MegaBITS: Mobilizing Europe's Green Ambition through Bicycles and ITS

TRA
TRANSPORT RESEARCH ARENA
DUBLIN 2024
10th CONFERENCE • 15-18 April

Ronald Jorna - Province of Overijssel/MOVECO

Technical Session 4.1.4: Digital Transition and Multimodal Integration

Interreg North Sea
Co-funded by the European Union
MegaBITS

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

provincie Overijssel

Content of presentation

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

1. Introduction ITS and cycling
2. Project philosophy
3. Lessons learnt from BITS project
4. The MegaBITS project
5. Smart Cycling Ecosystem
6. Contribution to multimodal integration
7. Conclusions

If you think about ITS … it probably is about motorized traffic!

MegaBITS

Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

Floating Car Data

Source: Storey & Holtom

Source: Rijkswaterstaat

Connected Vehicles

Compact Truck Parking

Source: wegenforum.nl

VMS for Car Traffic

Interreg North Sea

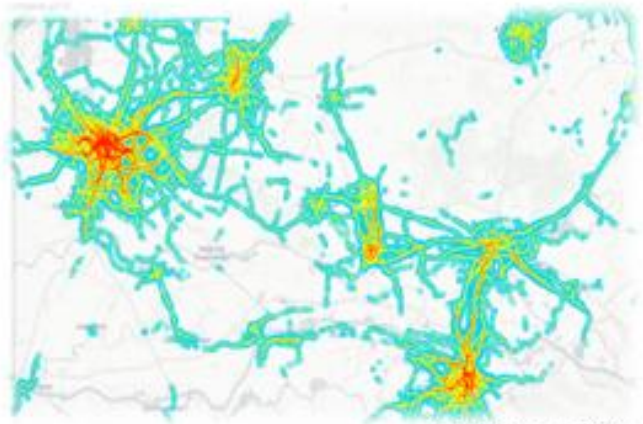
Co-funded by the European Union

provincie Overijssel

If we think about ITS … it is about bicycles!

