Challenges and Opportunities for Cycling Data Standardisation

Ambassadors Cristina BURAGA, Mirelle PETERS
Samuel PIERCE, Jørgen WANSCHER, Bard DE VRIES

napcore
cycling ambassador

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Goal of session

Collect challenges, priorities and value in the standardisation of cycling data in order to start with workshops:

- Who needs the standard?
- What problem does it solve?
- What needs to be standardized?

- Who is going to participate in which workshop?

Slido-survey QR code

Program

- Introduction: presentation Budapest BKK
- Presentations on the challenges
- Feedback and opportunities
- Exchanges on community building
- Conclusion and closing

Budapest BKK presentation

“BKK’s tasks and duties regarding the management/development of active and micromobility with a focus on cycling data management”

Presentations of the Challenges

- Counting data: Mirelle Peters (NDW)
- Infrastructure data: Holger Haubold (ECF)
- Bike parking data: Nigel Williams (EPA)
- Real-time data: Jørgen Wanscher (HTI)

Moderator: Bard de Vries

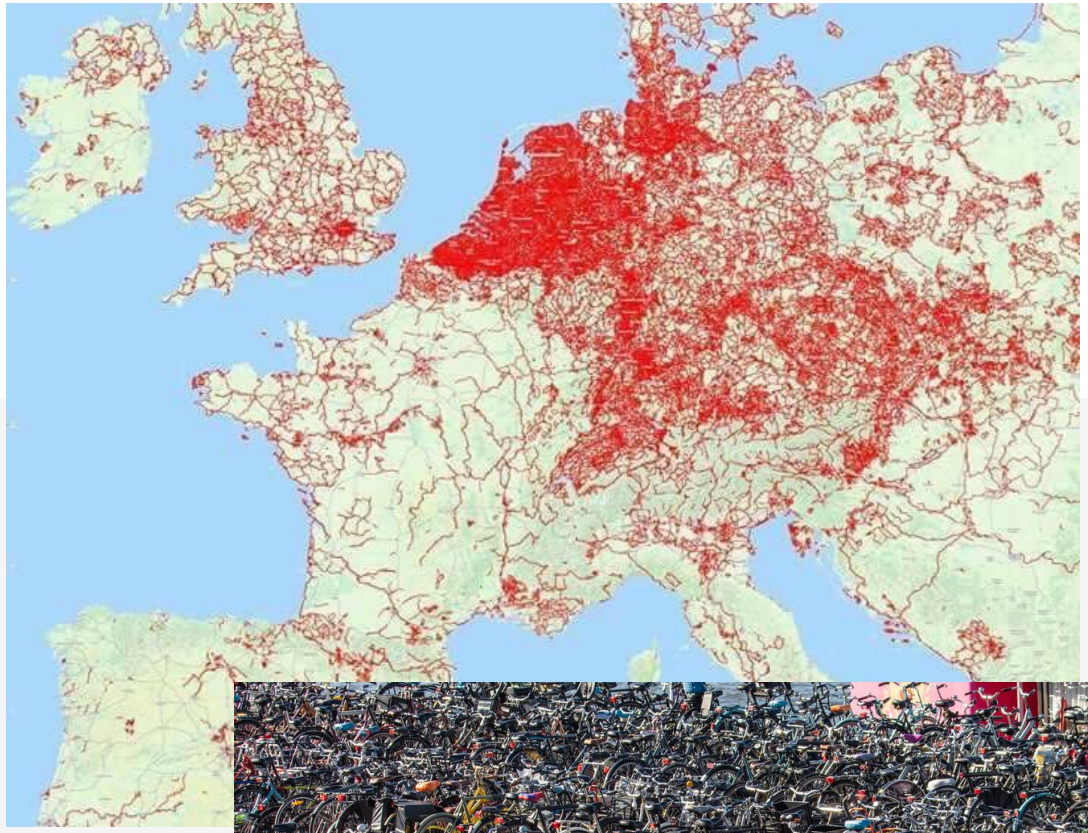
Counting bikes

cycling data in DATEX II and lessons learned

Mirelle Peters

Community manager Cycling with the Dutch National Access Point for Mobility Data

Bike data



35.000 km cycle track

5.000 km roads with a bike lane

23 million bicycles for 17,2 million people (2018)

28% of trips by bike

More than half of all car journeys cover less than 7,5 km, so still room for improvement

Improved bike data highest priority for NDW partners

Application and usage

Local goverments/ road authorities:

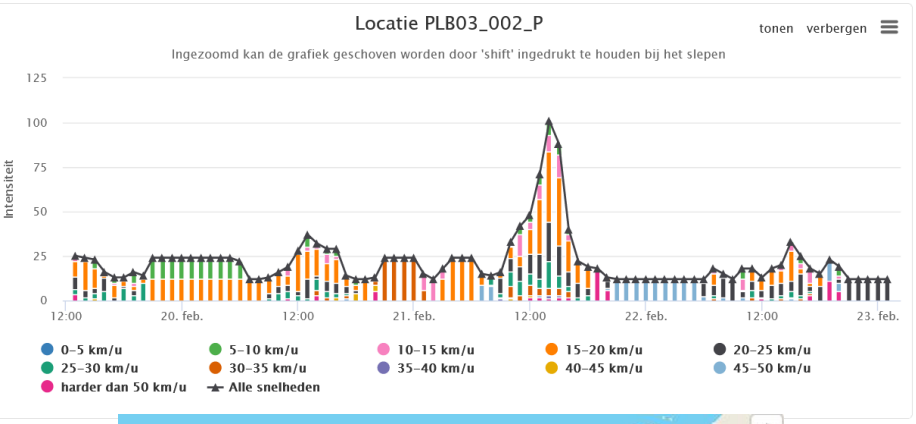
- Traffic models
- Policy making
- Monitoring (policy)
- Development new routes
- Bike parking space
- Safety measures (increase safety)
- Capacity bike lanes
- Prioritize projects
- Increase bicycle use
- Connect modalities

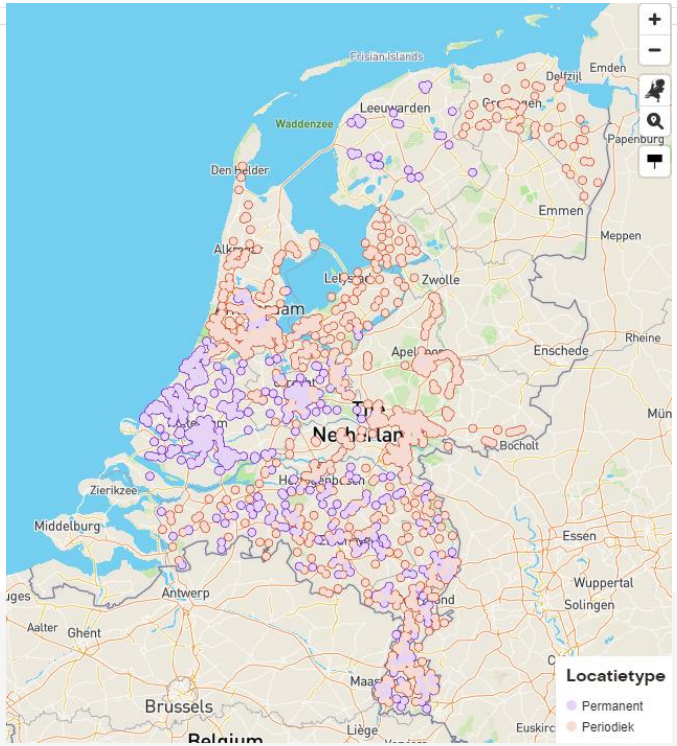
- Flow
- Routes
- Speed
- Origin – destination
- Model split (normal bike, E-bike, speed pedelec, cargo bike), delays
- Location (parking),
- Time / duration (parking),
- Target groups (parking/ bike rental)
- Delay/waiting cross sections

1) Bike counting data

- Loops, road tubes, radars system, cameras, manual counting.
- Periodic and location based
- Traffic models and policy local governments
- Standard: DATEX II profile (automatic upload in system)
- Output: CSV, Excel or XML

Bike counting data historical dataset





- **Extended version of the vehicle dataset**
- **TrafficFlow**
- **Several classifications:**
  - Speed-category
  - Bike-width
  - Propulsion-type
  - (slow) vehicle classification

Where were you counting?

Approach

- **Wish: to have one central platform to store data and be able to compare the data across cities**
- **9 (large) cities in working groups**
- **Proces to come to an agreed framework was facilitated and lead by NDW**
- **Questions to be answered:**
  - Where to count and where not to?
  - What are different countingintervals and how to aggregate these?
  - How does cycling data relate to other modes of transport?

