Online Workshop on Truck Parking Information Quality

December 17, 2020

Co-financed by the European Union
Connecting Europe Facility

Truck Parking Information Quality Workshop

- Session Topics
  - What is our **understanding on "Quality"** regarding Truck Parking Information?
  - How to **describe and assess the quality** of data and services in the field of Truck Parking Information?
  - How can a **Quality Framework for Truck Parking Information** benefit data providers and data users?

Truck Parking Information Quality Workshop

- Agenda
  - 10:00 Welcome and introduction
  - 10:20 Insights from the ITPS Quality Package
  - 10:45 Validation results from NL
  - 11:00 Validation results from DE
  - 11:15 Open Session
  - 11:50 Wrap-up and closing

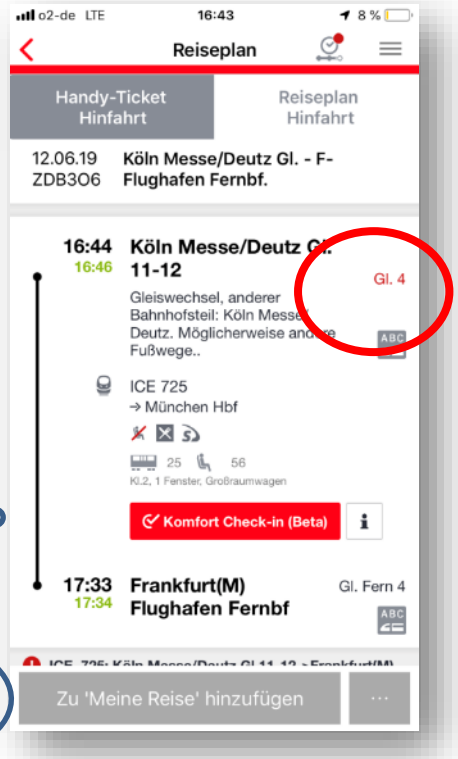
Why Quality?

Map by road authority

Location accuracy?

Map by TomTom

Why Quality?

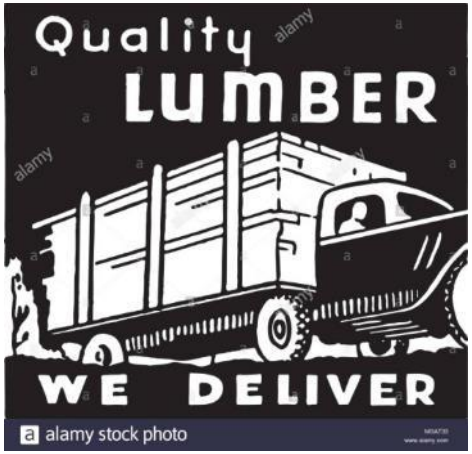


Information correctness?

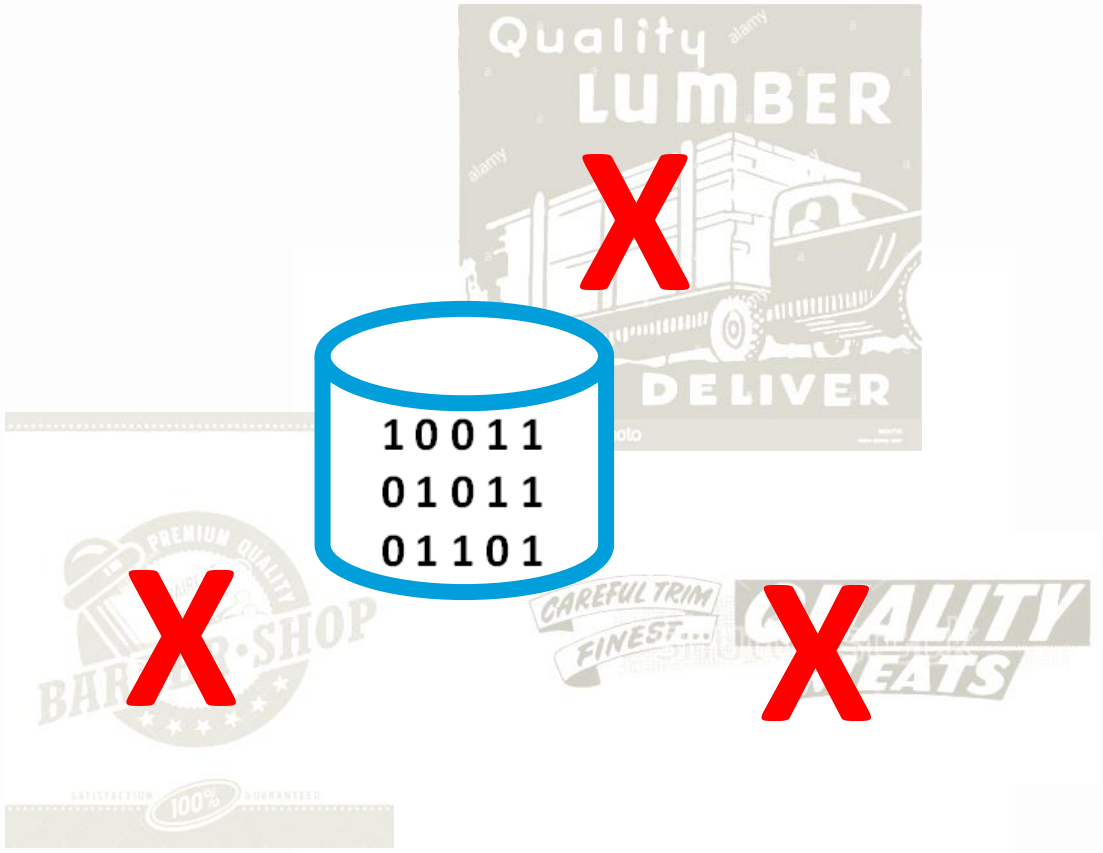
Why Quality?

- **Benefits**
  - Trust!
  - Transparency!
  - User Acceptance!
  - Facilitates Data Cooperation!

What is Quality?



What is Quality?



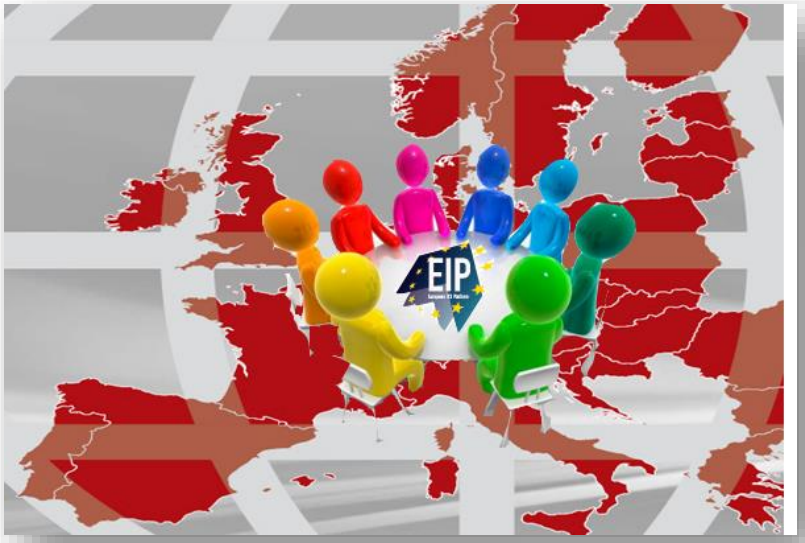
What is Quality?

- **Quality** =
- „degree to which a set of inherent characteristics of an object fulfils requirements“(ISO 9000)
- „fitness for use“ (J.M. Juran)

What to do with Quality?

- **Assess**
- **Document**
- **Report…**
  - … internally
  - … to external data consumers
  - … to European Commission
- **Implement QMS**

What is EU EIP?



- **Technical knowledge management center for ITS Deployment**

Key Mission of Quality Activity

Activity 4 - Harmonization Cluster

– Sub-activity 4.1: Determining Quality of European ITS Services

→ Works on:

- … quality frameworks, recommendation papers and practical trials,
- … regarding data and service quality,
- …for all priority actions of the EU ITS Directive.

