways, highways, major and minor arterials. Speed is reported at the XD Traffic Segment level and is updated approximately every minute and includes comparisons to typical and free-flow as well as travel time.

Company information

- Inrix is a private company.
- **Mobility domain focus:** Automotive, Public Sector, Enterprise.
- Revenue sources: SaaS, DaaS.
- **Pricing structure:** Data license model (per unit, per transaction, flat, ...)
- Other resources: none.
- **Geographical footprint:** Americas, Europe, Middle East.
- **Data providers:** providers of car data (OEMs).
- **Data users:** Automotive, Public Sector, Enterprise.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y

MOBIDATALAB

Funded by the European Union

Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: license agreement.
- **Prohibited / limited usage of the platform:** Information non-disclosed or non-available.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location*	US, Europe, Middle East	Y	*Information non-disclosed*	Y	Y	*Information non-disclosed*	Real time
Environment	n/a	n/a	n/a	N	n/a	n/a	n/a
Cartographic	n/a	n/a	n/a	N	n/a	n/a	n/a
Payment	n/a	n/a	n/a	N	n/a	n/a	n/a
Vehicle usage	US, Europe, Middle East	Y	*Information non-disclosed*	Y	Y	*Information non-disclosed*	Real time
Static Infrastructure	US, Europe	Y		Y	Y		Near real time
Dynamic infrastructure	n/a	n/a	n/a	N	n/a	n/a	n/a
Ticketing	n/a	n/a	n/a	N	n/a	n/a	n/a
User-generated	n/a	n/a	n/a	N	n/a	n/a	n/a

* cars, trucks, heavy trucks

- Data quality: ISO 9001.
- GDPR compliance: yes.
- **Data sharing options for the data providers:** *Information non-disclosed or non-available.*

4.13. Mapbox

Product description *(source: website slightly edited) //* https://www.mapbox.com/

Mapbox provides maps and location for developers:

- **Maps:** APIs, SDKs, and live updating map data.
- **Mapbox Studio:** Mapbox Studio gives designers control over everything from colours and fonts, to 3D features and camera angles, to the pitch of the map as a car enters a turn.

- **Navigation:** Mapbox provides routing engines, traffic-powered travel times, and turn-by-turn directions.
- **Search:** Search and geocoding is tied to every product (maps, navigation, AR).
- **Movement:** Dashboards to understand where and when movement is happening.

Company information

- Mapbox is a private company.
- Mobility domain focus: automotive.
- Revenue sources: Freemium.
- **Pricing structure:** Free below 20 000 requests, then 2$ per 1 000 requests.
- Other resources: none.
- Geographical footprint: WW
- **Data providers:** OSM, telecommunication companies, smartphone applications.
- **Data users:** Cities, businesses, car manufacturers.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served and customised.
- **Prohibited / limited usage of the platform:** *information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location *	WW		Y	*Information non-disclosed*			Real time
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	Y	OSM				
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure	WW	Y	OSM	*Information non-disclosed*			
Dynamic infrastructure	WW	N	Y				
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

* through smartphone telemetry. Datasets generated daily from over 600 million mobile devices and 45,000 different apps powered by Mapbox.

- **Data quality:** information non-disclosed or non-available.
- GDPR compliance: Yes.
- Data sharing options for the data providers: n/a.

4.14. MapKit

Product description

(source: website slightly edited) //https://developer.apple.com/documentation/mapkit/

MapKit is an API available on IOS devices to:
- Embed maps directly into app's windows and views.
- Add annotations and overlays to a map for calling out points of interest.
- Provide text completion to make it easy for users to search for a destination or point of interest.

Transit directions can be made available to Maps. Users can also use Maps to supplement the directions that they provide in their app. For example, if an app only provides directions for subway travel, Maps can be used to provide walking directions to and from subway stations.

Company information

- MapKit is a product by Apple.Inc, a private company.
- Mobility domain focus: n/a.
- Revenue sources: API calls.
- **Pricing structure:** Freemium (free below 250 000 maps views / day).
- Other resources: none.
- Geographical footprint: WW.
- **Data providers:** *information non-available,* numerous data sources (5000 +).
- **Data users:** Application developers.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	N
Data processing and analysis	N
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: according to IOS rules.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	Y	Y		Proprietary		
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure	WW	Y	Y	*Information non-disclosed*			
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** Information non-disclosed or non-available.
- **GDPR compliance:** information non-collected.
- Data sharing options for the data providers: *n/a*.

4.15. Mobi-iti

Product description // *https://www.okina.fr/opendata/*

Mobi-iti is an open-source platform designed to collect, enrich, manage and publish mobility data. Mobi-iti respect European standards such as IFOPT, Transmodel, NeTEx profil France and SIRI 2.2 IDFM and also GTFS and GTFS RT. Mobi-iti provides an interface to facilitate data management and integrates basemaps and map-matching software to visualize data on maps.

The solution can integrate a real time aggregator, a trip planner, and other solutions designed by the company (e-store, fare data base, payment management, invoice management).

Company information

- Mobi-iti is a product by Okina, a private company.
- Mobility domain focus: public transport.
- **Revenue sources:** SaaS subscription.
- **Pricing structure:** per data input and output connectors and data volumes.
- Other resources: none.
- Geographical footprint: France.
- **Data providers:** Cities, Districts, Public transport operators.
- **Data users:** Cities, Districts, Public transport operators, software providers, open data platforms.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: customized agreements.
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location data*	WW	Y	PTA	Y	*Information non-disclosed*	Europe	Real time
Environment	*n/a*	N	N	Y	*n/a*	*Information non-disclosed*	*n/a*
Cartographic	WW	Y	OSM, Cities	Y	*Information non-disclosed*	Europe	near real time
Payment	WW	Y		Y		France	near real time
Vehicle usage		N	N	Y	*n/a*	*Information non-disclosed*	*n/a*
Static Infrastructure	WW	N	OSM, Cities	Y	open data	Europe	*Information non-disclosed*
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

* buses, coaches, micro-mobility

- **Data quality:** The software integrates control procedures and an internal team ensures data quality for mobility data.
- GDPR compliance: Yes.
- **Data sharing options for the data providers:** *Information non-disclosed or non-available.*

4.16. Moovit transit data manager

Product description // www.moovit.com

Moovit develops and owns a mobility app solution which has been used by customers since 2012.

Moovit provides a MaaS platform that handles over 990 million users and manages over more than 6 billion data points per day. The app is available in more than 3,400 cities in 112 countries, fully localised to 45 languages, and integrates over 1000 different API that feed into the platform.

By combining information from 7500 public transit operators and over 319 shared and micro-mobility service providers (taxis, Uber, Lyft, bikes, scooters, e-scooters, mopeds, shared-cars, and more) with live information, Moovit suggests transit routes with real-time information about that journey.

Company information

- Moovit is a limited company, Israel incorporated.
- **Mobility domain focus:** MaaS, Data Provider, Integrator, Ticketing.
- Revenue sources: SaaS.
- Pricing structure: annual licence.
- Other resources: none.
- Geographical footprint: 1 billion + users WW.
- **Data providers:** Public Transit Operators, Local Authorities.
- **Data users:** General public, Local Authorities, Operators, etc.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	Moovit collects 6 billion GDPR compliant data points a day
Data collection and storage	Y	
Data processing and analysis	Y	
APIs	Y	
Exchange (monetization)	Y	

- **Users' entry requirements and onboarding process:** Every project is different, so they scope the data set required to the clients' specific needs.
- Prohibited / limited usage of the platform: *n/a*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	N	Multiple	Y	*Information non-disclosed*		
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

Cartographic	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Payment	WW	N	Multiple	Y	*Information non-disclosed*		
Vehicle usage	*n/a*	N	N	Y	*n/a*	*Information non-disclosed*	*n/a*
Static Infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	WW	N	Multiple	Y	*Information non-disclosed*		
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** internal processes
- GDPR compliance: yes
- Data sharing options for the data providers: *information non collected.*

