NAP Reference Architecture

This report defines one of the Views of the NAP Reference Architecture

16.06.2025

# Specifications and Recommendations

The **Specifications and Requirements** document describes legal and technical specifications as well as recommendations and profiles used for the ITS Service in different Views. The specifications could be linked to different objects defining is technical or organizational parameters, its usage, interaction requirements behaviour etc.

The **Specifications and Requirements** is elaborated with respect of minimum functionality of two NAP types: **Metadata Directory** and **Data Platform.**



Figure: Specifications and Requirements

## Legal specifications

This folder contains European legislative documents (directives, regulations, decisions) that are relevant to the NAP ecosystem.



Figure: Legal requirements

### Directive (EU) 2019/1024 - Open Data

*Date Modified: 16.06.2025 16:48:12, GUID: {A47BBEAA-7629-4fb8-A2B9-082D024A3B64}*

**Type**: Legal

**Full Name:** Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (recast)

**Link:** <https://eur-lex.europa.eu/eli/dir/2019/1024/oj>

**Description**: Directive (EU) 2019/1024, also known as the Open Data Directive, establishes binding rules for the release and reuse of public sector information across the EU. It obliges Member States to ensure that data produced, held, or funded by public bodies is made available in machine-readable formats, via Application Programming Interfaces (APIs), and under open licences with minimal legal, technical, or financial restrictions. It defines categories of high-value datasets, including transport, which are subject to specific publication and reuse obligations.

**Additional details:** In the context of National Access Points (NAPs) under Directive 2010/40/EU (ITS Directive), the Open Data Directive applies where the transport-related data hosted or disseminated via NAPs is produced or funded by public sector bodies. It imposes legal obligations on such data to be openly licensed, structured for automatic processing, accessible through APIs, and free of charge. This directly impacts the way NAPs must provide access to static and dynamic ITS data, ensuring compliance with both the ITS legal framework and the horizontal open data obligations. If the NAP environment includes private stakeholders, applicability may depend on whether the data provision is mandated by law or publicly funded.

**Related Documents:**

* [Commission Implementing Regulation (EU) 2023/138](https://eur-lex.europa.eu/eli/reg_impl/2023/138) – Defines high-value datasets, including transport, and mandates their free availability via APIs and bulk download.
* [Data Governance Act (Regulation (EU) 2022/868)](https://eur-lex.europa.eu/eli/reg/2022/868) – Supports secure data sharing across sectors, relevant for public-private cooperation in NAPs.
* [INSPIRE Directive (2007/2/EC)](https://eur-lex.europa.eu/eli/dir/2007/2) – Ensures interoperability of geospatial data, often used in transport datasets.
* **ITS Delegated Regulations** – Specify data types and access requirements under Directive 2010/40/EU, aligning with open data principles.

### Directive (EU) 2022/2555 - NIS2

*Date Modified: 16.06.2025 16:48:13, GUID: {4960CAB3-98F8-4f09-94E1-62AFA0954523}*

**Type**: Legal

**Full Name:** Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive)

**Link:** <https://eur-lex.europa.eu/eli/dir/2022/2555/oj>

**Description**: Directive (EU) 2022/2555, also known as the NIS 2 Directive, establishes a common framework for cybersecurity risk management and reporting obligations across the EU. It replaces the original NIS Directive (EU) 2016/1148 and significantly expands the scope of entities subject to cybersecurity requirements, including operators of essential and important services in sectors such as transport, energy, and digital infrastructure.

**Additional details:** National Access Points (NAPs), as defined under Directive 2010/40/EU, typically qualify as essential or important entities under NIS 2 if they are operated by public authorities or provide critical digital services related to transport data exchange. As such, they are subject to obligations including Implementation of technical and organizational cybersecurity measures,Incident notification to national CSIRTs or competent authorities and Participation in cybersecurity supervision and enforcement mechanisms.

**Related Documents:**

* [Directive (EU) 2016/1148](https://eur-lex.europa.eu/eli/dir/2016/1148) – The original NIS Directive, now repealed, provides historical context and may still influence transitional arrangements.
* [Commission Recommendation (EU) 2017/1584](https://eur-lex.europa.eu/eli/reco/2017/1584) – Offers guidance on coordinated response to large-scale cybersecurity incidents, relevant for NAPs involved in cross-border data exchange.
* [Regulation (EU) 2019/881 (Cybersecurity Act)](https://eur-lex.europa.eu/eli/reg/2019/881) – Establishes the EU cybersecurity certification framework, which may apply to ICT products and services used by NAPs.
* [ENISA Guidelines and Sectoral Guidance](https://www.enisa.europa.eu/publications/guideline-on-security-measures-under-the-eecc) – While not legally binding, ENISA’s technical guidance supports implementation of NIS 2 requirements in transport and digital infrastructure sectors.

### L.1.1 Website Accessibility

*Date Modified: 16.06.2025 16:48:12, GUID: {A51F2AC6-F30A-41f9-A541-C79492AE8B88}*

Member States shall ensure that public sector bodies take the necessary measures to make their websites and mobile applications more accessible by making them perceivable, operable, understandable and robust.

