



Deutsches Zentrum  
für Luft- und Raumfahrt  
German Aerospace Center

# AIM Reference track

Applicationplatform intelligent mobility

Christian Wille, DLR

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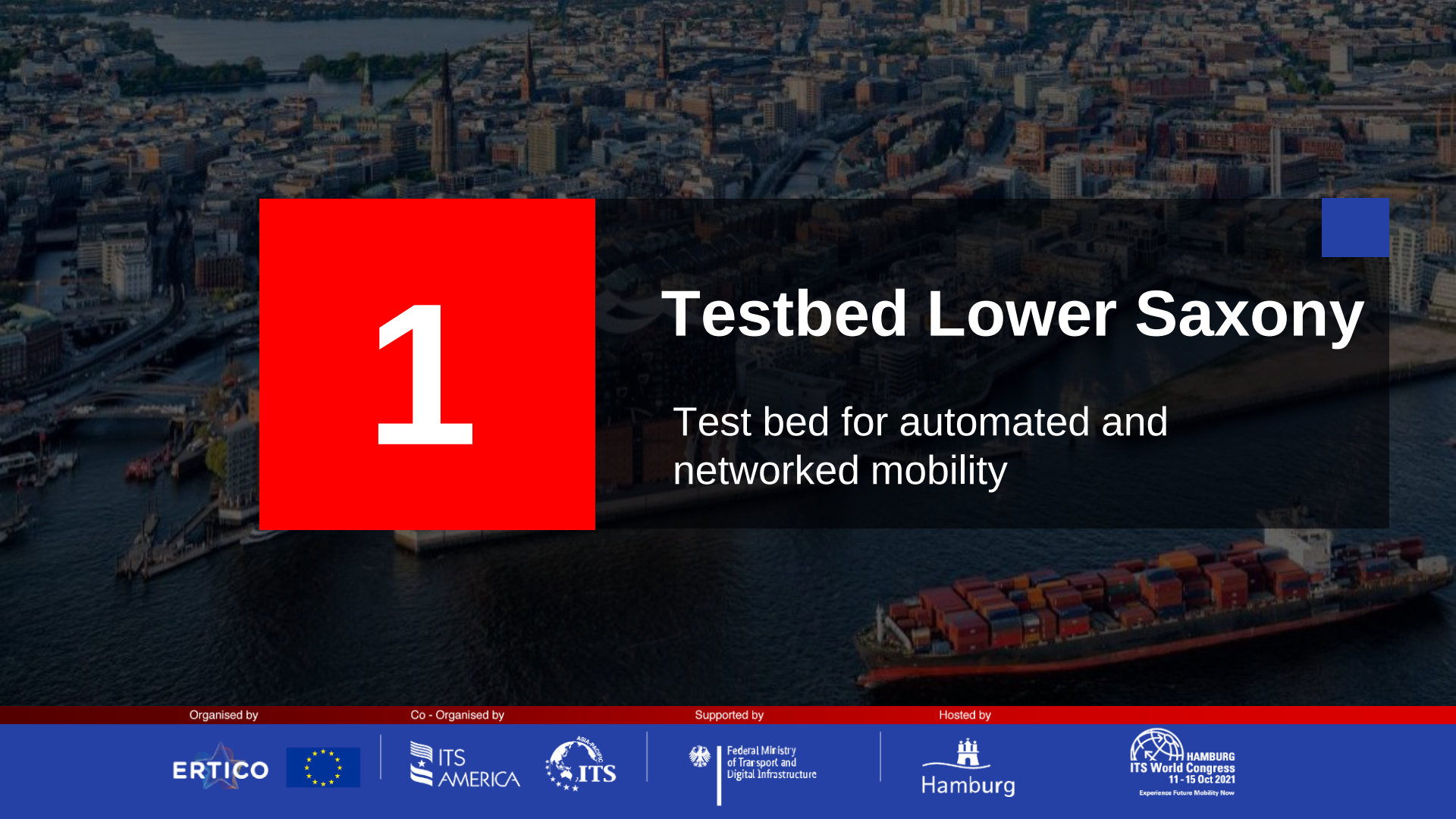