Lesson’s learned

- Accept it will be different than you’re used to.
- Not all local wishes can be covered in a national standard
- You need conversions to register historical data within the current agreement framework
- The proces takes time (this took us 1,5 year)
- Make sure you do a realitycheck with data suppliers: some things are just not possible

ECF

EUROPEAN CYCLISTS´ FEDERATION

Quantifying Europe‘s cycling infrastructure using Open Street Map data

Aleksander Buczyński, Policy Officer – Infrastructure

Holger Haubold, Director Intellectual Property + Data Collection

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Cycling Industries Europe

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Cycle infrastructure

- Traditionally: municipal competence
- No official data, no data standard on cycle infrastructure:
  - On the European level
  - Often also on the national level
- Data from cities not comparable

- **Researchers and policymakers desperate for data!**

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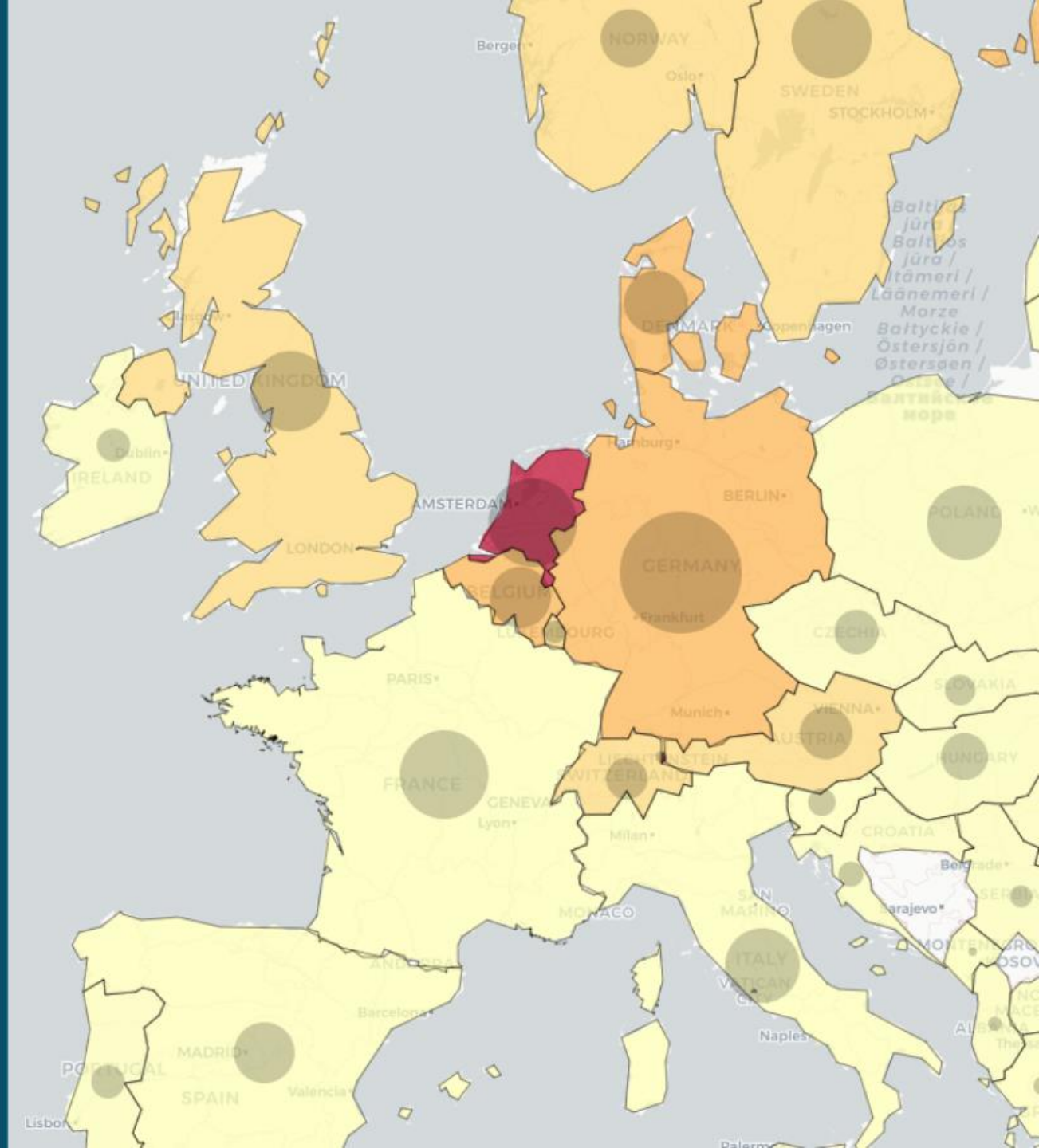
ECF Dashboard: Quantifying Europe's Cycling Infrastructure using OpenStreetMap

37 countries
1502 NUTS-3 regions
more than 450,000 km of cycle infrastructure
ca. 370,000 km segregated



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Quantifying Europe's Cycling Infrastructure using OpenStreetMap

1. **How do we extract the cycle network?**
2. What do we do with the data?
3. What do we have problems with?

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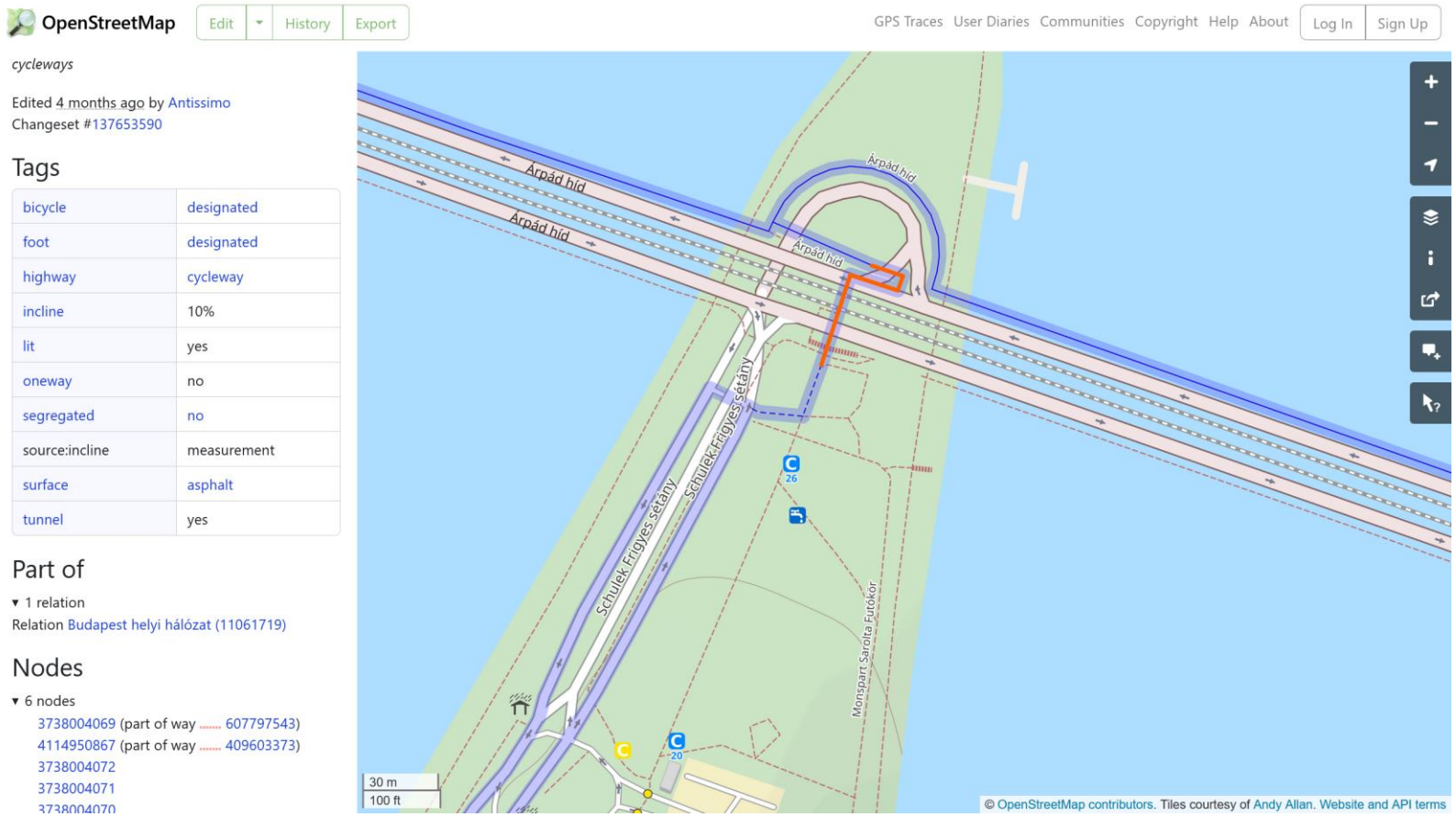
Process

- Extract cycle infrastructure and main/local roads
- Produce summary for each NUTS-3



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Cycle infrastructure types (1)

Cycle track

Cycle and pedestrian track

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Cycle infrastructure types (2)

Cycle lane

Bus and cycle lane

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Cycle infrastructure types (3)

Cycle street

Limited access road

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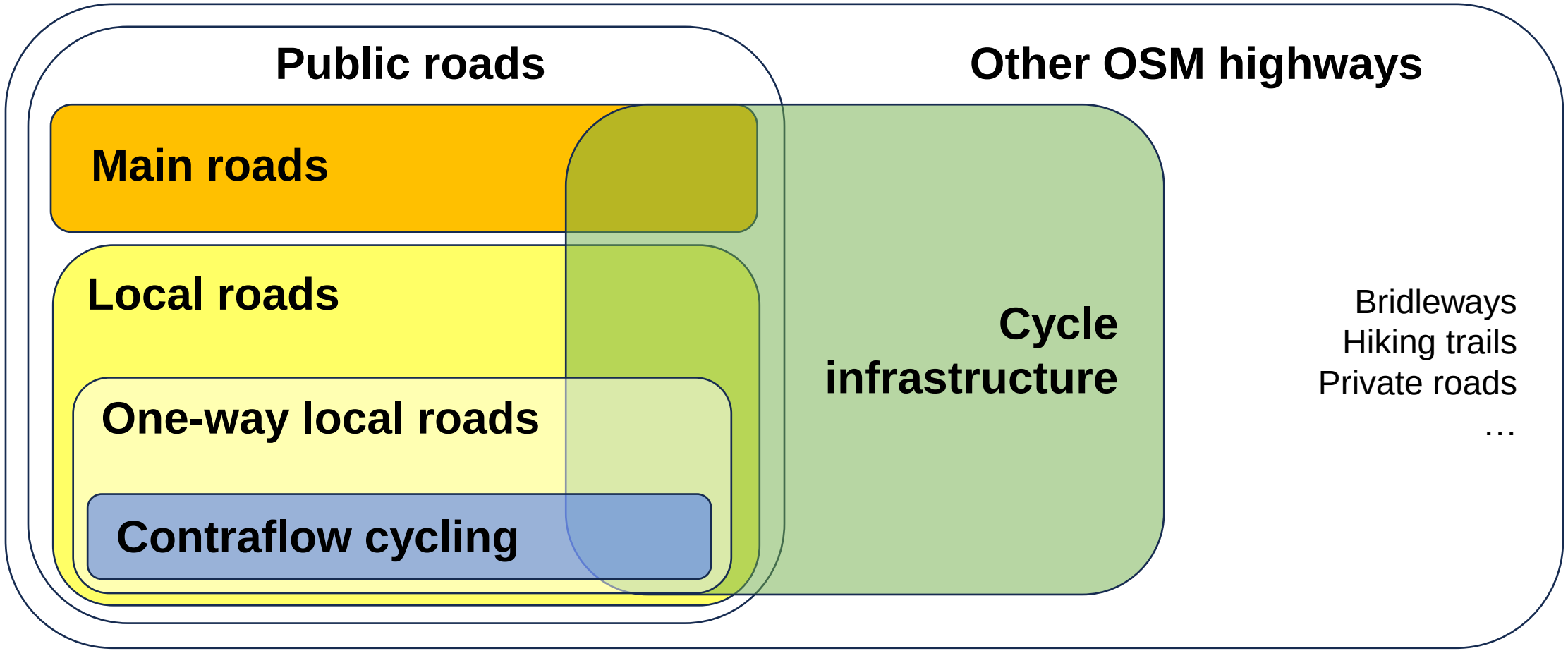
Highway subsets



