SOLUTIONS FOR SMART CITIES – EXPERIENCES FROM HAMBURG

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Raimund Brodehl | Ministry of Transport and Mobility Transition

Hamburg

CITY OF HAMBURG - IMPRESSIONS

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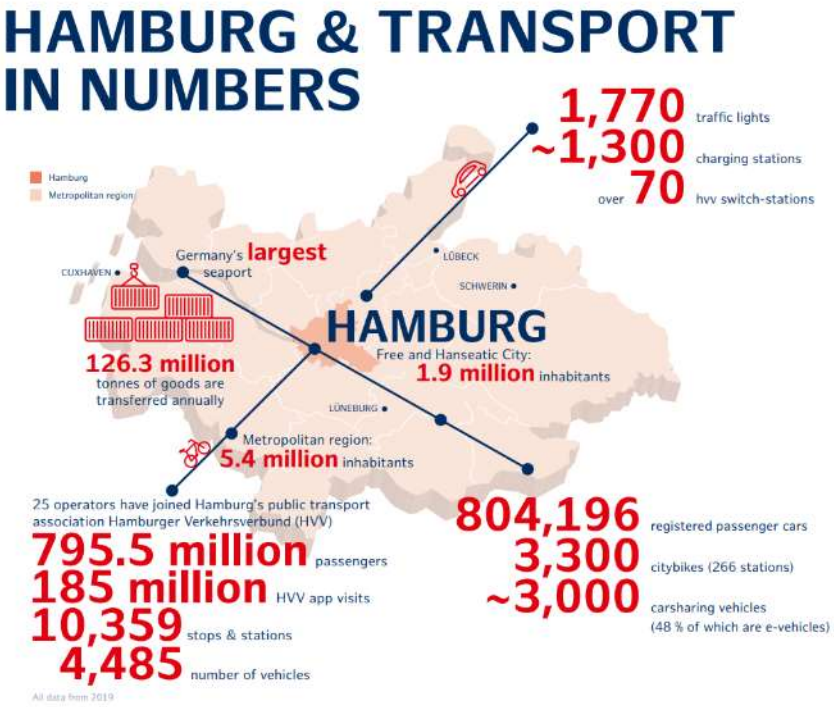
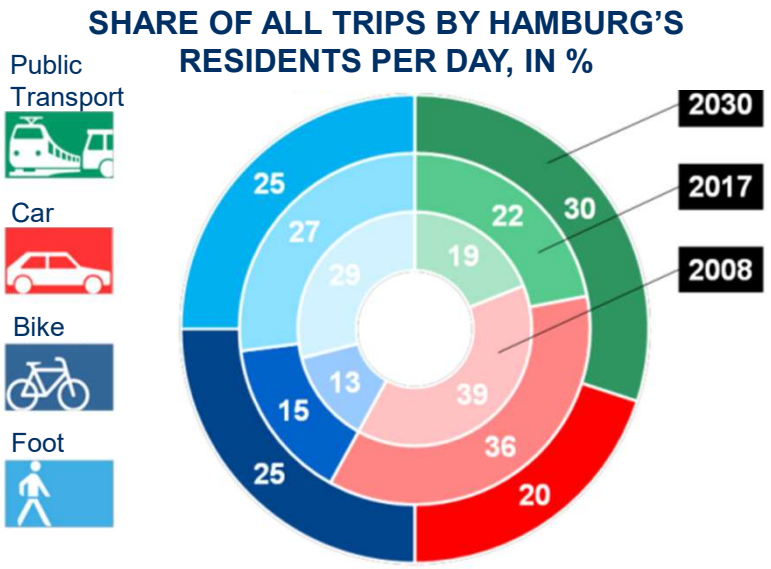
HAMBURG - A MODEL CITY FOR INNOVATIVE MOBILITY

- **Capital** of **logistics**
- Third largest **seaport** in Europe with the best **hinterland connections** by rail
- Leading **industrial- and business location** in Germany
- Central hub for **long-distance rail transport (TEN-T node)**
- **Center metropolitan area** of 5 million people
- The world's third largest location for **civil aviation**
- Strong **local public transport** by bus and train
- Systematic expansion of **bicycle traffic** since 2011