4.17. Navitia

Product description // https://www.navitia.io/

Navitia is a product suite including:
- **Navitia**: open-source intermodal passenger information system
- **Data Factory:** data quality tools and services
- **Navitia.io:** open data portal + open APIs (Navitia instance) giving access to enriched public transport data sets in over 30+ countries
- **Navitia Lab:** private data portal to promote and develop digital innovation in the field of mobility

Company information

- Navitia is a product by HOVE, a private company.
- **Mobility domain focus:** Public transports, Shared mobility, Micro-mobility.
- **Revenue sources:** SaaS subscription (Navitia, Data Factory), Usage based (Navitia.io), Services (Navitia Lab, Data Factory).
- **Pricing structure:** Setup costs + annual subscription (Navitia, Data Factory, Navitia Lab), Monthly subscription (Navitia.io).
- Other resources: none.
- **Geographical footprint:** France (90%), Europe, Canada, US.
- **Data providers:** PTA (Cities, Regions), PTO (SNCF, TransDev, Keolis, RATP, ...), new mobility service providers.
- **Data users:** Navitia: PTA/PTO. Navitia.io: various companies (real estate, job boards, …), Data factory: data providers.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	Navitia.io open data portal: https://navitia.opendatasoft.com/
Data collection and storage	Y	Data Factory: input and output data sets are stored for a limited time but only available for data providers Navitia.io: open data sets available for everyone
Data processing and analysis	Y	Data enhancement process: dedicated team and several products for data enhancement and analysis For Navitia and Navitia.io: Rooting, schedule and mobility data exploration engines Data Hub is a Data Factory tool used for data processing and analysis
APIs	Y	HOVE is an API company. All services are available through APIs
Exchange (monetization)	N	

- **Users' entry requirements and onboarding process:** navitia.io: self-registration, Navitia SaaS: custom agreement, Navitia Lab: custom agreement.
- Prohibited / limited usage of the platform: *n/a.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	For public transport: only few bus lines in France and Canada Freefloating: Europe	N	- Public transport: Keolis and STS Sherbrooke - Freefloating : Fluctuo	Y	- Public transport: Open (OBL) and private Data - Freefloating : private Data	France	Real Time for both
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	N	OSM	Y	Open	France	n/a
Payment	*n/a*	N	N	N	*n/a*	*n/a*	*n/a*
Vehicle usage	Europe	N	Fluctuo	Y	Private Data	France	Real Time
Static Infrastructure	France (95%) European cities: Berlin, Madrid,	N	OSM	Y	Open and Private - for some public transport data providers	France	n/a

MOBIDATALAB

Funded by the European Union

	Barcelona … US, Canada, Asia, Africa						
Dynamic infrastructure	France, Sherbrooke	N	PTA/PTO (Keolis, Ratp, Transilien, STS Sherbrook, …)	Y	Open and Private Data (it depends on the provider)	France	Real Time and Near Real Time
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** Dedicated team for data enrichment and enhancement.
- GDPR compliance: yes.
- **Data sharing options for the data providers:** Open data sets are redistributed through navitia.io open data portal.

4.18.oneTRANSPORT

Product description *(source: website slightly edited) //* https://onetransport.io/

The oneTRANSPORT Data Marketplace is a cloud-based platform that allows organisations, including central and local governments and transport service providers, to share and access data about the real-time operation of towns and cities and their transport and mobility services.

The oneTRANSPORT Data Marketplace enables organisations of any size to expose, transform and share dynamic data, to enable the creation of new data-driven Intelligent Mobility solutions.

Public and private sector organisations are using oneTRANSPORT to publish, distribute and consume real-time data about the operations of cities and regions.

- Storage of dynamic, real-time, or other reference data in the cloud, with auto-archiving of historical real-time data to files
- Sharing of data privately across an organisation via a web interface or through standardised APIs
- Exposure of real-time to other organisations, and reports on who is consuming which data
- Discovery and consumption of data that others have published via licensed terms
- Sharing of data for free or for a price

Company information

- oneTRANSPORT is a product of Chordant, a UK based private company.

- Mobility domain focus: Public transport.
- Revenue sources: licence fee.
- **Pricing structure:** yearly subscription.
- Other resources: none.
- Geographical footprint: UK.
- **Data providers:** Cities and PTA.
- **Data users:** Cities and PTA.

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	Y

- Users' entry requirements and onboarding process: self-served.
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

oneTRANPORT does not directly provide data and enables data sharing of any type of data.

4.19. Openstreetmap

Product description *(source: website slightly edited) //* https://www.openstreetmap.org/

OpenStreetMap (OSM) is a collaborative project to create a free editable map of the world (over two million registered users). Users may collect data using manual survey, GPS devices, aerial photography, and other free sources, or use their own local knowledge of the area. Crowdsourced data is then made available under the Open Database License.

The data from OSM can be used in various ways, including production of paper maps and electronic maps (similarly to Google Maps, for example), geocoding of address and place names, and route planning.

Company information

- OpenStreetMap is community owned and supported by OpenStreetMap foundation.
- **Mobility domain focus:** no specialisation on any domain.
- **Revenue sources:** no direct revenues.
- Pricing structure: free.
- **Other resources:** voluntary work, donations.
- Geographical footprint: WW.

- Data providers: volunteers.
- **Data users:** Prominent users include Facebook, Wikimedia Maps, Apple, Microsoft, Amazon Logistics, Uber, Craigslist, Snapchat, OsmAnd, Maps.me, Geocaching, MapQuest Open, JMP statistical software, and Foursquare.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	N
Data processing and analysis	N
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: Self served.
- Prohibited / limited usage of the platform: following Open Database License (ODbL).

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	Community owned	n/a	n/a	ODbL		n/a
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure	WW	Community owned	n/a	n/a	ODbL		n/a
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** crowdsourced data.
- GDPR compliance: *n/a.*
- Data sharing options for the data providers: *n/a.*

4.20. Open transport Net

Spatially Referenced Data Hubs for Innovation in the Transport Sector. Brings together open geo-spatial data within City Data Hubs and enables it to be viewed in easy-to-understand ways. EU project that ended in 2017.

Excerpt from the final report https://cordis.europa.eu/project/id/620533:

OpenTransportNet (OTN) was created to address key challenges that hinder the use of geographic information (GI) in Europe. Standards and tools have been identified as two main issues around which these challenges revolve. Standards because they can be difficult to apply in practice, even by experienced users; tools because their features are often inaccessible to nontechnical ordinary citizens – the greatest source of innovative potential in every country. OTN's response to these challenges has been the creation of collaborative virtual hubs where everyone from individuals to SMEs to city managers can access harmonised data and visualise it using simple tools.

Data - Harmonising data from a variety of sources
- Used existing research, previous project outcomes and end-user feedback to understand the main challenges citizens, cities and SMEs face in exploiting geographic information for innovation and business purposes;
- Collected, processed and aggregated GI, voluntary GI and Open Data from a variety of sources into common, usable, harmonised formats and made them available through OTN Hubs;
- Used a set of Semantic tools to enable interoperability between spatial and non-spatial open datasets.

Technology – Combining data to extract new information and insights
- Involved end-users in the Hub design process to ensure the platform met their needs and requirements;
- Protected the privacy of users through the development of a sophisticated Access Control Management (ACM) System;
- Built upon current Open Innovation & GI projects by adapting and integrating existing technical components and methodologies into the OTN Hub and solution;
- Visualised full range of GI data using a series of creative layers and applications.

Innovation - Provide tools and skills for using GI in rapid service creation
- Deployed the local OTN hubs using a pilot methodology that (a) created a feedback loop for continuous improvement and (b) showed significant impact on the GI ecosystem of a city through cross-border scenarios;
- Brought together Sponsors and Innovators through the OTN Hubs and encouraged participation and innovation through a range of engagement activities;
- Evaluated the pilots' successes and prepared a sound exploitation plan to ensure the sustainability of project results after the end of the funding period.