The platform shall comply with conformance level AA of the “Web Content Accessibility Guidelines Web - WCAG 2.1” or with the applicable European standard EN 301 549 V2.1.2 (2018-08).

Source:

L1 Directive (EU) 2016/2102 - Website Accessibility

### L.2.1 National Body support

*Date Modified: 16.06.2025 16:48:12, GUID: {E6106D59-DA87-4922-86F9-2C886A68B717}*

The NAP shall fully disclose all received information/evidence to the NB/CA assisting in the assessment process.

Source:

L2 Regulation (EU) No 886/2013 - SRTI

L3 Regulation (EU) No 885/2013 - SSTP

L4 Regulation (EU) 2022/670 - RTTI (recast)

L5 Regulation (EU) 2017/1926 - MMTIS

### L.2.2 Provide up to date data

*Date Modified: 16.06.2025 16:48:12, GUID: {3A5AE4E8-99D6-446e-9A35-26D9A69357B2}*

Content provider shall provide up-to-date and accurate data with a desired level of quality, in the prescribed format.

Source:

L2 Regulation (EU) No 886/2013 - SRTI

L3 Regulation (EU) No 885/2013 - SSTP

L4 Regulation (EU) 2022/670 - RTTI (recast)

L5 Regulation (EU) 2017/1926 - MMTIS

### L.2.3 Free of charge

*Date Modified: 16.06.2025 16:48:12, GUID: {5C137FED-9A72-48a1-A2CB-13519B3FD8E0}*

To provide SRTI information service to ensure the widest reach of end users concerned, where possible free of charge to end users.

Source: L2 Regulation (EU) No 886/2013 - SRTI

### L.4.1 information to end users

*Date Modified: 16.06.2025 16:48:12, GUID: {7B937610-0132-4f10-A6F5-DB46BD160E85}*

When presenting information to end users, processes relevant data updates on infrastructure, regulations, and restrictions [digital map producers], data updates on the state of the network / the real-time use of the network within a timeframe fitting to the reliable and effective use of the data in real-time traffic information services. [service providers]

Source: L4 Regulation (EU) 2022/670 - RTTI (recast)

### L.7.1 GDPR compliance

*Date Modified: 16.06.2025 16:48:12, GUID: {20EB6C72-5D11-49f7-8692-86134D5D4931}*

Platforms shall be compliant with any GDPR rules (as they are stated between platform operator and content provider).

Source:

L7 Regulation (EU) 2016/679 - GDPR

### L.8.1 EU directive to national law

*Date Modified: 16.06.2025 16:48:12, GUID: {0D151ADE-7E07-4dcb-8130-2E96318678A0}*

Member States implement of EU Directives into a national law, that reaches the goals set in the ITS Directive, and direct execution of EU Regulations and Delegated Acts including an enforcement process.

Including periodically report of the progress on the achievement of the goals established in the ITS Directive (and its delegated regulations).

Source:

L8 Directive (EU) 2023/2661 - ITS (recast)

### L.8.2 Establish National Access Point and Operator

*Date Modified: 16.06.2025 16:48:12, GUID: {5245A6BC-0DBC-4bed-9444-EBF6E16DE191}*

Member States shall establish the NAP Operator (NO), in the national law; either delegate its establishment to a responsible ministry or directly state the party responsible for NAP operation.

Source:

L8 Directive (EU) 2023/2661 - ITS (recast)

### L1 Directive (EU) 2016/2102 - Website Accessibility

*Date Modified: 16.06.2025 16:48:13, GUID: {0F8F6863-97AA-4c8f-916B-9E76E080D254}*

**Type**: Legal

**Full Name:** Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies

**Link**: <https://eur-lex.europa.eu/eli/dir/2016/2102/oj>

**Description**: Directive (EU) 2016/2102 on the accessibility of websites and mobile applications of public sector bodies ensures that digital services are usable by all, including people with disabilities. This is directly relevant to the National Access Points (NAPs) established under Directive 2010/40/EU (ITS Directive) and its recast, which require Member States to provide access to transport-related data through digital platforms.

**Additional details**: Since NAPs are typically operated by public authorities or on their behalf, they fall under the scope of the Web Accessibility Directive. This means that the websites and mobile apps used for publishing transport data—such as real-time traffic, public transport schedules, or multimodal travel information—must comply with accessibility standards like EN 301 549.

**Related Documents:**

* [Commission Implementing Decision (EU) 2018/1523](https://eur-lex.europa.eu/eli/dec_impl/2018/1523): Establishing a model accessibility statement
* [Commission Implementing Decision (EU) 2018/2048](https://eur-lex.europa.eu/eli/dec_impl/2018/2048): Establishing the monitoring methodology and arrangements for reporting by Member States

### L10 [Title Pending] – Data Specifications for Alternative Fuels Infrastructure (AFIR)

*Date Modified: 16.06.2025 16:48:13, GUID: {B7ADA655-593E-48ce-A50C-97CB4684F009}*

**Type:** Legal (Implementing Act – in preparation)

**Full Name:** Commission Implementing Regulation laying down technical specifications regarding the format, frequency, and quality of data on alternative fuels infrastructure pursuant to Regulation (EU) 2023/1804

**Link:** <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14345-_en>

**Description:** This implementing regulation will define harmonised technical specifications for the format, update frequency, and quality of data relating to publicly accessible alternative fuels infrastructure in the EU. It supports Regulation (EU) 2023/1804 (AFIR) and applies to electric recharging points, hydrogen refuelling stations, and other designated fuel types. The regulation aims to standardise machine-to-machine data exchange and improve accessibility, reliability, and cross-border interoperability.