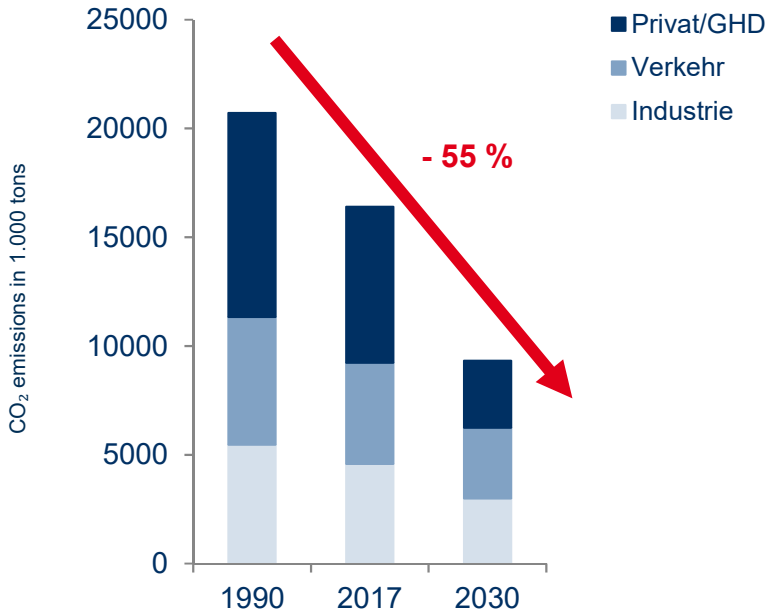
MOBILITY TRANSITION AND CLIMATE PROTECTION

Target for modal split until 2030



Source: MiD 2017 (infas, DLR et.al.), BVM

Target CO_2 reduction until 2030



Source: Statistikamt Nord (2017), BVM

Hamburg

MOBILITY TRANSITION –
MORE CYCLING + WALKING

- Expanding the network and infrastructure for walking
- Connecting cycling with public transport
- Promoting foot traffic
- Digitisation and communication
- VRU-protection

PRIOBIKE-HH – VISION AND MISSION

Federal Ministry for Digital and Transport

Duration

- Four years

Partner

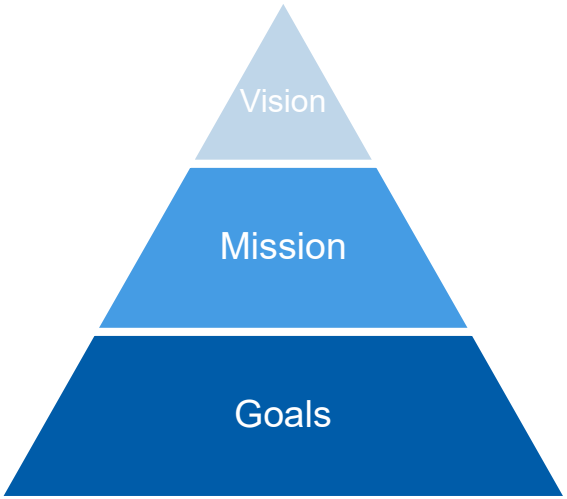
- Free and Hanseatic City of Hamburg, Technical University of Dresden amongst others

Vision for Hamburg

- To support the mobility transition; Hamburg is a pioneer in the digitization of cycling in Germany in 2025

Mission for PrioBike-HH

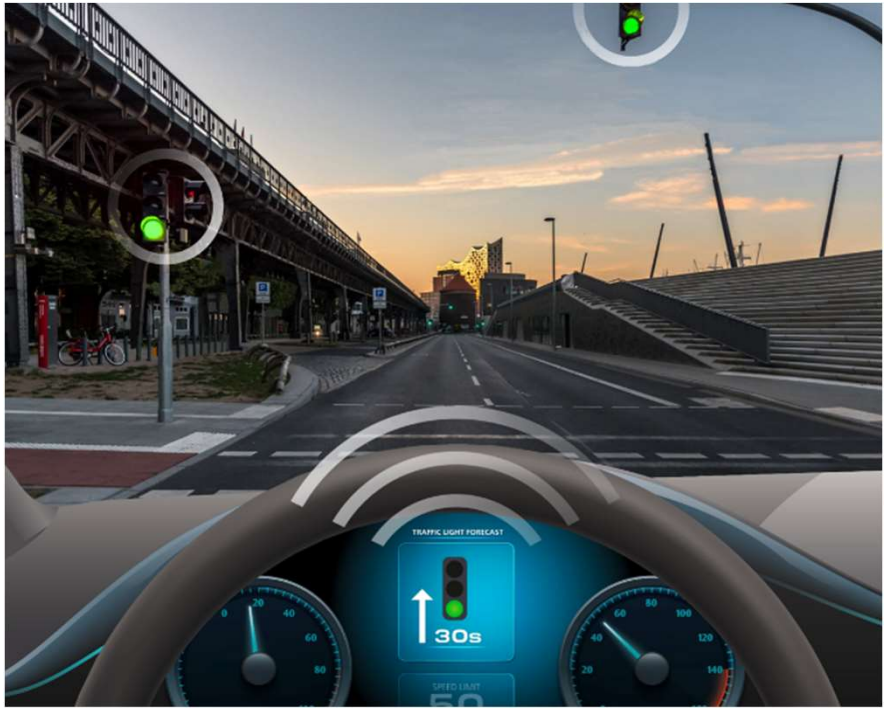
- Use of digital technologies to increase comfort and safety in bicycle traffic