EU EIP Quality: Stage Plan

Priority Action	Domain EC (Del. Reg.)	Phase					
		Take stock →	Propose →	Test →	Validate →	Enhance →	Optimise
C)	SRTI (886/2013)	✓	✓	✓	✓	✓	✓
B)	RTTI (2015/962)	✓	✓	✓	✓	✓	✓
A)	MMTIS (2017/1926)	✓	✓	✓	✓	✓	
E)	Truck Parking (885/2013)	✓	✓	✓	✓		
	C-ITS (n/a)	✓	✓				

Activities & Products

- Quality Frameworks for Priority Actions of the EU ITS Directive

The Quality Package Concept

- Contents

The Quality Package Concept

- Example

"Location Accuracy"

"max. off-set < 2 km"

"Reference testing"

The Quality Package Concept

Available at EU EIP website:
www.its-platform.eu

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Steps completed in Quality definitions for Intelligent Truck Parking

- Truck Parking Information Services Questionaire;
- Relation between quality criteria and services (table);
- Quality of Intelligent Truck Parking Services (ITPS) ;

Truck Parking Information Services Questionnaire

- Questionnaire

EU EIP A4.1

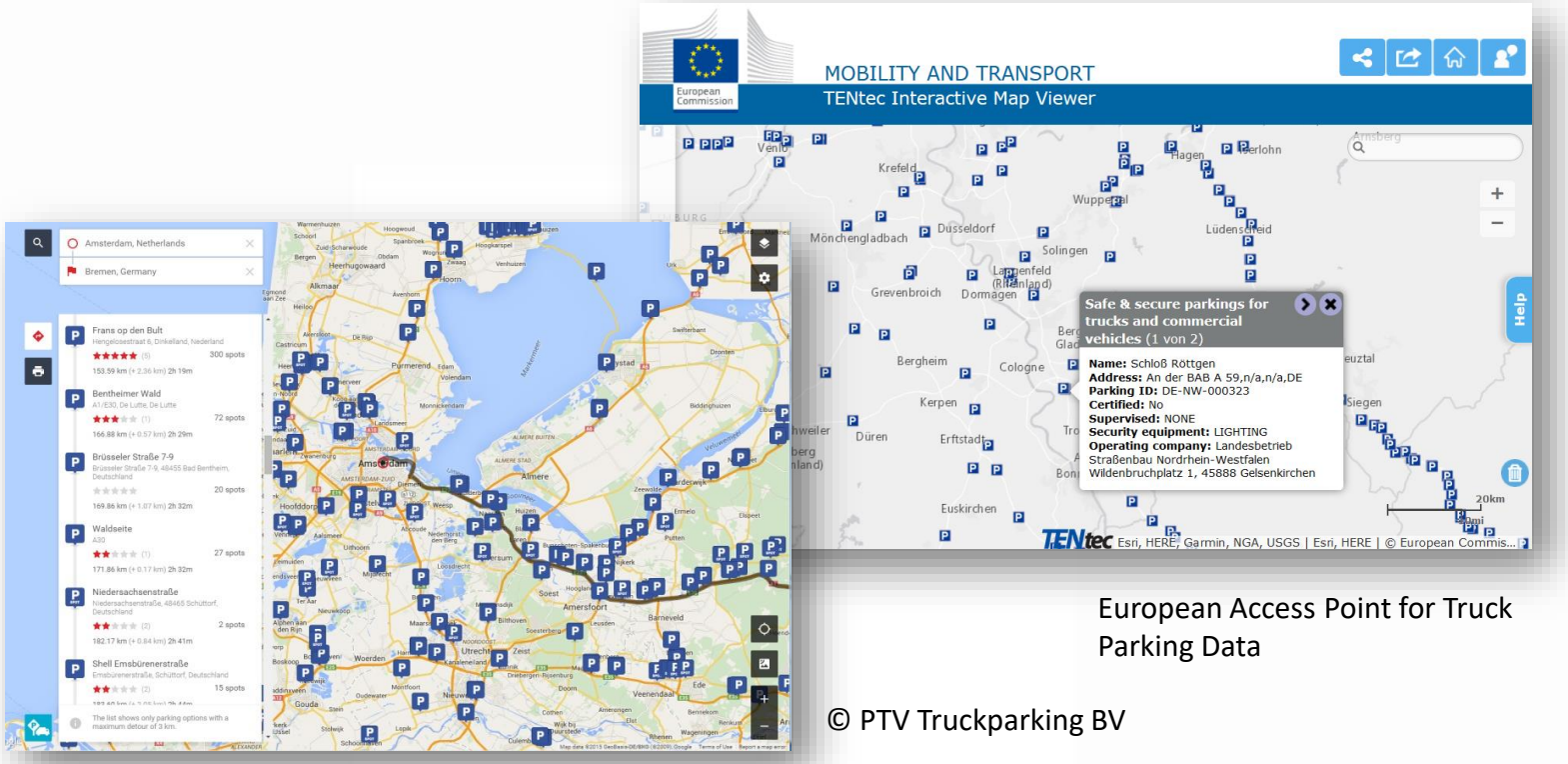
Truck Parking Information Services

Questionanire

General information	
Name of service/system/project	Truck Parking Europe
Name of operator/organisation	PTV Truckparking BV
Service delivery	☐ Public x Private
Service in accordance to …	☐ Delegated Regulation 885/2013 and its Guidance Documents ☐ Other relevant Deployment Guideline(s): _____
Unique national identification number (if applicable)	
Is the data delivered to a central data access point?	☐ National Access Point (according to the Delegated Regulation) ☐ European Access Point ☐ other public access point: _____ ☐ other private access point: _____
Contact for more information	Niels de Zwaan - niels.dezwaan@truckparkingeurope.com

ITPS Quality: Baseline

- Existing ITP services and projects



European Access Point for Truck Parking Data

© PTV Truckparking BV

Relation between quality criteria and services

		Quality criteria										
Data to be collected	Data entities	Geographic coverage	Availability	Timeliness (start)	Reporting period	Timeliness (update)	Latency (content side)	Location accuracy	Error rate	Event coverage	Report coverage	Completeness of data
Static data related to the parking areas, including (where applicable)	Identification information of parking area (name and address of the truck parking area (limited to 200 characters))	x	x			x			x		x	x
	Location information of the entry point in the parking area (latitude/longitude) (20 + 20 characters)	x	x			x		x	x		x	x
	Primary road identifier1/direction (20 characters/20 characters), and Primary road identifier2/direction (20 characters/20 characters) if same parking accessible from two different roads	x	x			x			x		x	x
	If needed, the indication of the Exit to be taken (limited to 100 characters)/Distance from primary road (integer 3) km or miles	x	x			x			x		x	x
	Total number of free parking places for trucks (integer 3)	x	x			x			x		x	x
	Price and currency of parking places (300 characters)	x	x			x			x		x	x
Information on safety and equipment of the parking area	Description of security, safety and service equipment of the parking including national classification if one is applied (500 characters)	x	x			x			x		x	x
	Number of parking places for refrigerated goods vehicles (numerical 4 digits)	x	x			x			x		x	x
	Information on specific equipment or services for specific goods vehicles and other (300 characters)	x	x			x			x		x	x
	Name and surname (up to 100 characters)	x	x			x					x	x
	Telephone number (up to 20 characters)	x	x			x			x		x	x
	E-mail address (up to 50 characters)	x	x			x			x		x	x
	Consent of the operator to make his contact information public (Yes/No)	x	x			x			x		x	x
Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places which are available		x	x		x	x			x		x	

ITPS Quality: Deliverable

- **Quality concepts and definitions on:**
  - **quality criteria**
  - **quality requirements**
  - **assessment methods for ITPS data and information.**

- **Report is online, see link:**

https://eip.its-platform.eu/highlights/intelligent-truck-parking-services-itps-quality-framework-published

Service and quality criteria

Table 2: EU EIP definitions for service and quality criteria for information in the field of ITPS

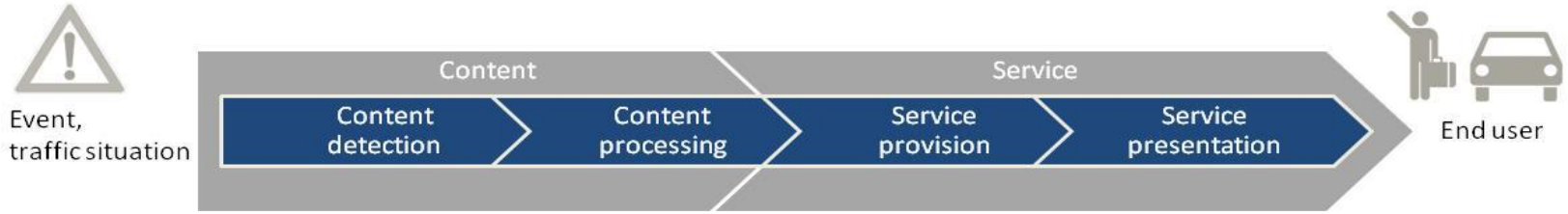
Service and Quality Criteria for ITPS		
Level of Service	**Geographical coverage**	Percentage of the transport system infrastructure covered by the (content provision) service.
	Availability	Percentage of the time that the (content provision) service is available.
Level of Quality	**Reporting period**	*Time interval for refreshing information (data)*
	Timeliness (update)	Time interval between a change of any data entity and the moment that change is reflected in the service
	Error rate	*For static data* Percentage of data entities for which the values are different from the ground truth out of the total data entities which are included in the service provision. Measured as the arithmetic mean of the percentages for all parking places covered by the service. *For dynamic data* Absolute relative error (Err) of the provided number of free spaces (Np) compared to the ground truth (Nr) calculated as: $Err = \frac{\lvert N_r - N_p \rvert}{N_r} \times 100$ Measured as the arithmetic mean of the errors for all parking places covered by the service.
	Report coverage	The percentage of data entities which were updated out of the total data entities for which changes occurred since the previous update period
	Completeness of data	Percentage of data elements available in the service provision with respect to the total data elements of that service or data type for which quality criteria have been defined. More precisely, for a given service or data type, are all the data elements foreseen in the Regulation provided?

Example Initial Target Values for ITPS Level-of-Service Criteria

	Criterion	★ (Basic)	★★ (Enhanced)	★★★ (Advanced)
ITPS Level-of-Service Criteria	**Geographical coverage**	**90%**	95%	99%
	Availability	**95% (347 days/year)**	99% (361 days/year)	99,5% (363 days/year)
	Geographical coverage *This quality criterion is interpreted as* percentage of truck parking stations within a given network covered (% of all stations). **Availability** *This quality criterion is interpreted as* Server availability.			

