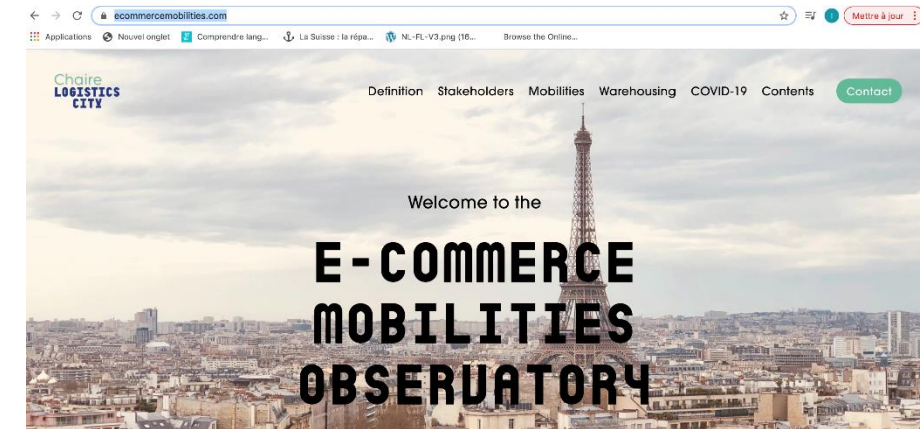# New Sources of 'Incidental Data' for Urban Freight Policy and Research

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1. Warehouses, logistics real estate
2. E-commerce logistics
3. Public policies

https://www.lvmt.fr/chaires/logistics-city/

Objective of research

- The research looks at 'incidental data' on urban freight from traffic and parking technology

- 'Incidental' = occurring as a chance consequence of another activity or action

- Objectives:

    - To assess whether new sources of urban freight data are available to local governments from their transport management technology

    - To assess the quality of these new sources

    - To evaluate the specific situation of France

- This paper is based on Dablanc, L., Adoue, F. (2025) New ways of collecting urban freight traffic data and applications for urban freight policies and research? Case Studies on Transport Policy

Why get better data for urban freight?

- To integrate freight into traffic management
- To monitor progress of an urban freight strategy
- To support decarbonization of freight through better impact assessments
- To provide tools for cost–benefit analysis of transport policy such as low emission zones
- To model/simulate city logistics solutions and support better design
- To promote stakeholder involvement:
  - Benchmark for freight companies
  - Stakeholder collaboration based on good data (build trust)

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Carbon footprint City of Paris 2004-2014

- CO_2 emissions from urban freight ''decreased between 2004 and 2014'' ?

BILAN CARBONE® DE PARIS - ÉDITION 2014
25,6 millions de tonnes équivalent CO_2
- 9,2 % depuis 2004
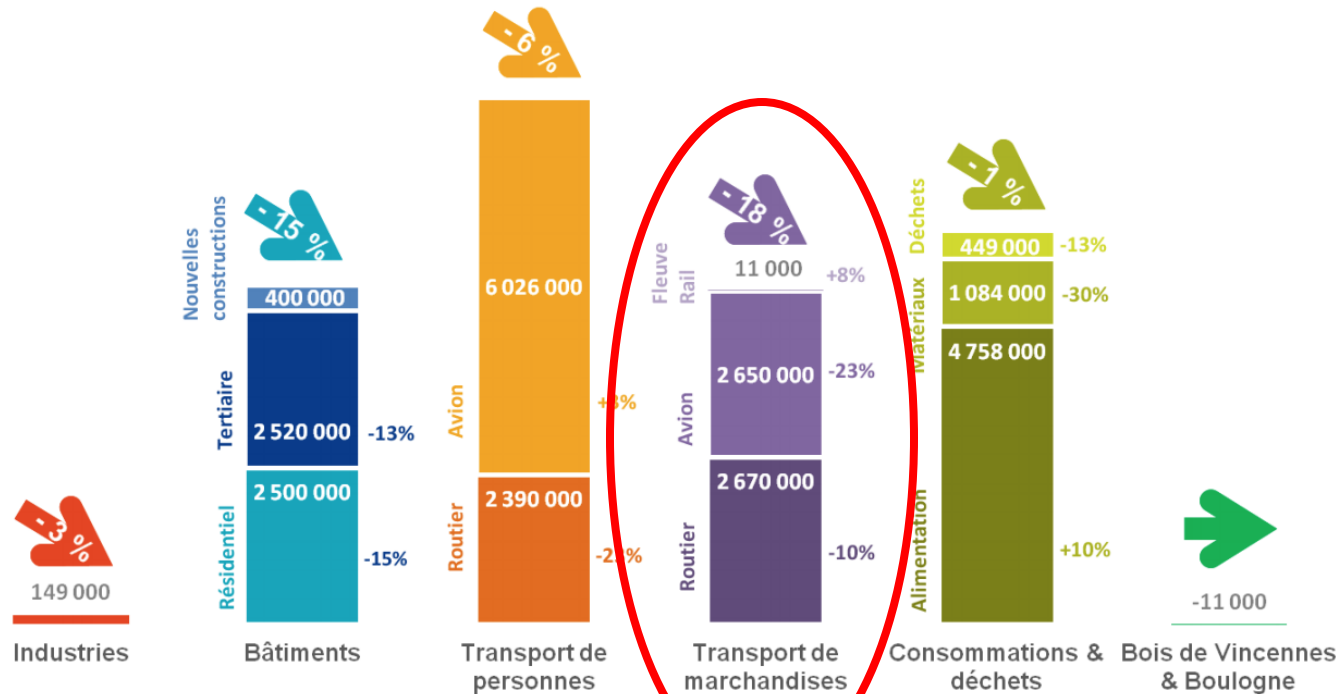
Method