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

Floating Bike Data



Fietstelweek 2016

Source: Siemens

Connected Bicycles

Intelligent Bike Parking

Bicycle parking Utrecht Central Station

Source: Anders Adamsen

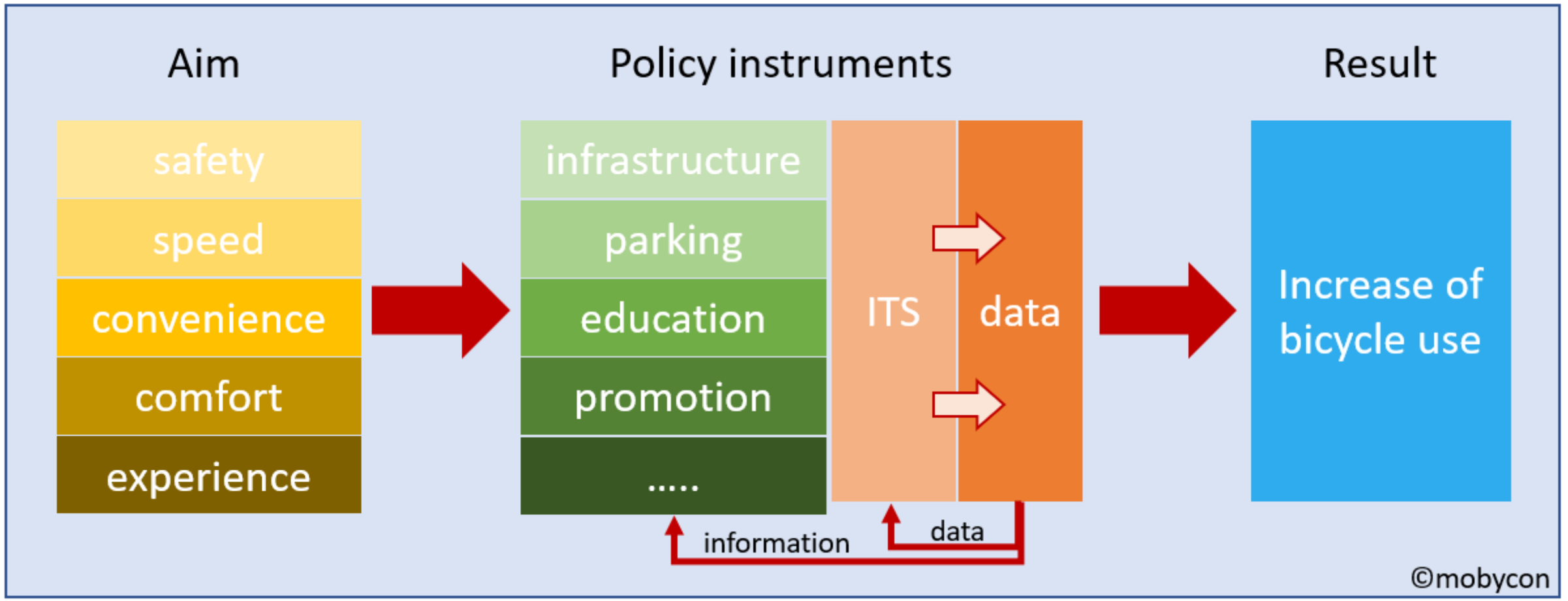
VMS for Bicycles

Interreg North Sea
Co-funded by the European Union