4.21. OpenTripPlanner

Product description *(source: website slightly edited) //* https://www.opentripplanner.org/

OpenTripPlanner (OTP) is a family of open-source software projects that provide passenger information and transportation network analysis services. The core server-side Java component finds itineraries combining transit, pedestrian, bicycle, and car segments through networks built from widely available, open standard OpenStreetMap and GTFS data. This service can be accessed directly via its web API or using a range of Javascript client libraries, including modern reactive modular components targeting mobile platforms.

Launched in 2009, the project has attracted a thriving community of users and developers, receiving support from public agencies, startups, and transportation consultancies alike. OTP powers regional and national journey planning services around the world, as well as several popular multi-city mobile applications.

Company information

- OpenTrip Planner is a community driven project and IBI group hosts the efforts to maintain the product since 2019.
- **Mobility domain focus:** public transport, biking, and pedestrian.
- **Revenue sources:** Free open-source software.
- Pricing structure: open-source.
- **Other resources:** community efforts.
- **Geographical footprint:** US and UK (OpenTriPlanner has been deployed in several cities in the world: http://docs.opentripplanner.org/en/dev-2.x/Deployments/).
- Data providers: *n/a.*
- Data users: *n/a.*

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	N
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: following open-source license.

Data information

OpenTripPlanner does not directly provide data.

4.22. Opendatasoft

Product description // *https://www.opendatasoft.com/*

The Opendatasoft platform is a cloud-based data publishing solution that lets users share their data easily. Cities, transportation providers, government administrations, and other private-sector companies use the Opendatasoft platform to publish, visualise, and share data in order to break down silos and facilitate their reuse. Data become easily understandable thanks to charts, tables, search, filtering, and mapping features. By turning all datasets into APIs with aggregation, faceting, query, and real-time capabilities, data can be reused in applications and new services that create new or improve services in a Smart City environment, for instance.

Reference: Israel Smart Mobility Living Lab Consortium using an Opendatasoft platform for their Data Platform: https://israellivinglab.opendatasoft.com/pages/home/

Company information

- Opendatasoft is a private company.
- **Mobility domain focus:** Public Transport, Automotive, Transport & Logistics, Micro-mobility.
- **Revenue sources:** SaaS Subscription.
- **Pricing structure:** Annual subscription fee (licensing model).
- Other resources: none.
- Geographical footprint: 21 countries.
- Data providers:
  o Rail: SNCF, Ile-de-France Mobilités, Smart Services IdF, RATP, Keolis Rennes, Keolis Caen, Keolis Dijon, HOVE, Infrabel, STIB, SBB CFF FFS, Transports Publics Genevois, Ferrocarrils de Catalunya ;
  o Main European Cities publishing mobility data on their ODS platform (parking, bike, traffic, infrastructure, etc.): Open Data Ville de Paris, Métropole Européenne de Lille, Bordeaux Métropole, Toulouse Métropole, Ville de Bruxelles, Comune di Bologna, City of Basel ;
  o Parking: Saemes, SABA.
- **Data users**: same as data providers.

Product information

Scope of service	Y/N	Comment
Provision of data	Yes	Users collect data from their own databases (private sources) & from 3rd parties open data sources (native connector with ODS Data Network, 22.000 datasets ready to use: https://data.opendatasoft.com/pages/home/)
Data collection and storage	Yes	More details here: https://help.opendatasoft.com/platform/en/publishing_data/01_creating_a_dataset/creating_a_dataset.html
Data processing and analysis	Yes	More details here: https://help.opendatasoft.com/platform/en/publishing_data/05_processing_data/processing_data.html
APIs	Yes	More details here: https://help.opendatasoft.com/en/apis/

MOBIDATALAB

Funded by the European Union

Exchange (monetization)	No	Note: some clients are using 3rd party payment solutions to monetize datasets on top of their ODS data platform (using ODS generated APIs)

- **Users' entry requirements and onboarding process**: Details about the configuration of a portal general security policy: https://help.opendatasoft.com/platform/en/configuring_domain/01_managing_security/portal.html#configuring-your-portal-s-general-security-policy
- **Prohibited / limited usage of the platform:** Quotas set per licence are: maximum number of datasets, maximum number of records per dataset and maximum volume. Details about the configuration of quotas per user to avoid a user use up all of a license usage quotas: https://help.opendatasoft.com/platform/en/managing_domain/01_managing_users_and_groups/users.html#quotas

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	France, some European countries and some cities in US and Australia	N	ODS clients publish datasets in open data	Yes	OPEN DATA (Etalab and ODbL)	France/Europe	Both real time & static datasets
Environment		N	ODS clients publish datasets in open data + Opendatasoft Data Team	Yes		France/Europe	Both real time & static datasets
Cartographic	France Switzerland Canada Australia Portugal Spain	N	INSEE IGN ARCEP Etc.	Yes		France/Europe	Static
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	France, some European countries and some cities in						
Static Infrastructure		N	ODS clients publish datasets in open data	Yes	OPEN DATA (Etalab and ODbL)	France	Both real time & static datasets

	US and Australia						
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** Ensured by the clients through their own data quality/governance processes.
- **GDPR compliance:** Label CNIL, GDPR governance.
- **Data sharing options for the data providers:** Access rights to an Opendatasoft platform is very flexible (access to a specific or several datasets/pages, etc.). For more details about data accessibility & security: https://help.opendatasoft.com/platform/en/publishing_data/09_managing_dataset_security/security.html#managing-security

4.23. Otonomo

Product description *(source: website slightly edited) //* https://otonomo.io/

Vehicle data platform that uses patented technology to ingest more than 4 billion data points per day from over 40 million global connected vehicles in order to reshape and enrich the resulting data. It creates aggregated data from 16 OEMs and more than 100 service providers. It provides secure data management and gives drivers granular control over how their personal automotive data is shared.

Company information

- Otonomo is a private company. Originally limited, it merged with Soft Acquisition Group Inc. II in 2021.
- Mobility domain focus: automotive.
- **Revenue sources:** data marketplace.
- **Pricing structure:** Pay per use or custom plan.
- **Revenue:** $56.1M per year (estimation on growjo.com).
- Other resources: none.
- Geographical footprint: US and UK.
- **Data providers:** OEMs & service providers.
- **Data users:** drivers, passengers, municipalities, and transportation companies.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y

MOBIDATALAB
MOBIDATALAB – H2020 G.A. No. 101006879

Funded by the European Union

APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served and customised agreement.
- Prohibited / limited usage of the platform: fewer functions with pay-per-use option.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location *	US, EU, Asia	N	OEMs & service providers	*Information non-disclosed*			
Environment	*Information non-disclosed*	N	OEMs & service providers	*Information non-disclosed*			real-time
Cartographic	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage *	US, EU, Asia	N	OEMs & service providers	*Information non-disclosed*			
Static Infrastructure **	US, EU, Asia	N	OEMs & service providers	*Information non-disclosed*			
Dynamic infrastructure *	US, EU, Asia	N	OEMs & service providers	*Information non-disclosed*			real-time
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

* 4 billion data points, 40 million global connected vehicles in the United States, Canada, Europe, and Asia
** ultrasonic sensors within 600,000 passenger vehicles driving in 70+ cities across Europe and North America

- **Data quality:** Otonomo Automotive Data Services Platform adds new data layers from ultrasonic car sensors, ADAS systems and EVs to enrich the raw data collected and make them useable. Data is normalised and harmonised.
- **GDPR compliance:** GDPR principles included in privacy by design and deployed in practice, through internal procedures and policies, privacy policy, and engagements with partners. Otonomo gets user consent (Grant/Revoke) directly from the OEMs or data providers and offers a centralised Consent Management Hub to support the consent process with data subjects.
- Data sharing options for the data providers: *information non-available.*

4.24. Populus

Product description // https://www.populus.ai/solutions-overview

Populus is a digital solution that empowers cities to manage their streets, and develop data-driven policies with access to data from shared mobility services (carsharing, ride-hailing, bikeshare, and scooters) and urban freight delivery services.