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1

# Testbed Lower Saxony

Test bed for automated and networked mobility

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# Testbed Lower Saxony

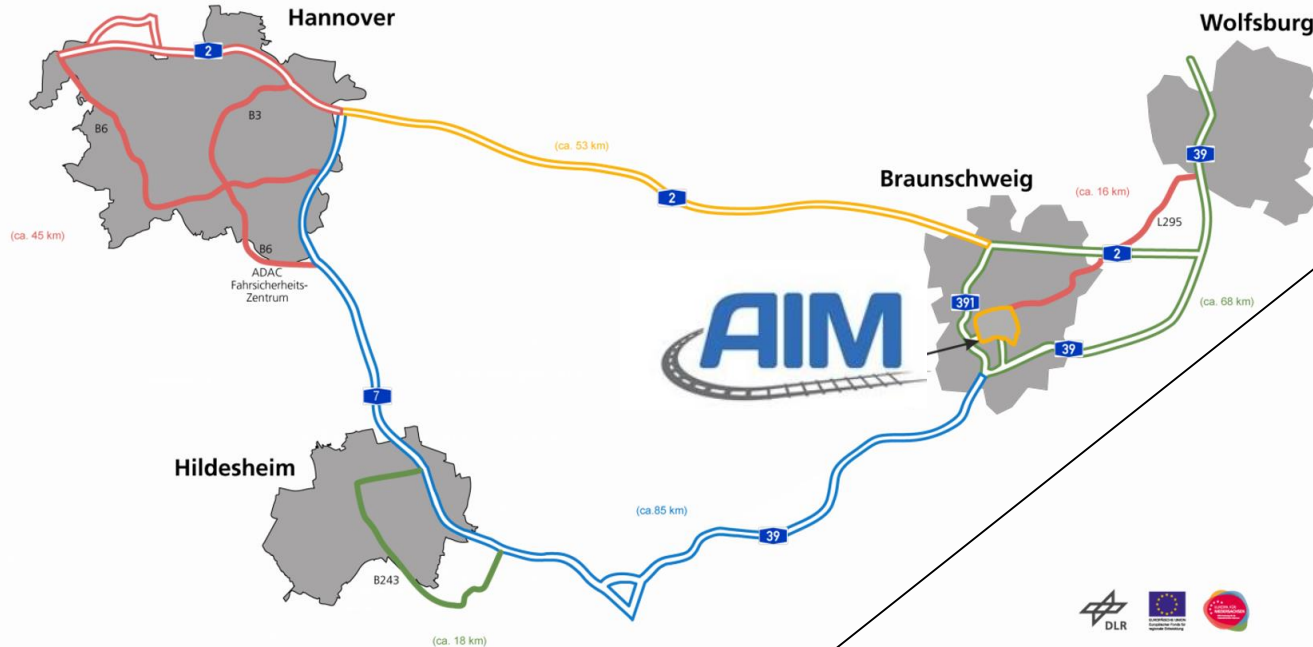


Fig.: Lower Saxony test bed

Source: <https://verkehrforschung.dlr.de/de/projekte/testfeld-niedersachsen-fuer-automatisiert-und-vernetzt-mobilitaet>, last accessed on 11.09.2021



Fig.: Overview Test Bed

Source:  
<https://derweg.org/deutschland/gesamt/deutschlandkarte/>  
 last accessed on 11.09.2021

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# Testbed Lower Saxony

- Acquisition technology - anonymized acquisition of traffic objects and their trajectories
- Communication technology - V2X via WiFi 802.11p and cellular radio
- Maps - highly accurate and up-to-date for simulations and vehicles