Example Quality assessment methods

- **CONTINUOUS MONITORING OF EQUIPMENT PERFORMANCE AND AVAILABILITY**
  - Verifying the availability of the data the equipment is supposed to produce
  - Checking of consistency between the data values measured by the same equipment
  - Comparison of the measured data to other equipment in adjacent or to the same geographical area
  - Monitoring of error messages and alerts generated by the equipment.



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ITPS Quality: Validation Phase

- Overall goal:
  - Validate the ITPS Quality Package (quality criteria, minimum requirements and assessment method proposals) under real-life operating conditions

Assessment of ITP Netherlands

Dutch-Data quality assessment of Intelligent Truck Parking facilities related to the EU core network

Michel Kusters
Rijkswaterstaat - NL

Presentation Workshop Truck Parking Information Quality
Date: 17 December 2020

Content

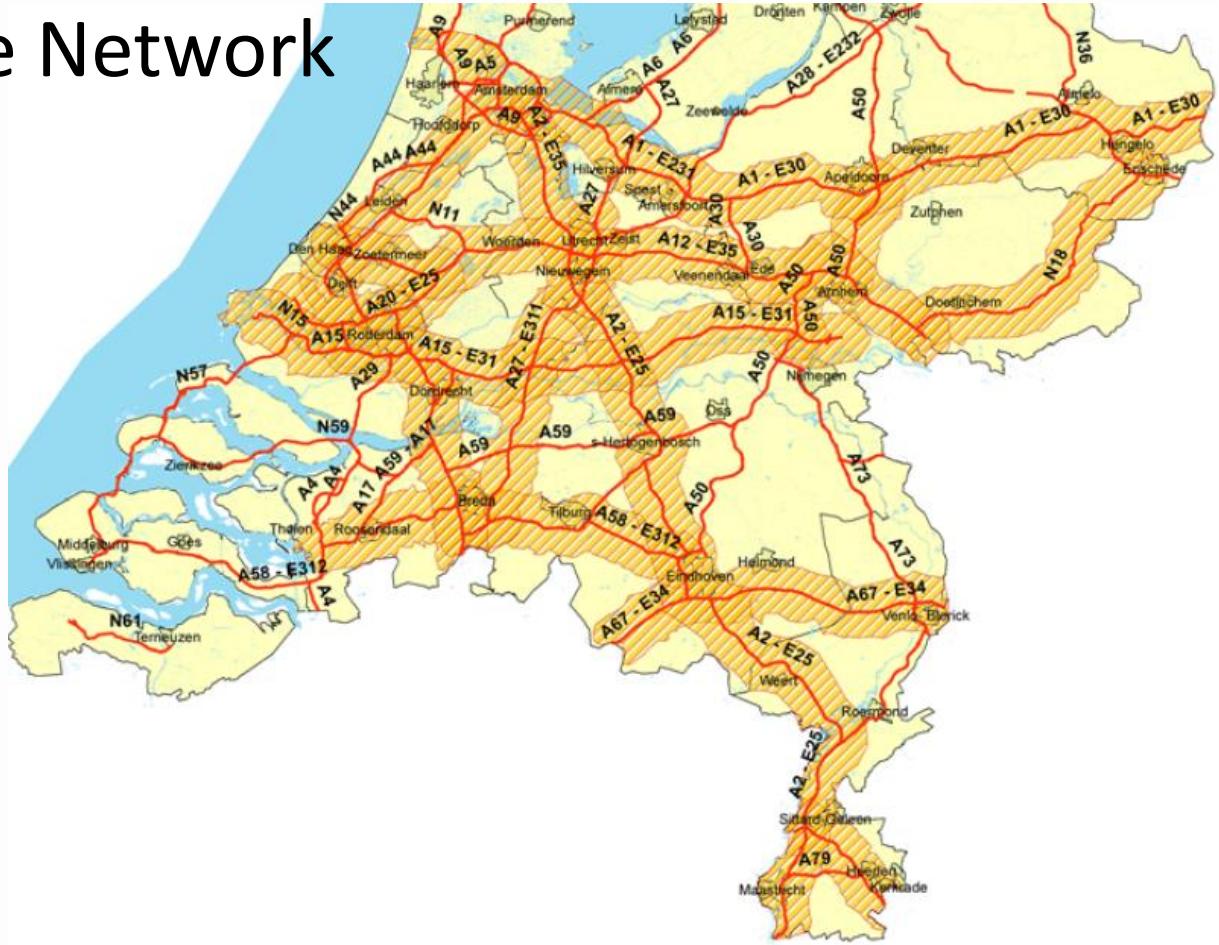
- **Introduction**
  - The Dutch NAP
  - How the information for NT (= Dutch NAP) is collected
    - Public Parkings
    - Private Parkings
- **Assessment method private parkings**
- **Assessment results**
  - Level of Service
    - Geographical coverage
    - Availability
  - Level of Quality
    - Reporting period
    - Error rates
    - Report coverage/ completeness
  - Other
    - General findings
    - Reflections on NAP
- **Summary**

Introduction: The Dutch NAP

- "Nationaal Toegangspunt" (Dutch for "**National Access Point**"):
  - Live since 2015, the National Data Warehouse for Traffic Information (NDW) manages the NAP (priority action E, Delegated Act under ITS guideline 2010/40/EU)
  - Information about **public and private truck parkings** (TP's)
  - TP's Located in a range of **max. 5 km from the highways** (the priority zones **include the European Core Network**)
  - **TP information includes** (a.o.):
    - Addresses, parking capacity, facilities regarding both the driver (e.g. restaurant/hotel) and the truck (e.g. truck maintenance services)
  - The Dutch NAP is publicly available, via https://nt.ndw.nu/
  - **Public TP information** is managed by **Rijkswaterstaat** (Dutch Highway Authority)
  - Through personal accounts, **private TP owners** manage the information of their TP's themselves