OBJECTIVES

- Expanded bicycle traffic counting
- Adjusted traffic signal control for bicycle traffic prioritization at intersections
- Green waves for cyclists
- Cycling information app to provide a GLOSA and routing service
- Innovative forms of interaction and their provision through various media
- Visualization of speed recommendations or remaining green times along bike lanes
- Collision warnings at intersections to increase the safety of cyclists
- Collection of dynamic cycling-related data
- Transferability to other cities

OBJECTIVE: GREEN WAVES FOR CYCLISTS



GREEN WAVES FOR CYCLISTS

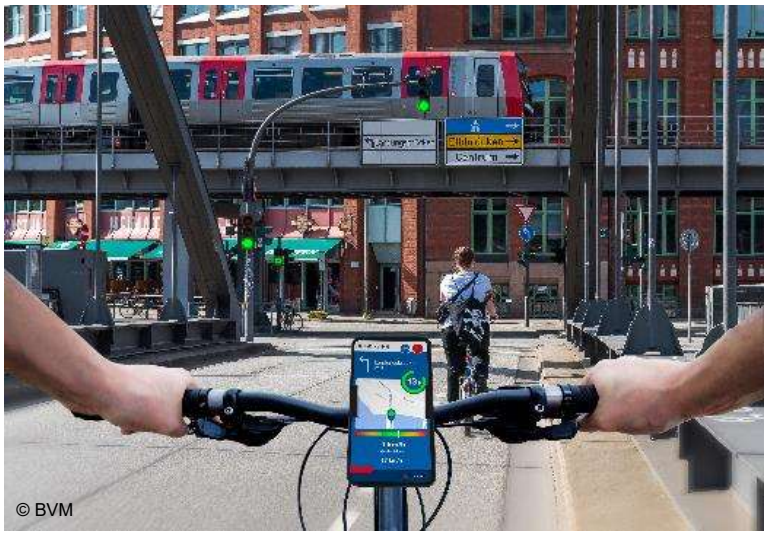
- So far implemented on two routes (mixed traffic)
- Traffic lights are coordinated in a row
- At a driven average speed of 18 km/h
- Less stops for cyclists, increased comfort

Evaluation

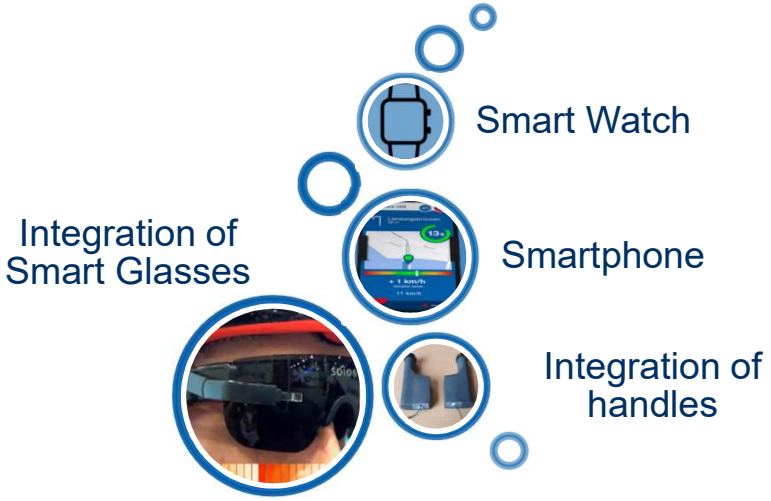
- Floating Car Data is used
- Complex coordination with possible side effects especially for bus traffic
- But possible if well coordinated