Products:
- Mobility Manager
- Street Manager
- Curb Manager

Company information

- Populus Technologies Inc. is a private company.
- **Mobility domain focus:** Micro-mobility, Shared Mobility, Transport and Logistics, Public Transport, Automotive.
- **Revenue sources:** SaaS subscription.
- **Pricing structure:** Monthly or yearly subscription.
- **Other resources:** Federal Agencies like US DOT funding, University and Transportation Research Board Research.
- **Geographical footprint:** Argentina, Brazil, Canada, Germany, Mexico, Israel, Portugal, Spain, United Kingdom, United States.
- **Data providers:** Mobility partners.
- **Data users:** public agencies.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- **Users' entry requirements and onboarding process:** Standard terms and conditions use of the platform, but if needed customised agreement.
- **Prohibited / limited usage of the platform:** Data usage is subject to Data Access Agreements and Data Processing Agreements. User may not reverse engineer the platform or incorporate any part of the platform into any product or service without prior written consent. All approved usages and prohibited usages are outlined in the Terms of Service https://www.populus.ai/legal/terms-of-service.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	N	Y	Y	Non-sublicensable, non-transferable, non-exclusive subscription to access and use the data.	US and Europe based on customers location	Real time with data standards designed for that (GBFS) and historical
Environment	WW	N	N	N			Historical
Cartographic	WW	N	N	Y			Historical
Payment	WW	N	N	Y			Historical
Vehicle usage	WW	N	Y	Y	Non-sublicensable, non-transferable, non-exclusive subscription to access and use the data.		Near real time
Static Infrastructure	WW	N	Y	Y			Historical
Dynamic infrastructure	WW	N	Y	Y			Near real time
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	WW	N	N	Y	There are varying degrees of user-generated content: Customer Content and Published content. *	US and Europe based on customers location	Real time

Users grant Populus a non-transferable, non-exclusive, fully paid-up, royalty-free license to access, use, modify, directly or through third parties, and create derivative works of Customer Content for the purpose of providing the Terminal Services and other third-party products and services that integrate the Terminal Services. Additional details on the license for Customer Content and Published content can be found in the terms of service. https://www.populus.ai/legal/terms-of-service

- **Data quality:** Populus has policies that outline who has access to data, the acceptable use of such data, and procedures in case of breach or disaster. While processing data Populus

checks for some common issues and raises problems internally for investigation. Code is tested for accuracy and to detect regressions. The platform's security layer ensures users only have access to the data they are authorised to view and/or edit.

- GDPR compliance: yes.
- Data sharing options for the data providers: *n/a.*

4.25. PTV

Product description (source: website slightly edited) // https://company.ptvgroup.com/fr/

PTV software empowers users to monitor, optimise and control mobility and transport (data, models, predictions, optimisation).

- **PTV Visum:** traffic planning solution which provides an holistic overview of a transportation model but also a detailed representation of the public transport system for transport authorities, associations and operators.
- **PTV Vistad:** software collecting and validating accident data for safety experts.
- **PTV Map&Guide:** route planner for trucks.
- **PTV Epics & PTV Balance:** PTV Epics analyses traffic conditions locally and determines the best control option, PTV Balance transmits the ideal timing for a particular phase to the local signal control system.
- **PTV xServer:** Developer APIs to add functionalities to existing solutions.

Company information

- PTV Group is a private company.
- Mobility domain focus: automotive.
- **Revenue sources:** traffic software, transport consulting, logistics software.
- **Revenues:** 117 M€ in 2019.
- **Pricing structure:** PTV Map&Guide : options depending length of use. PTV xServer : software components possible.
- Other resources: none.
- **Geographical footprint:** Headquarters in Germany with subsidiaries worldwide, customers from 120+ countries.
- **Data providers:** authorities on public transport and traffic management and municipalities.
- **Data users:** research organisations, private companies.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	PTV Vistad on accident data
Data processing and analysis	Y	PTV Data Analytics
APIs	Y	PTV xServer
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: *Information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	Germany	*Information non-disclosed*					
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic		N	map data by HERE, TomTom, OpenStreetMap	*Information non-disclosed*			
Payment	EU	N	European data suppliers				
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure			V2X-equipped vehicles	*Information non-disclosed*			
Dynamic infrastructure	Germany	*Information non-disclosed*					
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** PTV Vistad: More than 200 plausibility rules specified by the German Federal Statistics Bureau provide quality managers with precise instructions for data maintenance to ensure the validity of the data collected in PTV Vistad.
- **GDPR compliance:** Information non-disclosed or non-available.
- **Data sharing options:** Information non-disclosed or non-available.

4.26. Remix data platform

Product description *(source: website slightly edited) //* https://www.remix.com/solutions/data-platform

Remix's GIS mapping software helps bring relevant transportation data into one place and visualize it in a way that's easy to use and easy to understand. The software performs end-to-end processing of mobility data: ingestion, validation, and aggregation. Remix's GIS mapping software is cloud-based, improving the platform based on customer feedback and providing regular cloud updates.

Company information

MOBIDATALAB

- Remix is owned by Via, a private company.
- Mobility domain focus: automotive.
- Revenue sources: SaaS, TaaS.
- **Pricing structure:** Information non-available or non-disclosed
- **Revenues:** 187 m€ ($228 Million).
- Other resources: none.
- **Geographical footprint:** North America, South America, Europe, Asia, Australia.
- **Data providers:** Open data platforms, Users' data.
- **Data users:** Cities, Transport Agencies, Mobility Providers.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	
Data processing and analysis	Y	+ simulation tools
APIs	Y	
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: *Information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Remix supports over 3,000 data sets, including ridership, origin-destination data, collisions, custom GIS layers.

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	Y	Y	*Information non-disclosed*			
Environment	*n/a*	N	N	Y	*n/a*	*n/a*	*n/a*
Cartographic	WW		Y				
Payment	*n/a*	N	N	Y	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	N	N	Y	*n/a*	*n/a*	*n/a*
Static Infrastructure	WW		Y	*Information non-disclosed*			
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	N	N	Y	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality:** Information non-disclosed or non-available.
- **GDPR compliance:** Information non-disclosed or non-available.
- **Data sharing options for the data providers:** Information non-disclosed or non-available.

4.27. Sensoris

Product description *(source: website slightly edited) //* https://sensoris.org/

SENSORIS represents a group of 28 key players from the global vehicle industry, map and data providers, sensors manufacturers and telecom operators.

Sensoris focuses on the vehicle-to-cloud upload form and the cloud-to-cloud data exchange format, specifically for vehicle-based data and other data needed for mobility services. The cloud can be an intermediate server or aggregation server or a service provider input gateway.

All Sensoris developments conform to the data authorisation/authentication process, and fully comply with data privacy and approved security regulations.

Sensoris is committed to deliver and maintain technical specifications that define the format and content of sensors and campaign data in the cases mentioned under scope. This implies vehicle-to-cloud data upload format for vehicle-based data only, cloud-to-cloud exchange format for vehicle-based data and other data needed for mobility services, and cloud-to-vehicle "campaign" request format for specific data at specific locations and times only.

Company information

- SENSORIS is composed by members in the vehicle industry, map and data providers, sensors manufacturers and telecom operators.
- Mobility domain focus: automotive.
- **Revenue sources:** no direct revenues.
- Pricing structure: free.
- **Other resources:** voluntary work, donations.
- Geographical footprint: WW.
- Data providers: n/a.
- Data users: n/a.

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	Y
Data processing and analysis	N
APIs	N
Exchange (monetization)	N

- Users' entry requirements and onboarding process: *n/a.*
- Prohibited / limited usage of the platform: *n/a.*

Data information

SENSORIS does not gather or provide data but is instead a format for data exchange.

4.28. SharedStreets

Product description *(source: website slightly edited) // https://sharedstreets.io/*

SharedStreets global referencing system is used to move data between different street representations, whether data linked to OpenStreetMap, a city-managed GIS system, or a commercial basemap. SharedStreets uses linear referencing to identify specific street segments and subsegments (lines and points) and link them to a specific location along the street, regardless of basemap. SharedStreets referencing system is a global, non-proprietary system for describing streets and connecting street-linked data. This allows users to link data related to streets into one unified view.