Introduction: The Dutch NAP

- Dutch “priority zoning”, including European Core Network

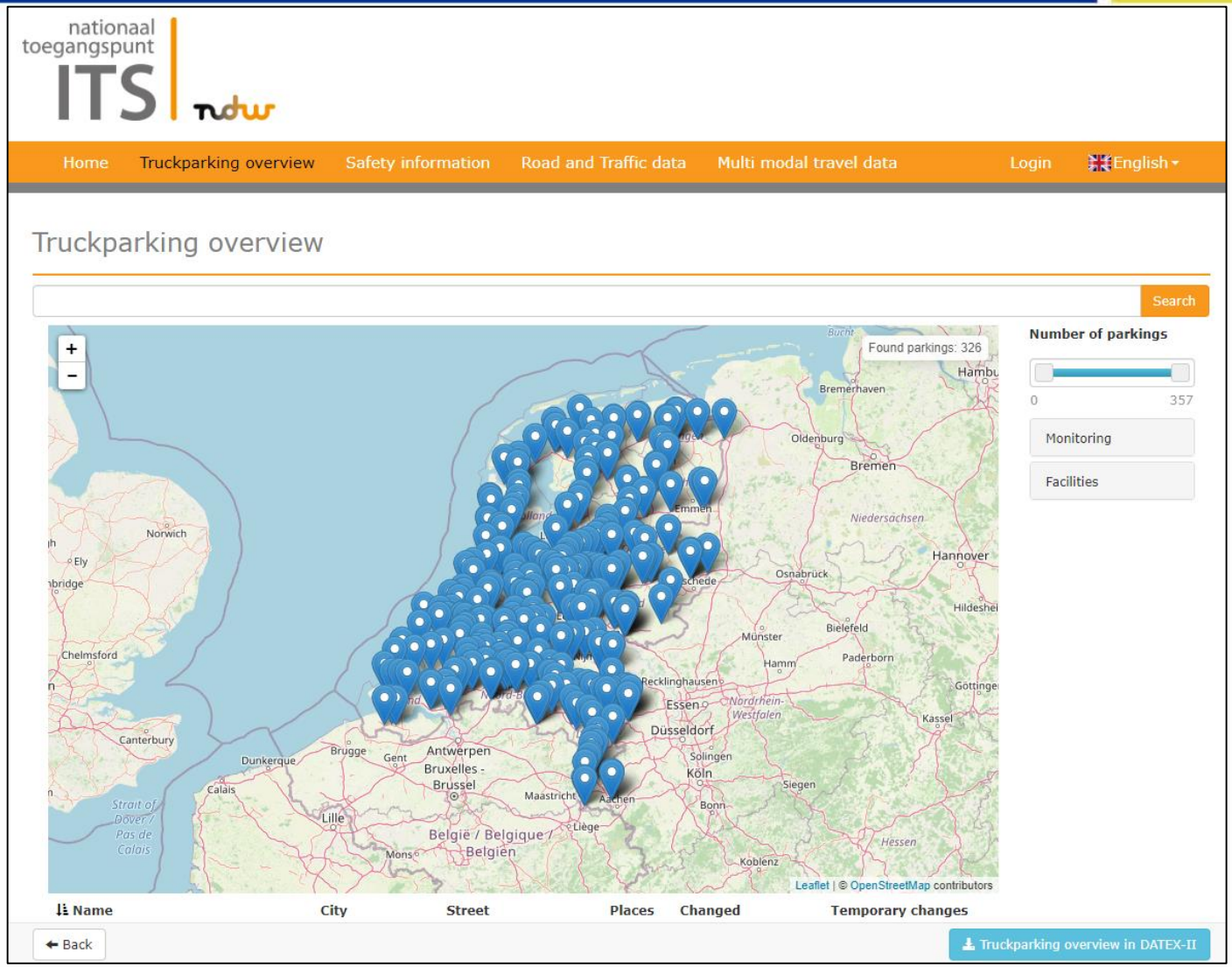


Introduction: The Dutch NAP

The NAP webpage →

- Map & text search
- Access to DATEX-II

After selecting a truck parking, the information appears



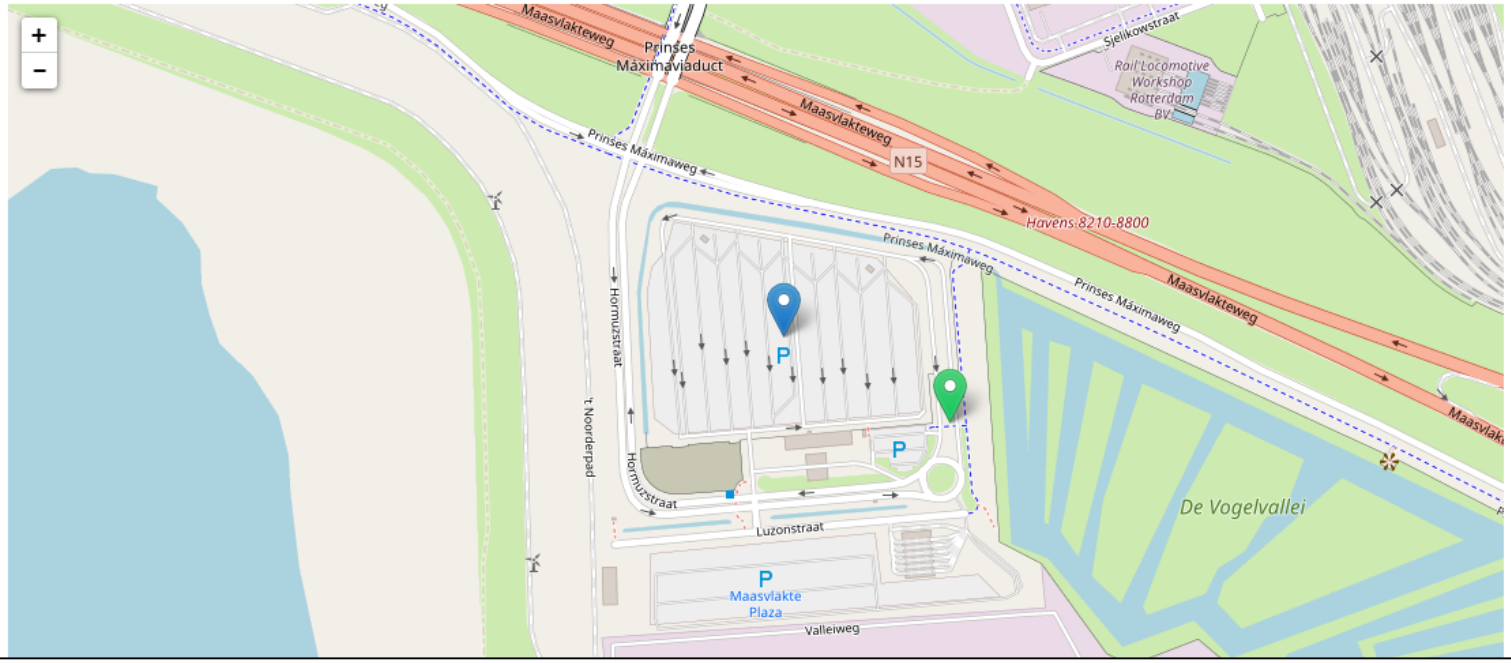
Introduction: The Dutch NAP

Home | Truckparking overview | Safety information | Road and Traffic data | Multi modal travel data | Login | English

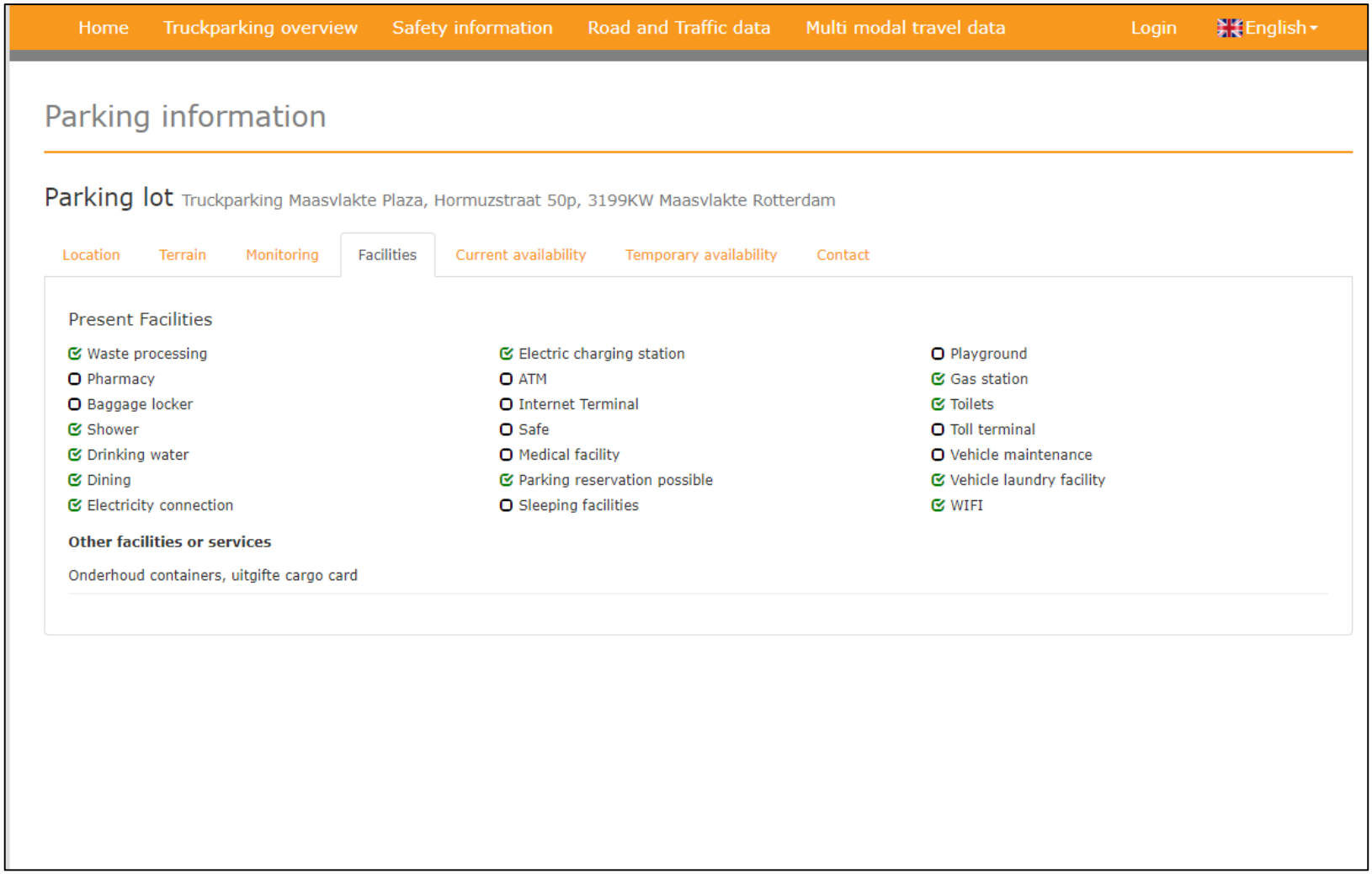
Parking information

Parking lot Truckparking Maasvlakte Plaza, Hormuzstraat 50p, 3199KW Maasvlakte Rotterdam

Location | Terrain | Monitoring | Facilities | Current availability | Temporary availability | Contact



Introduction: The Dutch NAP



Intro: Data collection method NAP

Public Parkings:

- Structural data collection by **Rijkswaterstaat**
- In 2015 the NAP was loaded with a readily **available basic list of truck parking** sites in NL
- The **collection and improvement of the database started in 2017**

- **Quality improvement activities**:
  - Visit of all sites with more than 35 parking spots
  - Desk research (internet, documents) and detailed check with recent satellite and 360-degree images (street view)
- Extra **site visits** (in case of missing or conflicting data)
- **Yearly check-up** with regional Rijkswaterstaat departments for recent amendments

Intro: Data collection method NAP

Private truck parkings (TP's):

- Initial entry of TP's based on 'basic list' (as shown on previous sheet)
- **Private TP owners were requested to check their information and make amendments**
- **Own responsibility** of TP owners
- Assumes that TP owners **keep their TP's information up-to-date, when changes occur** (e.g. change of available facilities/services)

Assessment method private TP's[1]

Assessment: comparison between information on NAP (entered by TP owner) and the 'ground truth' of TP, by conducting desk research:

- **Comparison of current dataset from NAP with previous desk research**, to check for newly added, deleted or missing TP's.
- **Check & complement selection criteria**: private/public parking, parking capacity, part of ECN and/or NL prio zoning.
- **Selection of private parkings** (based on the criteria above) that are **suitable for quality control**.
- **Digital visitation all selected TP's**, by using satellite & 360^{o} imagery and TP's online web presence, to compare information on NAP with ground truth.
- **Calculation of geographical coverage and error rates**.
- Personal **contact** (phone & e-mail) **with 5 TP owners** to ask about irregularities and general opinions about the NAP.