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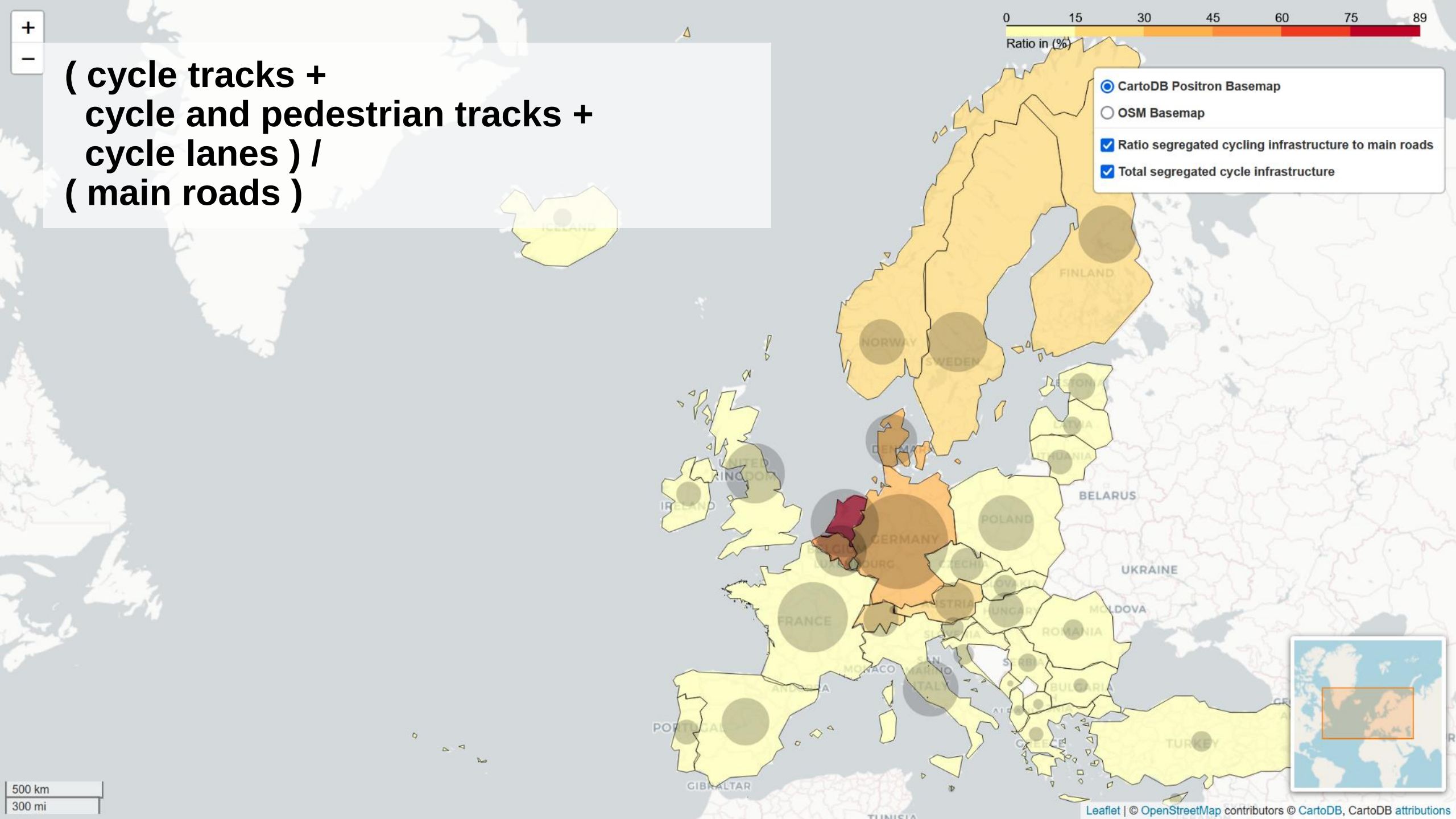
(cycle tracks +
cycle and pedestrian tracks +
cycle lanes) /
(main roads)
0
15
30
45
60
75
89
Ratio in (%)
CartoDB Positron Basemap
OSM Basemap
Ratio segregated cycling infrastructure to main roads
Total segregated cycle infrastructure
FINLAND
NORWAY
SWEDEN
BELARUS
UKRAINE
GERMANY
POLAND
FRANCE
MOLDOVA
ROMANIA
TURKEY
GIBRALTAR
500 km
300 mi
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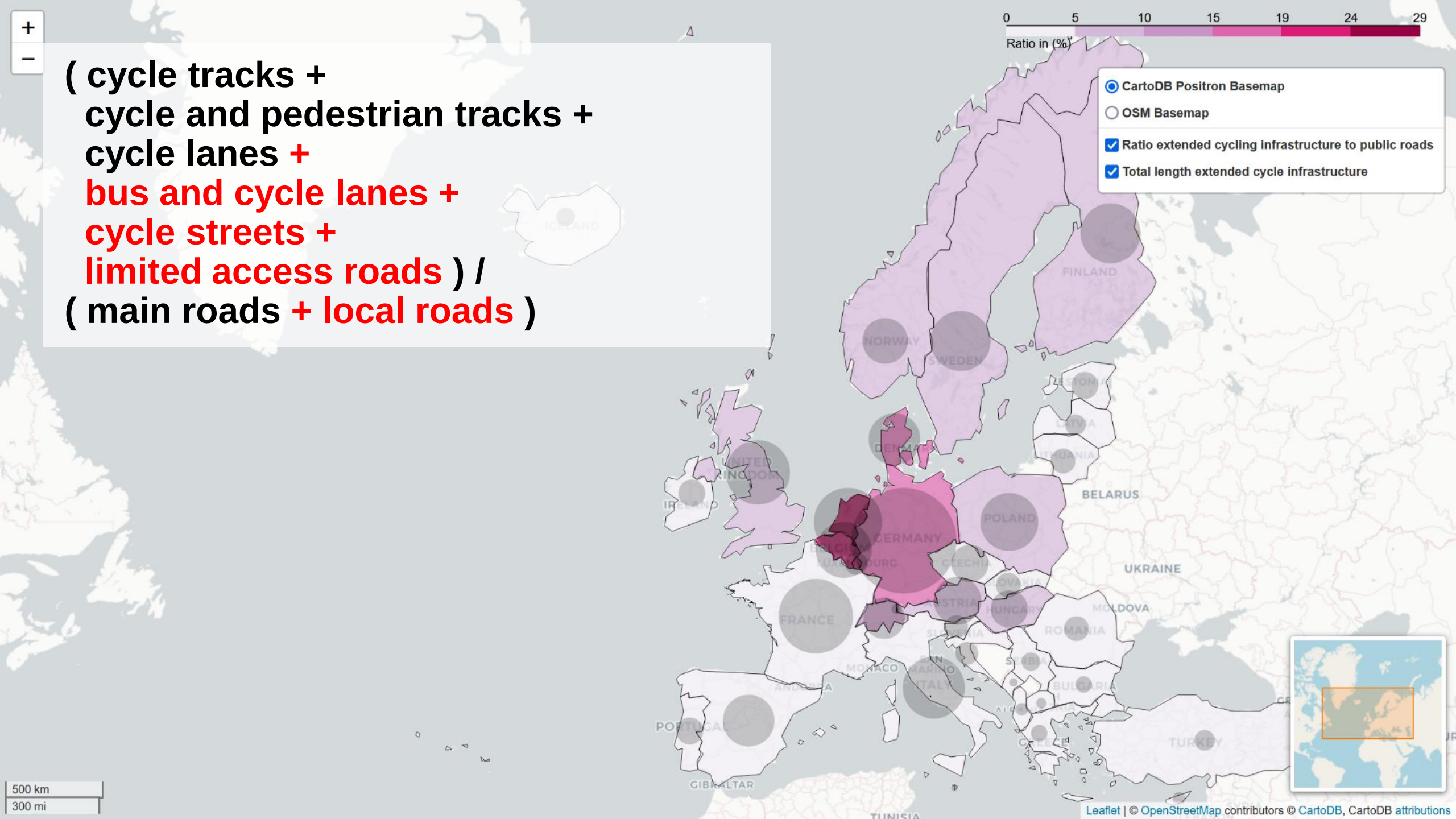
(cycle tracks +
cycle and pedestrian tracks +
