



NAPCORE Quality Framework for On-Street Parking Data

Mobility Data Days

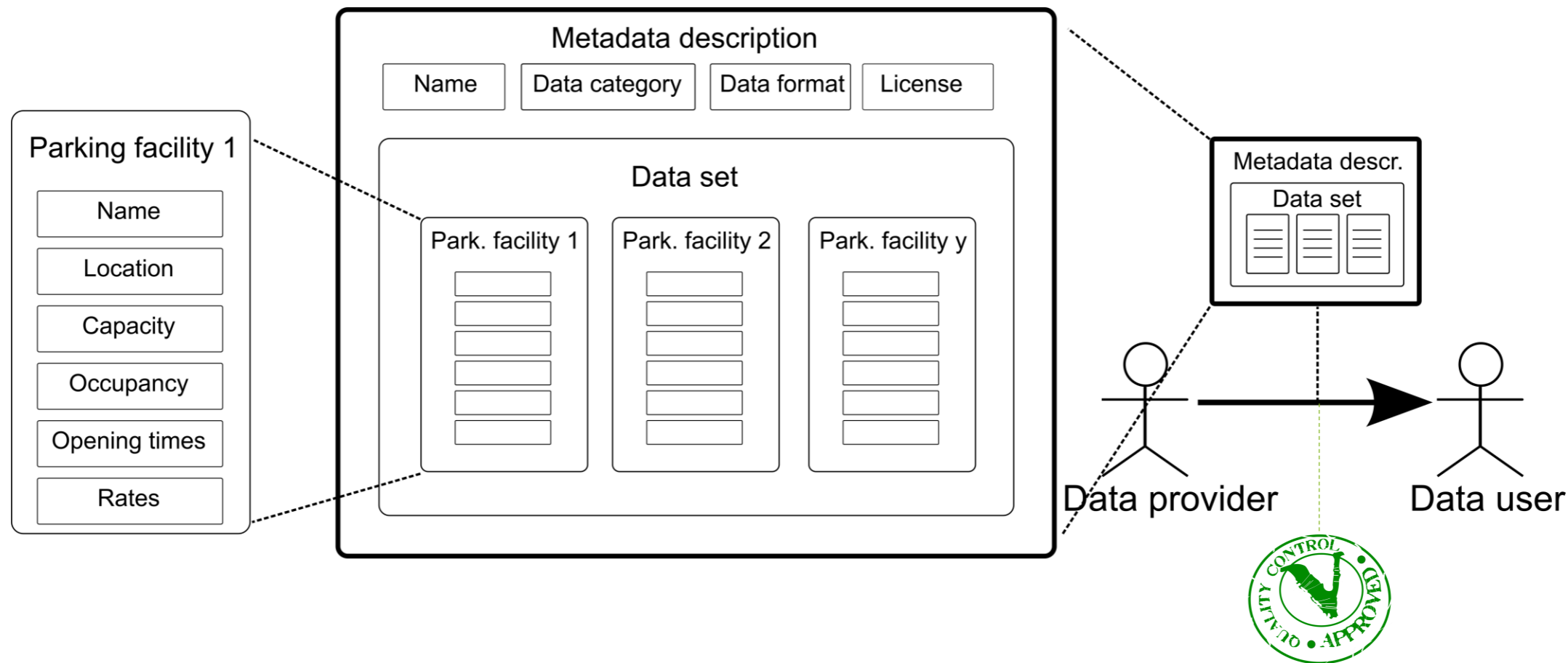
November 8th, 2023 | Peter Lubrich | BAST

What to do with Quality of ITS Data?

