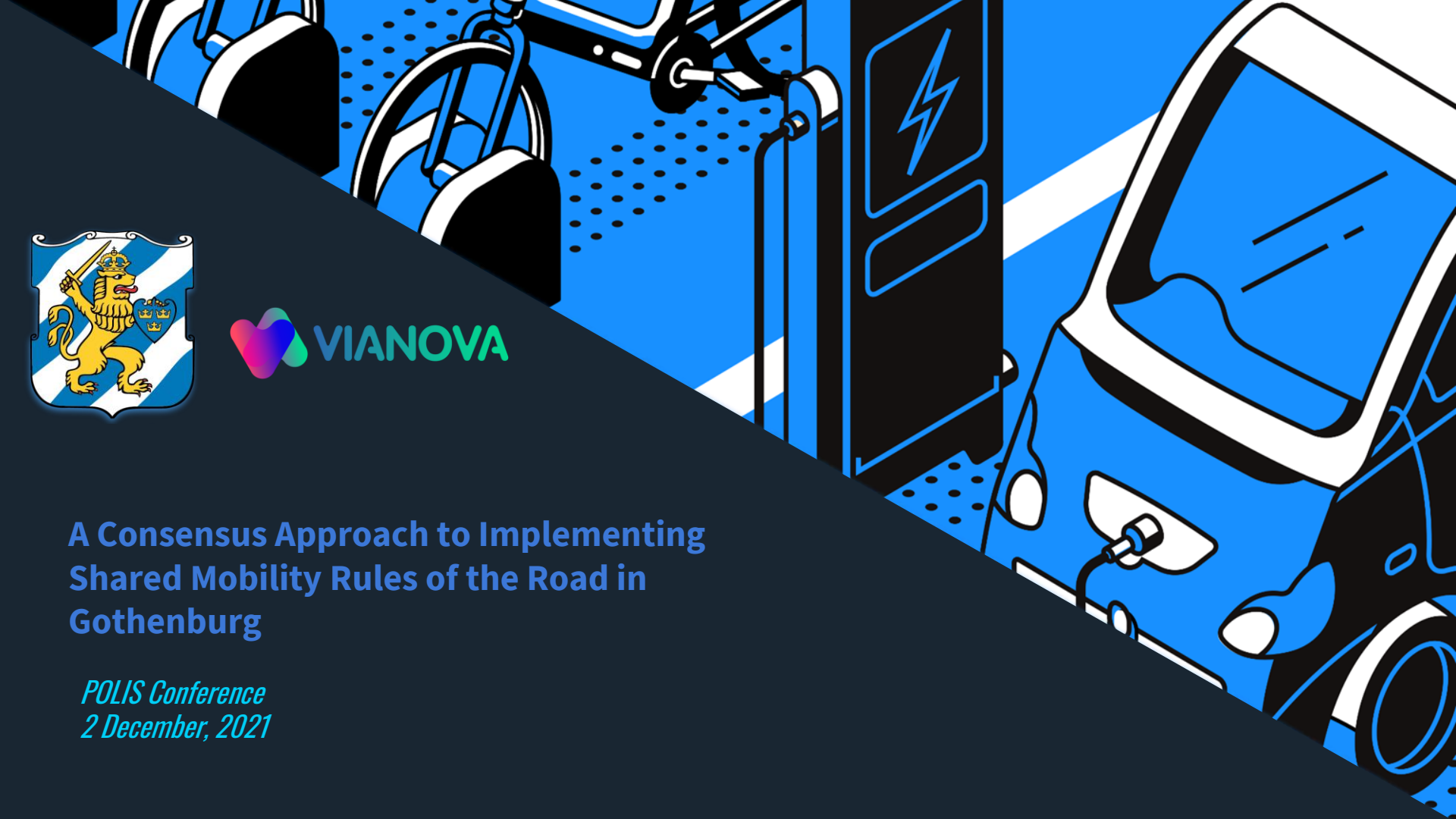

A Consensus Approach to Implementing Shared Mobility Rules of the Road in Gothenburg