1. Review of academic and technical literature

2. Case studies: Rotterdam, The Netherlands, Barcelona, Spain, and Brussels, Belgium

- Collect local technical information and websites on data collection

- Review scientific or technical publication using these data sets

- Interviews with stakeholders

- Data producer (institutional)

- Data users (institutional and academic)

3. Assessment grid

- Relevance of data

- Representativity of the data

- Conditions of dissemination and reuse

New methods for urban freight data collection

- Data from logistics operators and other companies (retailers, e-retailers)
- Data from telecom operators
- Open access data from various sources such as OSM
- Data from **municipal technology and services**
  - Automated number plate recognition cameras
  - Truck tachographs, On-Board-Units
  - Bike-sharing service

Several cities in Asia and Europe

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Three case studies

Rotterdam: Automated Number Plate Regulation (ANPR) cameras and Data Sharing

- Enforcement of low and zero emission zones

Brussels: truck pricing and On-Board Units (OBUs)

- Regulating HGV traffic based on distance travelled and emission standards

Barcelona: regulating time at loading/unloading areas

- Enforcement of on-street delivery with local app

Brussels: HGV traffic data collected from truck pricing scheme

Table 3. Raw data and enriched data made possible by Belgian truck road pricing scheme

Vehicle characteristics data	Vehicle location data (every 30 seconds)	Calculated data on routes (24 hour maximum)
Pseudo vehicle ID Maximum authorized weight Axle number Country code	Timestamp GPS coordinates Instantaneous speed Vehicle direction	Origin/Destination Routes taken Mileage and duration Characteristics of routes taken Number of stops, location and duration