**Additional details:** The act will mandate the use of DATEX II for structured data exchange by April 2026. Static data (location, capacity, connector types, operational status) must be updated at least every 24 hours; dynamic data (availability, malfunction, real-time energy status) must be refreshed at intervals no greater than 1 minute. EV charging point operators will be required to disclose roaming capability, smart charging readiness, and communication interfaces. Hydrogen stations must signal low-fuel warnings (<100 kg). NAPs will act as the central access points for compliant data publication and retrieval.

**Related Documents:**

* [Regulation (EU) 2023/1804 – AFIR](https://eur-lex.europa.eu/eli/reg/2023/1804/oj) – Legal base establishing mandatory deployment and data reporting obligations for alternative fuels infrastructure.
* [Public Consultation Summary](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14345-Data-on-alternative-fuels-infrastructure-technical-specifications-format-frequency-and-quality-_en) – Data Specification Initiative – Commission platform outlining scope and stakeholder feedback.
* [DATEX II Electric Vehicle Charging Profile](https://docs.datex2.eu/v3.2/reference_profiles/rsp/alternativefuel/index.html) – Technical profile defining data elements and structure for compliant AFIR data exchange.

### L11 Regulation (EU) 2025/655 – AFIR Data Specifications

*Date Modified: 16.06.2025 16:48:13, GUID: {BB34947F-7458-46e4-B45C-28338EDB244A}*

**Type:** Legal

**Full Name:** Commission Implementing Regulation (EU) 2025/655 of 2 April 2025 laying down rules for the application of Regulation (EU) 2023/1804 as regards specifications and procedures relating to the availability and accessibility of data on alternative fuels infrastructure

**Link:** <https://eur-lex.europa.eu/eli/reg_impl/2025/655/oj>

**Description:** This regulation establishes binding technical specifications and procedures for the provision of data on publicly accessible alternative fuels infrastructure under Regulation (EU) 2023/1804 (AFIR). It defines harmonised requirements for data format, update frequency, quality, and accessibility to ensure interoperability and transparency across the EU. The act applies to electric recharging points, hydrogen refuelling stations, and other AFIR-regulated infrastructure types.

**Additional details:** Operators must publish static data (e.g. location, connector types, access conditions) with a maximum update interval of 24 hours, and dynamic data (e.g. availability, operational status) with a maximum latency of 1 minute. The use of the DATEX II format is mandatory from 14 April 2026. Additional obligations include disclosure of roaming capability, smart charging features, and hydrogen low-fuel alerts (<100 kg). NAPs serve as the designated access points for compliant data exchange.

**Related Documents:**

* [Regulation (EU) 2023/1804 – AFIR](https://eur-lex.europa.eu/eli/reg/2023/1804/oj) – Legal base establishing mandatory deployment and data reporting obligations for alternative fuels infrastructure.
* [Public Consultation Summary](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14345-Data-on-alternative-fuels-infrastructure-technical-specifications-format-frequency-and-quality-_en) – Data Specification Initiative – Commission platform outlining scope and stakeholder feedback.
* [DATEX II Electric Vehicle Charging Profile](https://docs.datex2.eu/v3.2/reference_profiles/rsp/alternativefuel/index.html) – Technical profile defining data elements and structure for compliant AFIR data exchange.
* [Commission News Release – 11 April 2025](https://transport.ec.europa.eu/news-events/news/commission-enhances-interoperability-and-transparency-alternative-fuels-infrastructure-data-2025-04-11_en) – Summary of the adopted implementing regulation and legislative package.

### L2 Regulation (EU) No 886/2013 - SRTI

*Date Modified: 16.06.2025 16:48:13, GUID: {4B31C570-BDB3-4ccd-A917-C3680106BA2A}*

**Type**: Legal

**Full Name:** Commission Delegated Regulation (EU) No 886/2013 of 15 May 2013 supplementing Directive 2010/40/EU with regard to data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2013/886/oj>

**Description:** This regulation defines the minimum requirements for the provision of safety-related traffic information (SRTI) services across the EU road network. It mandates that specific categories of safety-critical events (e.g. wrong-way drivers, unprotected accident areas, reduced visibility) be made available to users free of charge, where possible. It sets obligations for data collection, processing, quality assurance, and dissemination, and requires Member States to ensure interoperability and continuity of service through harmonised procedures and formats.

**Additional details:** NAPs are the designated interface for publishing SRTI-relevant data. They must provide machine-readable access to static and dynamic datasets covering the event categories defined in the regulation. Data must comply with update frequency, latency, and quality requirements. NAPs must also support metadata publication, service documentation, and conformity assessment. The harmonised DATEX II Reference Profile for SRTI must be used to ensure semantic and syntactic interoperability across Member States.