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# 2

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# Overview map

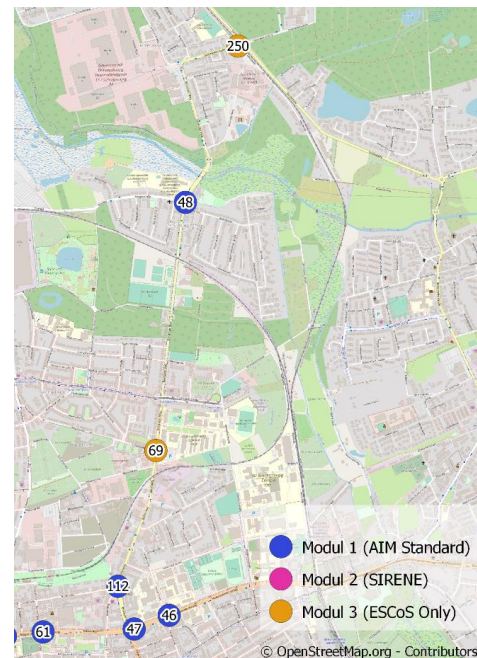
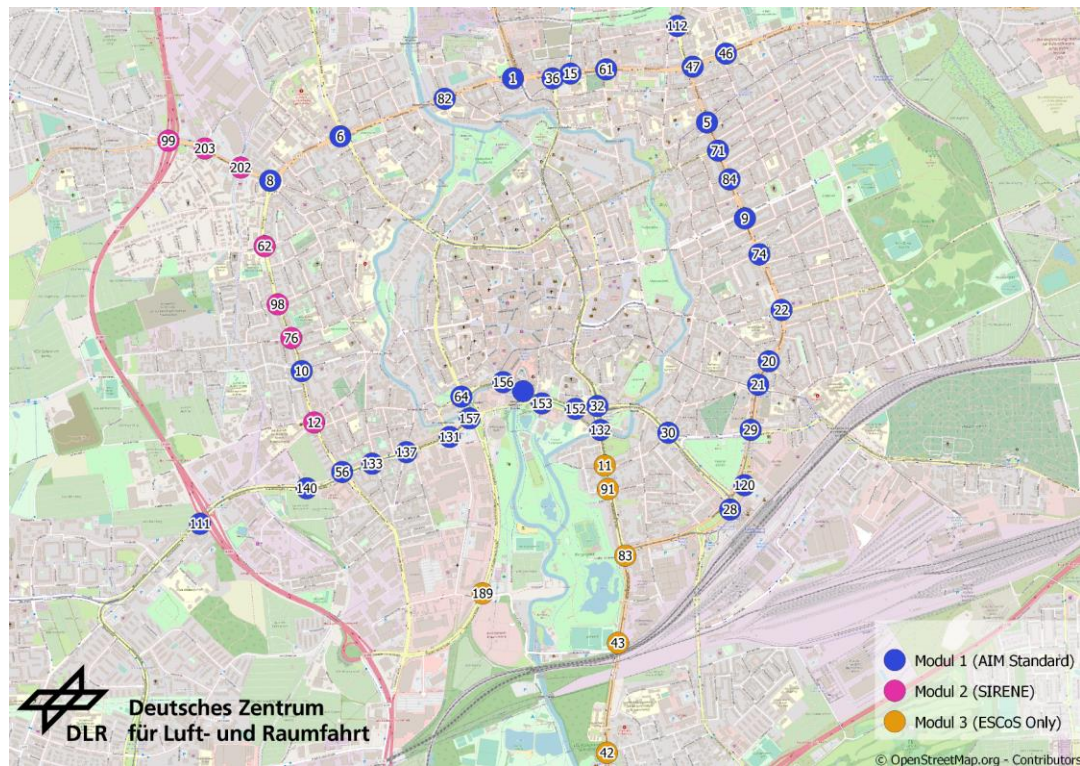