([1]An assessment on the ground truth of the public parkings was not conducted since the continuous data collection methods provides full coverage of location and information.)

Assessment results - overview

Level of service

- Geographical coverage of NAP
- Availability of NAP

Level of quality

- Reporting period & timeliness of the presented information
- Discrepancies regarding parking capacity, facilities and services in terms of
  - Error rate
  - Report coverage
  - Completeness
- Ableness of Dutch NAP to present TP information that suits the business format of TP's

Other

- General findings
- Reflections on NAP

Level of service

- Geographical coverage: overall is **75% (<Basic level**)
  - For public parkings 100%, for private parkings 55%
  - The geographical coverage of TP's in total (in- and outside NL prio zoning) is higher.

Service and Quality Criteria for ITPS			★ (Basic)	★★ (Enhanced)	★★★ (Advanced)	Netherlands	Remarks
Level of Service	**Geographical coverage**	Percentage of the transport system infrastructure covered by the (content provision) service.	90%	95%	99%	**75% overall** 100% public 55% private	**< Basic level** = Advanced level < Basic level
	Availability	Percentage of the time that the (content provision) service is available.	95% (347 days/year)	99% (361 days/year)	99,5% (363 days/year)	99,9%	= Advanced level

	Number of truck parkings		
Item	Public parkings	Private parkings	Total parkings
Total no. of parkings in NL ≥35 parking spots	32	35	67
Total no. of parkings on NT * ≥35 parking spots	32	20	52
% of NL parkings on NT * ≥35 parking spots	100%	57%	78%
Total no. of parkings in NL (within PRIO NL zoning) ≥35 parking spots	25	31	56
Total no. of parkings on NT * (within PRIO NL zoning) ≥35 parking spots	25	17	42
% of NL parkings on NT * (within PRIO NL zoning) ≥35 parking spots	100%	55%	75%

** NT=Nationaal Toegangspunt (a.k.a. the Dutch National Access Point (NAP))*

- Availability of NAP: always on-line (**99,9 %**) **Advanced level**

Assessment results - overview

Level of service

- Geographical coverage of NAP
- Availability of NAP

Level of quality

- Reporting period & timeliness of the presented information
- Discrepancies regarding parking capacity, facilities and services in terms of
  - Error rate
  - Report coverage
  - Completeness
- Ableness of Dutch NAP to present TP information that suits the business format of TP's

Other

- General findings
- Reflections on NAP

Level of quality (1/5)

Reporting period and Timeliness

- 60% of all parkings are up to date (public parkings).
- All information of the 17 private TP's is at least 1,5 years old.
  - 4/17 private parkings most recently modified in January 2019, other 13 private parkings have older information.
- 11/17 private TP's have information dating back to June 2015, when the Dutch NAP was first launched.
-

Service and Quality Criteria for ITPS			★ (Basic)	★★ (Enhanced)	★★★ (Advanced)	Netherlands	Remarks
Level of Quality	Reporting period	Time interval for refreshing information (dynamic data)	15 min	10 min	5 min	N/A	One owner (4 parkings) provides dynamic data via link to own website, with time interval 1 min
	Timeliness (update)	Time interval between a change of any data entity and the moment that change is reflected in the service	1 month	1 week	1 day	Immediate	= Advanced level

Level of quality (2/5)

Error rate

- The error rate of all parkings is **3,5%** (**enhanced Level**) for static location data and **3,9 %** (**enhanced level**) for safety and equipment info.

Service and Quality Criteria for ITPS			★ (Basic)	★★ (Enhanced)	★★★ (Advanced)	Netherlands	Remarks
Level of Quality	Error rate	*For static data* Percentage of data entities for which the values are different from the ground truth out of the total data entities which are included in the service provision. Measured as the arithmetic mean of the percentages for all parking places covered by the service.	10% 10%	5% 5%	1% 1%	**Static data (location data)** 3,5% overall 0,0% public 8,5% private **Safety & equip-ment info** 3,9% overall 0,0% public 9,5% private	 = Enhanced level = Advanced level = Basic level = Enhanced level = Advanced level = Basic level
		For dynamic data Absolute relative error (Err) of the provided number of free spaces (Np) compared to the ground truth (Nr) calculated as: $Err = \frac{\lvert N_r - N_p \rvert}{N_r} \times 100$ Measured as the arithmetic mean of the errors for all parking places covered by the service.	15%	10%	5%	N/A	One owner (4 parkings) provides dynamic data via link to own website, with time interval 1 min

Level of quality (3/5)

Report coverage & completeness

- The **report coverage** could not be calculated because the changes since the previous update are not available at the level of data entities. (**N/A**)
- The **completeness of data** is **72,1%** (**basic level**) for **static location data** and **55,5 %** (**basic level**) for **safety and equipment info**. These calculations should be higher because of non applicable data that is stored as empty entities in stead of a data values like 'none' or 'N/A'.

Service and Quality Criteria for ITPS			★ (Basic)	★★ (Enhanced)	★★★ (Advanced)	Netherlands	Remarks
Level of Quality	Report coverage	The percentage of data entities which were updated out of the total data entities for which changes occurred since the previous update period	80%	90%	95%	N/A	For this it's neccesary to have insight into the changes that've occurred since the previous update period that haven't been reported in the NAP. For this assignment, this kind of information was not available.
	Completeness of data	Percentage of data elements available in the service provision with respect to the total data elements of that service or data type for which quality criteria have been defined. More precisely, for a given service or data type, are all the data elements foreseen in the Regulation provided?	50% (at least ½)	80% (at least ¾)	100% (all)	**Static data (location data)** 72,1% overall 72,0% public 72,2% private **Safety & equip-ment info** 55,5% overall 49% public 65,2% private	 = Basic level = Basic level = Basic level = Basic level < Basic level = Basic level

Level of quality (4/5)

Parking capacity

- For **90%** of all parkings the right number (approximately) of parking spots is presented on the NAP.
  - **100 %** of public parkings
  - **76 %** of private parkings (13/17)

- For a small number of private TP's (4/17) large differences occur between # parking spots stated on NAP and # parking spots visible on satellite images.
  - It's not always clear if parking spots on neighboring business properties is accessible for parking purposes, or changes in parking capacity since first registration (>5 years ago) isn't updated on NAP.
- In most cases, designated parking spots for refrigerated, extra long and/or convoy exceptionnel trucks aren't mentioned specifically in parking capacity figures.

Level of quality (5/5)

Parking facilities and services

- For 100% of all parkings the information of the major facilities (e.g. petrol station, restaurant, sleeping facility) on NAP are actually present and meet the ground truth
  - 100 % of public parkings
  - 100 % of private parkings (17/17)

- Some private TP's include facilities of neighboring businesses. (e.g. nearby restaurant, truck service station)

- The results of the private parkings are based on aerial reconnaissance, 360^{o} imagery scans & interviews with TP owners.

Assessment results - overview

Level of service

- Geographical coverage of NAP
- Availability of NAP

Level of quality

- Reporting period & timeliness of the presented information
- Discrepancies regarding parking capacity, facilities and services in terms of
  - Error rate
  - Report coverage
  - Completeness
- Ableness of Dutch NAP to present TP information that suits the business format of TP's

Other

- General findings
- Reflections on NAP

Other: General findings

regarding NAP quality

- Price info on NT (price/hr) doesn't (seem to) match TP's price setting desires (possibility to differentiate tariffs)

- Regulations on security labels aren't clear;
- Security labels differ from actual present security equipment

- Dynamic data (live information on availability of parking spots), Only 4 TP's have a live feed that show current parking space availability (all owned by same company)

Other: Reflections on NAP

Feedback of private truck parking owners

- Truck parking businesses are not always convinced that a (obligatory) participation to a NAP is good for their business:
  - Fear of too high parking pressure leading to decline in service to their regular, returning, loyal customers
  - 'Smaller' local parkings (max. 50-75 places) Confident with 'own' regular and returning clients
  - The attention (and willingness) of truck parking owners to keep information on NAP up-to-date is low.