Number of vehicles per Euronorm

Euro 6 standard
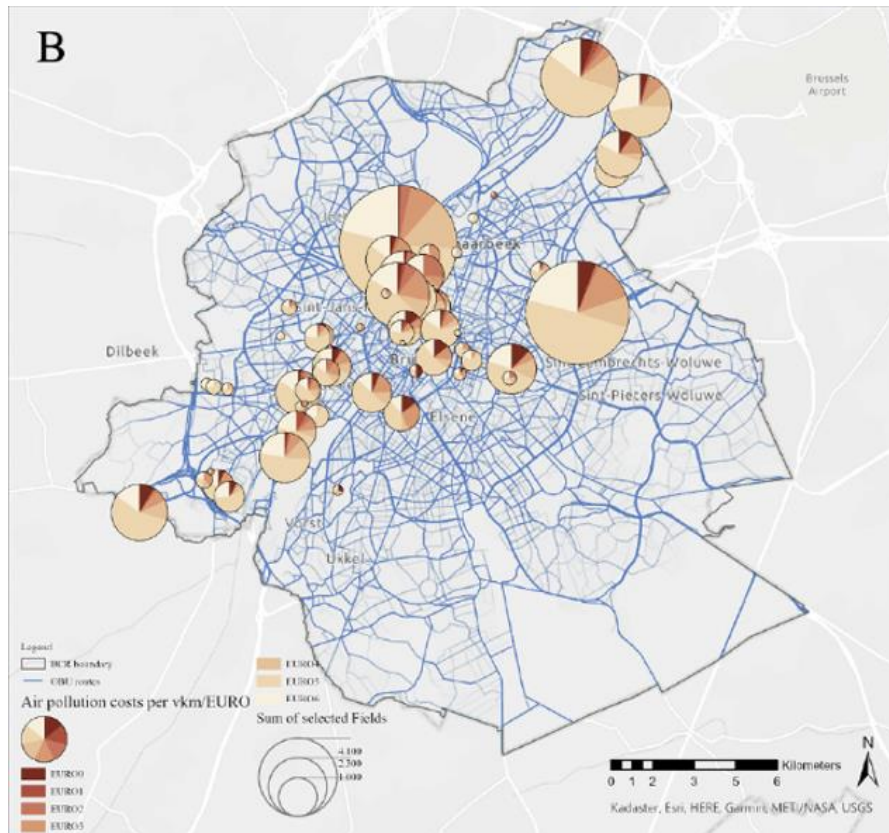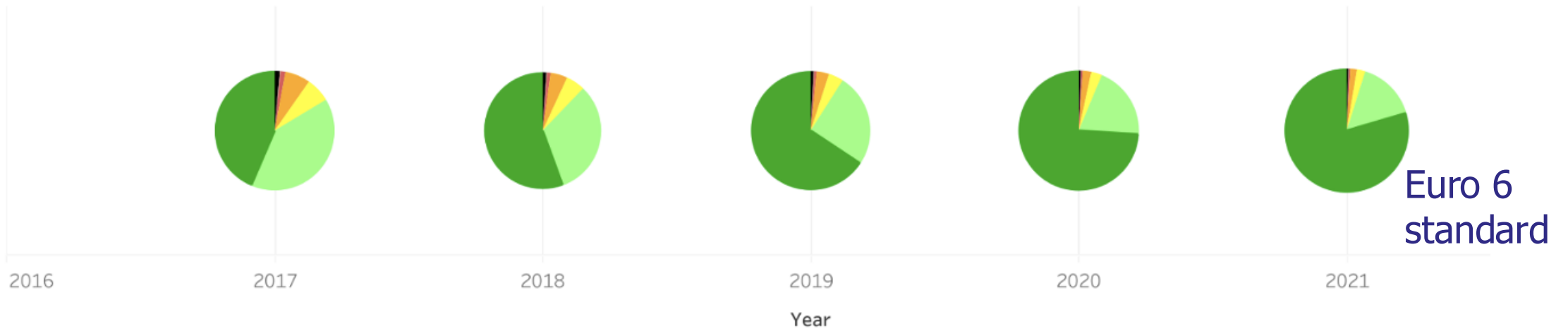
- Example of sector analysis: air pollution generated by HGV traffic to and from construction sites in Brussels

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Barcelona: delivery app and data provided

- Delivery drivers register on a smartphone app (SPRO) including plate registration number
- They log in once arrived at a loading zone
- 30 minute window
- 58% users do not log in (estimation from a survey)

Estacionamientos del Área de Distribución Urbana de Mercancias (DUM) de la ciudad de Barcelona

🏛 Ciudad y servicios   🚊 Transporte

Número de estacionamientos realizados el dia anterior a la fecha actual en las Áreas de Distribución Urbana de Mercancias (DUM) de la ciudad de Barcelona