OBJECTIVE: CYCLING INFORMATION APP

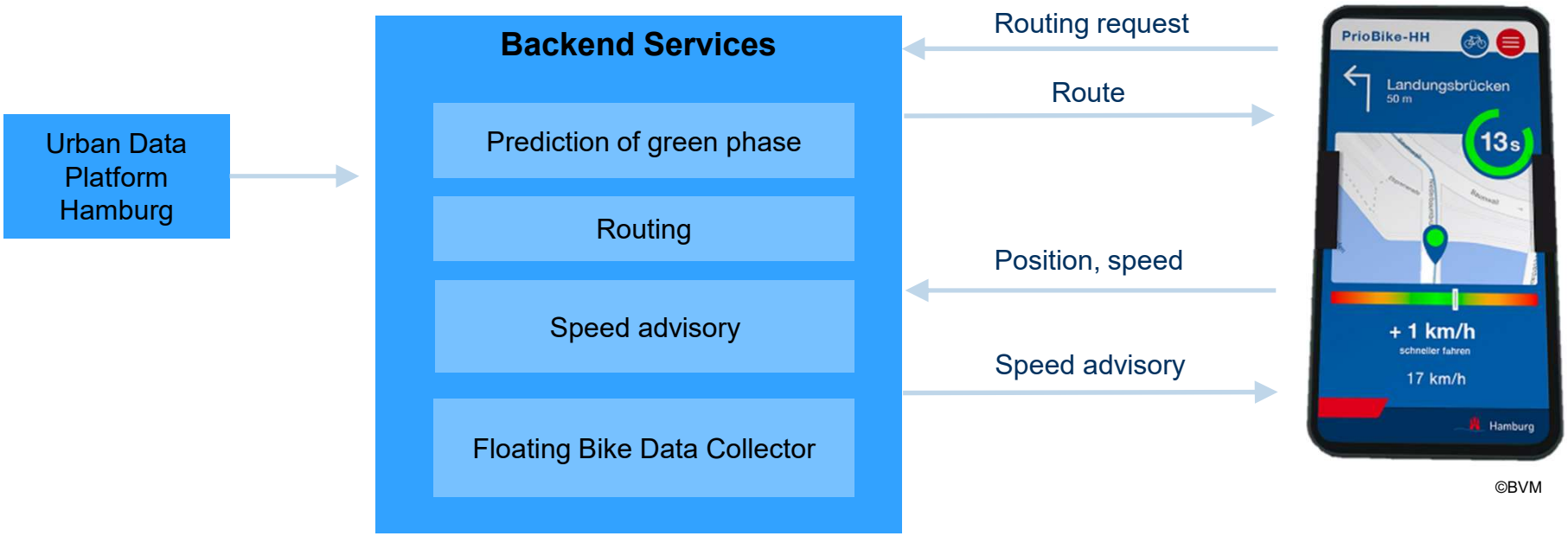
Development of an app, for use on smartphones, that provides a GLOSA for cyclists as well as optimized bicycle traffic routing.



Development of different interaction forms for instance, the use of augmented reality.



PRIOBIKE - APP



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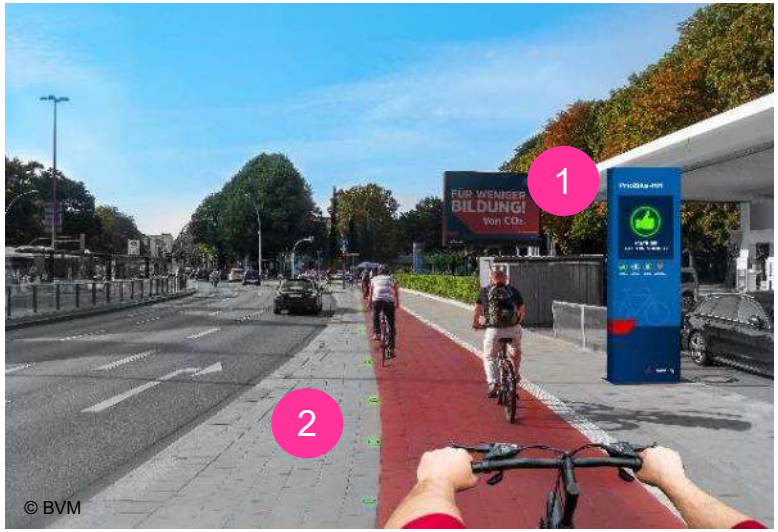
OBJECTIVE: SPEED RECOMMENDATIONS