Summary

- The information of the public parkings on the NAP is complete and up to date (100% coverage)
- The information of private truck parkings (TP's) on the NAP is for half of the cases incomplete and out of date (+/- 55% coverage)
  - Most of the assessed private TP's (the selection of TP's that have information on the NAP) have correctly presented their parking capacity, driver facilities and truck services
  - Security labeling is not uniform; information about security facilities (e.g. fence, CCTV) seem to be more reliable
  - Nearly all private TP's have information on the NAP that's >5 years old
  - The NAP price setting option (€/hr) doesn't match TP's business format (buy a meal & get parking ticket)
  - Some private TP's have concerns about (negative) impact on their business

For more information, please contact:

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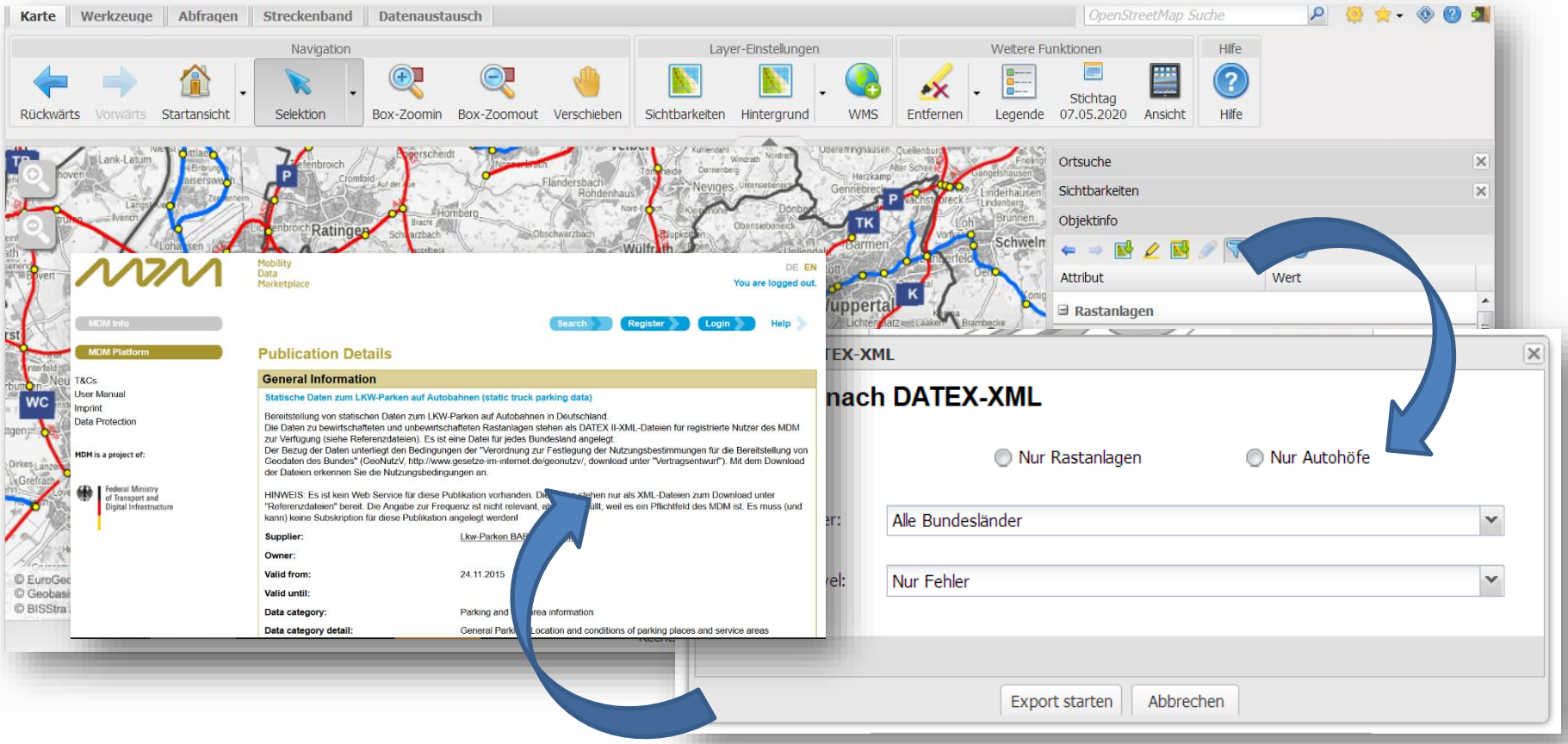
Validation Test DE

– Data Collection Tool for truck parking operators (Web Database, DATEX II Export for NAP publication)



Validation Test DE

- Analysis methods and tools
  - Check NAP publication (DATEX II file) on completeness and conformity with DATEX II minimum profile
  - Focus on mandatory fields
  - For entire Germany and by individual Bundesländer
  - Automated analysis with Python script

Records per Bundesland	
BB	122
BE	3
BW	279
BY	570
HB	10
HE	189
HH	10
MV	82
NI	335
NW	363
RP	181
SH	78
SL	36
SN	79
ST	100
TH	81
Total	**2518**

Validation Test DE

- DATEX Minimum Profile
  - elements of the DATEX II profile for static data related to safe and secure truck parking areas in accordance to delegated regulation 885/2013
  - …describes the attributes that are considered necessary to be included in any DATEX II profile

https://ec.europa.eu/transport/sites/transport/files/themes/its/doc/safe-and-secure-parkings/annex_i_datex_ii_ec_minimum_profile_truck_parking_description_v1_0.pdf

European Commission

European Access Point for Truck Parking Data

Guidance Document for Member States on technical implementation of Delegated Regulation 885/2013 in relation to the European Access Point for Truck Parking Data

Annex I:

DATEX II minimum profile for EU core components for static data related to Secured Truck Parking Areas

v1.0

March 2016

EUROPEAN COMMISSION

Directorate-General for Mobility and Transport
Directorate C – Innovative & sustainable mobility
Unit C3 – Intelligent Transport Systems

Contact: MOVE-ITS@ec.europa.eu

European Commission
B-1040 Brussels

Validation Test DE

- DATEX Minimum Profile

Section	Attribute name	Multiplicity
2 Identification Information		
2.1 Parking name	parkingName	1..1
2.2 Parking address	parkingSiteAddress	1..1
2.3 Additional datex2 attributes		
2.3.1 Usage Scenario	parkingUsageScenario	1..1
2.3.2 Parking Site Type	interUrbanParkingSiteLocation	1..1
3 Location information of entry point	parkingLocation	1..1
	latitude	1..1
	Longitude	1..1
	accessCategory	1..*
4 Primary road identifier / direction	Primary road	1..2
	roadDestination	1..1
5 Exit	n/a	

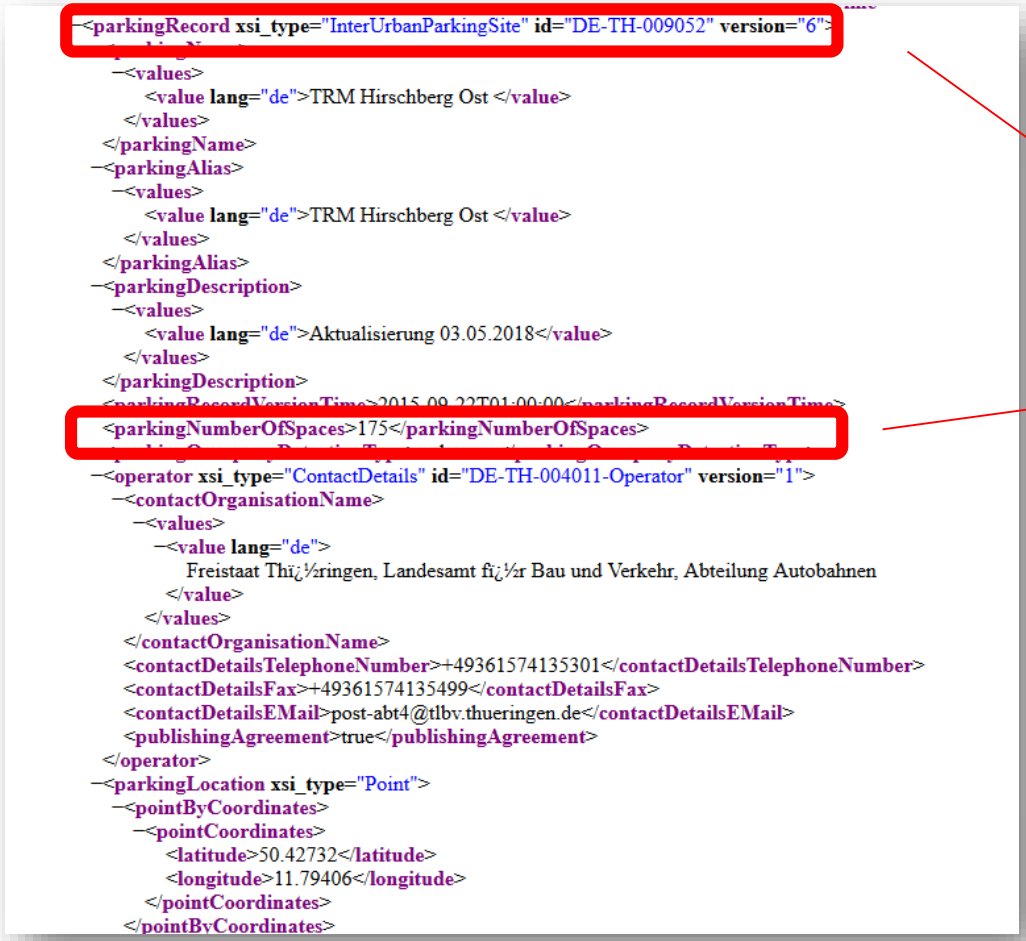
Validation Test DE

- DATEX Minimum Profile

Section	Attribute name	Multiplicity
6 Total number of parking places for trucks		
6.1 Total number of parking places for trucks	parkingNumberOfSpaces	1..1
6.2 Additional datex2 attributes		
7 Price and currency of parking places	Free of charge	1..1
8 Information on safety and equipment of the parking area		
8.1 Equipment and services	serviceFacilityType	1..1
	equipmentType	1..1
8.2 Number of parking places for refrigerated goods vehicles (or other specific goods vehicles)		
8.2.1 Number of parking places per vehicle characteristic	groupOfParkingSpaces	1..*
8.2.2 Additional Datex2 attributes	parkingTypeOfGroup	1..1
8.3 Description of security	parkingStandardsAndSecurity	1..1
9 Contact information of parking operator	Operator	1..1
10 Unique national identification number	Id	1..1