cycle lanes +
bus and cycle lanes +
cycle streets +
limited access roads) /
(main roads + local roads)
0
5
10
15
19
24
29
Ratio in (%)
CartoDB Positron Basemap
OSM Basemap
Ratio extended cycling infrastructure to public roads
Total length extended cycle infrastructure
FINLAND
NORWAY
SWEDEN
BELARUS
POLAND
GERMANY
UKRAINE
FRANCE
MOLDOVA
ROMANIA
TURKEY
GIBRALTAR
500 km
300 mi
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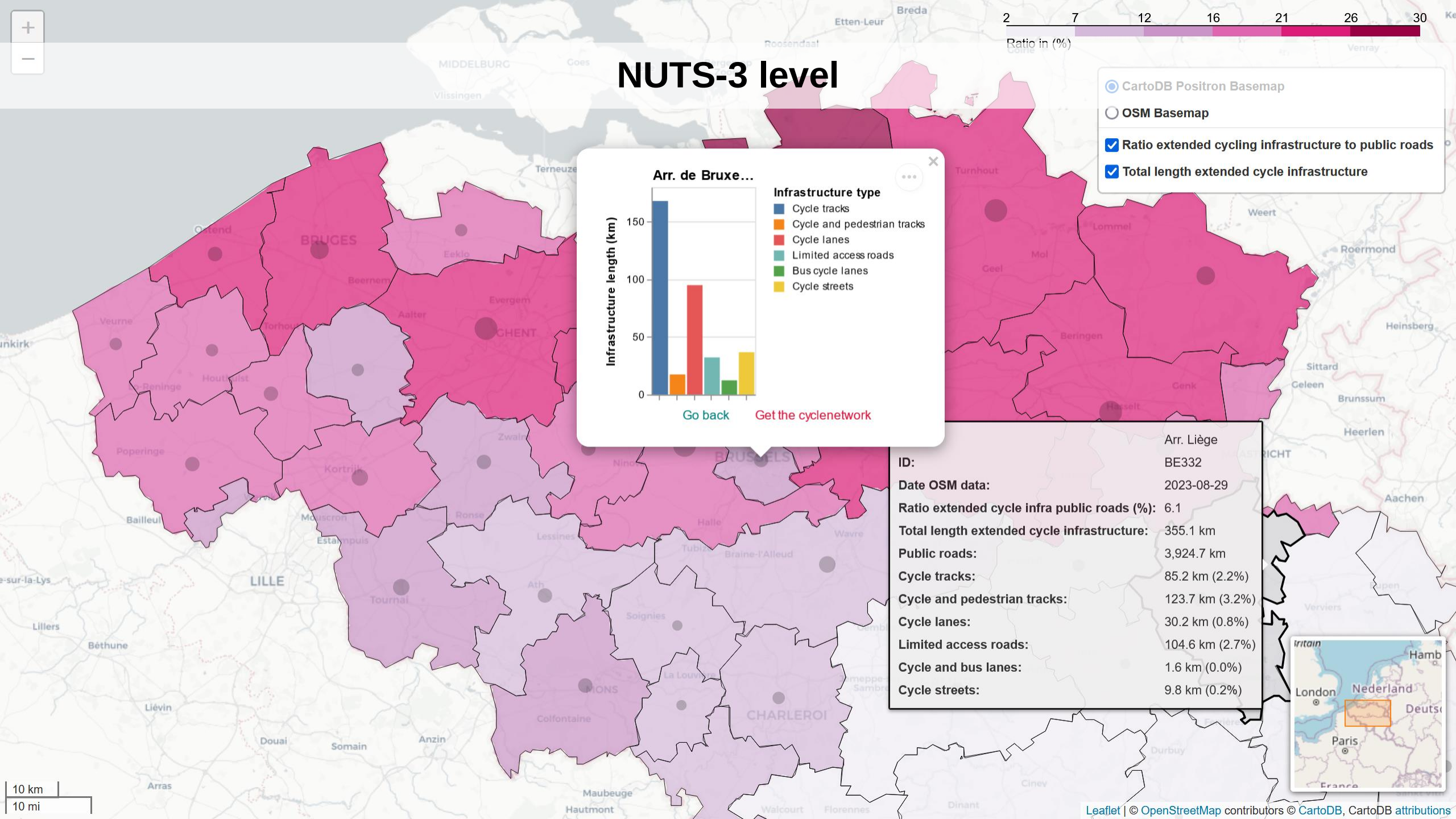
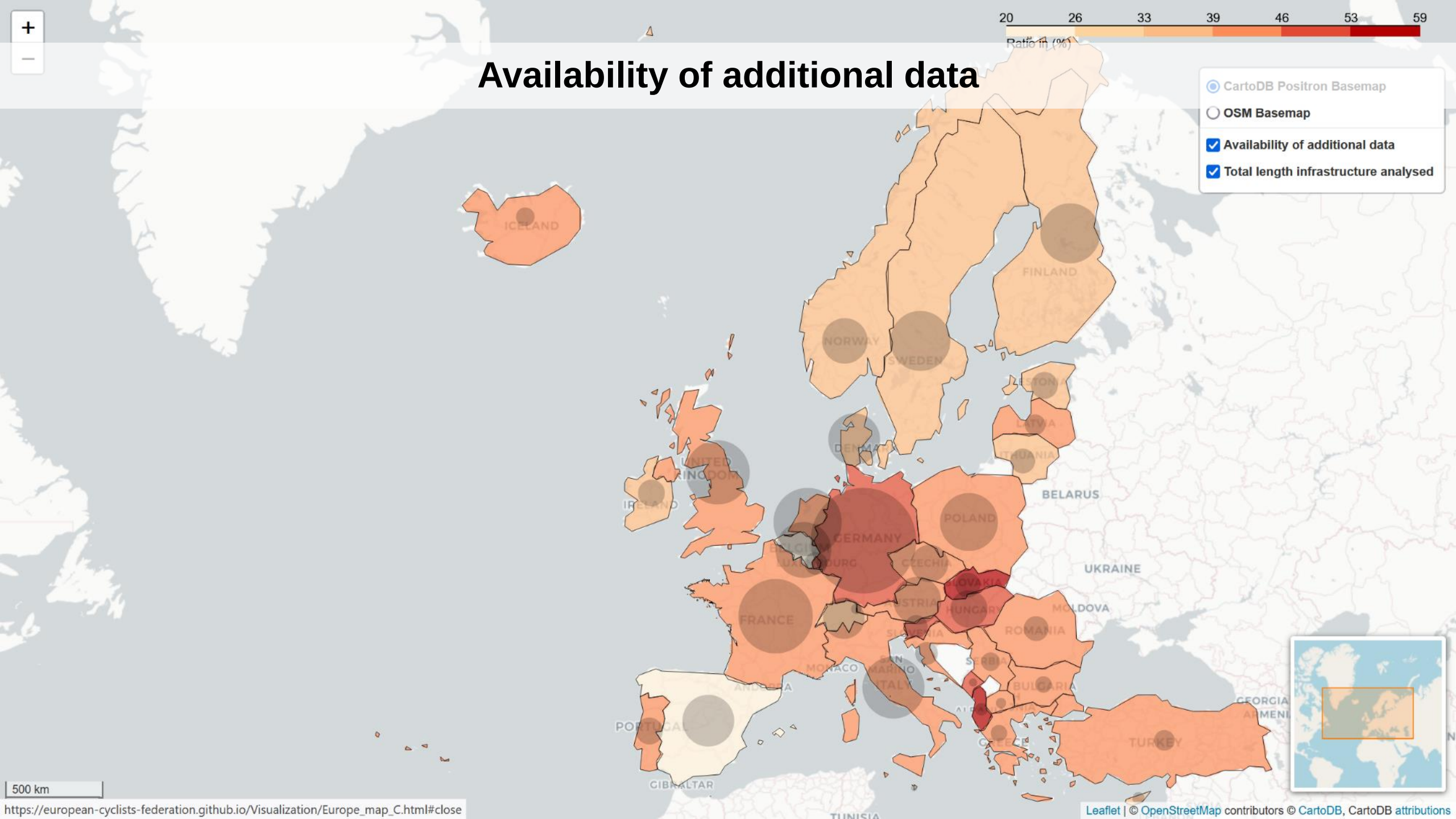
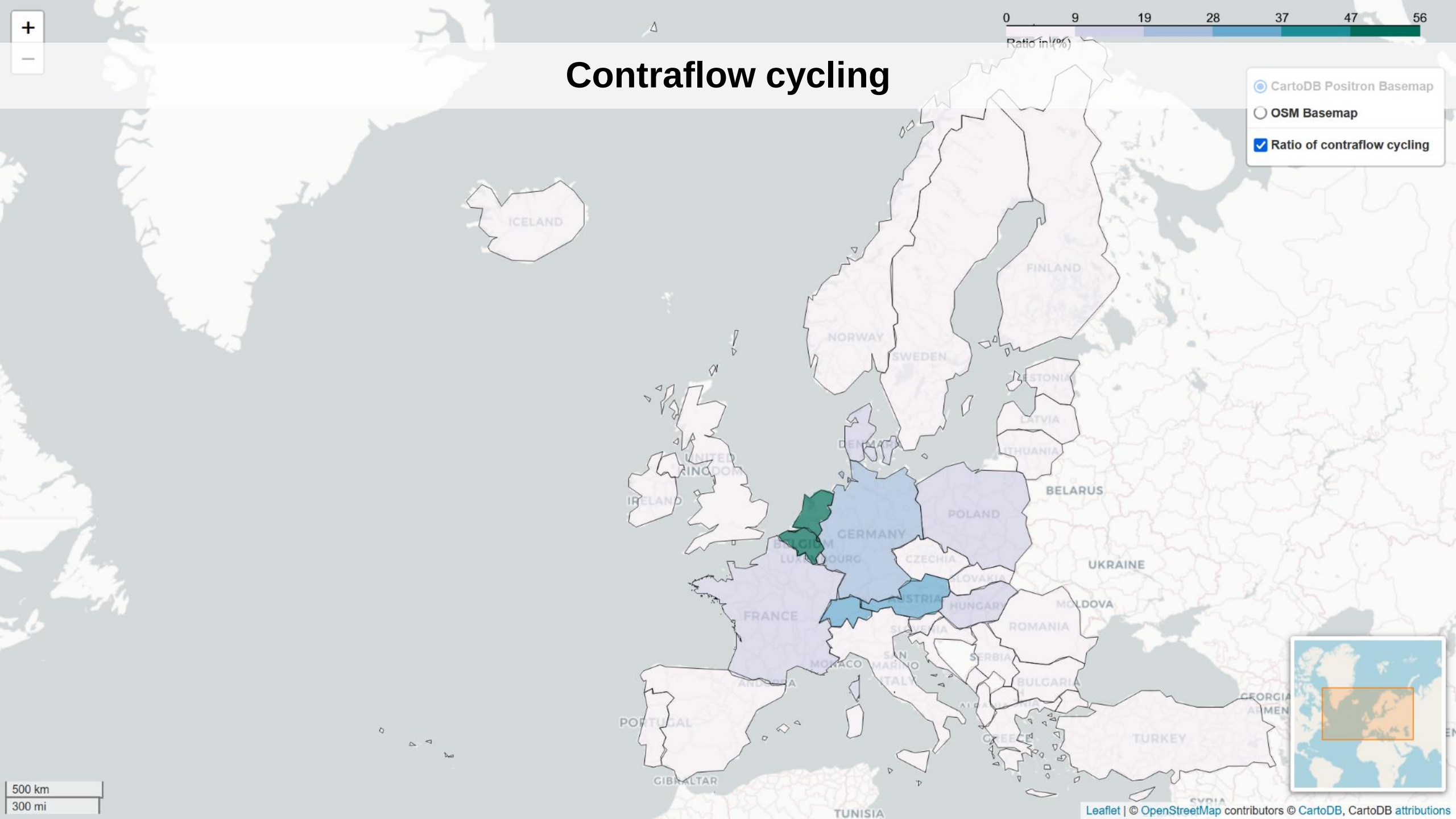
NUTS-3 level