provincie Overijssel

ITS as an instrument for cycling policy

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems



Interreg North Sea
Co-funded by the European Union

provincie Overijssel

MegaBITS project philosophy

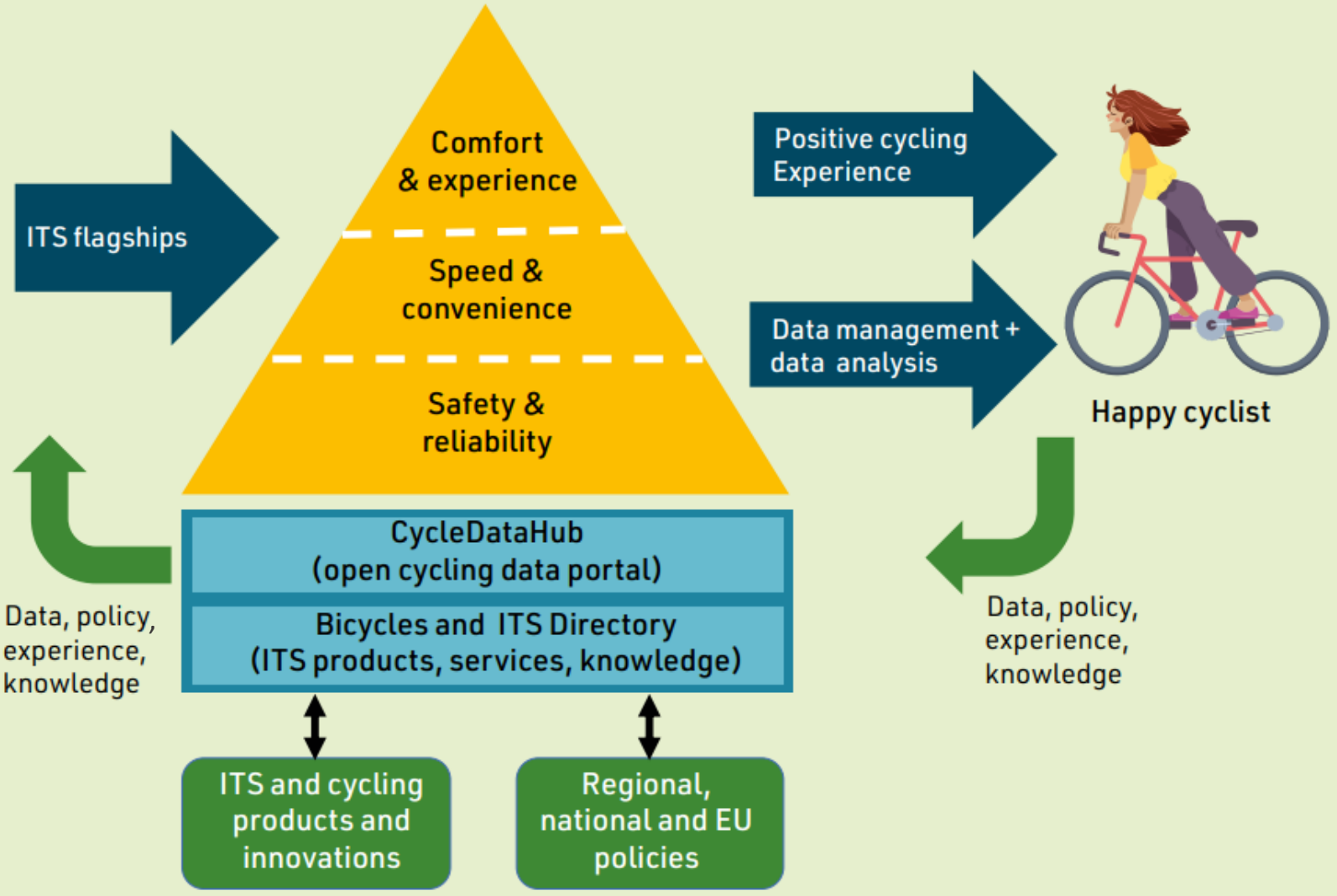
MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