Validation Test DE

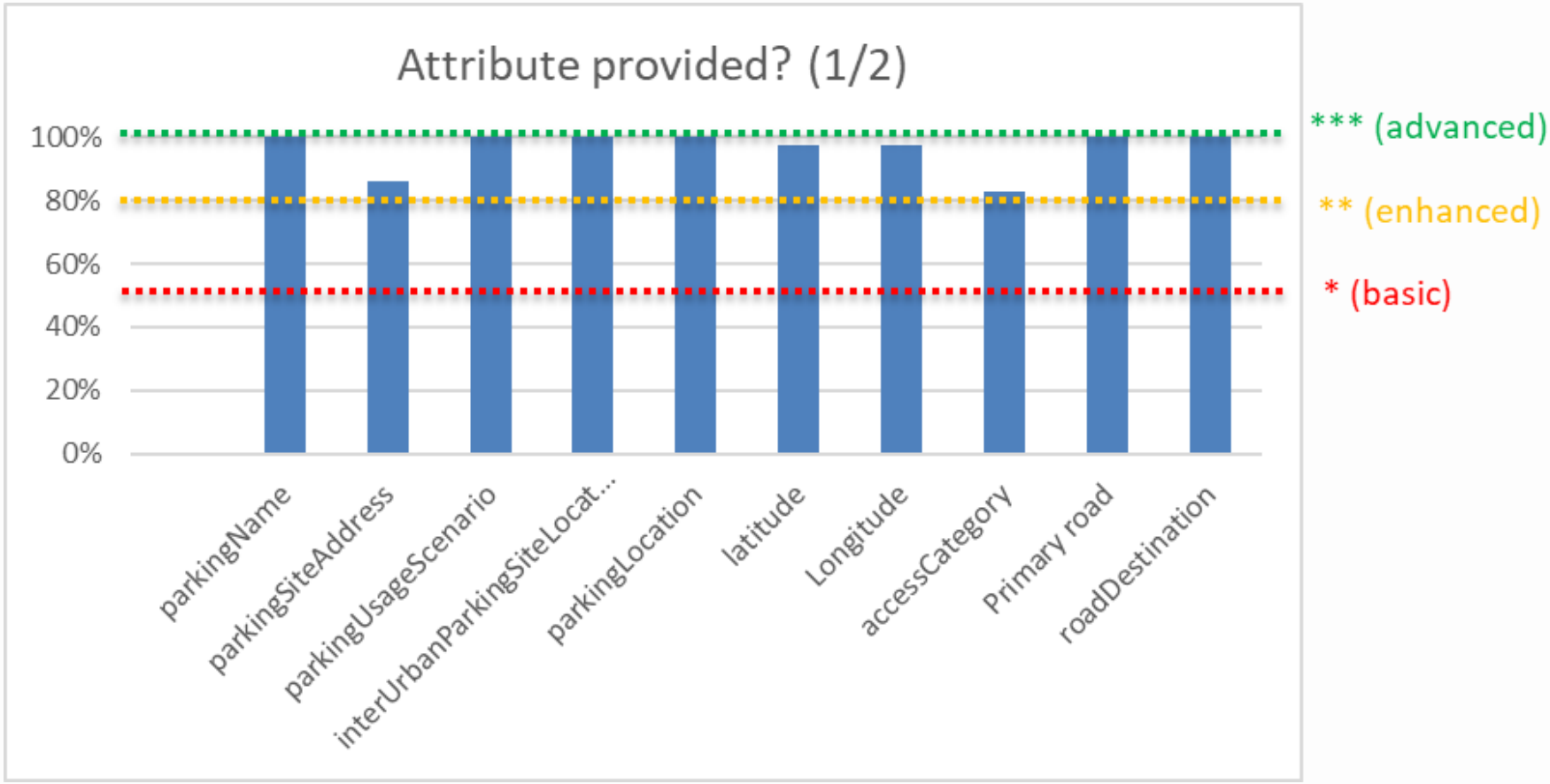
- DATEX II structure



Parking site „TH-009052“ has 175 parking spaces.
-> attribute „NumberOfSpaces“ is provided!

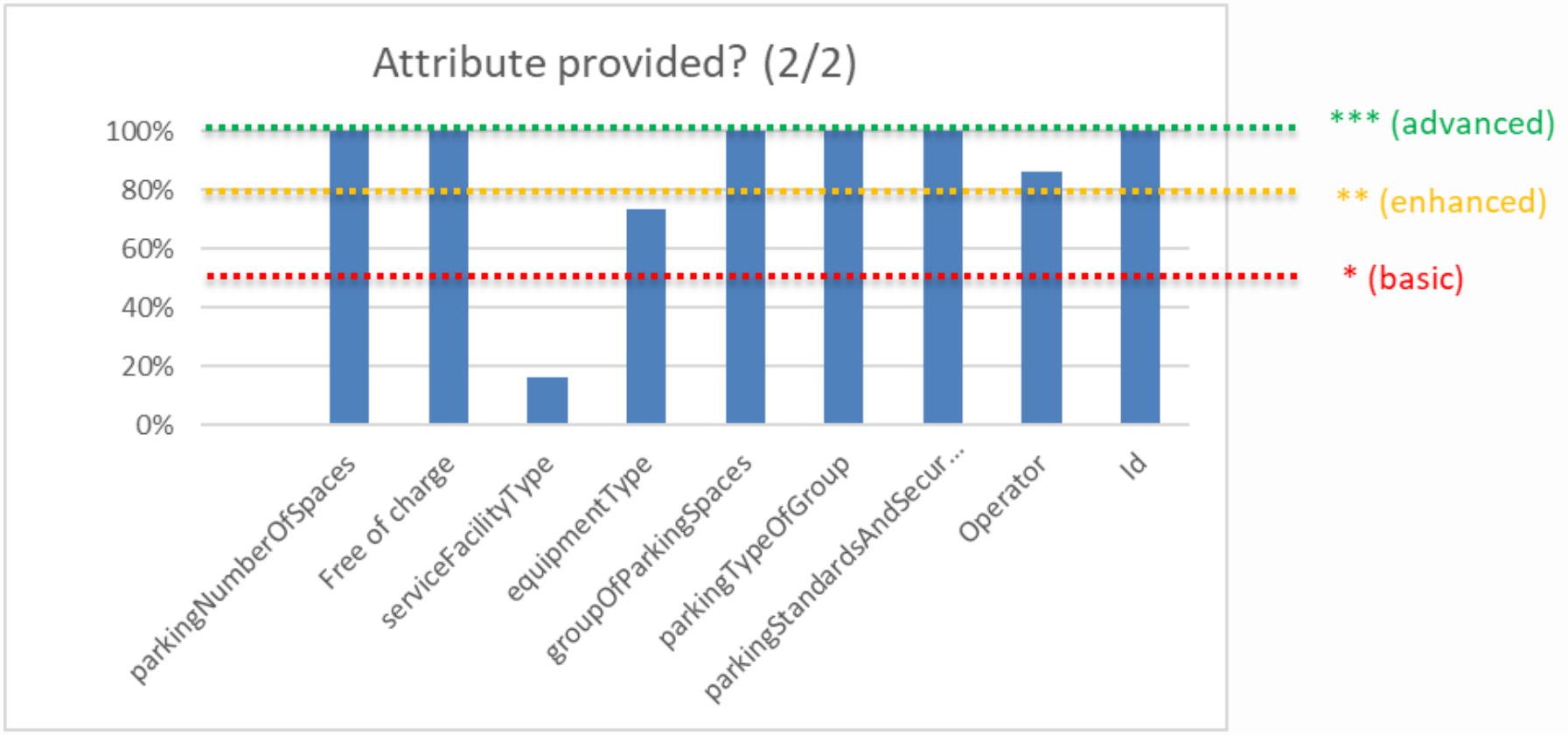
Validation Test DE

- Results (1/3)