Fig.: AIM reference route Braunschweig  
(left: city center, right: connection north)

Source: DLR, maps © OpenStreetMap contributors

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# System architecture

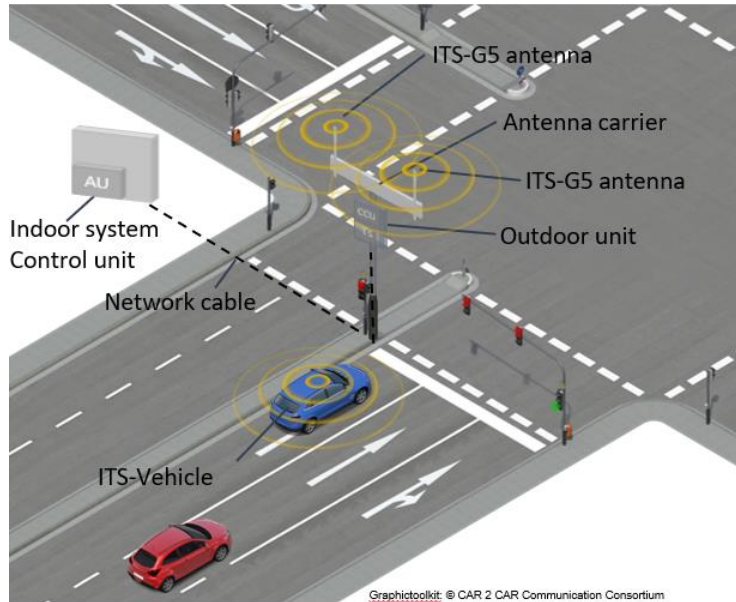


Fig.: Structure of the outdoor facility  
Source: DLR

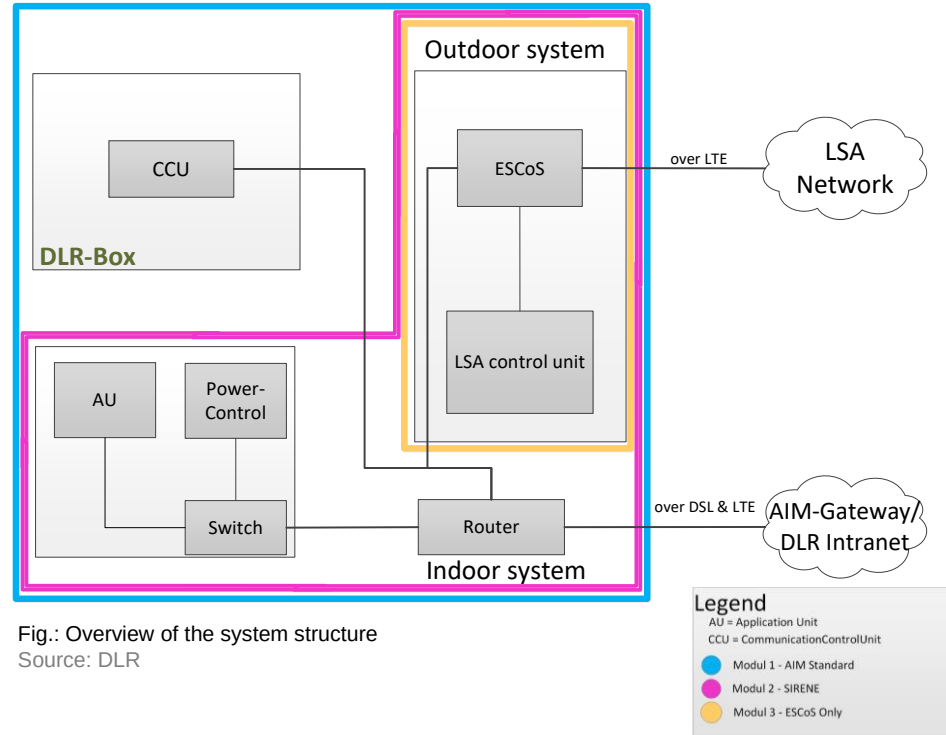


Fig.: Overview of the system structure  
Source: DLR

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## Analysis data range measurement