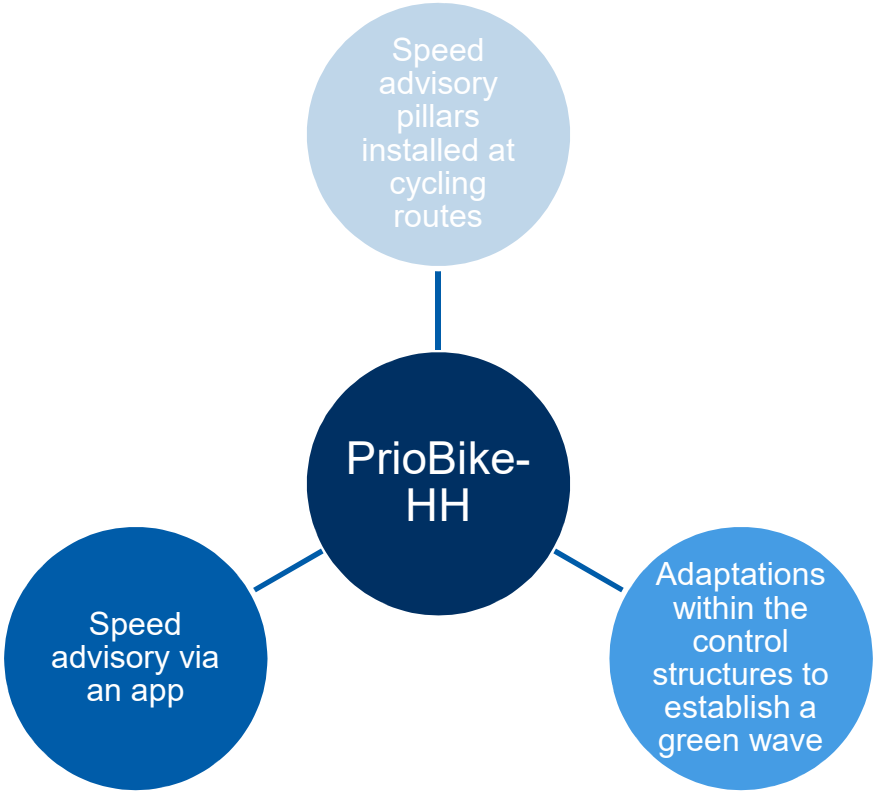
1. Digital signalling of remaining green times or driving recommendations for cyclists at the roadside, for example by a pillar.

2. Dynamic lights on the ground indicate whether to ride faster or slow down.



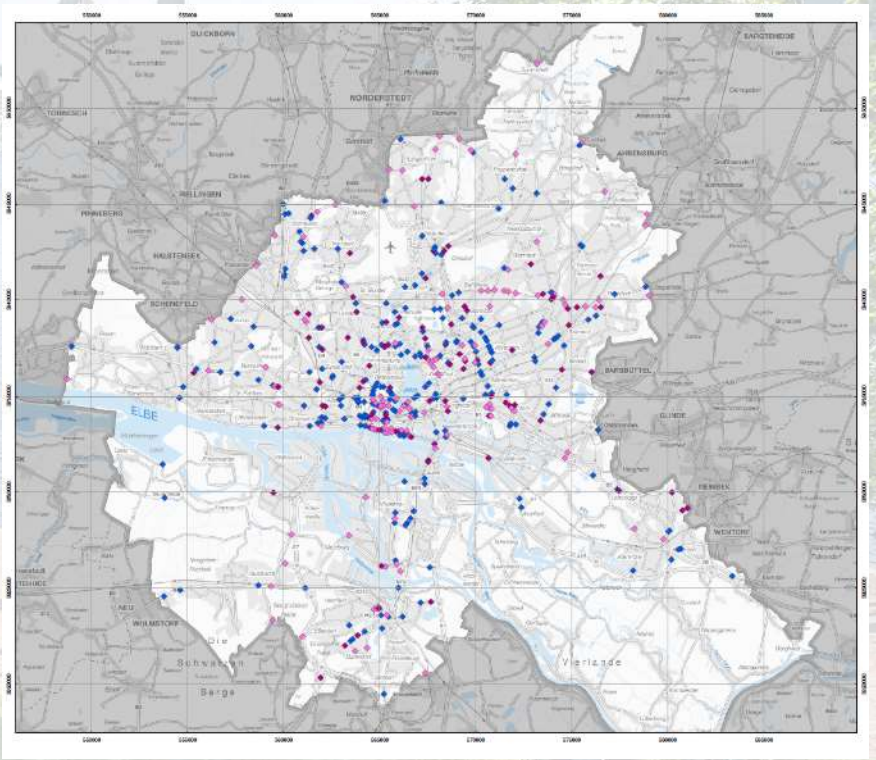
SUMMARY – PRIOBIKE-HH

➢ Enhancing cycling comfort by addressing different approaches to increase the traffic flow for cyclists