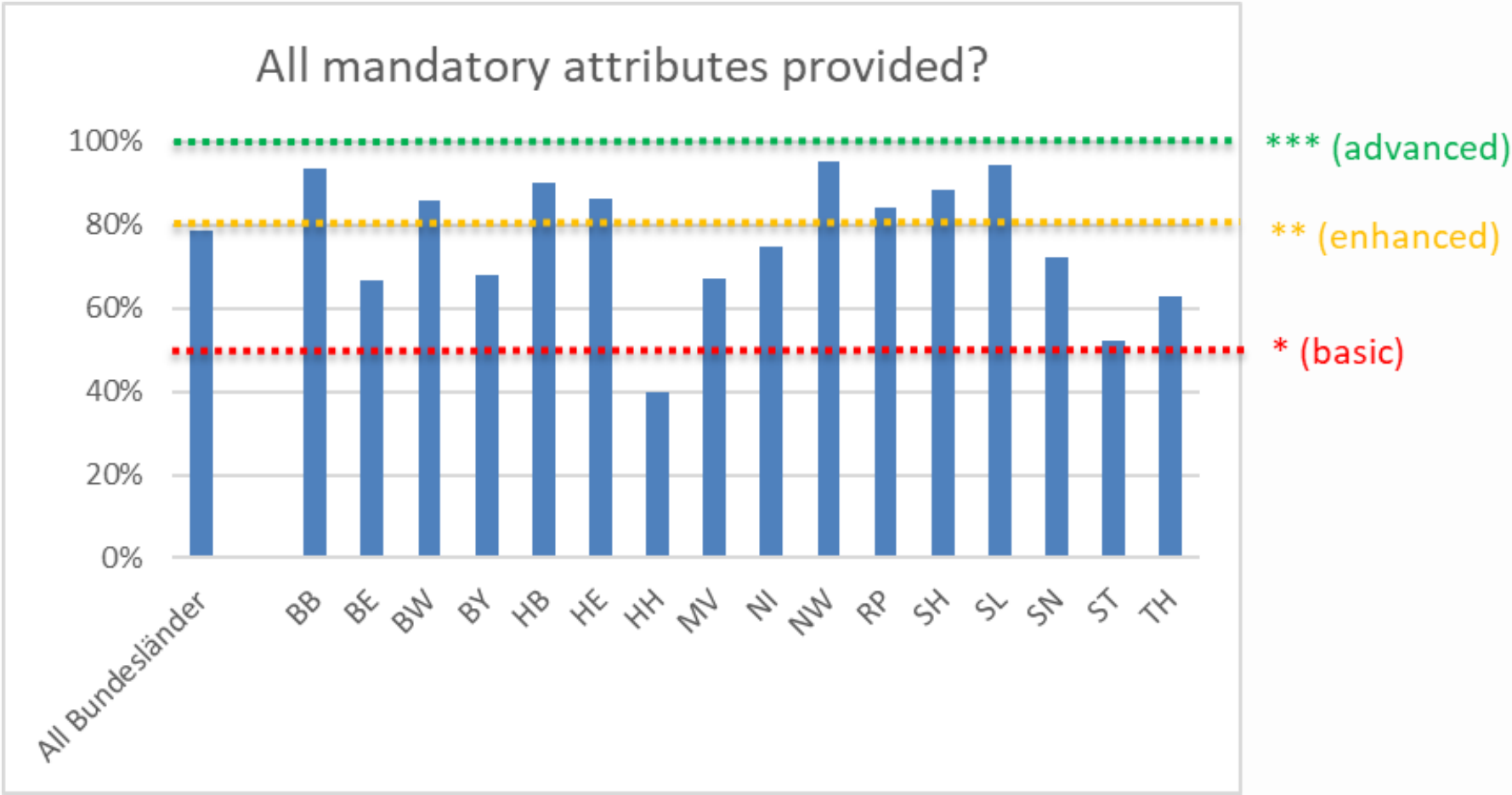
Validation Test DE

- Results (2/3)



Validation Test DE

- Results (3/3)

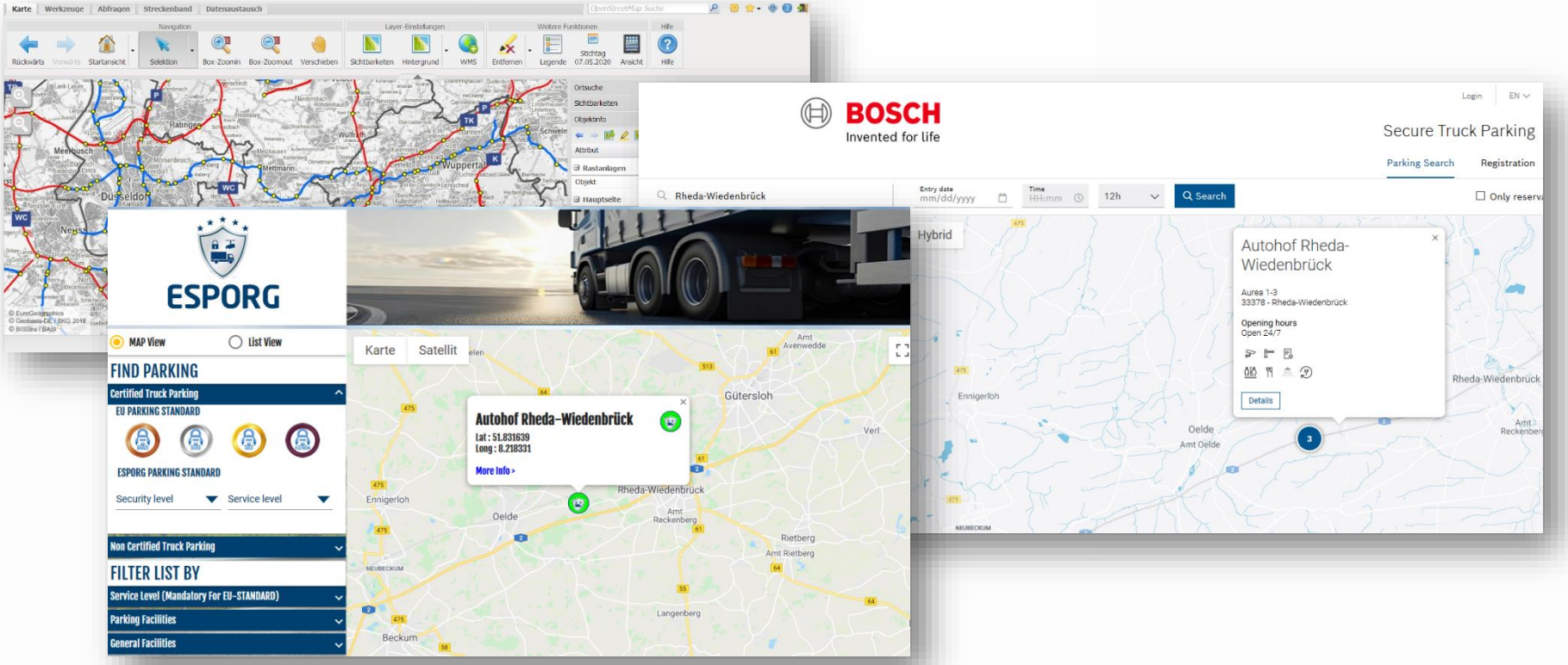


Validation Test DE

- Findings for ITPS Quality Package
  - Our verbal definition for Criterion „Completeness“ could be sharpened to relate to individual parking lots (i.e., relate to „Parking Records“ in Datex II).
  - Our requirements definition for Criterion „Completeness“ (50/80/100%) seem reasonable.
  - The applied methodology (automated analysis of DATEX II) gives hints on the pure provision of individual elements, i.e. they “exist” in the dataset.
  - However, no hints are given that these elements are filled in correctly.

Validation Test DE

- Findings for ITPS Quality Package
  - Look more on “contents” by comparing different data bases!
  - This way, have also a look at the “Correctness” of data.



Validation Test DE

- Findings for ITPS Quality Package
  - Example for a “data-base cross-check”

Autohof Rheda-Wiedenbrück				
ESPORG webseite	Erfassungstool	Bosch Secure Truck Parking		
Name of Highway : A2	A2	A2 E22		
Address : Aurea 1/3	Aurea 3	Aurea 1-3		
PostCode : 33378 Rheda Wiedenbruck	33378 Rheda Wieden	33378 Rheda-Wiedenbrück		
Opening Hours : 24/7	n/a	24/7		
Telephone : +4925228343732	not provided	not provided		
Number of Parking Spots : 24	59	59		
Latitude : 51.831639	51,829221	not provided		
Longitude : 8.218331	8,221309	not provided		
Exit Number : 22	not provided	not provided		
Name : Nadine Schmidt	Aral AG	not provided		
Telephone : +4925228343732	not provided	not provided		
Email : autohof.aurea@gmail.com	info@aral.de	not provided		
Equipment: not provided	not provided	CCTV, Gate, Certified		
Service: Restroom, Shower, restaurant, laundry	not provided	Restroom, Restaurant, Fuel Station		
Certifications: non certified	unknown	ESPORG Level 3		

Info only in one database!

Diverging info!

Different level of detail!

Truck Parking Information Quality Workshop

- Agenda
  - 10:00 Welcome and introduction
  - 10:20 Insights from the ITPS Quality Package
  - 10:45 Validation results from NL
  - 11:00 Validation results from DE
  - 11:15 Open Session
  - 11:50 Wrap-up and closing

Open Session

- Discussion items
  - Are the **EU EIP quality definitions sufficient** for a common understanding on Truck Parking Information quality? What (other) quality frameworks do you need?
  - What is the **your experience on data quality from external providers**? Which quality criteria are (not) satisfied?
  - What is the **role of private parking operators** in the data eco-system? Are they willing to share their data?
  - How to do **quality checks for data** about truck parking places? Can ground-truth-testing be efficiently done?

Truck Parking Information Quality Workshop

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Truck Parking Information Quality – Way forward

- Truck Parking Information Quality Package ready for review

→ feedback welcome, stay in touch !

- Thank you!
- Questions?

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