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# Data range measurement

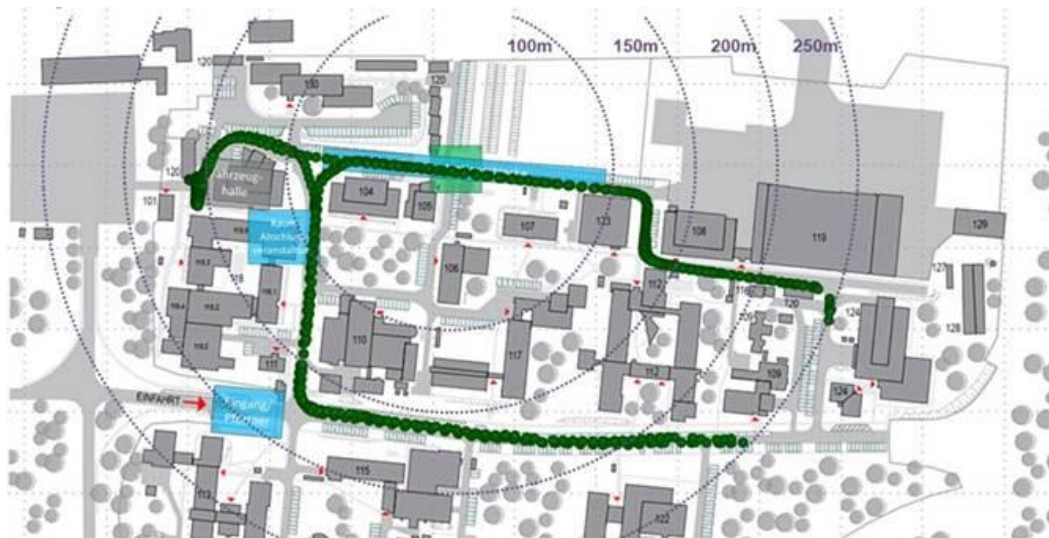


Fig.: RSU range measurement DLR site (RSU 1.7m, vehicle 2.2m, summer 2020)  
Source: Sten Ruppe and Ronald Nippold, SIRENE final presentation, January 20, 2021

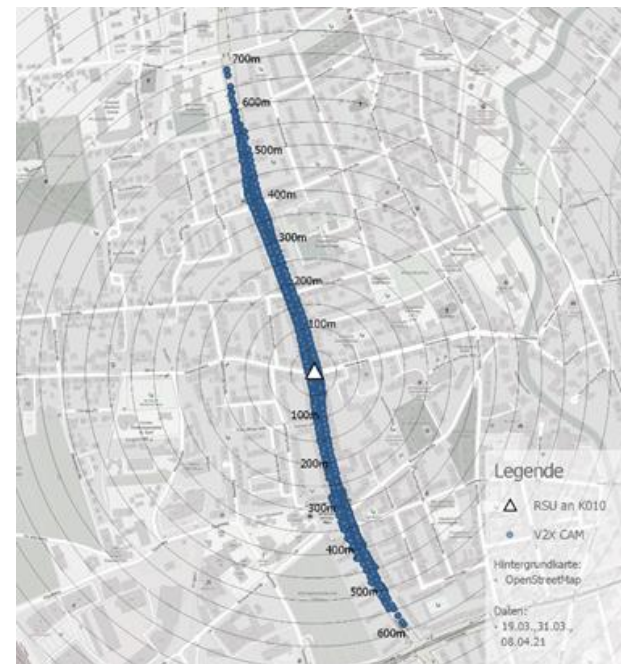


Fig.: RSU range measurement test field (RSU ~ 5m)  
Source: Sten Ruppe and Ronald Nippold, SIRENE final presentation, January 20, 2021