SharedStreets creates open-source software for aggregation and encryption that protects user privacy and business interests when dealing with potentially reidentifiable information.

SharedStreets creates user interfaces to reduce barriers and pay walls in visualising government owned data and allows for instantaneous visualisation and analysis. All the data generated by SharedStreets is portable to other map services using SharedStreets references and is downloadable via the GeoJSON format.

Four pilots have been done using SharedStreets Referencing System. They produced standardised and replicable data models and reusable open-source tools that help cities of all sizes to follow on others' footsteps, and build crucial partnerships between the public and private sectors.

- **Mobility Metrics.** Empowering cities to measure the impacts and outcomes of micro-mobility by creating tools for turning large datasets into key metrics. The mobility metrics software aggregates data to generate insights about mobility while protecting individual privacy. It standardises the conversion of data from points (like where a trip starts and where a trip ends) into trip information and then aggregates trips over time. The tool produces overall daily metrics as well as more detailed metrics for particular areas and time periods. https://sharedstreets.io/mobility-metrics/
- **Taxi and TNC Activity.** Empower cities to better manage curb space with high resolution anonymised and aggregated data on for-hire vehicle pick-up and drop-off, while protecting user privacy. Cities have access to curb pick-up and drop-off data from Uber and Lyft to allow them to make policy and infrastructure decisions based on the use of their streets. https://sharedstreets.io/taxi-tnc-activity/
- **Construction and closures.** Empower cities and government agencies with the ability to publish street closure data in a format consumable by multiple maps. This project uses SharedStreets referencing system to provide an open, non-proprietary, and machine-readable format for producing street closure information. Produce street-linked data using web app by drawing on the map. https://sharedstreets.io/incidents-construction-closures/

- **CurbLR.** Enable cities and companies to communicate clearly about curb regulations to enable better analysis, planning, and management of public space. CurbLR provides a structured way for all cities to store and share essential curb information, incorporating asset information that's been linear referenced onto the street using the SharedStreets Referencing System. It's a common language on which many things can be built, including tools to analyse and map how space is allocated, or apps to help route people to parking and make curb usage more seamless.

Company information

- SharedStreets is a project of the Open Transport Partnership, a non-profit organization.
- **Mobility domain focus:** Automotive, public transport.
- **Revenue sources:** no direct revenues.
- Pricing structure: free.
- Other resources: donations.
- Geographical footprint: US.
- Data providers: *n/a.*
- Data users: *n/a.*

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	N
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: Self served.
- Prohibited / limited usage of the platform: *n/a.*

Data information

SharedStreets does not own or directly give access to data.

4.29. TomTom

Product description *(source: website slightly edited) //* [*https://www.tomtom.com/*](https://www.tomtom.com/)

TomTom is a location technology specialist, offering maps, navigation, real-time traffic information and services. Main products:

- **Maps**: TomTom maps and data are in millions of vehicles around the world and power some of the most used location apps (Uber, Microsoft, and Fiat Chrysler Automobiles, for example). The map is updated through AI and machine learning with community input.

- **Traffic and travel information**: One out of every five cars on the road relies on TomTom connected services. TomTom traffic and travel information provide drivers around the world with real-time information and estimated times of arrival (ETAs).
- **Navigation for automotive**: TomTom Navigation for Automotive is an in-dash navigation system for OEMs.
- **Automated driving**: TomTom technology helps vehicles plan ahead and provides a safety net to sensors when visibility and conditions are poor, making automated driving safer. It currently powers over three million automated vehicles around the world.

Company information

- TomTom is a private company.
- Mobility domain focus: automotive.
- Revenue sources: Freemium.
- **Pricing structure**: 3€ / 1 000 API calls.
- Other resources: none.
- Geographical footprint: WW.
- **Data providers**: Connected devices providers, OEMs, …
- **Data users**: Car manufacturers and services.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	
Data processing and analysis	Y	Traffic Stats, route monitoring, O/D analysis
APIs	Y	
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: self-served and customised.
- **Prohibited / limited usage of the platform:** *information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location *			Y	*Information non-disclosed*			Real time and historical
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic		Yes	*Information non-disclosed*				
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Static Infrastructure		Yes	*Information non-disclosed*				

Dynamic infrastructure		Yes					
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

* TomTom combines information from 600+ million connected devices and third-party sources

- **Data quality**: information non-available.
- GDPR compliance: yes.
- Data sharing options for the data providers: *n/a.*

4.30. TravelAI

Product description *//* www.travelai.info

TravelAI offers both quantitative and qualitative data that covers 11 modes of transport (stationary/dwell, walk, run, bike, car, bus, train, tram, metro, air and water). This can then augment or even replace traditional paper based, phone call or web entry travel surveys. TravelAI is a multi-domain company with teams based in Finland, Portugal, and the UK.

Company information

- TravelAI is a private limited company.
- **Mobility domain focus**: TravelAI is generator of multi-modal multi-country movement trajectories, consumer behaviour data that falls into both policymaking as well as service design.
- **Revenue sources**: SaaS, licensing, data services
- **Pricing structure:** information non-disclosed or non-available.
- Other resources: none.
- **Geographical footprint**: UK, EU with data already being generated in North America and Asia.
- **Data providers:** Information non-disclosed or non-available.
- **Data users**: Rail, bus, transport planning, infrastructure owners.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	Only as is necessary
Data processing and analysis	Y	On device and cloud
APIs	Y	Internal use and licensed to 3rd parties/clients
Exchange (monetization)	Y	

- **Users' entry requirements and onboarding process**: off the shelf and bespoke.

MOBIDATALAB

Funded by the European Union

- **Prohibited / limited usage of the platform:** Licensing terms restrict reselling of data and certain uses.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	>50 countries	Y	N	Y	no reselling	UK+EU	near real time
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	>50 countries	Y	N	Y	no reselling	UK+EU	near real time
Static Infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	>50 countries	yes	no	yes	no reselling	UK+EU	near real time

- **Data quality**: 12m KMs of training data, quality assurance and field testing are continuous.
- **GDPR compliance**: Yes, a need to explain data collection purposes and get explicit user consent, context sensitive data capture and sector utilisation.
- Data sharing options for the data providers: Yes, data sharing is encouraged.

4.31. Uber Movement

Product description *(source: website slightly edited) //* https://movement.uber.com/

Uber Movement shares anonymised data aggregated from over ten billion trips to help urban planning around the world. Uber Movement is a free tool that shares dynamic insights about traffic and mobility in cities where Uber operates. Currently, Uber Movement displays average travel times around and between various areas of available cities (where Uber operates).

Uber Movement's travel times are determined by anonymous trip data from Uber driver-partners completing trips around the city. To ensure privacy for everyone on the Uber platform, Uber Movement never shares any personal information about riders or drivers.

Company information

- Uber Movement is a product by Uber Technologies, a private company.
- **Mobility domain focus**: automotive (transport and logistics).
- **Revenue sources**: Service: ride-hailing and food delivery.
- **Pricing structure**: Uber Movement is free of charge.

MOBIDATALAB

Funded by the European Union

- Other resources: none.
- Geographical footprint: WW.
- Data providers: Drivers.
- **Data users**: Uber, Users, Local Authorities.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	
Data processing and analysis	Y	Web-based exploration tool, available processing toolkits
APIs	N	
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: *Information non-available.*

Data information

Uber Movement provides historical aggregated data on average time and speed.

- **Data quality**: information non-available.
- GDPR compliance: yes.
- Data sharing options for the data providers: *n/a.*

4.32. UrbanSDK

Product description (source: website slightly edited) // https://www.urbansdk.com/

Advanced data analytics platform for transportation planners, engineers, and mobility organisations to make better decisions by leveraging connected vehicles and location data.
- **Best Practices & Metrics**: access to national best practices and analysis.
- **Streaming datasets**: access to mobility data like speeds, traffic counts, transit, incidents, weather and more.
- **Analysis Templates**: off the shelf analysis templates for dashboards, maps, and data analysis to reduce your team's bandwidth constraints.
- **Automate Reporting**: automation to share, print or export insights.
- **Export Datasets**: export data from any report or directly from a data warehouse.
- **Data management and backup**: data archiving, nightly backup and redundancy in the cloud.