- ✓ Assess
- ✓ Document
- ✓ Report
- ✓ Implement QMS
- ✓ Improve Quality

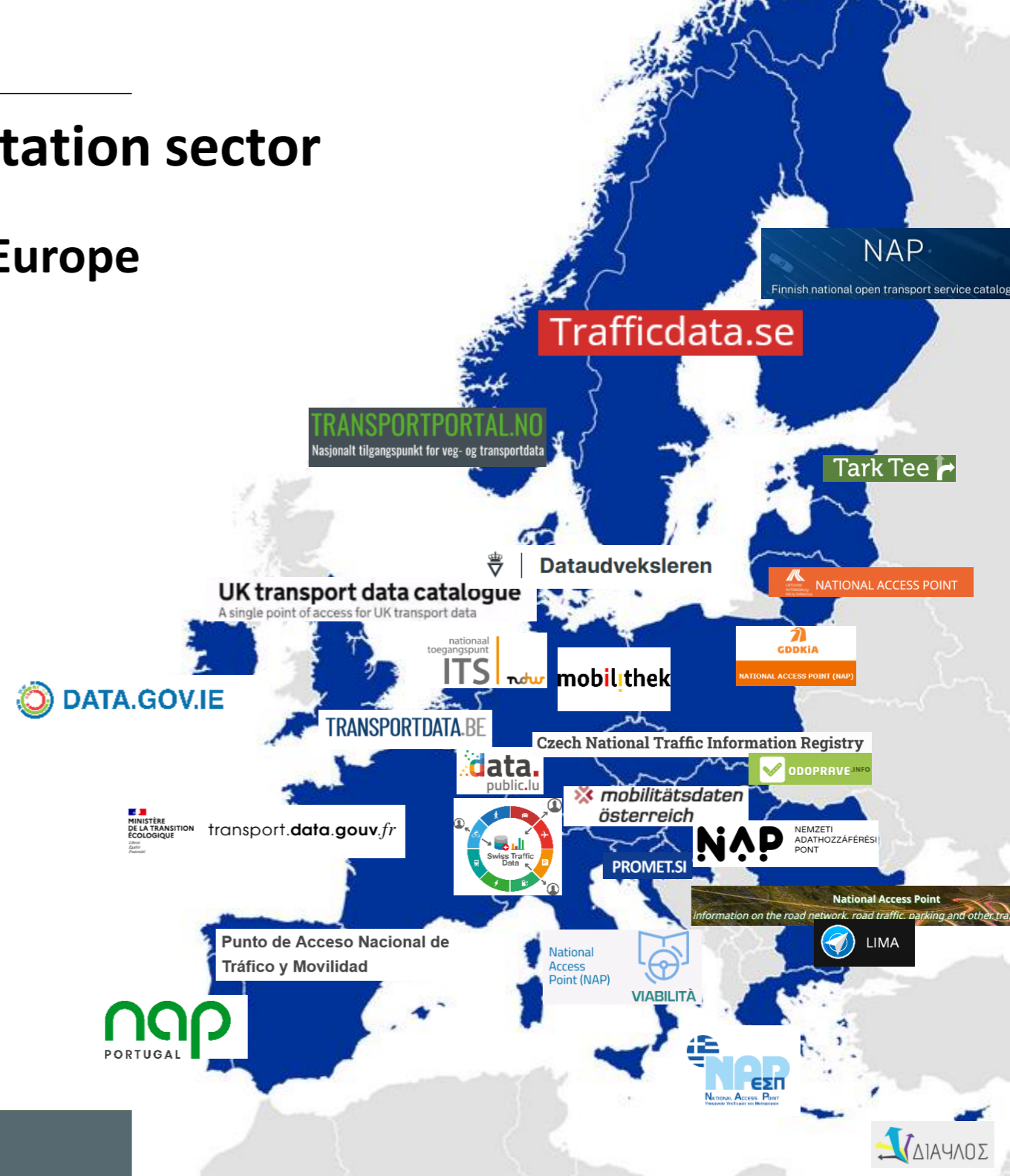


The Data-Exchange Scenario



Data portals for the transportation sector

National Access Points (NAPs) in Europe



The Concept of Quality Packages





How to do a Quality Package?