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## Analysis V2X messages

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# V2X - Analyzed crossings

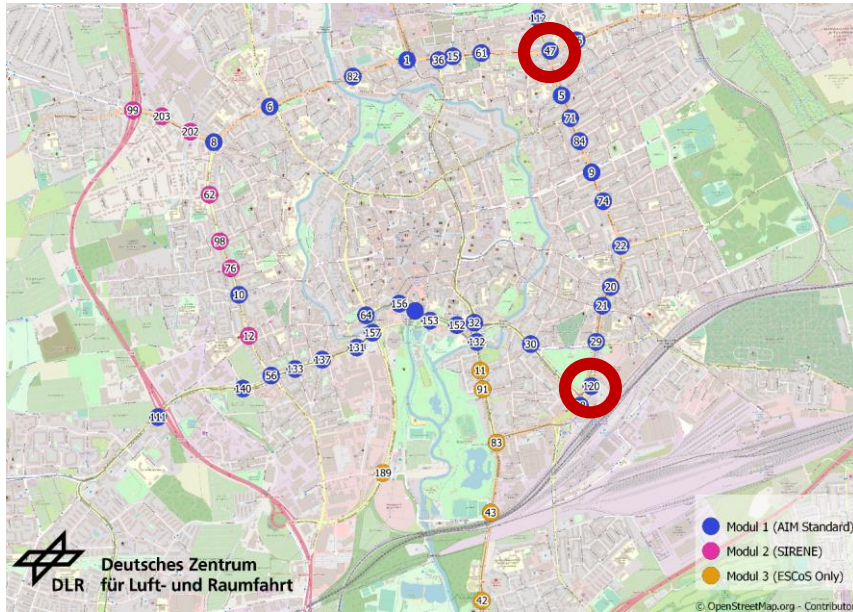
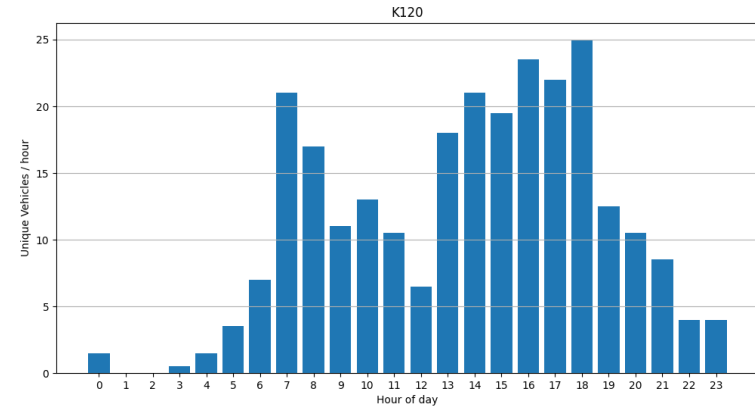
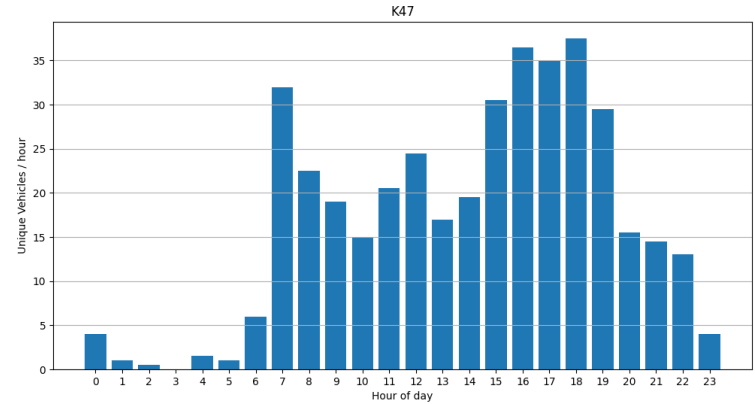