PROJECT ‚AVME' – AUTOMATED VEHICLE COUNTING

- Duration:
  12/2017 - 06/2022
- 23.4 Mio. Euro
- Component of:
  - ITS-strategy
  - Support programme „Digitalisation of urban traffic systems"
  - Master plan: Sustainable, emmission-free mobility in Hamburg
- All data available on Urban Data Platform Hamburg

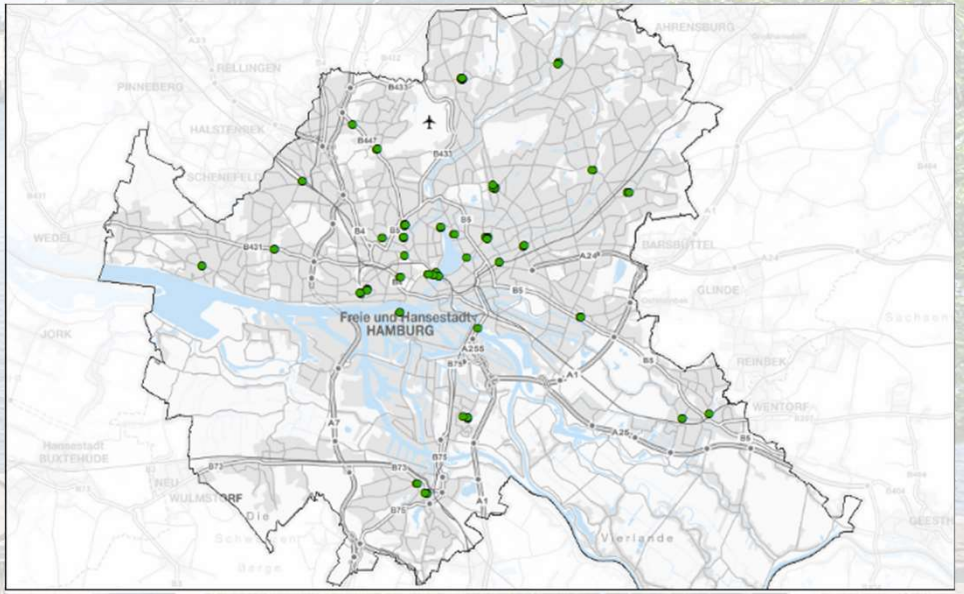


Source: BVM 2021

www.mediaserver.hamburg.de / Andreas Vallbracht

PROJECT ‚HARAZÄN' – BIKE COUNTING NETWORK

- Duration:
  12/2017 - 11/2020
- 1.38 Mio. Euro
- 90 locations have been equipped
- Component of:
  - ITS-strategy
  - Support programme: „Digitalisation of urban traffic systems"
  - Master plan: sustainable, emmission-free mobility in Hamburg
- All data available on Urban Data Platform Hamburg



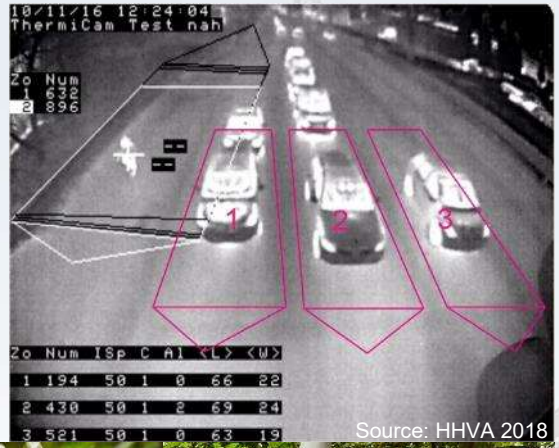
Quelle: BVM 2020

www.mediaserver.hamburg.de / Andreas Vallbracht

USED TECHNOLOGY

- 2.190 thermal infrared cameras with WLAN-module (2.100 aVME and 90 HaRaZäN)
- Installed at about 420 intersections at traffic light and lamp posts
  One camera can count and classify several traffic lines (depending on the position)
- Data privacy: no personal information such as number plates can be recognised