☰ Ver definición de campos

Campo	Descripción
'01. result	Resultat del procés de consulta
01.01. fecha	Data de la consulta
01.02. totalTiques	Nombre total de tiquets DUM processats
01.03. ListaDUMS	Array de trams DUM processats
01.03.01. idZonaDUM	Identificador de la zona DUM . Consultar **ID_TRAMO** a **Informació dels trams dels aparcaments en superfície a la ciutat de Barcelona**
01.03.02. direccion	Adreça postal de la zona DUM
01.03.03. tarifa	Array d'informació de la tarifa de la zona DUM
01.03.03.01 descripcion	Descripció de la tarifa
01.03.03.02. tipoFraccion	Tipus de fracció aplicat a la tarifa
01.03.03.03. importeFraccion	Tarifa de la zona DUM
01.03.03.04. importeMaximo	Màxima tarifa aplicable
01.03.03.05. tiempoMaximo	Temps màxim d'estacionament al tram DUM
01.03.04. horario	Array de dades d'horari del tram DUM
01.03.04.01. descripcion_horario	Descripció de l'horari
01.03.04.02. soloEnHorario	Tag que indica si només es pot estacionar dins l'horari (1=true, 0 =false)
01.04. plazas	Nombre de vehicles amb plaça al tram DUM
01.05. tickets	Tiquets processats al tram DUM

🔒 Licencia: Creative Commons Attribution 4.0 [OPEN DATA]
👁 Grado de apertura: ★★★☆☆

Datos y Recursos

[JSON] **Estacionaments_Area_DUM.json**

ⓘ Más información   ⊕ Descargar

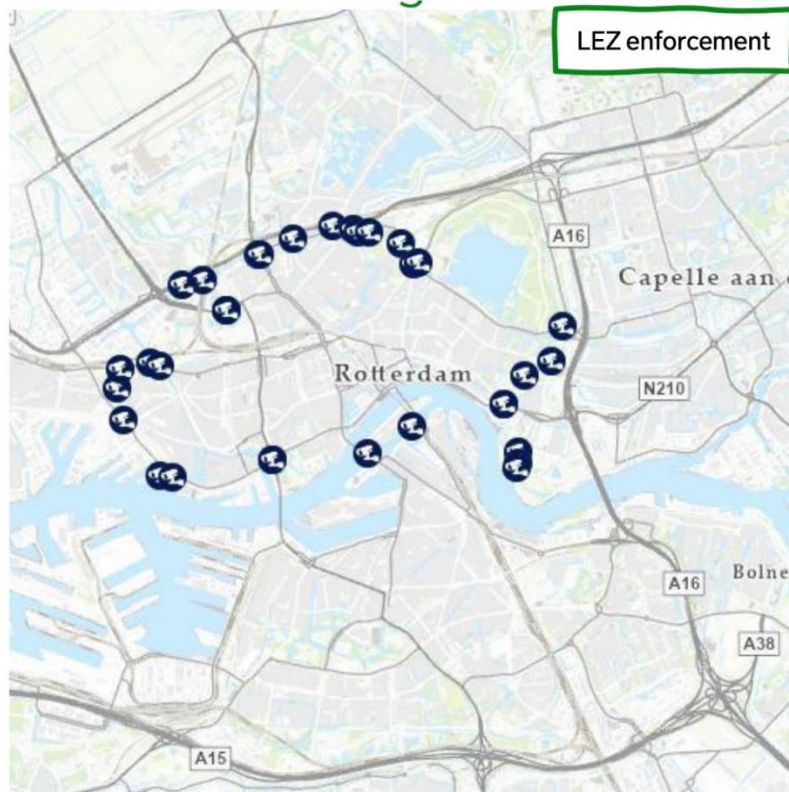# Daily open access data on each of the on-street loading spaces of Barcelona but API requires technical skills

https://opendata-ajuntament.barcelona.cat/data/es/dataset/estacionaments-dum

Automated Number Plate Recognition cameras in Rotterdam

Figure 6 - Localisation des caméras LAPI de contrôle de l'actuelle ZFE

Source : Sjouke et van Dijk (2022)

Table 1.
Volume of logistics traffic.

	2017	2018	2019	2020	2021*
Delivery vans	9,386,000	9,636,000	9,728,000	10,190,000	11,305,000
Lorries	831,000	856.000	854,000	843,000	898,000

Indication of the volume of logistics traffic in the envisaged ZECL zone,
shown in the number of traffic movements into the ZECL zone over the period 2017-2021.
* The volume in 2021 is based on the first 11 months and projected to 12 months.