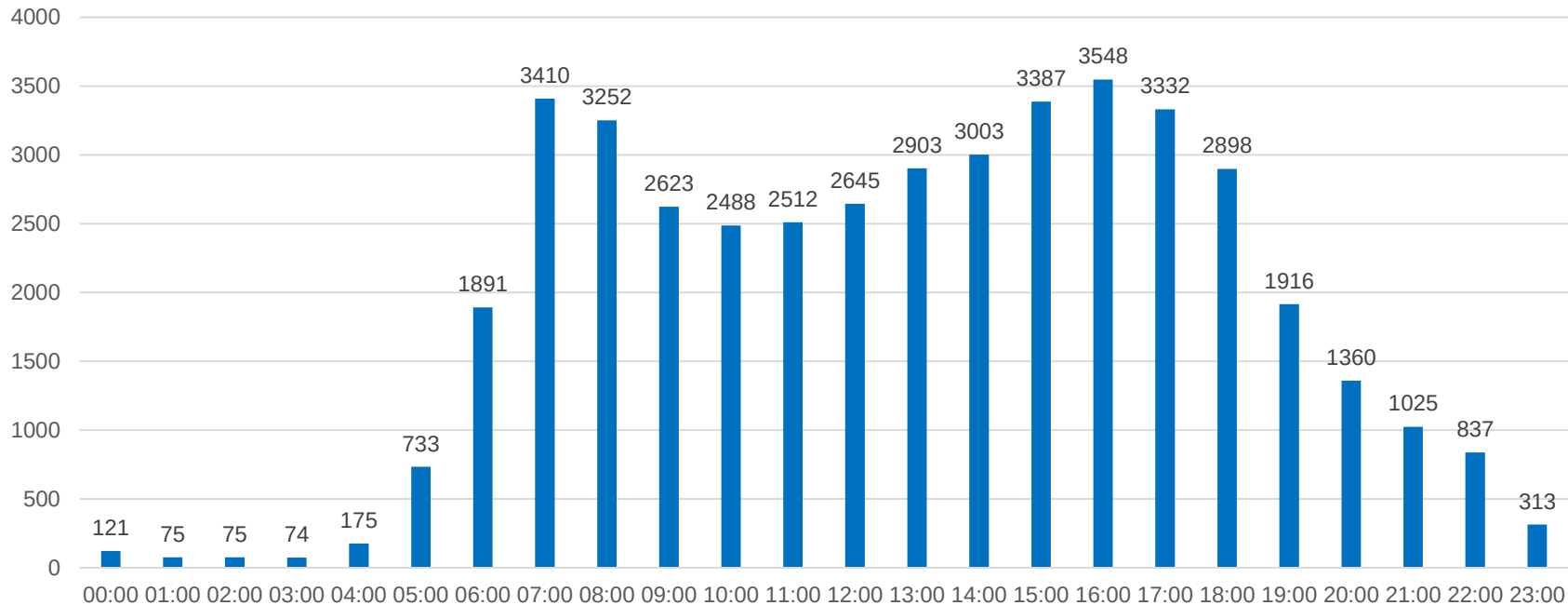
Fig.: AIM reference route Braunschweig city center - analyzed intersections  
Source: DLR, maps © OpenStreetMap contributors