POLIS Conference
2 December, 2021

History of the Project

- Electric scooters introduced in Gothenburg in 2018
- The quick growth of the market brought with it a number of challenges
- Increasing need to understand, regulate and monitor compliance for this new mode of transport
- Development project financed by Sweden’s innovation agency VINNOVA
- Cooperation between the city of Gothenburg, Voi and Vianova

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The Cityscope Platform and Data Exchange

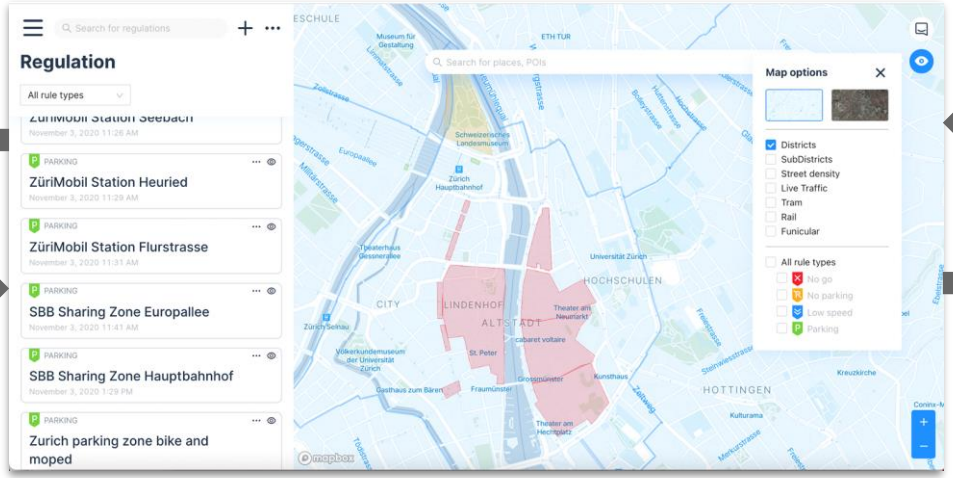
Connected fleets
(Produce data, consume regulations)

Micro-mobility

Carpooling

Mobility on-demand

Delivery



Cities & third parties
(Produce regulations, consume data)

Cities & gvnt

Consultants

Infrastructure managers

Public transport

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Data Formats Ingested in Cityscope

GBFS

Real-time availability of devices

A useful format for Mobility-as-a-Service uses, GBFS is a read-only dataset designed to be open data

- Device location
- Availability for rental

MDS

Bi-directional sharing of status changes and regulations

A new format providing real-time and historic information based on the status and location of a device at any given point in time.

- Device location
- Status (“rented”, “unavailable”, “reserved”, etc)
- Regulatory geofences known as “policies”

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Limitations of the Data

GBFS + MDS WILL

- Provide accurate information about trips, fleet sizes, and routes (if provided)
- Enable automatic monitoring of certain regulations
- Allow for comparisons to other datasets (transit, land use, etc.)
- Allow for easy comparisons to other cities and be non-proprietary

GBFS + MDS WILL NOT

- Provide personally identifiable information (both good and bad)
- Have down-to-the-meter accuracy
- Have down-to-the-second latency
- Be entirely free of data quality and mapping issues

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As Needs Become More Complex, Getting It Right Matters More

Data to Understand	Data to Plan	Data to Manage	Data to Integrate
How many vehicles?	Where should we add mobility hubs?	How many devices are violating policies?	How to we support multi-modal journeys?
Where are they going?	How do we improve cyclepaths?	Which operators are performing best?	How does shared mobility contribute to decarbonization targets?
Where are they parking most often?			