2
7
12
16
21
26
30
Ratio in (%)
CartoDB Positron Basemap
OSM Basemap
Ratio extended cycling infrastructure to public roads
Total length extended cycle infrastructure
Arr. de Bruxe...
Infrastructure length (km)
150
100
50
0
Infrastructure type
Cycle tracks
Cycle and pedestrian tracks
Cycle lanes
Limited access roads
Bus cycle lanes
Cycle streets
Go back
Get the cyclenetwork
Arr. Liège
ID: BE332
Date OSM data: 2023-08-29
Ratio extended cycle infra public roads (%): 6.1
Total length extended cycle infrastructure: 355.1 km
Public roads: 3,924.7 km
Cycle tracks: 85.2 km (2.2%)
Cycle and pedestrian tracks: 123.7 km (3.2%)
Cycle lanes: 30.2 km (0.8%)
Limited access roads: 104.6 km (2.7%)
Cycle and bus lanes: 1.6 km (0.0%)
Cycle streets: 9.8 km (0.2%)
London
Nederland
Paris
10 km
10 mi
Leaflet | © OpenStreetMap contributors © CartoDB, CartoDB attributions

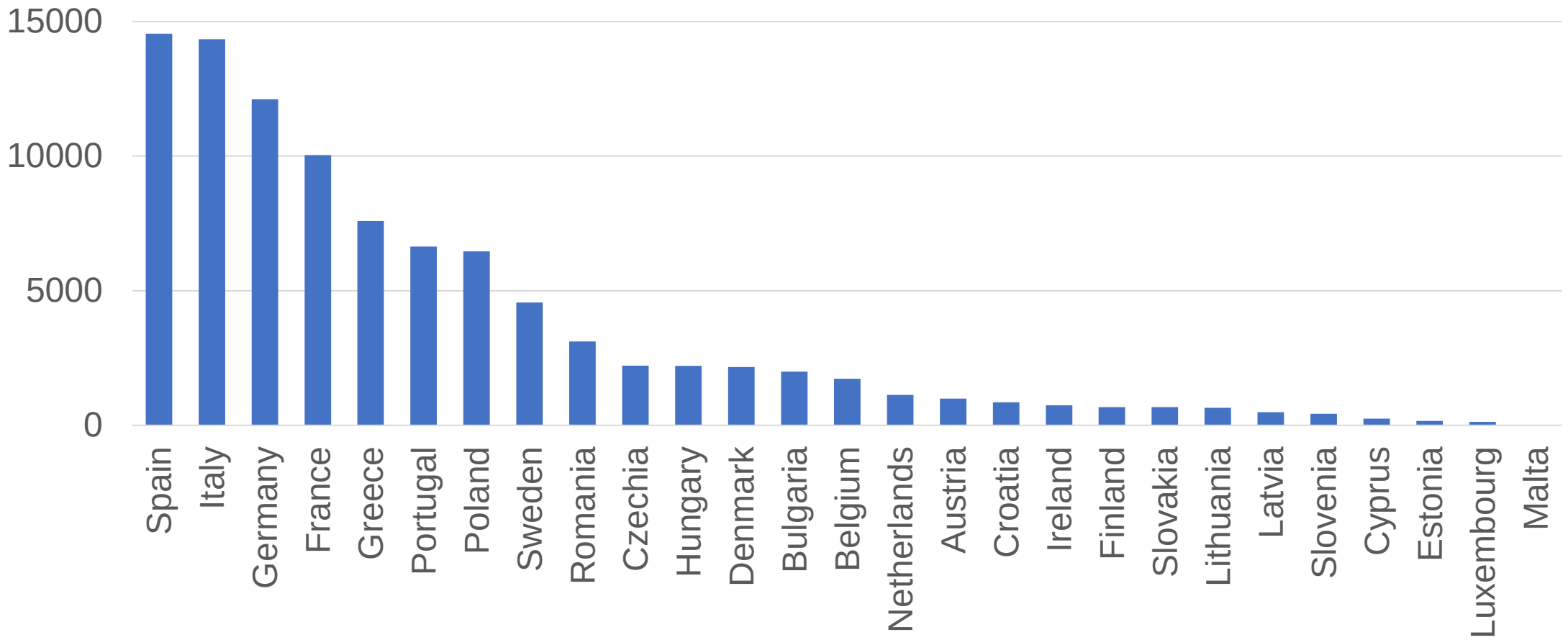
Availability of additional data



Contraflow cycling



Urban nodes – missing infrastructure – km



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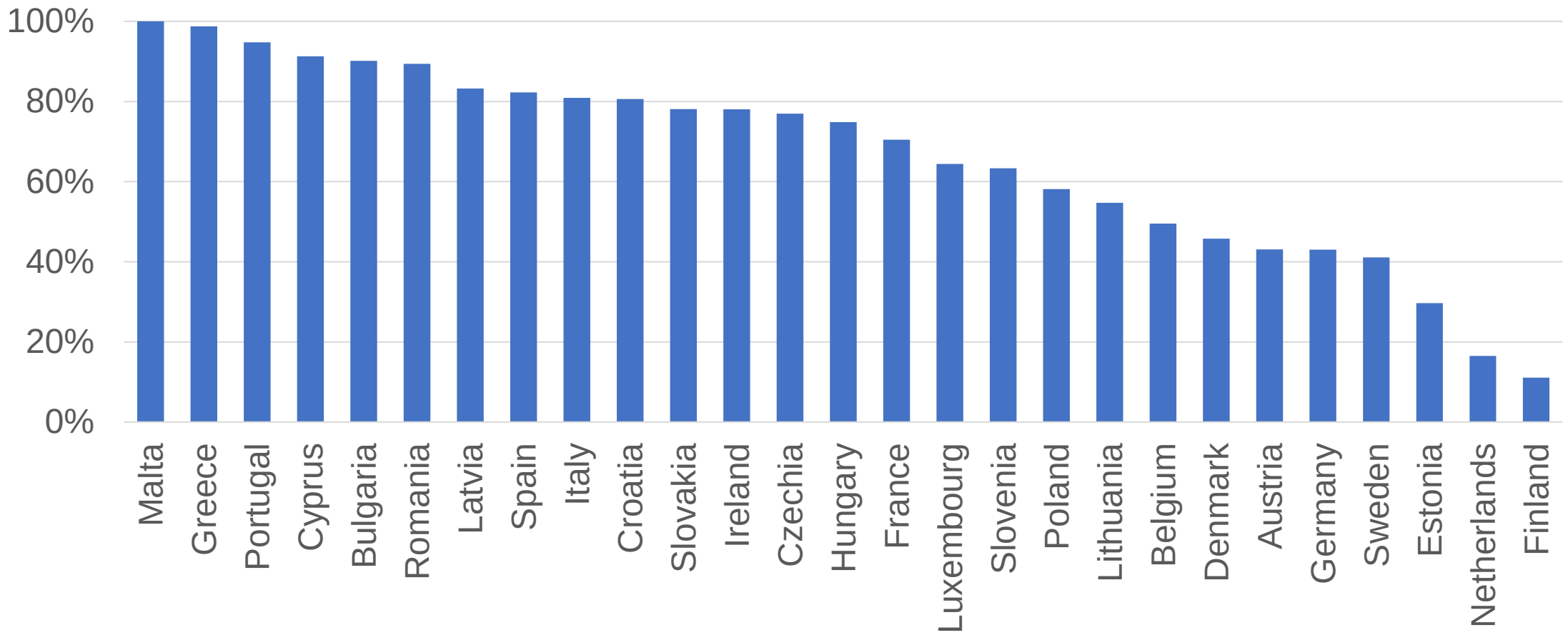
Urban nodes – missing infrastructure – %