**Related Documents:**

* [European Commission SRTI Guidance](https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan/safety-related-traffic-information-srti-real-time-traffic-information-rtti_en) – Technical guidance and implementation context under the ITS Directive.
* [DATEX II Reference Profile for SRTI](https://docs.datex2.eu/recommended-profiles/rrp/srti/) – Defines the mandatory data elements and structure for compliant SRTI data exchange.
* [NAPCORE SRTI Workstream Summary (PDF)](https://napcore.eu/wp-content/uploads/2025/05/DD_886_2013.pdf) – Implementation overview and harmonisation activities across Member States.

### L3 Regulation (EU) No 885/2013 - SSTP

*Date Modified: 16.06.2025 16:48:13, GUID: {1C6BB576-3649-41fd-BF57-B029DC1A37E4}*

**Type:** Legal

**Full Name:** Commission Delegated Regulation (EU) No 885/2013 of 15 May 2013 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2013/885/oj>

**Description:** This regulation defines functional and technical specifications for the provision of information services related to safe and secure parking places for trucks and commercial vehicles (SSTP). It supplements Directive 2010/40/EU (ITS Directive) and establishes requirements for static and dynamic data collection, dissemination, quality assurance, and compliance assessment. It applies to parking areas located along the trans-European road network (TERN) and aims to improve driver safety, rest compliance, and freight security through harmonised digital services.

**Additional details:** NAPs are designated as access points for SSTP-related data. Where Member States or service providers implement SSTP services, NAPs must ensure machine-readable access to static data (e.g. location, capacity, equipment, security features) and dynamic data (e.g. availability, occupancy). Data must conform to the regulation’s quality, update frequency, and metadata requirements. NAPs must also support compliance monitoring by national bodies and provide documentation on data coverage, dissemination methods, and service reliability.

**Related Documents:**

* [FAQ on Delegated Regulation (EU) No 885/2013](https://transport.ec.europa.eu/system/files/2016-09/2015-07-09-faq-on-del-reg-885-2013-itp.pdf) – European Commission – Clarifies scope, applicability, and compliance procedures for SSTP services under the ITS Directive.
* [DATEX II Reference Profile for SSTP (RRP 885/2013)](https://docs.datex2.eu/recommended-profiles/rrp/truck-parking/) – Defines the mandatory data elements and structure for static and dynamic SSTP data exchange, based on CEN/TS 16157-6:2022.

### L4 Regulation (EU) 2022/670 - RTTI (recast)

*Date Modified: 16.06.2025 16:48:13, GUID: {4DC0BF48-4C3D-4352-AC06-151C3D8DE95D}*

**Type**: Legal

**Full Name:** Commission Delegated Regulation (EU) 2022/670 of 2 February 2022 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2022/670/oj>

**Description:** This regulation defines binding technical specifications for the provision of EU-wide real-time traffic information (RTTI) services. It repeals Delegated Regulation (EU) 2015/962 and introduces updated requirements for the availability, accessibility, and reusability of static and dynamic road traffic data. Compared to the repealed act, it clarifies data categories, strengthens obligations for dynamic data updates, and adjusts performance requirements to reflect the current state of ITS deployment and operational data exchange practices. It enforces harmonised data formats and minimum service levels to ensure interoperability and continuity of RTTI services across Member States.

**Additional details:** National Access Points (NAPs) are the mandatory interface for publishing RTTI-relevant datasets. Under this regulation, NAPs must:

* Provide **machine-readable access** to static and dynamic data elements listed in Annex I and II,
* Ensure **data quality control** and **update frequency** in line with Annex III,
* Use **DATEX II** or equivalent formats to guarantee semantic and syntactic interoperability,
* Support **cross-border data exchange** by aligning with EU-wide service coverage and latency thresholds,
* Maintain **metadata and service documentation** to enable automated discovery and integration by third parties.

**Related Documents:**

* [Implementing Guidelines for RTTI (EU) 2022/670](https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan/safety-related-traffic-information-srti-real-time-traffic-information-rtti_en) – Version 1.0 (2022) – Provides operational interpretation of the regulation, including data categories, update intervals, and validation procedures for NAP operators.
* [DATEX II Technical Specification (CEN/TS 16157)](https://datex2.eu/specifications/) – Defines the mandatory data model for RTTI exchange, including profiles for event, measurement, and situation publications.
* [DATEX II Reference Profile for RTTI](https://docs.datex2.eu/recommended-profiles/rrp/rtti/) – Defines the harmonised data model for compliant RTTI data exchange.
* [TISA RTTI 5-Star Rating Scheme (Draft Proposal)](https://www.napcore.eu/documents/MDD2024ppt/16RTTI.pdf) – A voluntary self-assessment framework inspired by EuroNCAP, enabling road authorities and NAP operators to evaluate RTTI data quality and usability across five levels. It supports transparency and encourages alignment with service provider expectations for data reliability and accessibility.

### L5 Regulation (EU) 2017/1926 - MMTIS

*Date Modified: 16.06.2025 16:48:13, GUID: {9A0AAF44-DAED-4b89-81B3-12DD2B666F55}*

**Type**: Legal

**Full Name:** Commission Delegated Regulation (EU) 2017/1926 of 31 May 2017 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide multimodal travel information services.