Company information

- Urban SDK is a private company.
- Mobility domain focus: automotive.

- **Revenue sources**: subscription fees.
- **Pricing structure**: information non-disclosed or non-available.
- Other resources: none.
- Geographical footprint: US.
- **Data providers**: Information non-disclosed or non-available.
- **Data users**: Cities, businesses and autonomous car manufacturers.

Product information

Scope of service	Y/N	Comment
Provision of data	Y	
Data collection and storage	Y	
Data processing and analysis	Y	
APIs	Y	
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: *Information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location *	US	Y	Y	*Information non-disclosed*			
Environment	US		Y				
Cartographic	US		Y				
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage	US		Y	*Information non-disclosed*			
Static Infrastructure	US		Y				
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

* Historical and live speed data for speed, travel time and reliability indicators.

- **Data quality**: information non-disclosed or non-available.
- **GDPR compliance**: information non-disclosed or non-available.
- **Data sharing options for the data providers:** *information non-disclosed or non-available.*

4.33. Vianova

Product description *//* https://www.vianova.io/

Vianova provides a mobility data platform that facilitates data sharing between cities, operators, and third parties, and provides analytics and policy tools. It is an open-API platform using open-source data formats, fully self-service and with leading GDPR compliant systems. Stakeholders have access to a web-dashboard, customisable, where they can integrate mobility data sources (shared mobility, traffic, public transport), and infrastructure data (maps, parking, construction work, etc.). They can easily analyse mobility patterns and create digital geo-fenced regulations.

Company information

- Vianova is a private company.
- **Mobility domain focus**: micro-mobility, shared-mobility, mobility on-demand, transport and logistics, public transport, automotive.
- **Revenue sources**: SaaS subscription & data services.
- **Pricing structure**: Monthly license & data-as-a-service.
- Other resources: none.
- **Geographical footprint**: Europe (FR, UK, DE, AUT, Nordics, Baltics, IT, SP, PT, BE, NL, CH). South-America, US, Australia.
- **Data providers**: 40+ operators (shared & on-demand mobility).
- **Data users**: Cities (15), Public transport operators (3), third parties (10).

Product information

Scope of service	Y/N	Comment
Provision of data	Y	Agreements
Data collection and storage	Y	
Data processing and analysis	Y	
APIs	Y	Open-API
Exchange (monetization)	Y	Data marketplace

- **Users' entry requirements and onboarding process**: Self-service or customised depending on chosen level of support.
- Prohibited / limited usage of the platform: Wrongdoing in the use of the platform.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	EU	N	N	Y	License	Germany	Real-time
Environment	WW	N	N	Y	Open	Germany	Near real-time

Cartographic data	WW	N	N	Y	Open	Germany	Near real-time
Payment	WW	N	N	Y	Open	Germany	Real-time
Vehicle usage	WW	N	N	Y	License	Germany	Near real-time
Static Infrastructure	EU	N	N	Y	Open	Germany	Real-time
Dynamic infrastructure	EU	N	N	Y	License/Open	Germany	Near real-time
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	EU	N	N	Y	License	Germany	Real-time

- **Data quality**: Vianova has processes and systems to ensure data quality.
- **GDPR compliance**: data minimisation, storage limitation, data storage security, encrypted in-transit data, data isolation, role-based access controls, audit logs, aggregation techniques, data sharing agreements.
- Data sharing options for the data providers: Opt-in basis based on requests.

4.34. Vis.gl

Product description *(source: website slightly edited) //* *https://vis.gl/*

Vis.gl is a suite of composable, interoperable open-source geospatial visualisation frameworks centred around deck.gl. The core deck.gl framework was developed by Uber to support a wide range of geospatial visualisation use cases across the company. It was open-sourced in 2015. Uber transferred a set of core vis.gl frameworks to the Urban Computing Foundation (UCF).

The frameworks are deck.gl, kepler.gl, pydeck.gl, luma.gl, react-map-gl, math.gl and loaders.gl.

deck.gl is a WebGL-powered framework for visual exploratory data analysis of large datasets. deck.gl allows complex visualisations to be constructed by composing existing layers, and makes it easy to package and share new visualisations as reusable layers. When used with Mapbox GL it automatically coordinates with the Mapbox camera system to provide compelling 2D and 3D visualisations on top of Mapbox based maps. https://deck.gl/

Kepler.gl is an open-source geospatial analysis tool for large-scale data sets. Built with Deck.gl, Kepler.gl utilises WebGL to render large datasets quickly and efficiently. Built on React & Redux, Kepler.gl can be embedded inside mapping applications. https://kepler.gl/

Company information

- vis.gl is under open governance, and anyone can join the open planning meetings. Contributor status is available and technical steering committee membership is available to major contributors.
- Mobility domain focus: *n/a*.
- **Revenue sources**: no direct revenue sources.

MOBIDATALAB

Funded by the European Union

- Pricing structure: none.
- **Other resources**: contribution from partners (Uber, Carto, Unfolded).
- Geographical footprint: WW.
- Data providers: *n/a.*
- Data users: *n/a.*

Product information

Scope of service	Y/N
Provision of data	N
Data collection and storage	N
Data processing and analysis	Y
APIs	N
Exchange (monetization)	N

- Users' entry requirements and onboarding process: open-source.
- Prohibited / limited usage of the platform: *n/a.*

Data information

Vis.gl does not own or provide access to data

4.35. Waze

Product description *(source: Wikipedia slightly edited) //* https://www.waze.com/

Waze is a GPS navigation software app and a subsidiary of Google. It works on smartphones and tablet computers that have GPS support. It provides turn-by-turn navigation information and user-submitted travel times and route details, while downloading location-dependent information over a mobile telephone network. Waze describes its app as a community-driven GPS navigation app, which is free to download and use.

Waze launched the Connected Citizens Programme (CCP) in June 2014, a free, two-way data sharing programme used by over 450 governments, departments of transportation, and municipalities for traffic analysis, road planning, and emergency workforce dispatching. The programme is a two-way data exchange between Waze and the partner.

Company information

- Waze is a private company, subsidiary of Google.
- Mobility domain focus: automotive.
- Revenue sources: advertising.
- **Pricing structure:** information non-available.
- Other resources: none.
- Geographical footprint: WW.

MOBIDATALAB

Funded by the European Union

- Data providers: Cities.
- **Data users**: public and cities.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	N
Data processing and analysis	N
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: n/a.

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	Y	*Information non-disclosed*				
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW						
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Vehicle usage		Y	*Information non-disclosed*				
Static Infrastructure	WW	Y					
Dynamic infrastructure	Upon agreements "connected cities"	N	Cities	Y			
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	WW	Y	*Information non-disclosed*				

- **Data quality**: Information non-disclosed or non-available.
- GDPR compliance: Yes.
- Data sharing options for the data providers: n/a.

4.36. Wejo

Product description *(source: website slightly edited) //* https://www.wejo.com/

Wejo helps public sector agencies and Departments of Transport to use connected car data to improve the lives of their citizens and communities. Wejo ADEPT is a cloud-based data exchange platform that enables the sharing and accessing of huge volumes of connected car data.

Products for public service:

- **Movement data, High frequency movements & journey data:** Real-time information on journeys, traffic, and locations.
- **Driving events, identify common driving events & trends:** Current and historical information about driving behaviours.
- **Insight products, Traffic, road and journey intelligence:** Custom products, Flexible delivery and integration methods.

Company information

- Wejo is a private company.
- Mobility domain focus: automotive.
- **Revenue sources**: Information non-disclosed or non-available.
- **Pricing structure**: Information non-disclosed or non-available.
- Other resources: none.
- Geographical footprint: US.
- **Data providers**: OEMs, telematics providers, connectivity providers, smart mobility providers.
- **Data users**: Cities, businesses, and autonomous car manufacturers.