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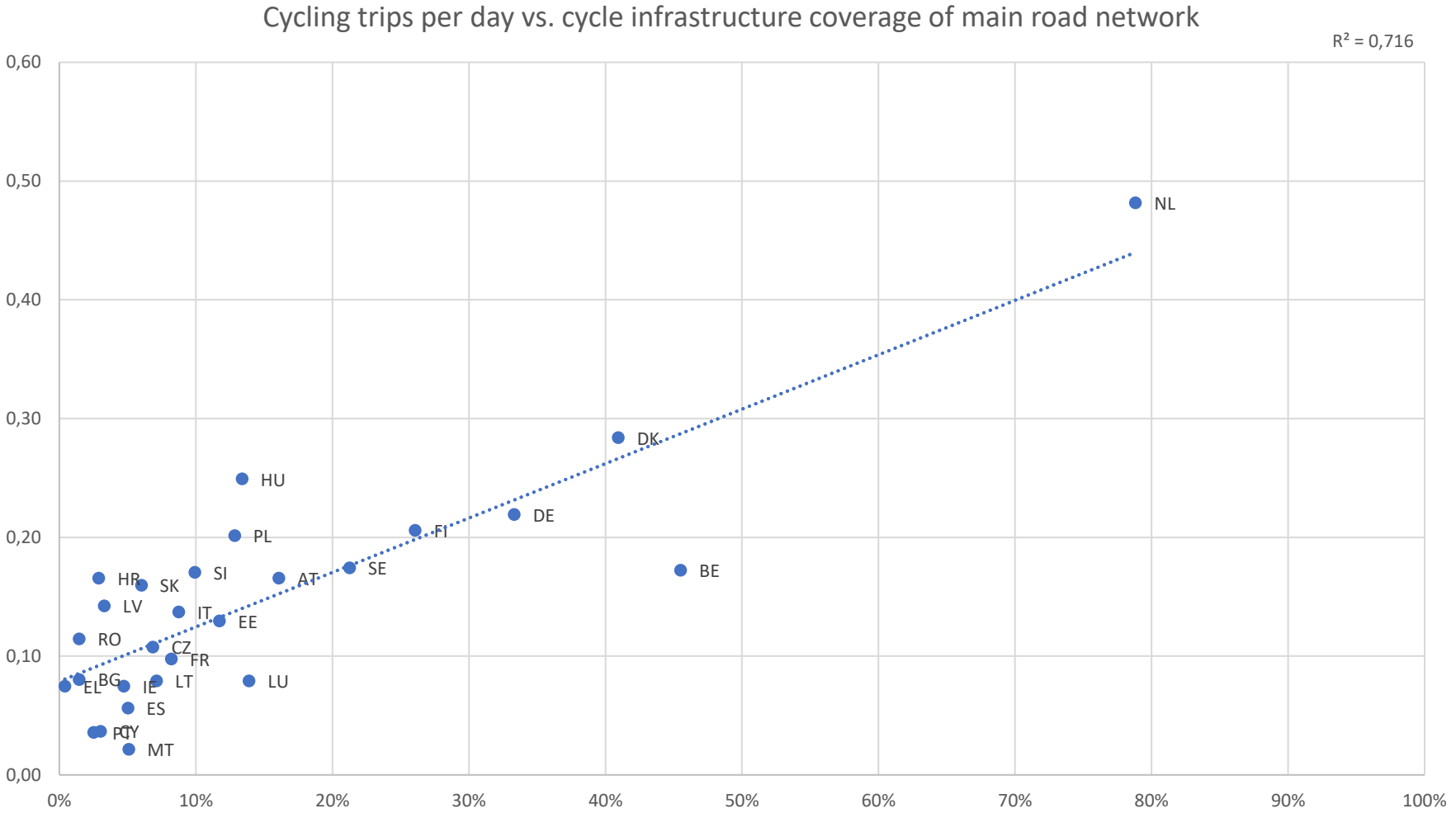
Infrastructure coverage and cycling levels



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Quantifying Europe's Cycling Infrastructure using OpenStreetMap

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The Big Question

- Is the street/road safe to cycle in mixed traffic (without segregated infrastructure)?
  - Best bet: highway attribute
  - Current assumption:
    - **Not safe:** motorway, trunk, primary, secondary, tertiary
    - **Safe:** residential, unclassified, living_street
  - But…

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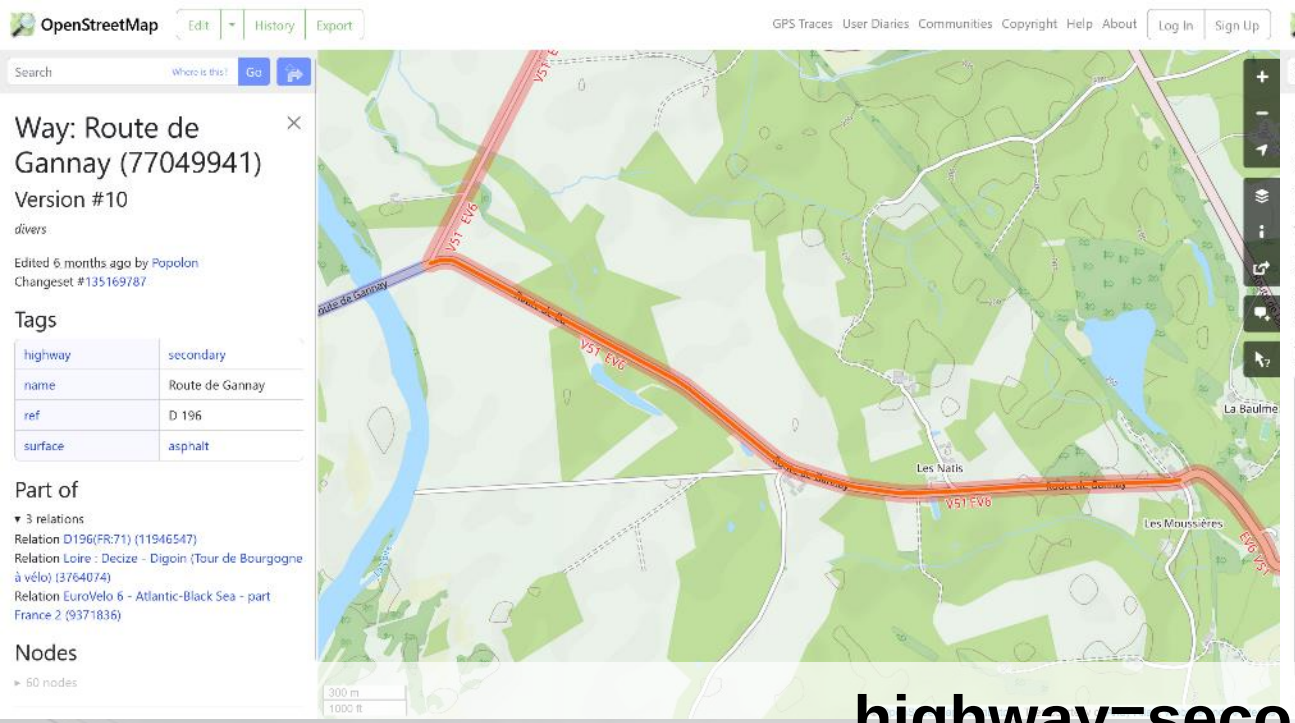
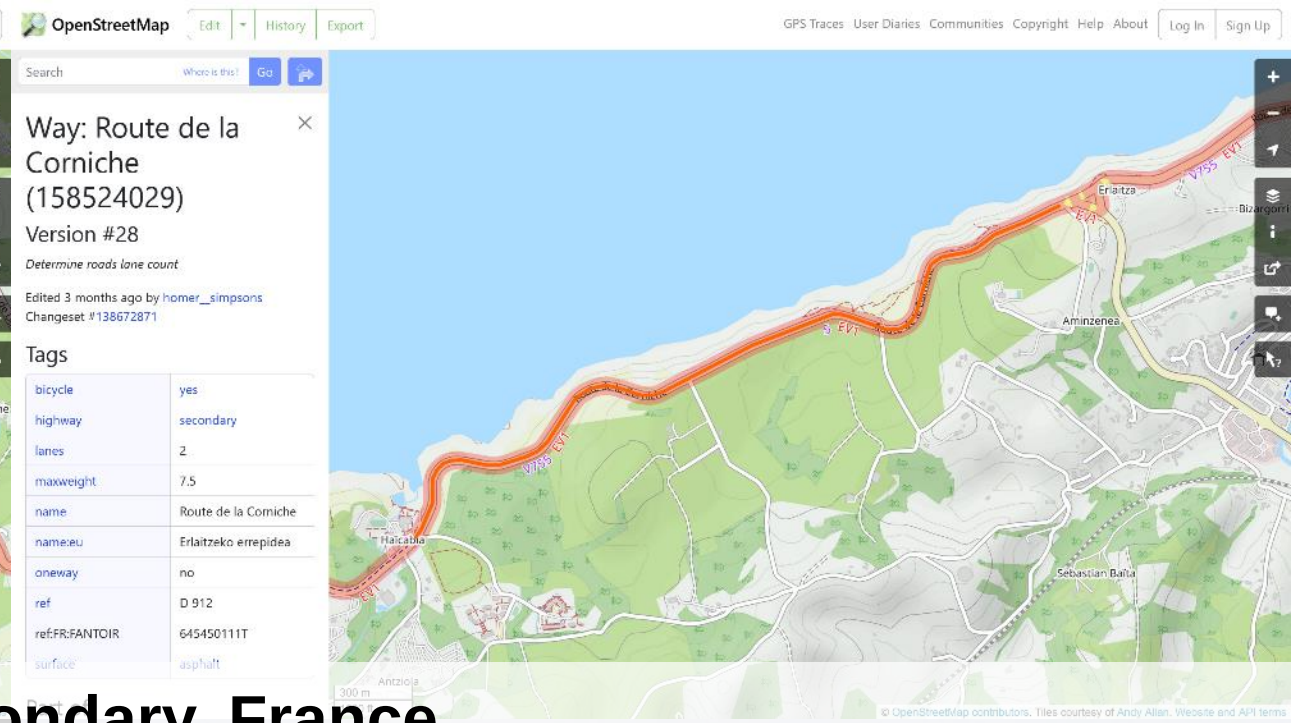
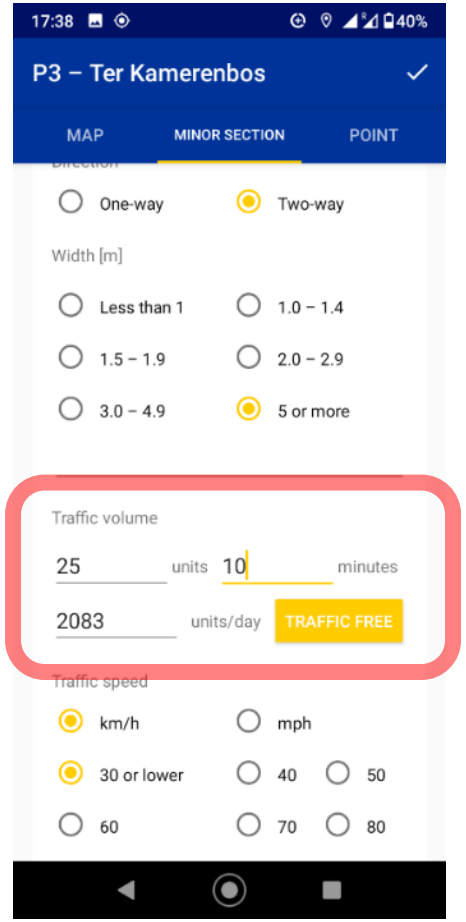
highway=secondary, France





The Big Question – outside OSM

- ECF, ADFC (D):
  - count cars for a few minutes
- Sustrans (UK):
  - Commercial traffic count data
- CycleAI:
  - GoogleStreetView images



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Quality of cycle infrastructure

- Surface & smoothness
- Width
- Segregation from pedestrians
- Lighting?
- Curvature?
- Gradients?
- Directness?
- Barriers/obstacles?