# V2X - Analyzed crossings

vehicle / h

K047



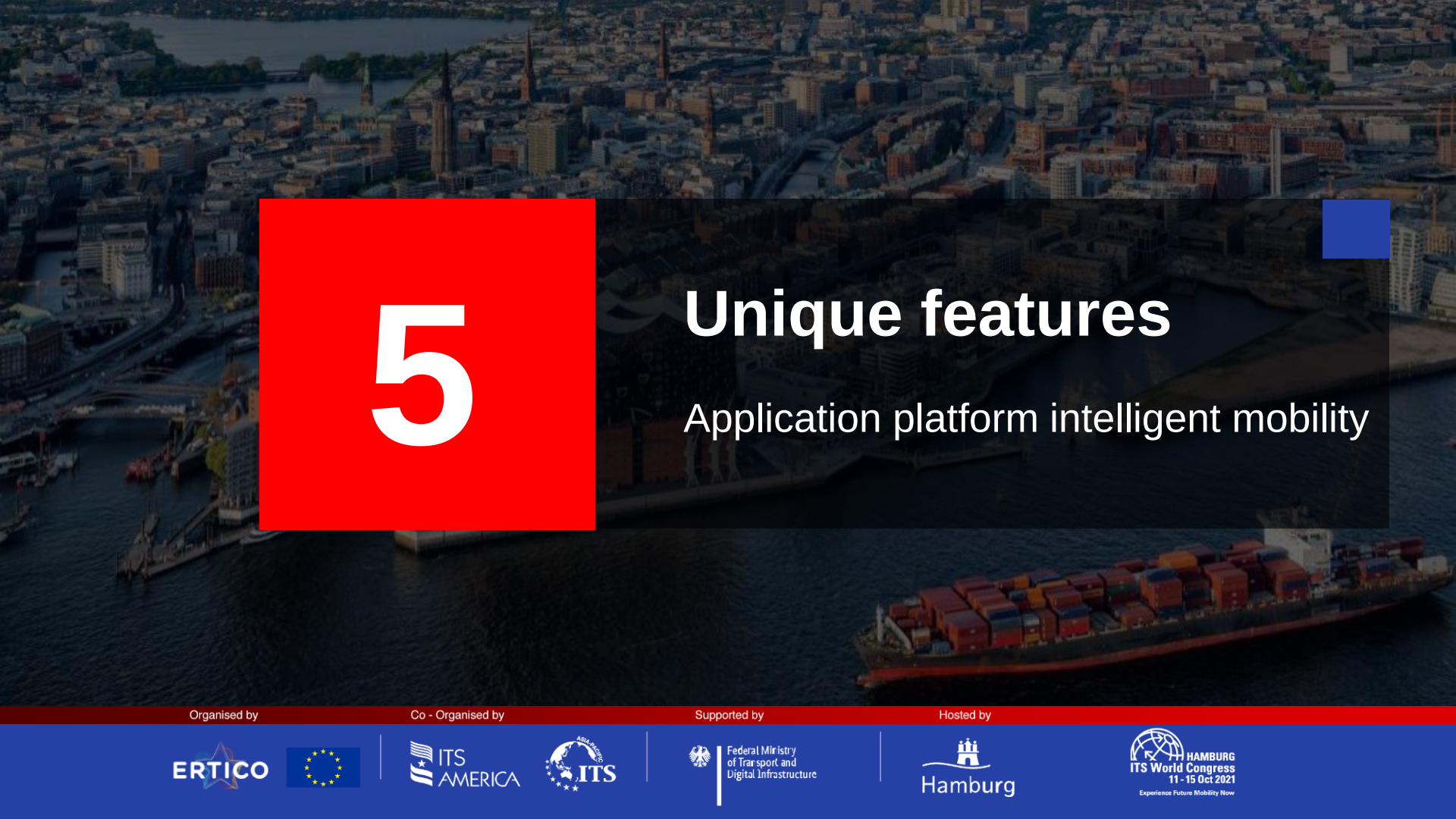
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## Unique features

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# Unique features

- Affect control units
- Different manufacturers of V2X devices
- V2X software framework
- Association with operational and research operations
- Flexibility with the V2X messages beyond the standard
- Open to research and industrial projects

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# Thank you for your attention!

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<https://www.dlr.de/ts/aim>

<https://verkehrsforschung.dlr.de/de/projekte/testfeld-niedersachsen-fuer-automatisierte-und-vernetzte-mobilitaet>

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