Product information

Scope of service	Y/N
Provision of data	Y
Data collection and storage	Y
Data processing and analysis	Y
APIs	Y
Exchange (monetization)	N

- Users' entry requirements and onboarding process: *Information non-disclosed or non-available.*
- **Prohibited / limited usage of the platform:** *Information non-disclosed or non-available.*

Data information

Data	Geographical coverage	Owned by the company	Provided by partners	Accepted	Re-use terms	Storage location country	Real time vs near real time
Vehicle location	WW	N	Y	Y	*Information non-disclosed or non-available*		
Environment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Cartographic	WW	N	Y	Y	*Information non-disclosed or non-available*		
Payment	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

Vehicle usage	WW	N	Y	Y	*Information non-disclosed or non-available*		
Static Infrastructure	WW	N	Y	Y	*Information non-disclosed or non-available*		
Dynamic infrastructure	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
Ticketing	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*
User-generated	*n/a*	*n/a*	*n/a*	N	*n/a*	*n/a*	*n/a*

- **Data quality**: internally controlled.
- GDPR compliance: yes.
- Data sharing options for the data providers: *n/a.*

4.37. X-Road

Product description

*(source: website slightly edited) //*https://e-estonia.com/solutions/interoperability-services/x-road/

X-Road is an open-source software and ecosystem solution that provides unified and secure data exchange between organisations. Members of an ecosystem exchange data through access points (Security Servers) that implement the same technical specifications.

Company information

- X-Road is a digital public good verified by the Digital Public Goods Alliance, and it is released under the MIT open-source license and is available free of charge.
- Mobility domain focus: none.
- Revenue sources: none.
- **Pricing structure**: free and open-source data exchange layer software.
- **Other resources**: public funding.
- Geographical footprint: WW.
- **Data providers**: technology partners.
- **Data users**: private and public entities.

Product information

Scope of service	Y/N	Comment
Provision of data	N	
Data collection and storage	N	
Data processing and analysis	N	
APIs	Y	X-Road Simple Statistics API provides some basic statistics about Estonian and Finnish X-Road environments, e.g. list of existing environments, and each environment's member count, Security Server

		count, subsystem count and list of member classes with member count per member class.
Exchange (monetization)	N	

- Users' entry requirements and onboarding process: self-served.
- Prohibited / limited usage of the platform: *n/a.*

Data information

X-Roads does not provide data.

The X-Road core is available in GitHub, and the repository contains information about X-Road, source codes, its development, installation and documentation. The current repository is a collaboration platform between the member countries of the Nordic Institute for Interoperability Solutions (NIIS).

X-Road SDK is a developers' package located in GitHub which contains, for example, code samples for basic operations in X-Road including communication with Security Server. It is the primary toolkit to get started with utilizing X-Road in service and application development.

The X-Road Knowledge Base contains how-to and troubleshooting articles, and the NIIS development team is adding new content regularly.

Standalone Security Server is a special version of Security Server that is ready-to-use in minutes without the normal Security Server installation, configuration, and registration process.

5. Conclusion

This document aims to better understand how mobility data sharing happens from a business perspective and has the ambition to support the decision-making processes of data-owners, data-users, and data-aggregators regarding opportunities to trade, share or use mobility data.

After explaining the methodology and the approach to conduct the market study, this document provides the analysis of recent reports on mobility data sharing and the description of 37 products, services, and platforms of mobility data-sharing.

The research presented in this deliverable suffered of two main limitations:

- Scope of analysis and list of companies analysed: the market is very dynamic, the list of companies active in the field is very significant and changes very frequently: new companies are created, others terminate, while others change their positioning. Therefore, the list of companies described here is thus not exhaustive.
- Heterogenous level of information gathered: the information available on each company is not homogenous with some having strict confidentiality concerns and being reluctant to provide detailed information on their activities.

The main results are summarised as follows:

- Identification of 9 data types with high potential of impact on the creation of innovative digital services: vehicle location, environment, maps, payment, vehicle usage, static infrastructure, dynamic infrastructure, ticketing, user-generated;
- Identification of 4 main components of the mobility data sharing value chain: generation, collection, analysis, and exchange;
- Positioning of 37 products, services, and platforms according to the data they provide or aggregate and the components of the value chain they offer;
- Detailed description of 37 products, services, and platforms: mobility domain focus, revenue source, geographical footprint, data providers and users, onboarding process, data re-use terms, data storage location, GDPR compliance.

Furthermore, looking at the market of mobility data-sharing platforms and products helped to get some relevant market insight, that may be considered in future market-related analysis in the project and beyond:

- Data generators (e.g., telecommunication companies, connected device manufacturers, mobility service providers) use various simultaneous distribution channels to share their data. A telecommunication company can trade its users' location data directly through an in-house data-trading platform and trade them through an aggregator and through customised partnerships. The same happens for connected car OEMs. Trading data is for them an additional revenue source, which, even though growing and significant, remains marginal compared to the revenue collected with the legacy business;
- Detailed information on data sources and price is mainly confidential. Both data generators and aggregators are reluctant to share publicly precise information on their commercial agreements;
- Data generators compete with each other to be a proxy for mobility. For example, origin / destinations can be traced from telecommunication companies, gaming applications, public transport ticketing or crowdsourced connected data (like We Count, a European project that enables citizens to initiate a policy-making process with fully automated measurement data in the field of mobility and air quality);
- Aggregators are becoming distributors of mobility services. Aggregating data from multiple mobility solutions is a first step to offer them in a marketplace or in an integrated service. Mobility data sharing market has then a direct influence on the mobility market itself and the way data is shared (or not) has an influence on the usage of the various mobility services aggregated in a data-sharing platform;
- Some data generators aggregate other data to limit the competition from aggregators within both the mobility data-sharing market and the mobility market.

6. References

Faroukhi, A. E. (2020). Big data monetization throughout Big Data Value Chain: a comprehensive review. *J Big Data*.

Strategy Analytics. (2019). *Location platform benchmark report: 2020.*

UITP. (2020). *Sharing of data in public transport.*

WBCSD. (2020). *Enabling data-sharing: Emerging principles for transforming urban mobility.*

7. Appendices

7.1. Organisations analysed and correspondence with use cases

Company/product	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8
AKKA datahub	■		■		■	■	■	■
ArcGIS / ESRI	■	■	■			■	■	■
Carto	■	■	■	■		■		
Chouette / En route mobi	■		■	■				
CKAN	■	■	■			■	■	■
Convex	■		■		■	■		
Fluctuo			■					
GaiaX								■
Geotab	■		■					
Google Maps	■			■		■	■	
Here	■	■	■	■	■			
Inrix	■	■	■	■	■			
Mapbox	■		■	■	■			
Mapkit (Apple)	■		■	■				
Mob-iti	■		■					
Moovit transit data manager	■	■	■				■	
Navitia	■	■	■		■			■
One transport	■		■	■	■	■	■	
OpenStreetMap	■	■	■		■	■		
Open transport Net								
Open trip planner	■		■			■		
Opendatasoft	■	■	■			■	■	■
Otonomo	■	■	■	■		■		
Populus	■	■	■			■		
PTV	■	■	■					
Remix	■	■	■				■	
Sensoris								
Sharedstreets			■		■			■
TomTom	■	■	■					
TravelAI	■		■	■				
Uber Movement			■					
UrbanSDK	■		■	■	■			
Vianova	■		■					
vis.gl			■					■
Waze	■	■	■	■				
Wejo	■		■					
X-Road			■					■

7.2. Survey template

Name of product/Platform			Website	
Product description				
Company				
Name			Turnover (2020 in M€)	
Legal form (private or administration or crowdsourcing)			Mobility domain focus (public transport, automotive, transport and logistics, micro-mobility)	
Revenue sources (eg: Saas subscription, service, data services, data marketplace)			Other resources (e.g.: public funding, voluntary work and partnerships)	
Pricing structure (eg. monthly subscription per car)			Users / clients	Data providers	
Geographical footprint *(clients nationalities)*				Data consumers	
Product				
Scope of service	Y/N	Comment	Users' entry requirements and onboarding process *(self-served, customized agreement, …)*	
Provision of data				
Data collection and storage				
Data processing and analysis			Prohibited / limited usage of the platform (….)	
APIs				
Exchange (monetization)				