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2017/1926/oj>

**Description**: It establishes specifications for the provision of EU-wide multimodal travel information services (MMTIS). The regulation aims to ensure that static and dynamic travel and traffic data from various transport modes (road, rail, air, maritime, etc.) are made accessible in a harmonised, interoperable, and machine-readable format to support seamless multimodal journey planning across the EU.

National Access Points (NAPs) are the designated platforms for publishing and accessing the datasets required under this regulation. MMTIS data providers—such as transport operators, authorities, and infrastructure managers—must make their data available via the NAP in accordance with the technical and organisational requirements set out in the regulation. This includes metadata, data formats, update frequencies, and accessibility conditions. NAPs thus serve as the core infrastructure for enabling compliance and interoperability under MMTIS.

**Additional details**: <https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan/multimodal-travel-information_en>

Related Documents:

* [Delegated Regulation (EU) 2024/490](https://eur-lex.europa.eu/eli/reg/2024/490) – Amends and updates the original 2017/1926 regulation, refining data categories, deadlines, and technical specifications for MMTIS implementation.

* [MMTIS Implementation Handbook (2024)](https://transport.ec.europa.eu/document/download/0b75db16-35b1-41df-8229-5c8abfec534d_en?filename=MMTIS_implementation_handbook.pdf) – A non-binding guidance document published by the European Commission to support Member States and stakeholders in applying the regulation. It includes practical examples, timelines, and FAQs.
* [INSPIRE-MMTIS Technical Report (JRC, 2019)](https://interoperable-europe.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/inspire-support-multi-modal-travel-information-services) – Analyses overlaps between MMTIS and the INSPIRE Directive, offering recommendations on harmonising geospatial and transport data standards in the NAP context

### L6 Regulation (EU) 2023/1804 - AFIR

*Date Modified: 16.06.2025 16:48:13, GUID: {0FF49A13-ACA1-4574-BC6C-56ECA1698F91}*

**Type**: Legal

**Full Name:** Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU

**Link:** <https://eur-lex.europa.eu/eli/reg/2023/1804/oj>

**Description**: The new **Alternative Fuels Infrastructure Regulation (AFIR)**, which repeals Directive 2014/94/EU. It establishes binding targets for the deployment of **publicly accessible recharging and refuelling infrastructure** for electric and hydrogen vehicles, vessels, and aircraft across the EU. It aims to ensure full **interoperability**, **user-friendliness**, and **data transparency** to support the EU’s climate and mobility goals.

**Additional details**: While AFIR does not explicitly mandate publication via NAPs, it requires **real-time and static data** on alternative fuels infrastructure (e.g. location, availability, pricing, technical characteristics) to be made **publicly accessible** in **machine-readable formats**. This aligns with the role of NAPs under the ITS Directive and its delegated acts, making them a **natural access point** for such datasets—especially where they support routing, parking, or multimodal travel services.

Related Documents:

* [Directive 2014/94/EU– Alternative Fuels Infrastructure Directive (repealed)](https://eur-lex.europa.eu/eli/dir/2014/94/) – The predecessor to AFIR, it laid the groundwork for infrastructure deployment and data requirements. Still useful for understanding the evolution of obligations, especially where national frameworks are based on it.
* [AFIR Implementation Guidelines (2024)](https://transport.ec.europa.eu/transport-themes/clean-transport/alternative-fuels-sustainable-mobility-europe/alternative-fuels-infrastructure_en) – European Commission Provides practical guidance on applying AFIR, including data formats, reporting obligations, and user information requirements—highly relevant for NAP operators managing infrastructure metadata.

### L7 Regulation (EU) 2016/679 - GDPR

*Date Modified: 16.06.2025 16:48:13, GUID: {B5E9322B-D985-449e-A4A9-D740A3AEF211}*

**Type**: Legal

**Full Name:** Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

**Link:** <https://eur-lex.europa.eu/eli/reg/2016/679/oj>

**Description**: Regulation (EU) 2016/679, known as the General Data Protection Regulation (GDPR), establishes a uniform legal framework across the EU for the protection of personal data. It governs how personal data of natural persons is collected, processed, stored, and shared, and grants individuals enforceable rights over their data. It applies to both public and private entities that process personal data within the EU or target EU residents.

**Additional details**: Even though NAPs don't generate or determine the content of the data they distribute, they may still be considered to be processing personal data if that data includes, for instance, vehicle trajectories, location-time stamps, or user-specific transport service data—especially in multimodal travel information services or dynamic datasets.

In GDPR terms, this processing—listing, storing, or facilitating access to personal data on behalf of data holders—may place the NAP operator in the role of a data processor, or in some setups, even a joint controller. This depends on the nature of its involvement, contractual arrangements, and whether it has any influence over the purpose or means of processing. Therefore, under GDPR:

* A Data Processing Agreement (DPA) is needed between the NAP operator and each data controller.
* The NAP must implement security and organisational safeguards (Art. 32 GDPR).
* If the platform enables discovery or access to personal data, data subject rights (e.g. access, erasure) must be supported—typically redirected to the original controller.