- Example of the use of traffic camera data: estimating volumes by vehicle category

Zero emission zone for city logistics since January 2025

Zero-emission zone   News   Knowledge
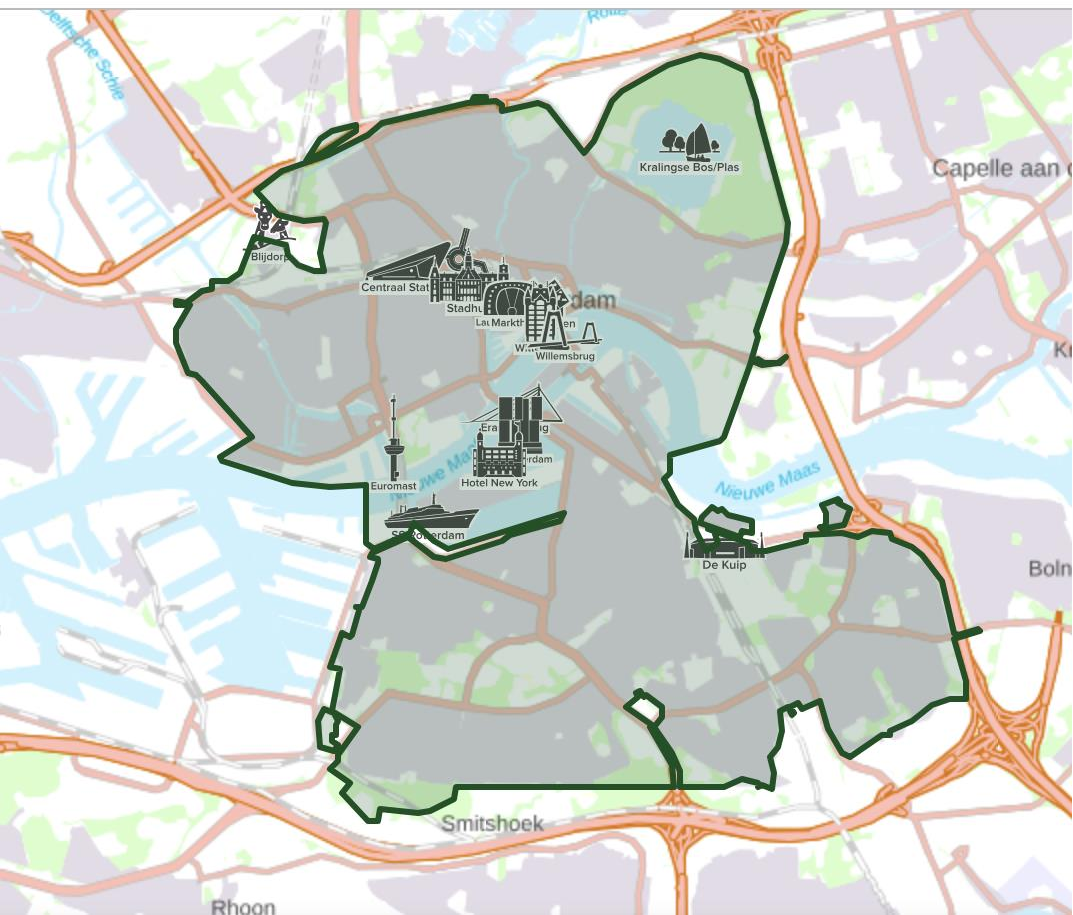
Size and access requirements of zero-emission zone for vans and trucks

From 2025, all new vans and trucks in the zero-emission zone (ZE zone) in Rotterdam must be emission-free. For certain (previously purchased) vehicles, there is a transitional arrangement until 2030. But how big will the ZE zone be? And what are the exact requirements for being allowed to enter this zone?

Warning period: no fines until July 1, 2025

From 1 January to 30 June 2025, no fines will be issued. You will receive a warning letter if you violate the rules. From 1 July 2025, you can receive a fine. The amount of the fines is 120 euros for vans. 310 euros for lorries.

logistiek 010   Zero-emission zone   News   Knowledge   About us

Rotterdam's zero-emission zone has started!

There is a warning period from 1 January to 30 June. If you are in violation, you will now receive a warning letter.

Do you have a delivery van or truck? Check your license plate and see whether or not you are allowed in.
Please note: Granted exemptions are not linked to the license plate check.