ITS technologies

Bikes anywhere and everywhere:
- Multi-modality
- Mobility as a Service (MaaS)
- Bike sharing and other sharing

Smart bike, smart rider:
- Route planners, traffic mngt., signal controls
- Smart locking and parking, theft prevention
- Reporting tools e.g. road defects
- On bike technology

Connected and automated:
- Collaborative ITS (C-ITS)
- Collaborative, Connected and Automated Mobility (CCAM)
- Vehicle to Vehicle, to bike, to infrastructure (V2V, V2C, V2I)

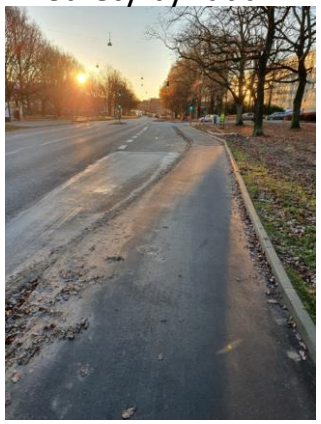


Building on the BITS project

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

1. Running from 2019-2023.
2. 30+ ITS systems for cycling implemented in 6 cities and regions.
3. All evaluation reports can be found at: https://northsearegion.eu/bits/project-deliverables/
4. Project website: https://northsearegion.eu/bits/

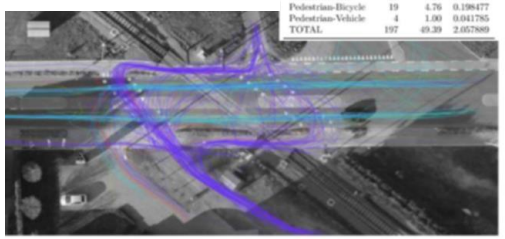
Safety by radar



Faster green for groups

…and for bike couriers

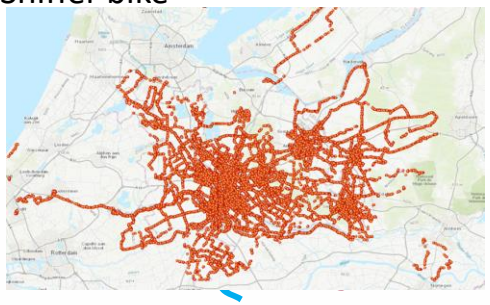
Conflict analysis



TYPE	Total	Per day	Per hour
Bicycle-Bicycle	113	28.33	1.180413
Bicycle-Vehicle	32	8.02	0.334276
Vehicle-Vehicle	29	7.27	0.302938
Pedestrian-Bicycle	19	4.76	0.198477
Pedestrian-Vehicle	4	1.00	0.041785
TOTAL	197	49.39	2.057889

Bike parking

Sniffer bike



Lessons learnt from the BITS project

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

Cycling data:

- Focus of cities/regions currently on collecting data and digitizing information:
  - Collecting data to improve cycling policy and to convince politicians
  - Digitizing information: to know the assets of cities/regions and as a basis for future applications
- Lack of standardization → higher costs, difficult to exchange data
- Lack of data and lack of quality of data → bike data should be equally important as car data
- Concerns about privacy issues can hinder ITS deployment

ITS applications for cycling:

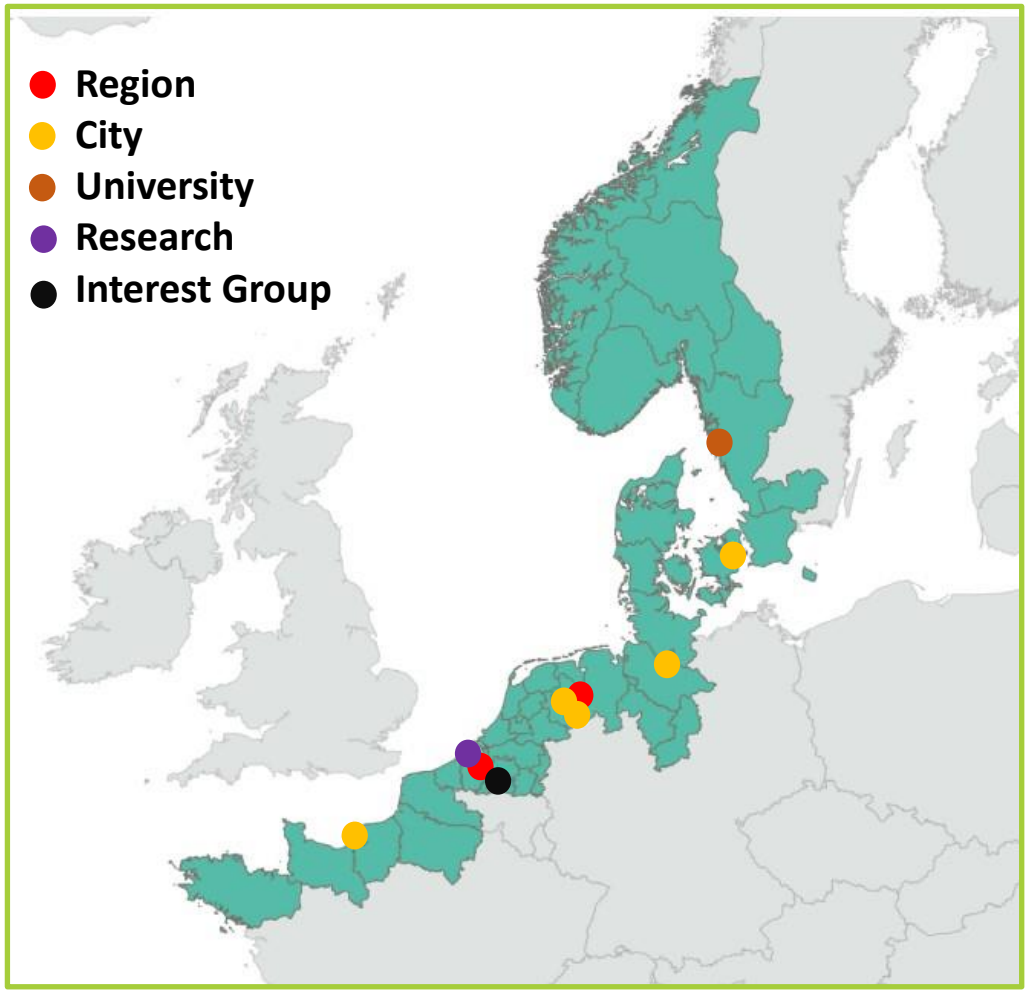
- Chicken and egg: suppliers need sufficient customers to develop a system; authorities want proven solutions
- Shortage on human resources and ITS knowledge at cities/regions
- Not clear what the costs and benefits are of ITS for cycling.
- Procurement of ITS services for cycling is relatively new.