If the National Access Point (NAP) merely provides metadata listings or pointers (e.g. links, APIs) to datasets without storing, transforming, or transmitting personal data, and has no access to the actual payload or content, then it’s technically not processing personal data within the meaning of Article 4(2) of the GDPR. In such cases, a Data Processing Agreement (DPA) would indeed not be required, as the NAP does not act as a processor or controller.

**Related Documents:**

* [Guidelines 01/2020 on Processing Personal Data in the Context of Connected Vehicles and Mobility-Related Applications (EDPB)](https://www.edpb.europa.eu/our-work-tools/our-documents/guidelines/guidelines-012020-processing-personal-data-context_en) – Clarifies how GDPR applies to vehicle-generated data, location tracking, and ITS services.
* [Guidelines 07/2020 on the Concepts of Controller and Processor (EDPB)](https://www.edpb.europa.eu/our-work-tools/our-documents/guidelines/guidelines-072020-concepts-controller-and-processor-gdpr_en)– Helps define roles and responsibilities of NAP operators and data providers under GDPR.
* [Guidelines 06/2020 on the Interplay of the Second Payment Services Directive and the GDPR (EDPB)](https://www.edpb.europa.eu/our-work-tools/our-documents/guidelines/guidelines-062020-interplay-second-payment-services_en) – While sector-specific, it illustrates how GDPR interacts with domain-specific EU legislation—relevant for interpreting overlaps with ITS legal acts.
* [Article 29 Working Party Opinion 13/2011 on Geolocation Services](https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2011/wp185_en.pdf) – Though predating GDPR, it remains informative for interpreting location data processing in transport contexts.

### L8 Directive (EU) 2023/2661 - ITS (recast)

*Date Modified: 16.06.2025 16:47:48, GUID: {4FEB9792-F5AB-4f30-A299-4A2EB59732D5}*

**Type**: Legal

**Full Name:** Directive (EU) 2023/2661 of the European Parliament and of the Council of 22 November 2023 amending Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

**Link:** <https://eur-lex.europa.eu/eli/dir/2023/2661/oj>

**Description**: Directive (EU) 2023/2661 is the recast of the original ITS Directive 2010/40/EU. It updates the legal framework for the deployment of Intelligent Transport Systems (ITS) in road transport and their interfaces with other transport modes. The recast reflects technological advancements and policy priorities such as multimodal mobility, digitalisation, and safety. It introduces mandatory availability of certain transport data in digital formats and strengthens interoperability and data accessibility across the EU.

**Additional details:** National Access Points (NAPs), as defined under the ITS Directive, are central to implementing the recast. The updated directive reinforces their role as mandatory digital platforms for publishing and accessing static and dynamic transport data. It expands the scope of data types to be made available (e.g. speed limits, roadworks, multimodal travel info) and introduces stricter requirements for data quality, timeliness, and accessibility, including through APIs and machine-readable formats.

**Related Documents**:

* [Commission Delegated Regulation (EU) No 885/2013](https://eur-lex.europa.eu/eli/reg/2013/885) – On the provision of information services for safe and secure parking places for trucks and commercial vehicles.
* [Commission Delegated Regulation (EU) No 886/2013](https://eur-lex.europa.eu/eli/reg/2013/886) – On the provision of road safety-related minimum universal traffic information.
* [Commission Delegated Regulation (EU) 2015/962](https://eur-lex.europa.eu/eli/reg/2015/962) – On the provision of EU-wide real-time traffic information services. *Partially superseded by 2022/670 but still relevant for transitional provisions.*
* [Commission Delegated Regulation (EU) 2017/1926](https://eur-lex.europa.eu/eli/reg/2017/1926) – On the provision of EU-wide multimodal travel information services.
* [Commission Delegated Regulation (EU) 2022/670](https://eur-lex.europa.eu/eli/reg/2022/670) – Updates and replaces parts of 2015/962; sets new specifications for real-time traffic information services.
* [Delegated Regulation (EU) 2024/490](https://eur-lex.europa.eu/eli/reg/2024/490) – Amends and updates the original 2017/1926 regulation, refining data categories, deadlines, and technical specifications for MMTIS implementation.
* [Commission Delegated Regulation (EU) 2022/1012](https://eur-lex.europa.eu/eli/reg/2022/1012) – Adds further specifications for the availability and exchange of parking data; complements but does **not** repeal 885/2013.

### L9 Regulation (EU) 2018/1724 - Single Digital Gateway

*Date Modified: 16.06.2025 16:48:13, GUID: {7FE3EFFF-05E1-4d46-83EE-48FE16A10E46}*

**Type**: Legal

**Full Name:** Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a single digital gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012

**Link:** <https://eur-lex.europa.eu/eli/reg/2018/1724/oj>

**Description**: Regulation (EU) 2018/1724, known as the *Single Digital Gateway (SDG) Regulation*, establishes a unified EU-wide portal—**Your Europe**—that offers cross-border users streamlined access to public services, procedures, and information. The regulation aims to improve the usability, accessibility, and multilingual availability of digital public services. It also introduces the **once-only principle**, meaning that public administrations should not ask citizens or businesses to resubmit information already provided to another authority.