Several national data platforms with open access to data
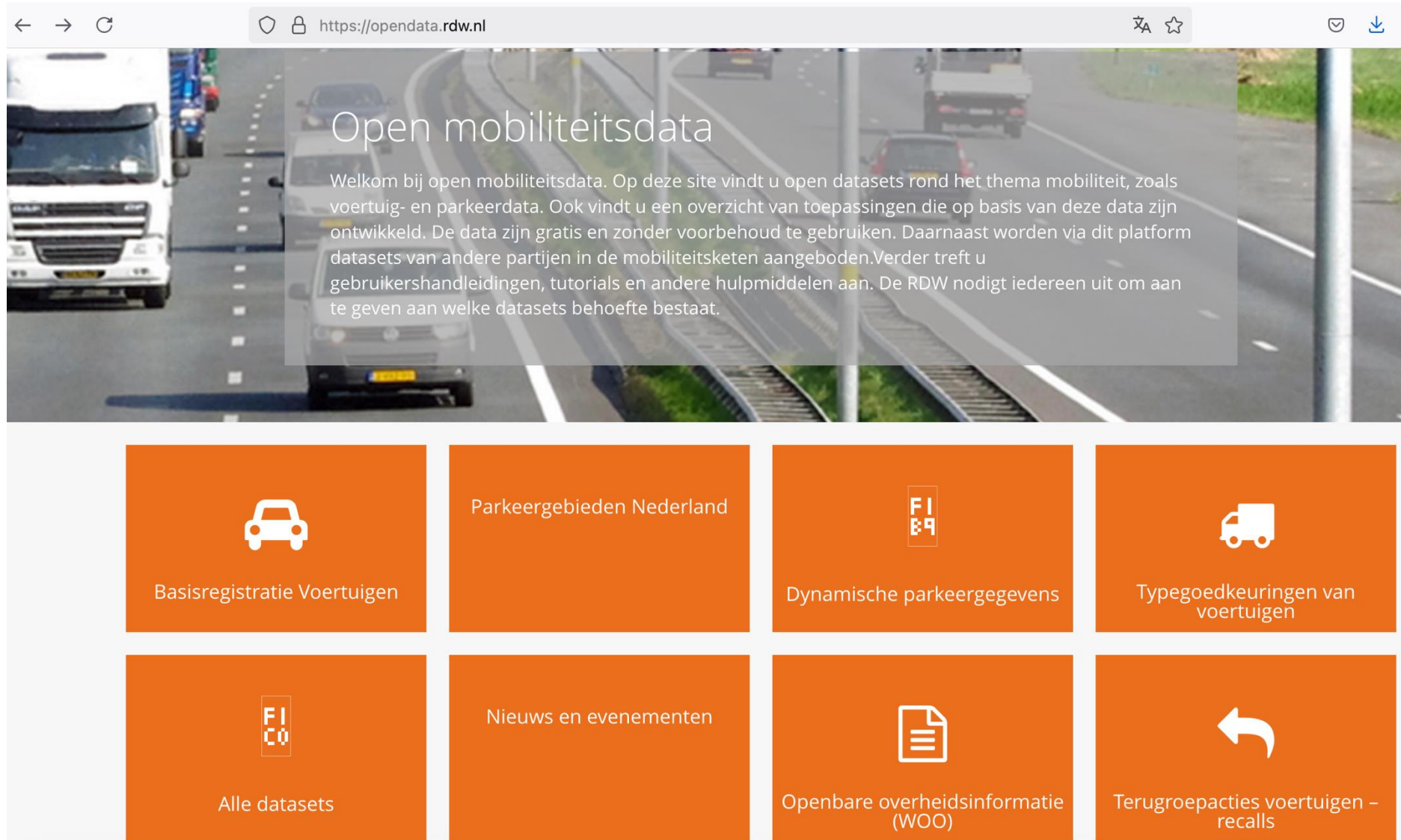
- https://dexter.ndw.nu/opendata
- Need to create an account then select the type of data requested and the geographical areas
- Data then received by email

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Construction of an analysis grid