- ✓ Define essential criteria
- ✓ Define quality levels for these criteria, starting with minimum levels
- ✓ Validate and back-up the levels
- ✓ via real-life evidence



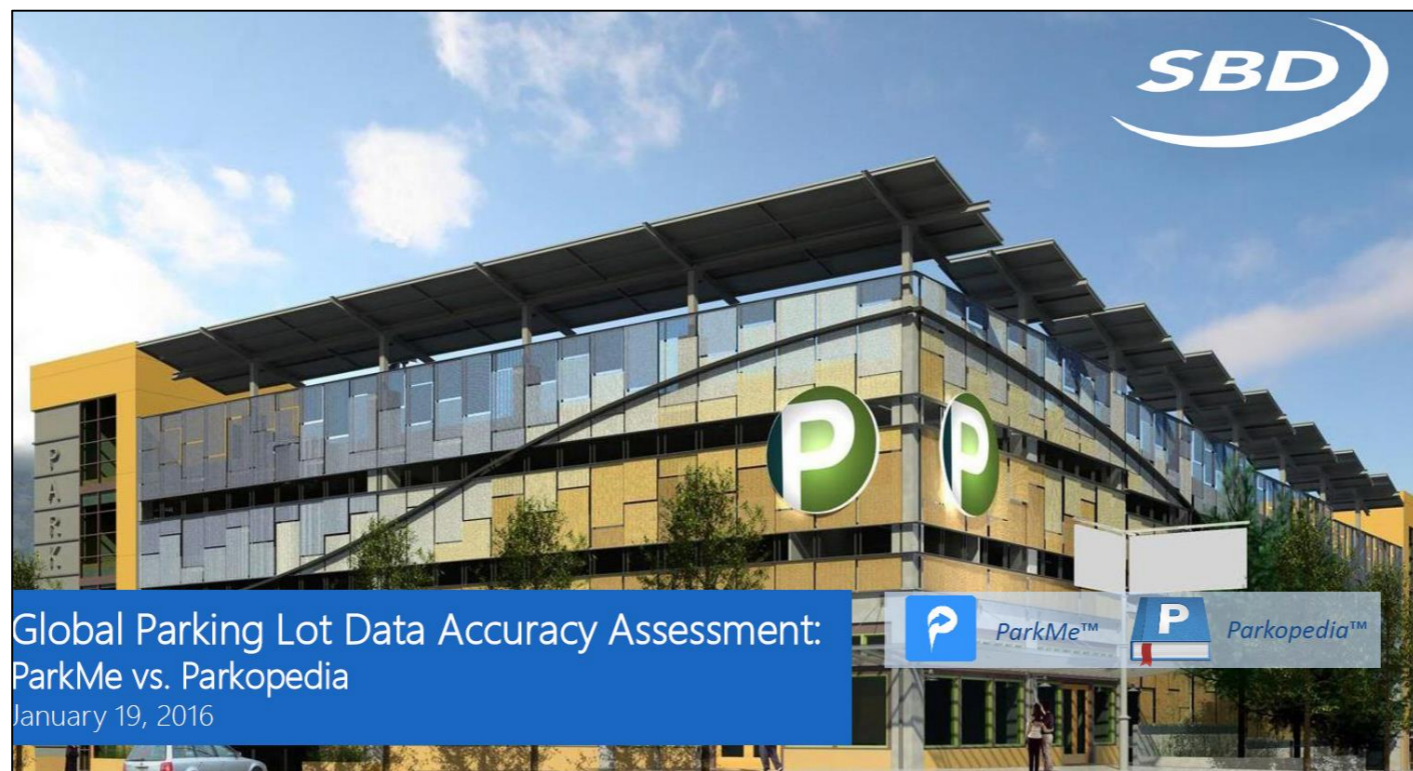
Quality Packages elaborated in EU projects

Scope/domain	Baseline	Project
Safety-Related and Real-Time Traffic Information Services (SRTI and RTTI)	Workshops, conceptualisation, validation with real-life data	 Link Published in 2019-2020
Multimodal Travel Information Services (MMTIS)	Stakeholder consultation	
Intelligent Truck Parking Services (ITPS)	Workshops, conceptualisation, validation with real-life data	
Cooperative ITS (C-ITS)	Pilot projects	
On-street Parking	Real-life data assessment	 Link To be published in 2024
Alternative Fuels (AF)	Pilot projects	
Multimodal Travel Information Services (MMTIS) - upgrade	Stakeholder consultation	
Floating Car Data (FCD)	Literature, Real-life data assessment	
Urban Vehicle Access Regulations (UVAR)	Pilot projects	
Network Topology	Pilot projects	
Cross-domain / formal / technical	Workshops, conceptualisation, validation with real-life data	