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Cycling infrastructure data + Multimodal travel information services

Delegated Regulation (EU) 2017/1926

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Annex

1. The types of the static travel data

1.1. Level of service 1

[…]

(e) Trip plan computation — road transport (for personal modes):

(i) Road network

(ii) Cycle network (segregated cycle lanes, on-road shared with vehicles, on-path shared with pedestrians)

(iii) Pedestrian network and accessibility facilities

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Annex, 1.1.e.ii

Cycle network (segregated cycle lanes, on-road shared with vehicles, on-path shared with pedestrians)

- *"Cycle lane" means a part of a carriageway designated for cycles. A cycle lane is distinguished from the rest of the carriageway by longitudinal road markings;*
- *"Cycle track" means an independent road or part of a road designated for cycles, signposted as such. A cycle track is separated from other roads or other parts of the same road by structural means;*

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Annex, 1.1.e.ii

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Better: Cycle network (cycle tracks, cycle lanes, on-road shared with vehicles, on-path shared with pedestrians)

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Developing a standard for bike parking data

NAPCORE Mobility Data Days Budapest 2023

Nigel Williams – President
European Parking Association

nigel.williams@europeanparking.eu

- What is EPA?
- What is APDS?
- CIE / APDS Pilot

EPA

23 NATIONAL PARKING ASSOCIATIONS

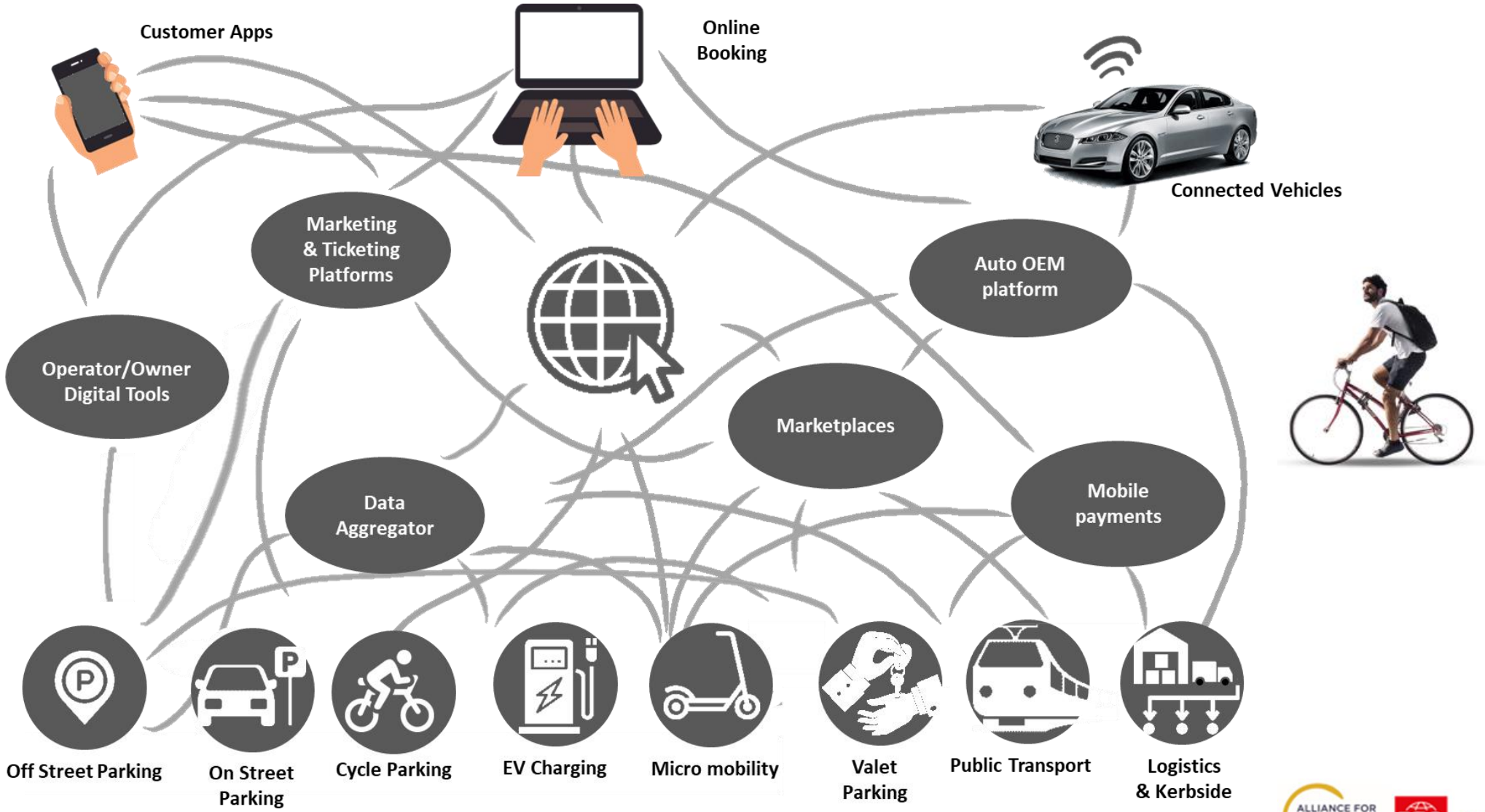
REGULATED PARKING SPACES

Off street	26,2 million
On street	14,7 million
Employees	500.000
Turnover	26,4 billion €

Estimated 237 million non regulated spaces

Source: www.europeanparking.eu

APDS - Parking data in the multi-modal world



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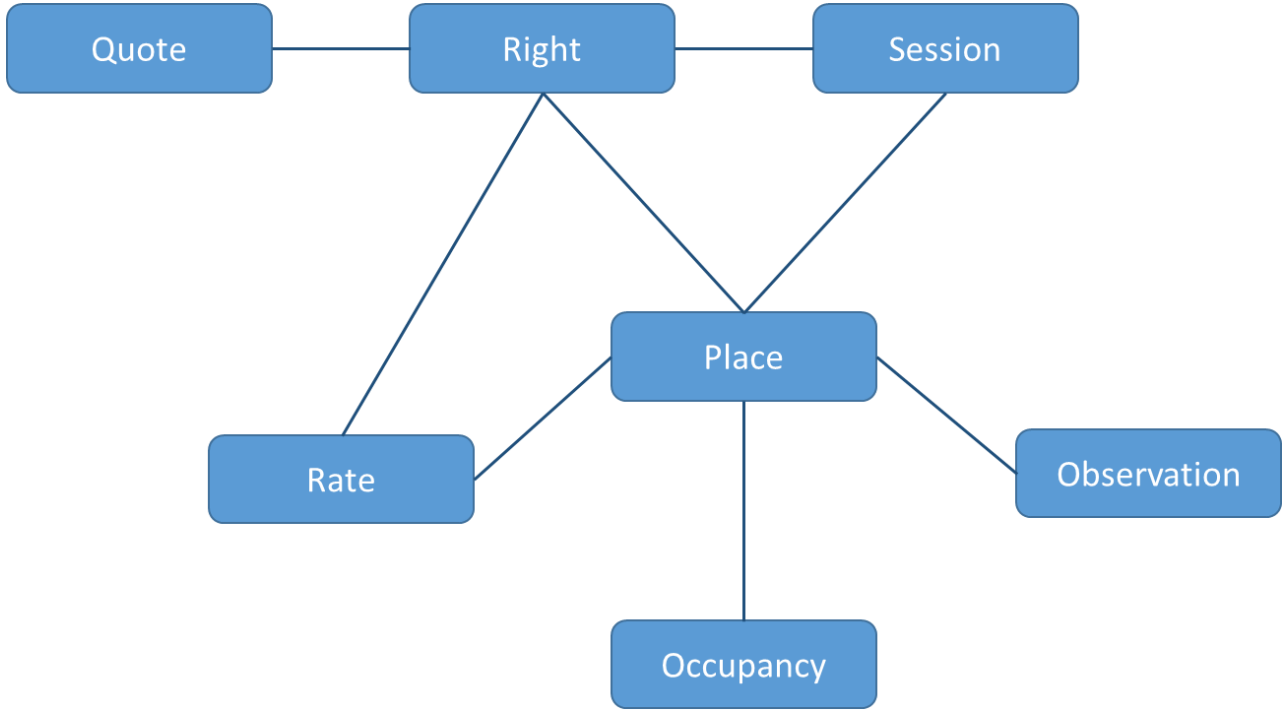
ALLIANCE FOR PARKING DATA STANDARDS

ISO

DATEX II

The CIE / APDS Pilot

Cycle parking is increasingly managed and digitalized,



So, it has more use cases in common with car parking

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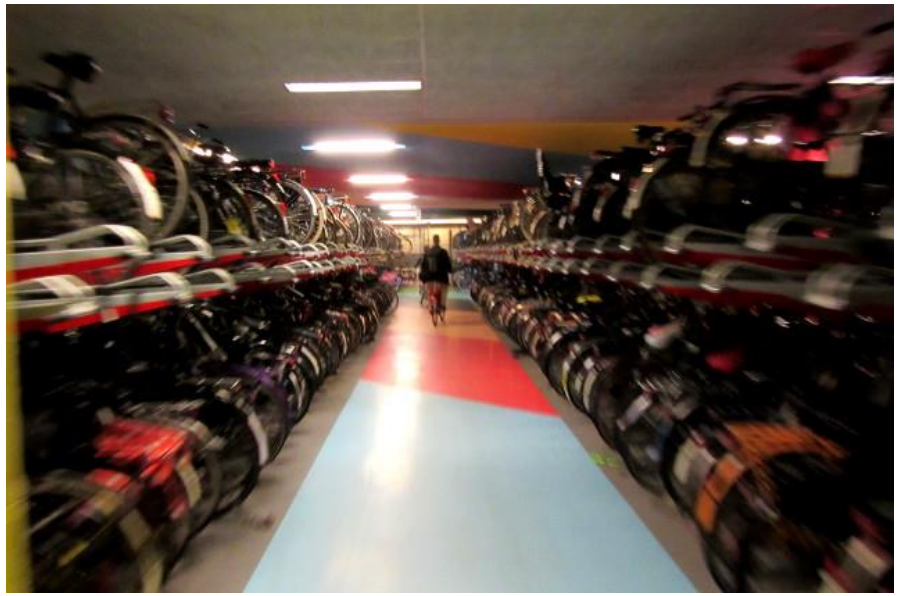
ALLIANCE FOR PARKING DATA STANDARDS