While not transport-specific, the regulation applies to National Access Points (NAPs) when they serve as public-facing digital platforms operated by authorities. If NAPs provide access to regulated datasets or procedures relevant to cross-border users, they must meet accessibility, quality, and multilingual standards. The once-only principle also supports federated data publishing, reducing duplication between NAPs and national open data portals.

**Additional details**: The SDG’s **once-only principle** supports a more streamlined and federated approach to data publishing. The goal is to **avoid redundant data publication and collection**—public sector data should be published *once*, and reused or accessed via interoperable systems rather than duplicated. This has practical implications for NAPs and open data portals:

* Transport datasets required under ITS delegated regulations must be made available via the NAP.
* The same datasets may also be subject to publication obligations under the Open Data Directive, typically via a national open data portal.

To resolve this, Member States should implement a **federated data publishing model** where the NAP serves as the authoritative data provider and the open data portal **references or harvests** its metadata. This avoids duplication while ensuring discoverability, open licensing, and machine-readability under both legal regimes.

**Related Documents:**

* [Your Europe Portal](https://europa.eu/youreurope/index_en.htm) – The operational interface of the Single Digital Gateway, which may link to or integrate with national portals like NAPs for transport-related procedures.
* [Commission Implementing Regulation (EU) 2020/1463](https://eur-lex.europa.eu/eli/reg_impl/2022/1463) – Sets out detailed rules on the quality of information and procedures provided via the gateway, including accessibility, findability, and user-centric design—relevant for NAP interfaces.
* [Commission Implementing Regulation (EU) 2022/1121](https://eur-lex.europa.eu/eli/reg_impl/2022/1121) – Defines the technical and operational requirements for the feedback mechanism under the gateway, which may apply to NAPs if integrated into the SDG ecosystem.

### Regulation (EU) 2022/1012 – Truck Parking

*Date Modified: 16.06.2025 16:48:13, GUID: {D0AB059E-6514-4d0b-A2CB-278A0D5D5922}*

**Type**: Legal

**Full Name:** Commission Delegated Regulation (EU) 2022/1012 of 7 April 2022 supplementing Regulation (EC) No 561/2006 of the European Parliament and of the Council with regard to the establishment of standards detailing the level of service and security of safe and secure parking areas and to the procedures for their certification

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2022/1012/oj>

**Description**: Commission Delegated Regulation supplementing Regulation (EC) No 561/2006 on driving and rest times in road transport. It establishes harmonised EU standards for the level of service, security, and certification procedures for Safe and Secure Truck Parking Areas (SSTPAs). The goal is to improve driver safety, working conditions, and cargo protection across the EU.

**Additional details**: While the regulation does not explicitly mandate publication via NAPs, it is highly relevant where parking area data (e.g. location, security level, available services) is made available to users through ITS services. Under Delegated Regulation (EU) 2017/1926, such data must be accessible via National Access Points to support multimodal travel information services.

**Related Documents:**

* [Regulation (EC) No 561/2006](https://eur-lex.europa.eu/eli/reg/2006/561/) – The parent regulation on driving and rest times; provides the legal basis for requiring safe rest areas for professional drivers.
* [EU SSTPA Standard Website](https://eu-parkings.eu/) – Maintained by the European Commission Expert Group on SSTPAs; provides technical details, certification criteria, and implementation support.

### Regulation (EU) No 1305/2014 – TAF TSI

*Date Modified: 16.06.2025 16:48:13, GUID: {1C65E621-1EED-47c9-AD18-66A51CC0A9F4}*

**Type:** Legal

**Full Name:** Commission Regulation (EU) No 1305/2014 of 11 December 2014 on the technical specification for interoperability relating to the telematics applications for freight subsystem of the rail system in the European Union and repealing Regulation (EC) No 62/2006

**Link:** <https://eur-lex.europa.eu/eli/reg/2014/1305/oj>

**Description:** This regulation establishes the mandatory Technical Specification for Interoperability (TSI) for the rail telematics applications for freight (TAF) subsystem, applicable to railway undertakings, infrastructure managers, wagon keepers, and other actors involved in freight operations. It replaces Regulation (EC) No 62/2006 and introduces extended message sets, a structured implementation governance model (including Change Control Management), and mandatory reference data alignment. It defines XML-based message exchange formats, interoperability interfaces, data models, and operational procedures to ensure seamless, real-time information sharing between rail freight stakeholders.

**Additional details:** When a National Access Point supports integration with rail freight data services, this regulation becomes binding for any data publication or relay function that involves TAF-compliant messages. NAPs interacting with these datasets must ensure message conformity with TAF TSI schemas, maintain full alignment with central reference data registries (e.g. company and location codes), and apply consistent semantic mapping if integrating with other ITS domains. NAPs must not alter the structure, content, or identification of regulated message types during conversion to other formats. Data quality assurance and interface documentation must be traceable to the latest applicable TAF TSI baseline.