Interreg North Sea
Co-funded by the European Union
provincie Overijssel

MegaBITS: Mobilizing Europe's Green Ambition through Bicycles and ITS

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

- May 2023 – April 2026
- Project within Interreg North Sea Programme
- Investing €4,9 mln. in cycling ITS and data (co-funded by EU).
- Partners:
  - NL: Province of Overijssel (lead), City of Zwolle, City of Enschede
  - BE: Province of Antwerp, CIE, imec
  - DE: City of Hamburg
  - DK: City of Copenhagen
  - FR: Le Havre Seine Métropole
  - SE: Chalmers University



Interreg North Sea
Co-funded by the European Union

MegaBITS

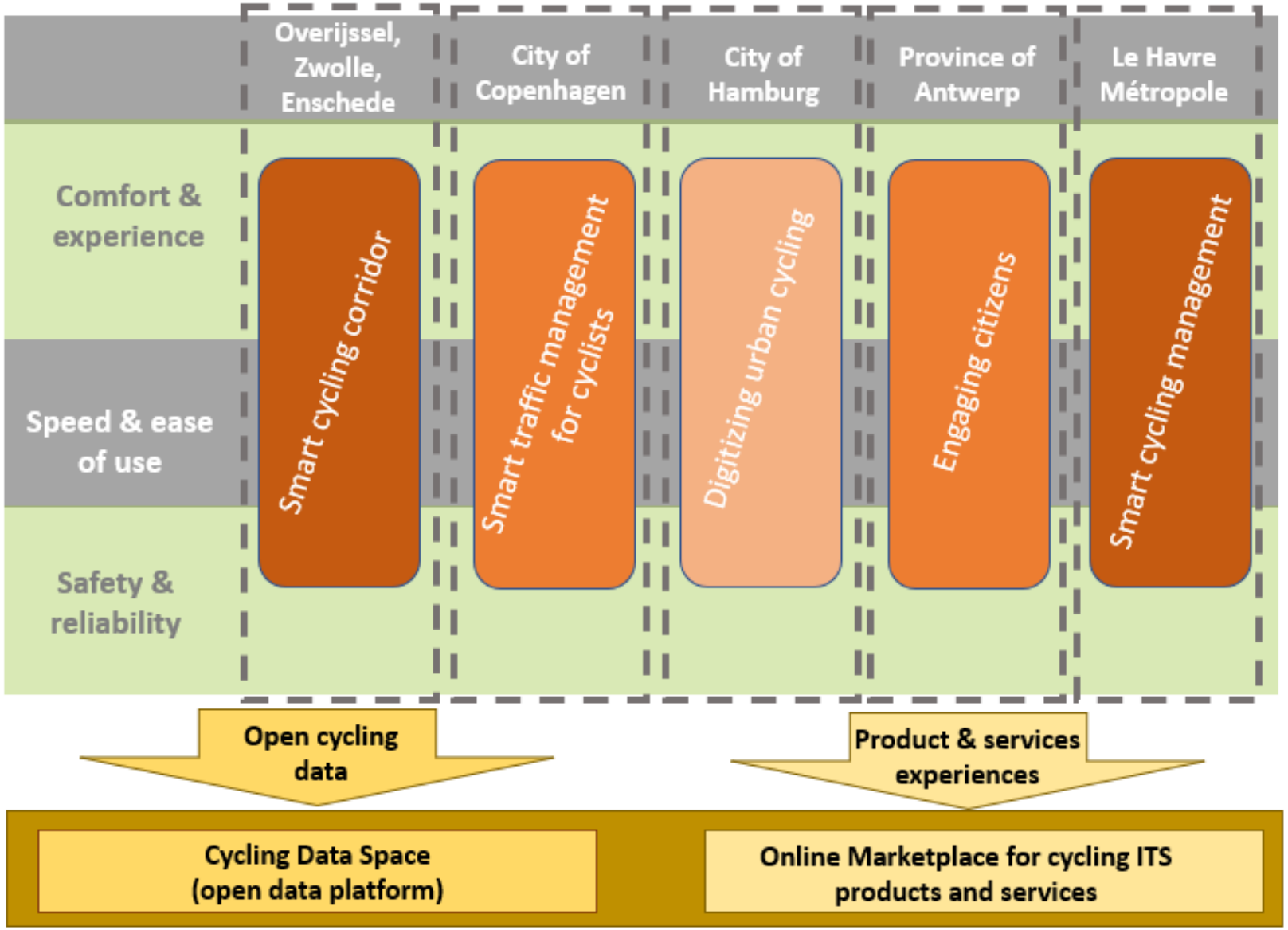
provincie Overijssel

In 2026:

1. We have implemented and evaluated 20+ cycling ITS and cycling data applications at the local and regional level. This increased knowledge on cycling ITS leads to more cycling and thus contributes to a greener transport system.
2. We have embedded cycling ITS and cycling data in national and EU level policies.
3. We have contributed to the availability, accessibility and standardization of cycling data by jointly approaching cycling data, within MegaBITS and in liaison with other projects.