- 15 criteria selected
- Value between 0 and 4 to characterize the level of data relevancy
- Applied on radar charts
- Use case examples: electrification of delivery vehicles requires a 4 on identification of vehicle category together with a high level of data frequency and good representativeness

|		0 None/not available	1 Low	2 Moderate	3 Advanced	4 Complete
Logistics activity	Specifications of the goods transported		Sector of activity (large classes)	Sector of activity (detailed classes)	Nature of goods transported	Nature and volume of goods transported
	Nature of the logistic operations		Identification of stops only	Identification of stops + duration	Identification of stops + duration + nature of the operation (delivery, collection)	Identification of stops + duration + nature of the operation (delivery, collection) + load factor
	Specifications of the vehicles		Vehicle length	Maximum Authorized Mass Category (without distinction transport of people/goods)	Vehicle category (N1,N2,N3)	Vehicle category and information associated with registration (age, engine, environmental standard, etc.)
	Coverage in terms of vehicle category		A single category of logistics vehicles	Several categories of logistics vehicles	All motorized logistics vehicles	All logistics vehicles (including cyclologistics)
	Coverage in terms of sectors of activity		A single sector of activity	Some sectors of activity	A wide variety of sectors of activity	All sectors of activity
Geography	Identification of origins, destinations and stopping points		Ability to formulate hypotheses about destinations (based on directions taken)	Identification of some origins, destinations and intermediate stopping points	Identification of all origins, destinations and intermediate stopping points (theoretical data)	Identification of all origins, destinations and intermediate stopping points (real data)
	Spatial precision of stopping points		Very large area (e.g. city center/rest of the city)	Large area (neighborhoods, several km2)	Fine zone (<1km2)	Full address or fine geolocation (GPS)
	Identification of roads taken		Identification of crossing points (without tracking)	Identification of crossing points (with possibility of tracking)	Modeling possible routes	Accurate identification of the routes taken
	Spatial scale		Street or Neighborhood	City or City center	Metropolis or Region	Country
Temporality	Temporal precision		Aggregates by week, month or year	Daily aggregates	Aggregates by hour/time range	Timestamp
	Temporal continuity at the scale of the day		A few hours a day (discontinuous periods)	A few hours a day (continuous periods)	Full daylight period	24 hours
	Temporal continuity at the scale of the week		4 days or less	5 days (weekdays)	6 days (Monday-Saturday)	7 days
Use of data	Data collection frequency		One-time data collection	Regular data collection (annual monitoring)	Regular collection (monthly monitoring)	Continuous collection (daily monitoring)
	Data openness for researchers		Publication of analysis results	Data sharing agreement	Data access authorizations	Open data
	Data representativeness		Small, non-representative sample	Large, non-representative sample	Representative sample	Entire study population

Data from ANPR cameras – Rotterdam

ANPR cameras - LEZ · ANPR cameras - Traffic monitoring (open data)
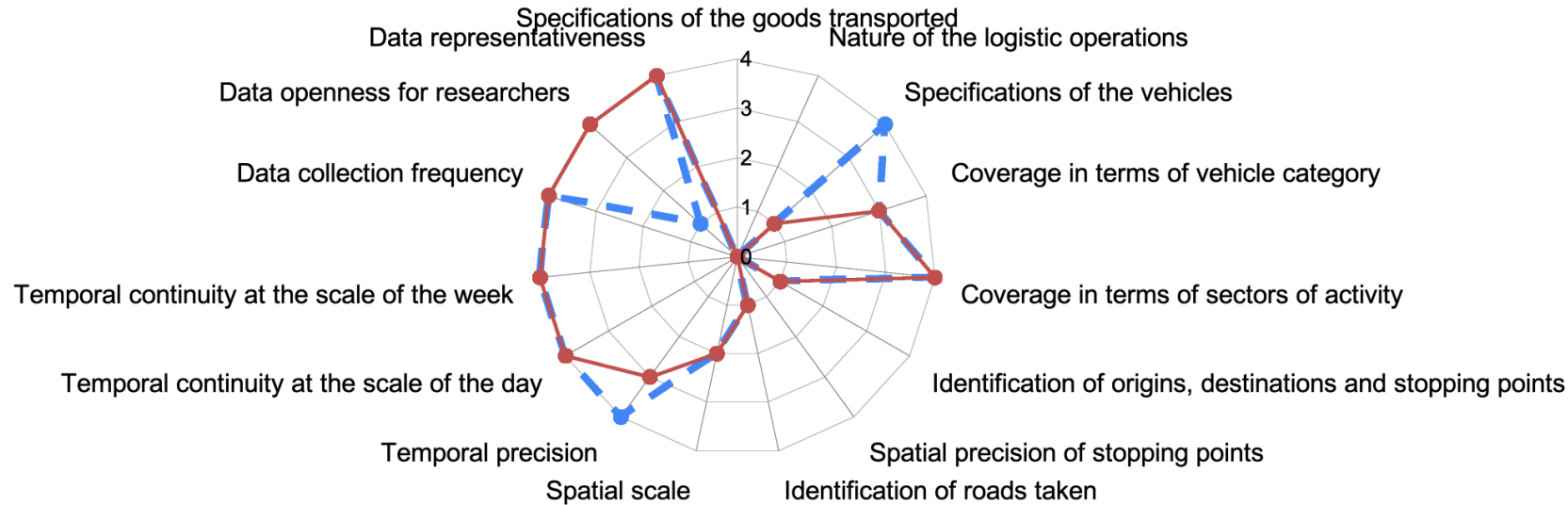
- Good frequency Good coverage No identification of stopping points