Source: HHVA 2018



Source: HHVA 2018

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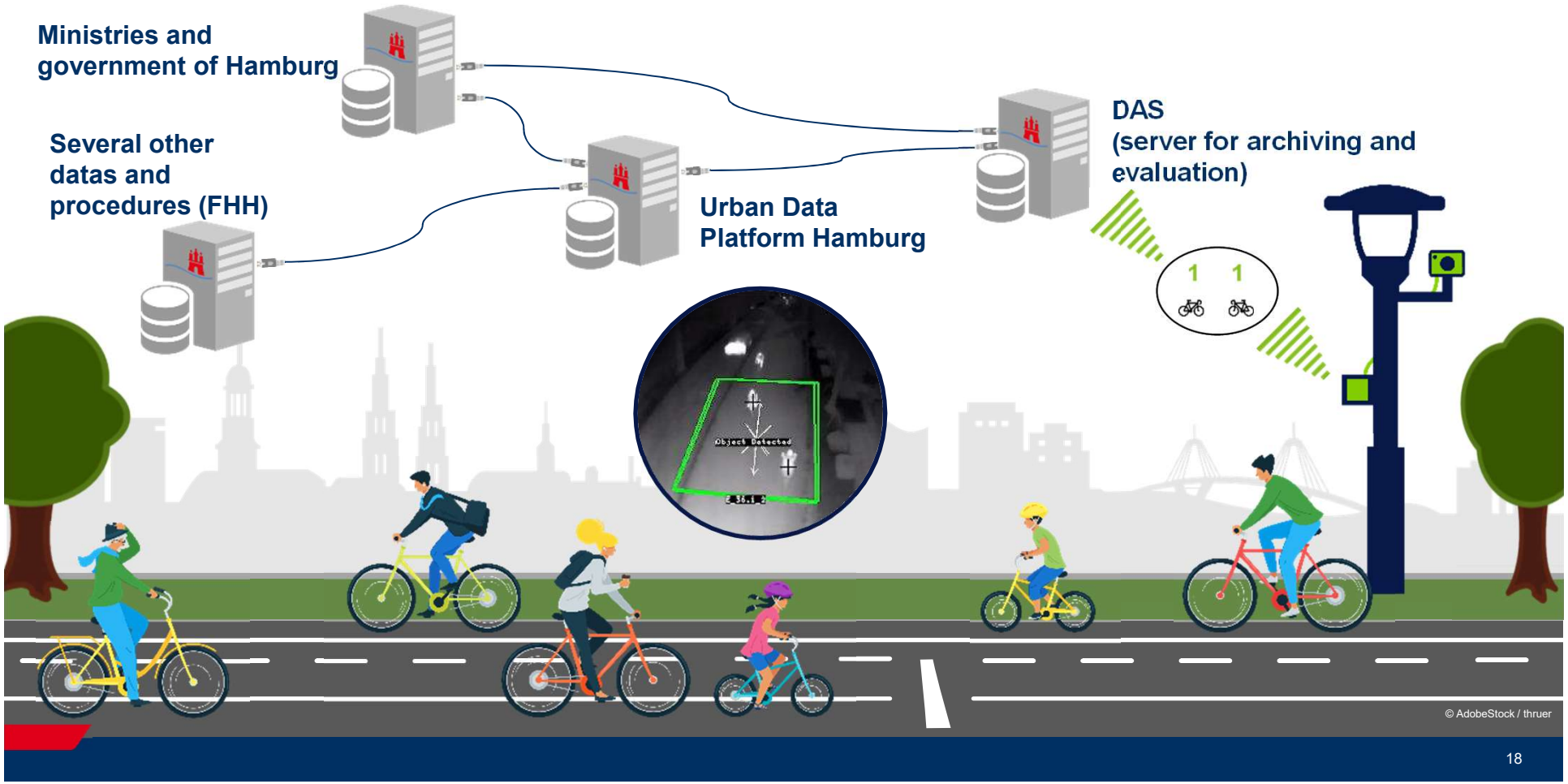
www.mediaserver.hamburg.de / Datenland Architektursimulation / Erik Recke

GENERATION AND PUBLISHING OF DATA



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