Project structure 1: Flagships

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems



Interreg North Sea
Co-funded by the European Union

provincie Overijssel

Flagship implementations

Overijssel/Enschede/Zwolle

- Cycling app (OVE) and app campaign (ENS)
- Smart traffic lights (OVE)
- Linking cycling to multimodality (OVE)
- Prioritizing specific groups (ENS)
- Counting poles (ENS, ZWO)
- Dashboarding (ENS) and digital twin (ZWO)
- Smart lighting (ZWO)
- Bicycle innovation centre (ZWO)

City of Hamburg

- Improve PrioBike (incl. GLOSA, green wave)
- Support #transmove (multimodality planning)
- Support infrastructure planning
- Improve intermodal link (PT – bicycle)

Le Havre Seine Métropole

- Floating Bike Data
- AI analysis of bike use in territory
- Bike parking

Province of Antwerp

- Digital citizen participation platform
- Floating Bike Data (FBD)
- Use cases of data fusion
- Mobility potential tools

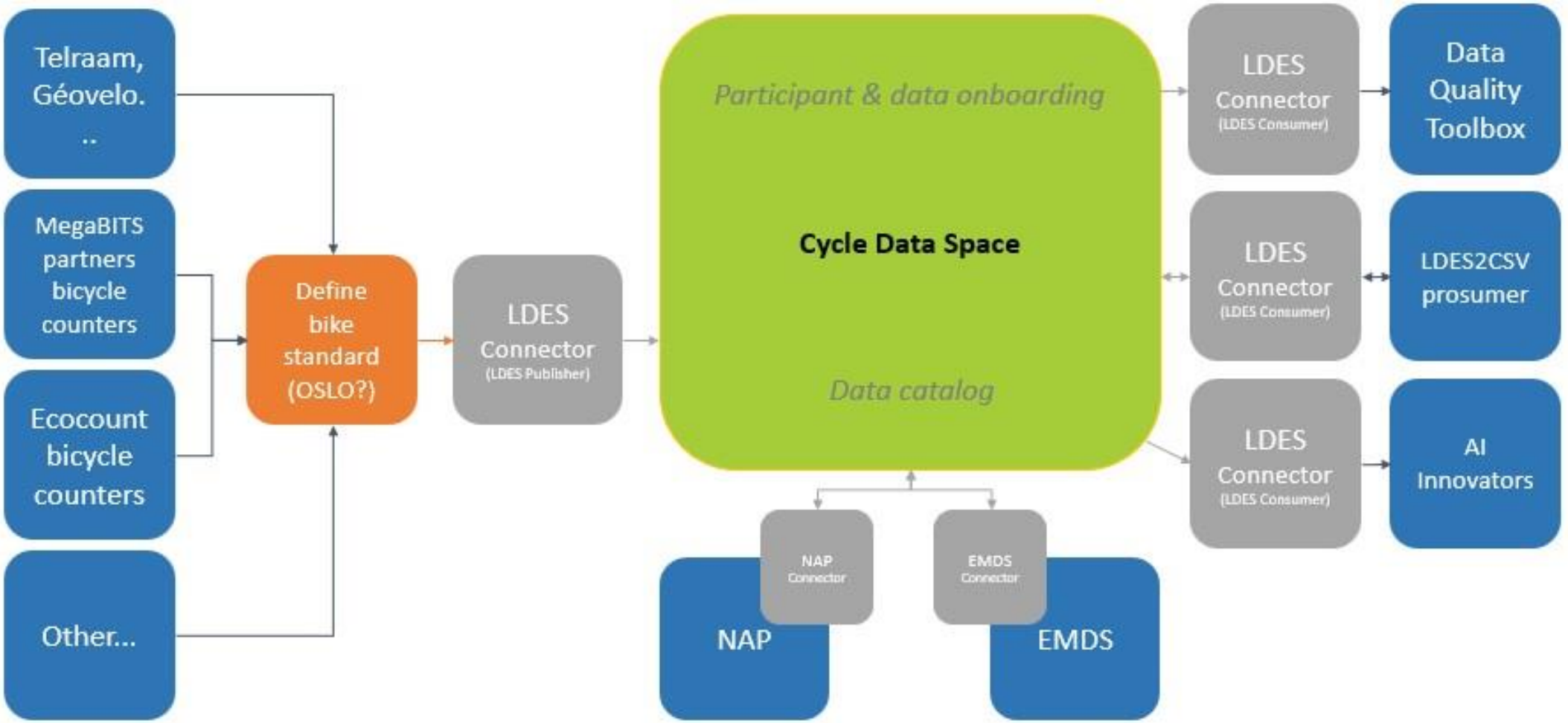
City of Copenhagen

- Floating Bike Data (FBD)
- Service goals & traffic management plans
- IT-back-end integration in TM systems
- Variable Message Signs

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems
Interreg North Sea
Co-funded by the European Union
MegaBITS

Project structure 2: Cycle Data Space

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems



Interreg North Sea
Co-funded by the European Union

provincie Overijssel

Project structure 3: BITS Directory

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

MultiSensor Signum And I-Signu

...with quality real-time ...ehicles on bike lanes or ...n the sidewalk. We do this with an ...cy of over 90%, also in the peak hours of traffic...

Categories: Encouraging cycling, Interactions (B2X), Data processing, Data analysis, Phase, Best practices, Target market

#b2g #counting-measuring-and-aggregating #cycling-industry-internal-data-i-e-sales- #data-for-infrastructure #implemented #implemented-projects #isa-and-speed-control #safety-of-cyclists

PowUnity BikeTrax

BikeTrax is a GPS theft protection for e-bikes. The GPS tracker is mounted in the e-bike motorhousing and connected to the PowUnity App with which the user can track the e-bike in real time...

Categories: Multimodal cycling, Encouraging cycling, Data processing, Data analysis, Phase, Best practices, Target market

#b2a #b2c #big-data #bike-sharing-and-other-sharing #cycling-industry-internal-data-i-e-sales- #implemented #implemented-projects #locking-and-parking #mobility-as-a-service #safety-of-cyclists #smart-locking

Eco-Visio

Online, easy-to-use data analysis platform. Eco-Visio is Eco-Counter's analysis software. This platform does not require any software to install or download, it is a secure website in HTML5 format,...

Categories: Encouraging cycling, Interactions (B2X), Data processing, Data analysis, Phase, Best practices, Target market

#b2a #bike-to-vehicle-to-bike-to-infrastructure-technology #counting-measuring-and-aggregating #counting-measuring-and-aggregating-data-i-e-dashboards- #data-for-infrastructure #implemented #implemented-projects #reporting #research-and-market-intelligence #traffic-management-and-dynamic-routing #vulnerable-road-user-its-vruits-

Flare

Flare is Mobility Safety Intelligence. Flare detects incidents and SOS alerts for Vulnerable