Data from Area DUM - Barcelona

BSM data · Open data
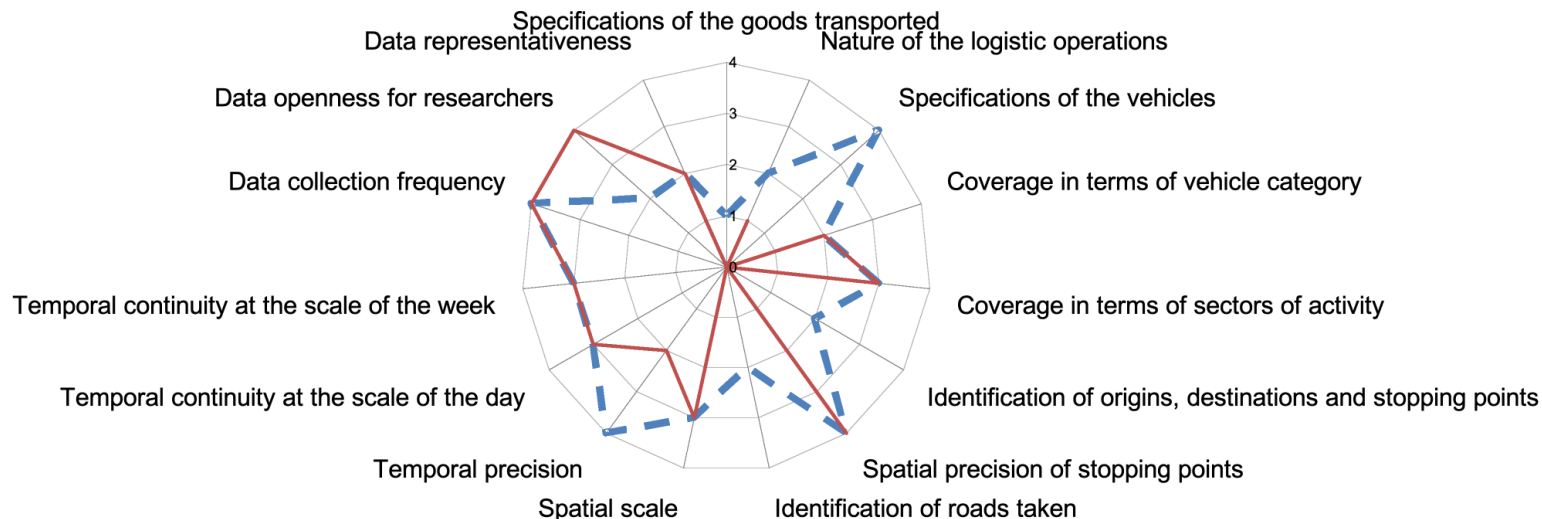
- Good frequency
- Poor temporal precision

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Conclusion

- Urban freight data exist at no survey cost
- Data increasingly available on open access data platforms
- Quality of data is heterogeneous
- European local governments make progress in collection and use of data
- Technical and legal issues including privacy laws especially in France and Germany
- Little actual use in academic research
- Analysis grid and charts can be used to serve as a basis for discussion for freight stakeholder groups

Acknowledgements

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