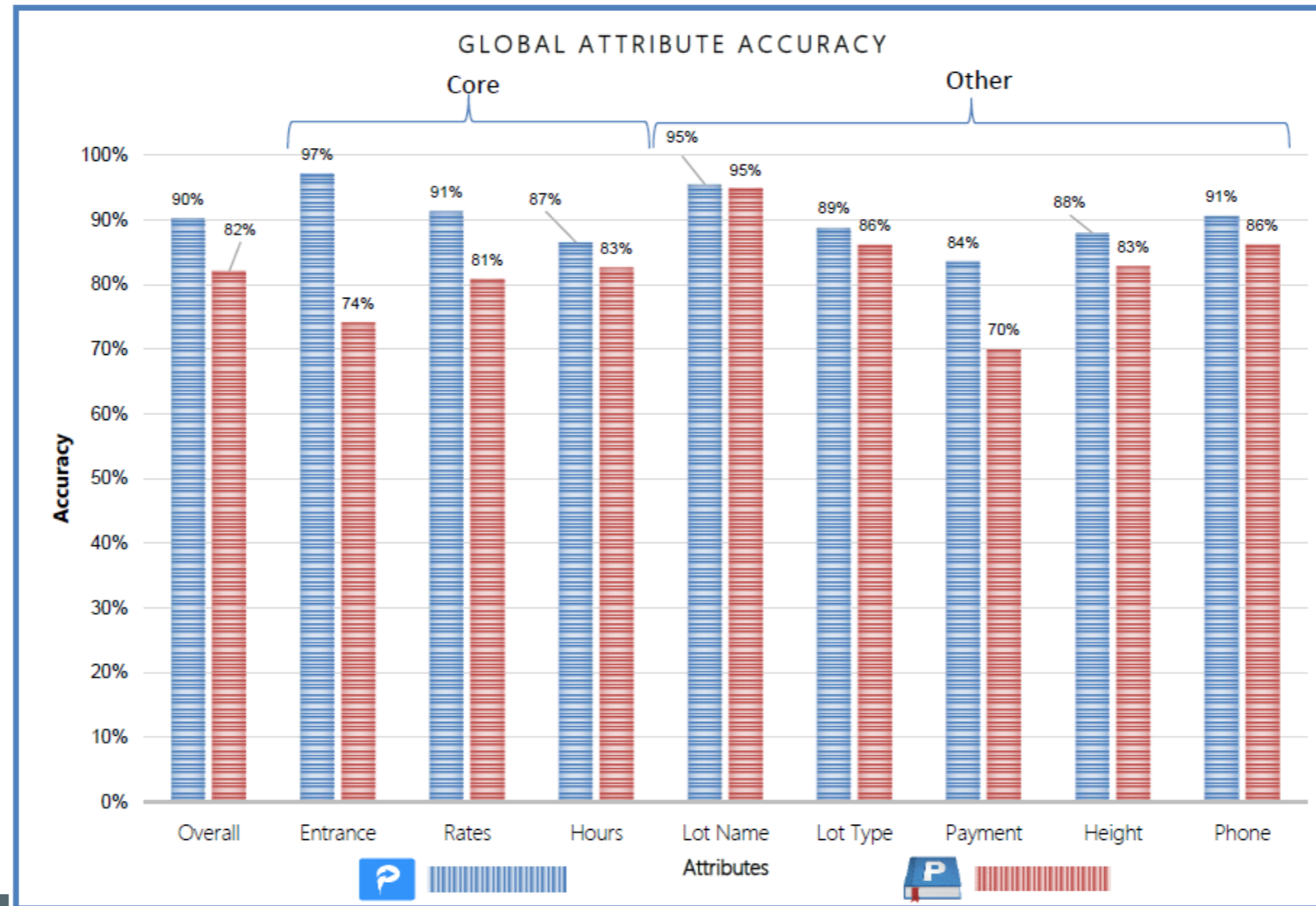
Previous definitions of Quality Criteria