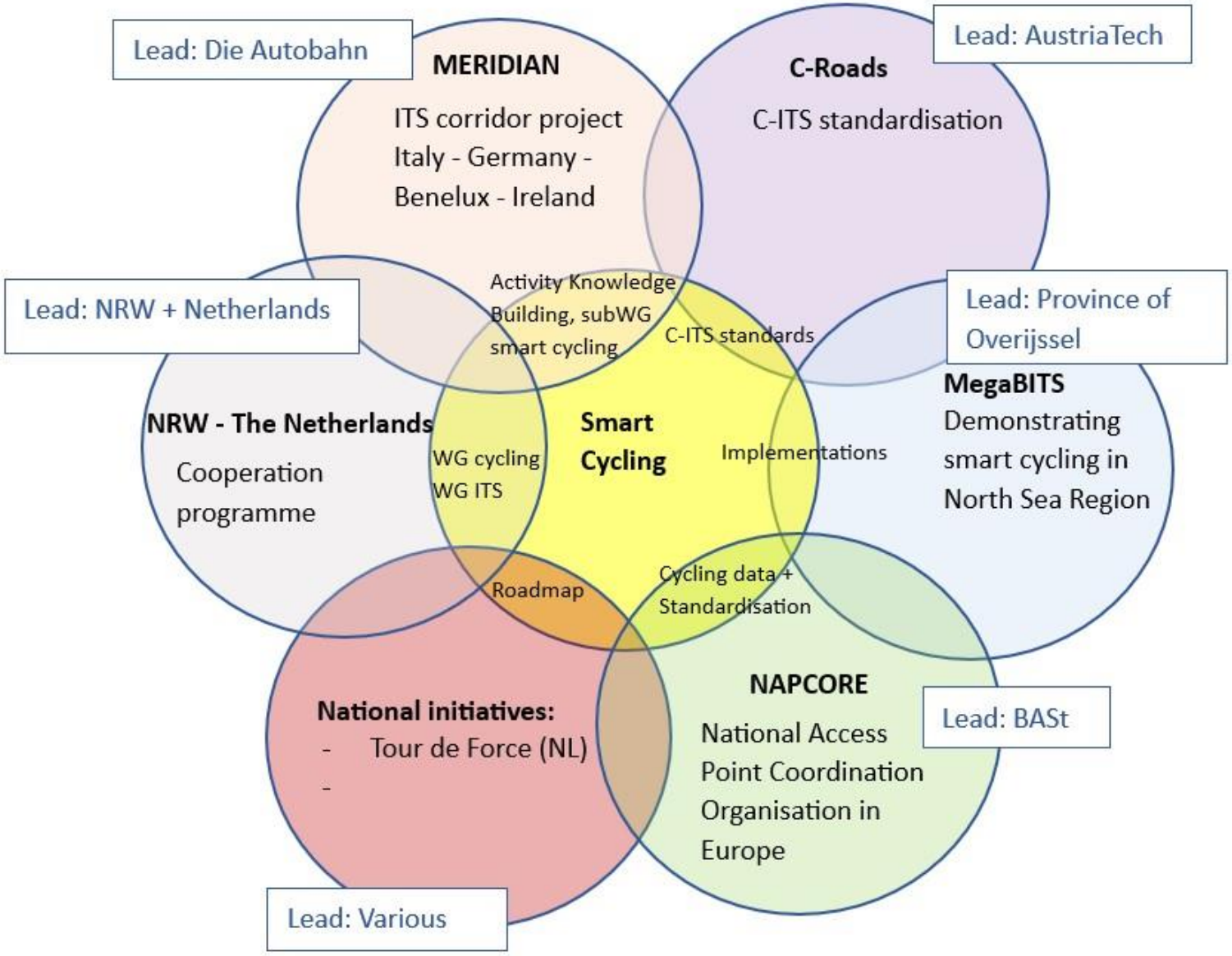
Motion Mobility Platform

Cycling Insights

Cycling Insights uses a big data approach for

Smart Cycling Ecosystem

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems



Smart Cycling & multimodal integration:

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

- Secure bike parking and bike parking guidance at intermodal hubs (railway stations, bus stations, park & bike)
- Bike sharing schemes at hubs (railway stations, bus stations, park & bike) and as part of MaaS
- Floating bike data to detect bottlenecks in bicycle access routes to multimodal hubs (detours, speed, parking, …)
- Variable Message Signs with public transport information
- Multimodal trip planning including cycling (pre/end trip, bike in train)
- Providing data related to the EU Delegated Regulation on MMTIS

Interreg North Sea
Co-funded by the European Union
MegaBITS
provincie Overijssel

Conclusions

MegaBITS
Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems

1. To make cycling a more attractive transport mode (safer, faster, more convenient, etc.), authorities must also invest in smart cycling solutions. This will be the digital layer on top of investments in bike infrastructure, bike parking facilities and bike promotion.
2. At the EU level more emphasis and budget has to be allocated to cycling data collection and standardization of cycling data. Cycling data must become as important as data on car traffic and public transport.
3. MegaBITS contributes by:
   - demonstrating whether and where cycling ITS works (and where not);
   - opening-up cycling data through the Cycling Data Space;
   - offering an insight in existing smart cycling solutions through the Bicycles and ITS Directory.

THANK YOU FOR YOUR ATTENTION!

@MegaBITS_EU

/company/megabits_eu

www.interregnorthsea.eu/megabits --> also to subscribe to MegaBITS newsletter

ronald.jorna@moveco.nl

MegaBITS