ISO

DATEX II

CIE / EPA Pilot

- Joint working group to undertake the technical work to extend current APDS specifications to include cycle parking
- CIE to provide cycling experts
- EPA to provide parking data experts



- CIE & EPA will define scope and location of cycle parking pilots

Thank you

NAPCORE Mobility Data Days Budapest 2023

Nigel Williams – President
European Parking Association

nigel.williams@europeanparking.eu

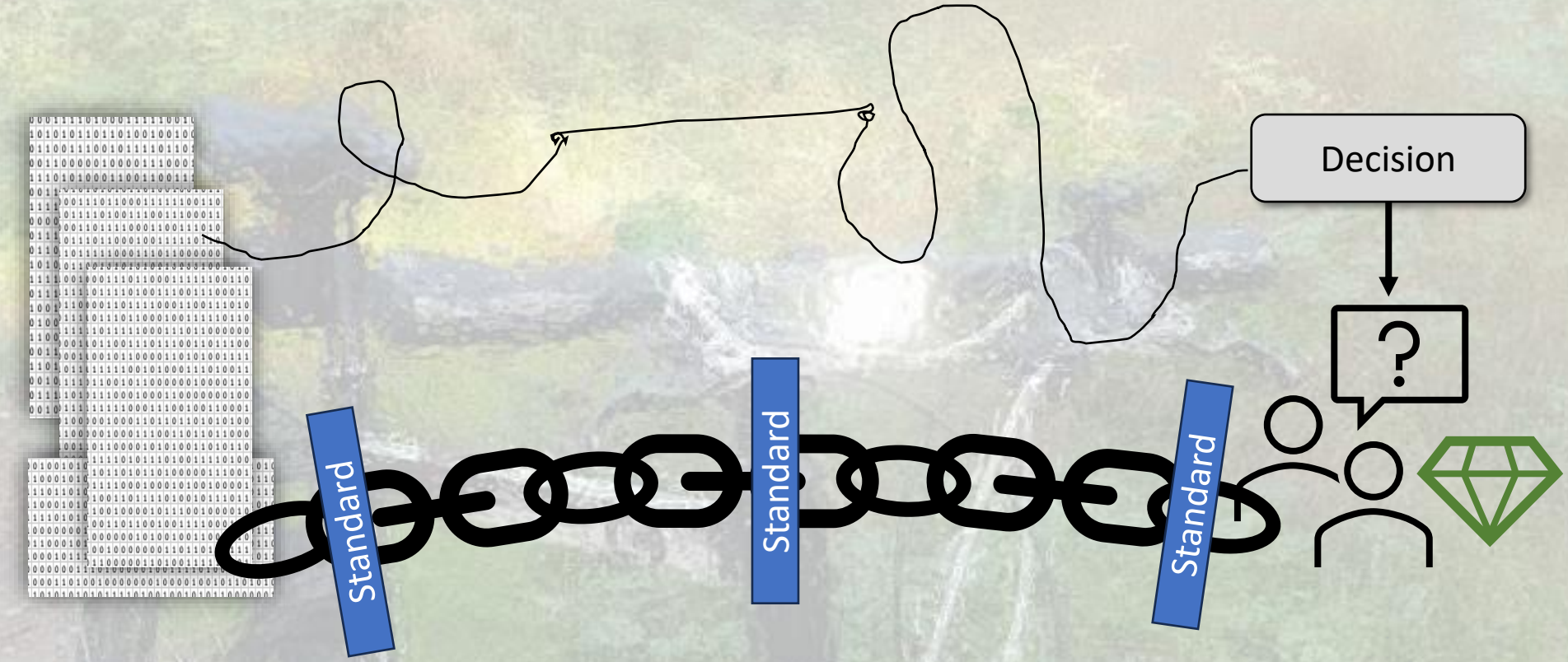
Real Time Cycling Data

Challenges and Opportunities

Jørgen Wanscher, CTO, Co-founder
Hermes Traffic Intelligence, Denmark

Hermes Traffic Intelligence

Decision chains



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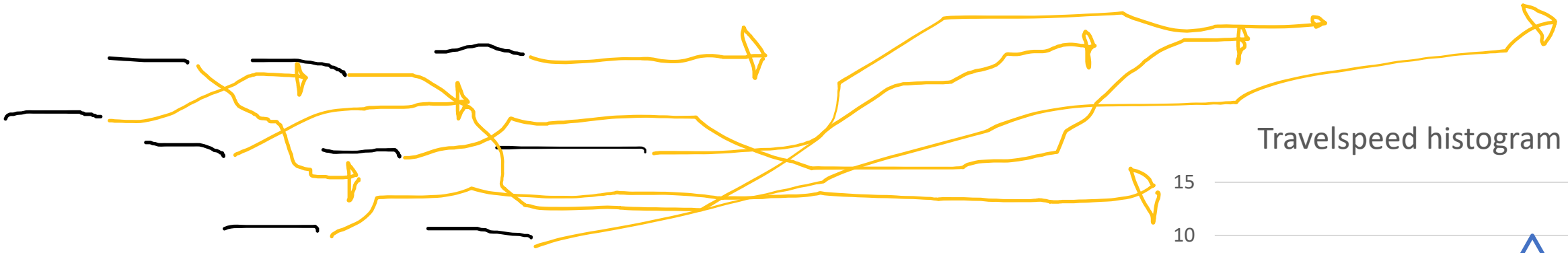
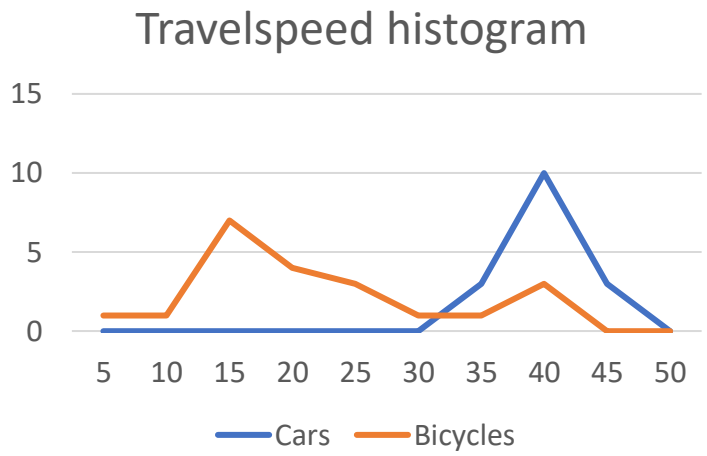
Traffic
Intelligence

Cars.....

Bicyclists.....





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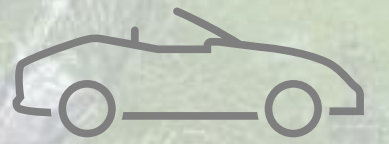
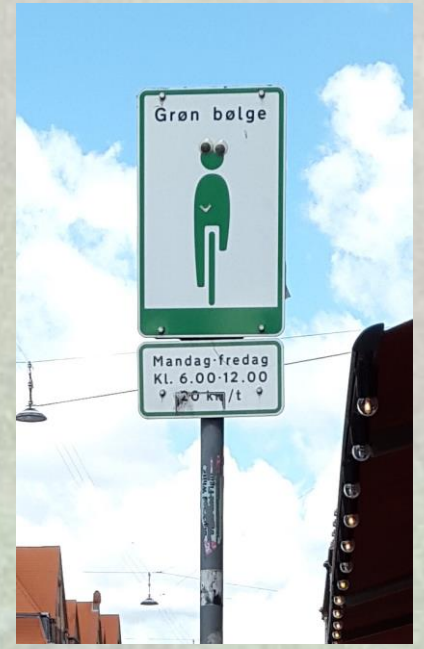
How to….





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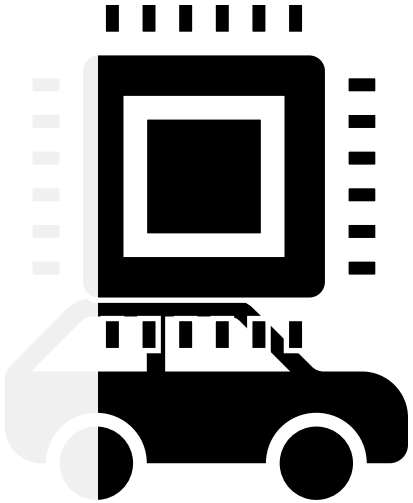
Availability



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Thank you

- Jørgen B. Wanscher – jbw@hermestraffic.com
- Lars R. Randleff – lrr@hermestraffic.com
- www.hermestraffic.com

Hermes Traffic Intelligence

Feedback and Opportunities

- Matthias Unbehaun (TISA)
- Suzanne Hoadley (POLIS)
- Tu-Tho Thai (ITxPT)
- Bard de Vries (NDW)

Moderator: Jørgen Wanscher

Exchanges on the community building

Go to Slido:

Moderator: Samuel Pierce (CIE)

Thank you!

Don’t forget to register yourself or someone else for the workshops! Sent an email to:

cristina.buraga@cerema.fr

mirelle.peters@ndw.nu

With: Name, organisation, role and your choice for counting, infrastructure, parking, real-time cycling data