MOBIDATALAB

Funded by the European Union

Data								
	List	Geographical coverage	Owned by the company (Y/N)	Provided by partners (Name of the partner)	Accepted in the platform (Y/N)	Re-use terms (license type)	Storage location (Country)	Real time vs near real time
Vehicle location data (e.g., cars, buses, micro-mobility, ...)								
Environment data (e.g., weather)								
Cartographic data								
Payment								
Vehicle usage data								
Static Infrastructure data (e.g., parking, stops, traffic lights ...)								
Dynamic infrastructure data (e.g., civil works, delays)								
Ticketing								
User-generated								

How data quality is ensured (processes, organisation, …)	
GDPR Compliance	
Data sharing options for the data providers (no choice, partners and exposure selection, …)	

MOBIDATALAB

MOBIDATALAB – H2020 G.A. No. 101006879

Funded by the European Union

7.3. Sources of information

Company/product	Sources of information
AKKA datahub	Survey filled in by the company
ArcGIS / ESRI	Company website
Carto	Company website
Chouette / En route mobi	Survey filled in by the company
CKAN	Company website
Convex	Survey filled in by the company
Fluctuo	Survey filled in by the company
GaiaX	Company website
Geotab	Company website
Google Maps	Company website
Here	Survey filled in by the company
Inrix	Survey filled in by the company
Mapbox	Company website
Mapkit (Apple)	Company website
Mob-iti	Survey filled in by the company
Moovit	Survey filled in by the company
Navitia	Survey filled in by the company
One transport	Company website
OpenStreetMap	Company website
Open transport Net	Company website
Open trip planner	Company website
Opendatasoft	Survey filled in by the company
Otonomo	Company website
Populus	Survey filled in by the company
PTV	Company website
Remix	Company website
Sensoris	Company website
Sharedstreets	Company website
TomTom	Company website
TravelAI	Survey filled in by the company
Uber Movement	Company website
UrbanSDK	Company website
Vianova	Survey filled in by the company
vis.gl	Company website
Waze	Company website
Wejo	Company website
X-Road	Company website

7.4. Level of integration of the solutions

Company/product	Generation	Collection	Analysis	Exchange
AKKA datahub		X		
ArcGIS / ESRI	X	X	X	
Carto	X	X	X	X
Chouette / En route mobi	X	X	X	
CKAN			X	
Convex	X	X	X	X
Fluctuo	X	X	X	
GaiaX		X		
Geotab	X	X	X	
Google Maps	X		X	
Here	X	X	X	X
Inrix	X	X	X	
Mapbox	X	X	X	
Mapkit (Apple)	X			
Mob-iti	X	X	X	
Moovit	X	X	X	X
Navitia	X	X	X	
One transport	X	X	X	X
OpenStreetMap	X			
Open transport Net	X	X	X	
Open trip planner			X	
Opendatasoft	X	X	X	
Otonomo	X	X	X	
Populus	X	X	X	
PTV	X	X	X	
Remix	X	X	X	
Sensoris			X	
Sharedstreets			X	
TomTom	X	X	X	
TravelAI	X	X	X	
Uber Movement	X	X	X	
UrbanSDK	X	X	X	
Vianova	X	X	X	X
vis.gl			X	
Waze	X			
Wejo	X			
X-Road			X	

7.5. Type of data managed

The following table uses color-coded cells (blue, red, grey, and a patterned/"②" fill) to indicate the type of data managed per company/product.

Company/product	Vehicle location data	Environment data	Cartographic data	Payment	Vehicle usage data	Static Infrastructure data	Dynamic infrastructure data	Ticketing	User-generated
AKKA datahub	②	②	②	red	②	②	②	②	②
ArcGIS / ESRI	②	②	②	②	②	②	②	②	②
Carto	blue	blue	blue	blue	blue	blue	red	red	blue
Chouette	②	red	②	red	red	②	②	②	red
CKAN	grey	grey	grey	grey	grey	grey	grey	grey	grey
Convex	②	②	②	②	②	②	②	②	②
Fluctuo	blue	red	red	red	blue	red	red	red	red
GaiaX	grey	grey	grey	grey	grey	grey	grey	grey	grey
Geotab	blue	blue	red	blue	blue	red	blue	blue	red
Google Maps	blue	red	blue	red	blue	blue	red	red	blue
Here	blue	blue	blue	blue	blue	blue	blue	red	red
Inrix	blue	red	blue	red	blue	blue	red	red	red
Mapbox	blue	red	blue	red	blue	blue	red	red	red
Mapkit (Apple)	red	blue	blue	blue	blue	blue	red	red	red
Mob-iti	blue	②	blue	blue	②	blue	red	red	red
Moovit	blue	red	red	red	blue	red	red	blue	red
Navitia	blue	red	red	red	blue	blue	red	red	red
One transport	②	②	②	②	②	②	②	②	②
OpenStreetMap	red	blue	blue	red	blue	blue	red	red	red
Open transport Net	②	②	②	②	②	②	②	②	②
Open trip planner	②	red	blue	red	blue	blue	red	red	red
Opendatasoft	blue	blue	blue	red	blue	blue	red	red	red
Otonomo	blue	blue	red	red	blue	blue	blue	red	red
Populus	blue	blue	blue	blue	blue	blue	blue	red	blue
PTV	blue	red	blue	red	blue	blue	blue	red	red
Remix	blue	②	blue	blue	blue	blue	red	red	red
Sensoris	grey	grey	grey	grey	grey	grey	grey	grey	grey
Sharedstreets	grey	grey	grey	grey	grey	grey	grey	grey	grey
TomTom	blue	red	blue	red	blue	blue	blue	red	red
TravelAI	blue	red	red	red	blue	red	red	red	blue
Uber Movement	blue	red	red	red	blue	red	red	red	red
UrbanSDK	blue	blue	blue	red	blue	blue	red	red	red
Vianova	②	②	②	②	②	②	②	red	②
vis.gl	grey	grey	grey	grey	grey	grey	grey	grey	grey
Waze	blue	red	blue	red	red	blue	blue	red	blue
Wejo	blue	blue	blue	blue	blue	blue	blue	red	red
X-Road	grey	grey	grey	grey	grey	grey	grey	grey	grey

7.6. Type of mobility vehicles managed

Company/product	Cars	Trucks	Public transport	Micro-mobility
AKKA datahub				
ArcGIS / ESRI				
Carto				
Chouette / En route mobi				
CKAN				
Convex				
Fluctuo				
GaiaX				
Geotab				
Google Maps				
Here				
Inrix				
Mapbox				
Mapkit (Apple)				
Mob-iti				
Moovit				
Navitia				
One transport				
OpenStreetMap				
Open transport Net				
Open trip planner				
Opendatasoft				
Otonomo				
Populus				
PTV				
Remix				
Sensoris				
Sharedstreets				
TomTom				
TravelAI				
Uber Movement				
UrbanSDK				
Vianova				
vis.gl				
Waze				
Wejo				
X-Road				

Not applicable	
Owned or provided by partner	
Not provided but accepted	
Not provided and not accepted	

MOBIDATALAB

MOBIDATALAB – H2020 G.A. No. 101006879

**Funded by the
European Union**

MobiDataLab consortium

The consortium of MobiDataLab consists of 10 partners with multidisciplinary and complementary competencies. This includes leading universities, networks and industry sector specialists.

@MobiDataLab
#MobiDataLab

https://www.linkedin.com/company/mobidatalab

For further information please visit **www.mobidatalab.eu**

MobiDataLab is co-funded by the EU under the H2020 Research and Innovation Programme (grant agreement No 101006879).

The content of this document reflects solely the views of its authors. The European Commission is not liable for any use that may be made of the information contained therein. The MobiDataLab consortium members shall have no liability for damages of any kind that may result from the use of these materials.

**Funded by the
European Union**