Traffic Data Quality Measurement: Final Report (FHWA, 2004)	Quality of Safety-Related and Real-Time Traffic Information Services (EU EIP, 2019)	ISO 19157-1:2023 Geographic information Data quality	ISO/TR 21707:2008 Data quality in ITS systems
Accuracy Completeness Validity Timeliness Coverage Accessibility	Geographical coverage Availability Timeliness Reporting period Latency Location accuracy Classification correctness Error Rate Event coverage Report coverage	Completeness Logical consistency Positional accuracy Temporal quality Thematic quality	Service completeness Service availability Service grade Veracity Precision Timeliness Location measurement Measurement source Ownership

Literature Review: INRIX/SBD



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A Quality Framework for Parking Data

Data Campaign: Data Sources

Ticket Machine
Transactions



Smart Phone Payment
Transactions



Sensor Data



INRIX: Parking API



Manual Data Collection

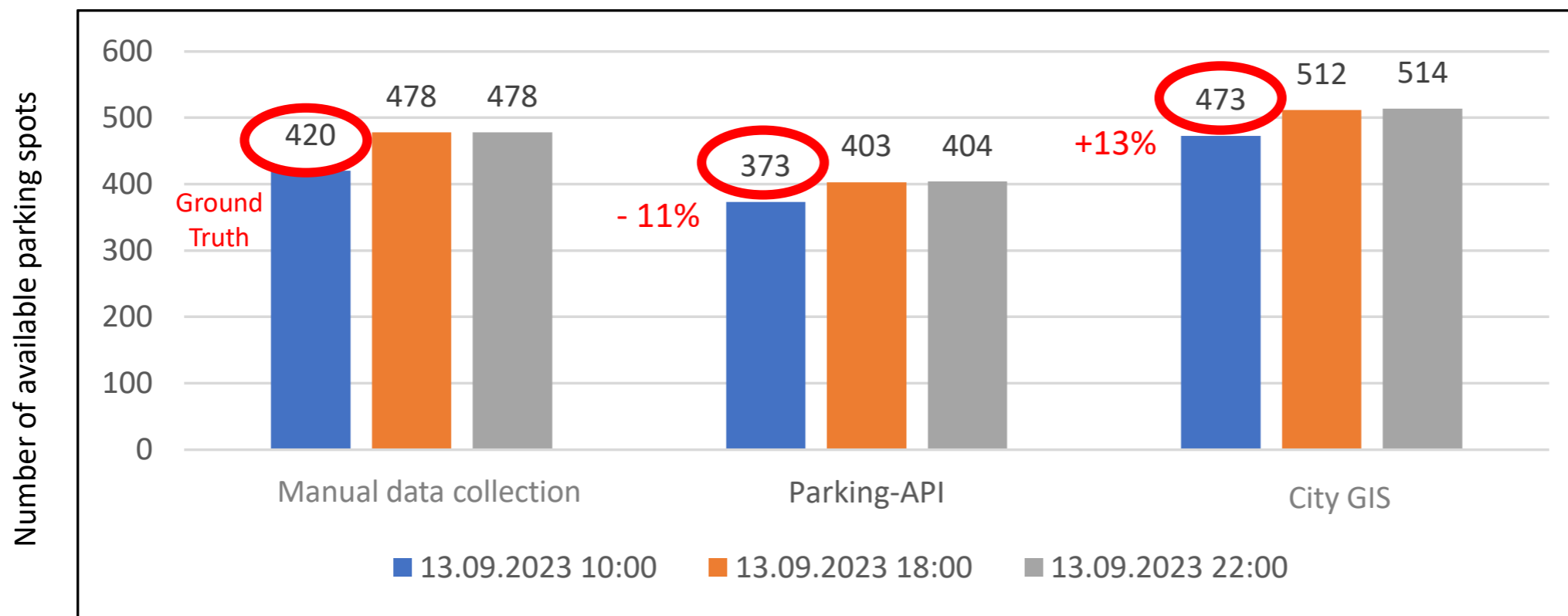


City GIS



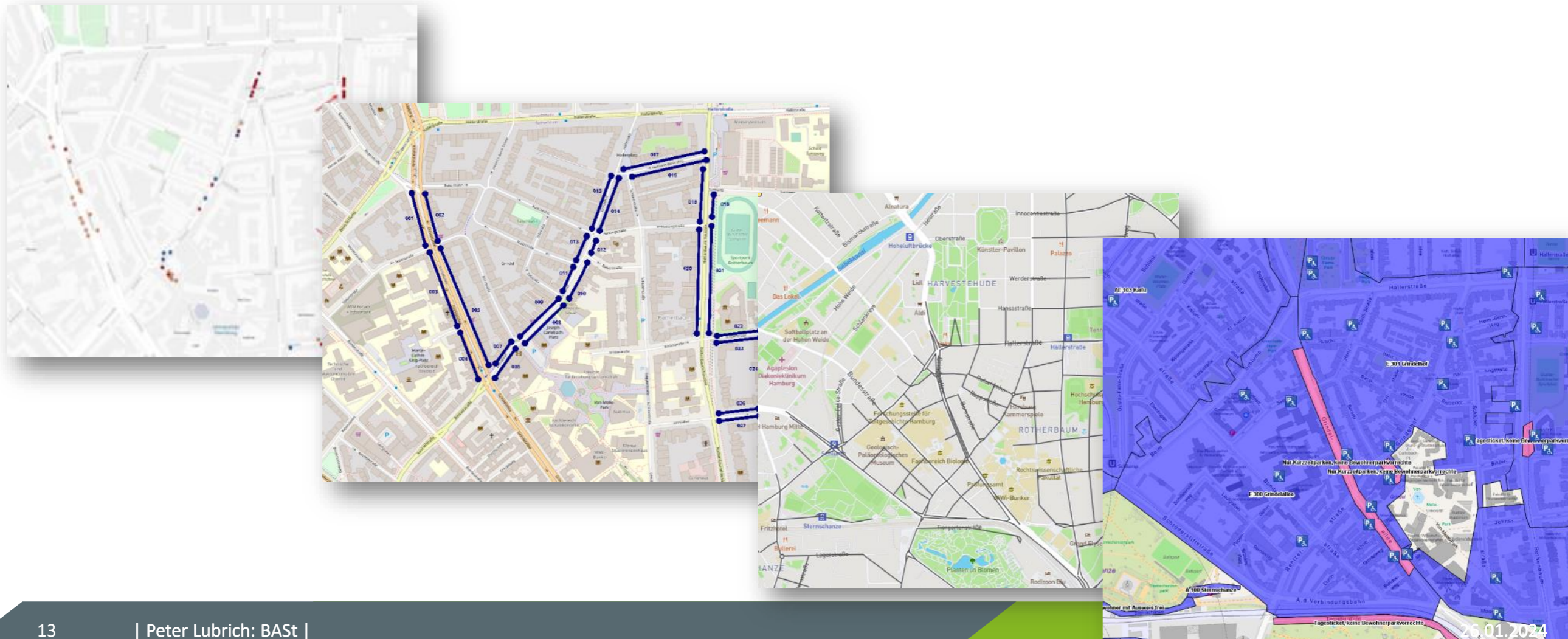
A Quality Framework for Parking Data

Identified quality issues – Quantitative deviations



A Quality Framework for Parking Data

Identified quality issues – Spatial Granularity



A Quality Framework for Parking Data

What should be reported in a “Quality Statement” by a Data Provider?

- Multiple Quality Criteria, each with:
 - Concrete definitions
 - Calculation methods
 - Calculation results
 - Last date of calculation
 - “Assessment Objects” applied
- Any auxiliary information
- Feedback channel

-> This “Quality Statement” should be published as part of the Metadata of a Dataset!

Thank you!

Any questions?

Peter Lubrich
Department Connected Mobility
Federal Highway Research Institute
Brüderstraße 53
51427 Bergisch Gladbach, Germany
lubrich@bast.de
www.bast.de + [LinkedIn](#) + [Instagram](#) + [YouTube](#)