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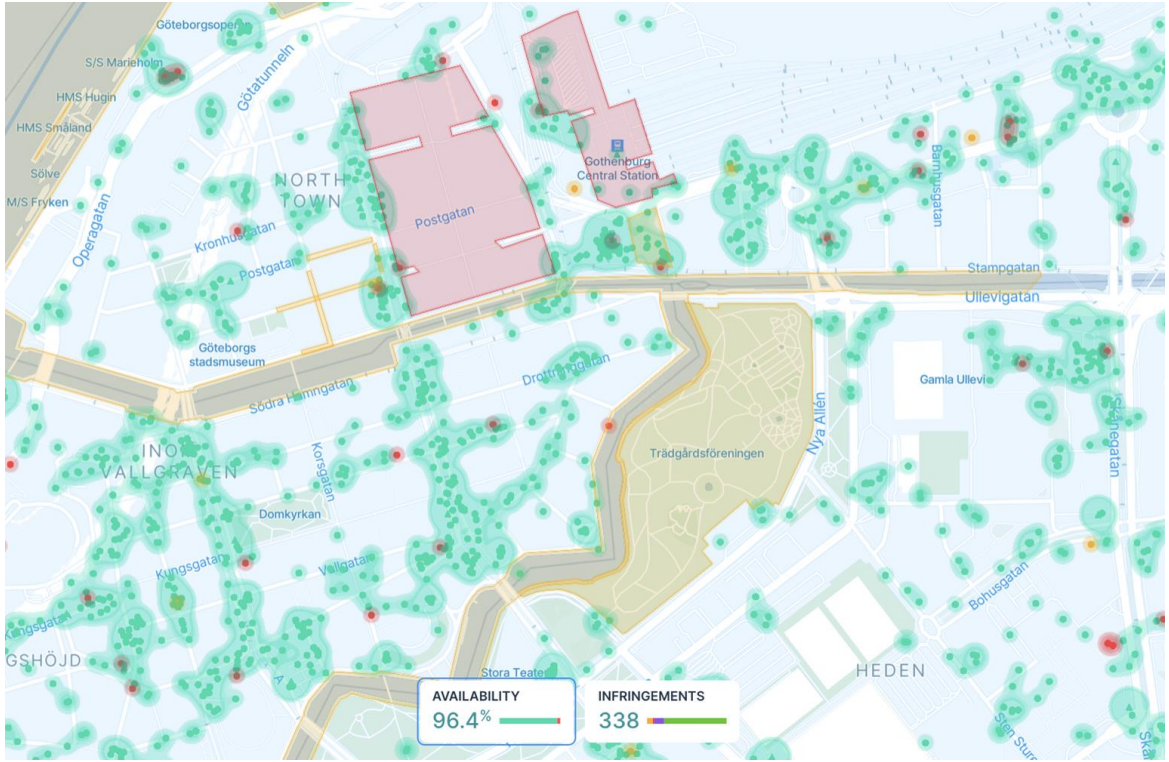
The View From Gothenburg



Permanent Policies

- 7 Low speed zones
- 17 No Parking Zones
- 2 No-Go Zones
- Restrictions on Maximum Parked Time and Maximum Unavailable Time Consistent with Swedish Law

Dynamic Geofences- Special events

2 types of policies- articulated in the permit vs added by request

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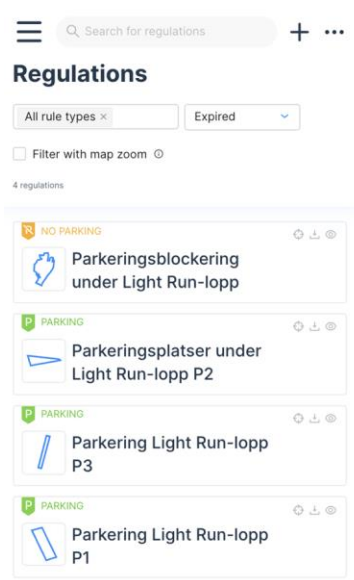
Where the Data Works Well

- Geofenced Regulations are effectively communicated to operators
- Quick-turnaround times for temporary events
- No parking violations are remaining low (but low parking districts are relatively small)
- Schrodinger's Regulations: Monitoring KPIs encourages the operators to perform better



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Limitations Playing Out in Gothenburg

- Different vehicles with different capabilities lead to variation in the accuracy of the data
- Operations teams are not data scientists- there is a knowledge gap on data specifications
- Time intensive to validate and verify data
- Speed rules are easy to communicate, hard to validate
- Not very helpful in addressing the three main complaint areas:
    - improper parking (in valid parking areas)
    - Tilted devices
    - Reckless riders

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Where do we go from here?

- Is “a regulated partnership” possible? Yes, but it requires:
    - A trust in data, but physical verification
    - A better understanding of operations and processes from companies
    - A willingness from companies to continue to invest in better hardware and better data
    - A little regulation isn’t a bad thing

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