**Related Documents:**

* [ERA TAF TSI Portal](https://www.era.europa.eu/domains/technical-specifications-interoperability/telematics-applications-freight-service-tsi_en) – Maintained by the European Union Agency for Railways; includes official message catalogues, implementation baselines, and interface control documents.
* [TAF TSI Implementation Reports](https://taf-jsg.info/wp-content/uploads/2025/03/TAP-RU-IM-JSG_2024-report-v1.0-1.pdf) – National-level deployment progress and milestone documentation, including XML mapping guides.
* [TAP/TAF Reference Data Portal](https://rne.eu/it/products/ccs/crd/) – Central management system for code lists (e.g. RICS location codes, company codes) required under the regulation.
* [Commission Implementing Regulation (EU) 2021/541](https://eur-lex.europa.eu/eli/reg_impl/2021/541/oj) – Updates the TAF TSI annexes; includes revised process flow diagrams and implementation dates.

### Regulation (EU) No 454/2011 – TAP TSI

*Date Modified: 16.06.2025 16:48:13, GUID: {1D4FBC58-0459-48fd-82D8-411F6693B4A7}*

**Type:** Legal

**Full Name:** Commission Regulation (EU) No 454/2011 of 5 May 2011 on the technical specification for interoperability relating to the subsystem ‘telematics applications for passenger services’ of the trans-European rail system

**Link:** <https://eur-lex.europa.eu/eli/reg/2011/454/oj>

**Description:** This regulation defines the Technical Specification for Interoperability (TSI) for the telematics applications for passenger services (TAP) subsystem of the trans-European rail system. It mandates standardised data exchange between railway undertakings, infrastructure managers, ticket vendors, and other actors involved in passenger rail services. It covers journey planning, real-time information, reservation, ticketing, and after-sales processes. The regulation enforces the use of harmonised message formats, reference data registries, and interface protocols to ensure cross-border interoperability. It has been amended to reflect updated IT architectures, governance models, and implementation deadlines.

**Additional details:** In NAP environments that expose or aggregate rail passenger data, TAP TSI applies where data originates from or conforms to TAP-compliant systems. NAPs must ensure interface compatibility with TAP message structures, maintain alignment with central reference data (e.g. company and location codes), and preserve semantic integrity when mapping to other ITS domains. Any transformation or relay of TAP messages must comply with the regulation’s baseline and versioning rules.

**Related Documents:**

* [ERA TAP TSI Portal](https://www.era.europa.eu/domains/technical-specifications-interoperability/telematics-applications-passenger-service-tsi_en) – Official source for baselines, message schemas, and implementation guidance.
* [TAP TSI Implementation Reports](https://taf-jsg.info/wp-content/uploads/2025/03/TAP-RU-IM-JSG_2024-report-v1.0-1.pdf) – Status reports on national deployment and compliance.
* [TAP/TAF Reference Data Portal](https://rne.eu/it/products/ccs/crd/) – Central management system for code lists (e.g. RICS location codes, company codes) required under the regulation.
* [Commission Implementing Regulation (EU) 2019/775](https://eur-lex.europa.eu/eli/reg_impl/2019/775/oj) – Updates Annexes and implementation timelines.

### Superseded documents

In this folder are placed obsolete legislative documents that have been cancelled or replaced by another legal act.

#### Directive 2010/EU/40 - ITS

*Date Modified: 16.06.2025 16:48:34, GUID: {16A6F191-FEAD-43db-A673-B04711F39783}*

**Type:** Legal

**Full Name:** Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

**Link:** <https://eur-lex.europa.eu/eli/dir/2010/40/oj>

**Description:** This directive establishes the legal framework for coordinated deployment of Intelligent Transport Systems (ITS) in road transport and its interfaces with other modes. It defines priority areas and empowers the Commission to adopt delegated acts specifying functional, technical, and organisational requirements. It was amended by Directive (EU) 2023/2661 to reflect developments in connected and automated mobility, digital infrastructure, and multimodal services. The amendment expands the scope of data availability obligations and strengthens requirements for interoperability, continuity, and digital access to transport-related information.

**Additional details:** Member States must designate National Access Points (NAPs) to enable access, exchange, and reuse of transport data. NAPs are required to support delegated acts adopted under this directive (e.g. RTTI, SRTI, SSTP, MMTIS) by providing harmonised, machine-readable, and quality-assured datasets. NAP operators must ensure compliance with the technical specifications of each delegated regulation and maintain cross-border interoperability.

**Related Documents:**

* [ITS Directive and Action Plan – European Commission](https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan_en) – Overview of the directive, its amendments, and implementation priorities.
* [Directive (EU) 2023/2661](https://eur-lex.europa.eu/eli/dir/2023/2661/oj)– Amending Act – Extends the scope of Directive 2010/40/EU to cover new mobility services and digital data availability.
* [Evaluation of the ITS Directive – SWD(2019) 368 final](https://transport.ec.europa.eu/document/download/fe5547be-ea96-4a6a-8211-25c7fb6584db_en) – Commission staff working document assessing effectiveness and implementation gaps.
* [NAPCORE Statement on the ITS Directive Revision (PDF)](https://napcore.eu/wp-content/uploads/2022/08/NAPCORE-Statement-Paper-on-the-Revision-of-the-ITS-Directive-FINAL-4.1.pdf) – Position paper outlining harmonisation priorities and legal coordination under the revised directive.
* [Commission Delegated Regulation (EU) No 885/2013](https://eur-lex.europa.eu/eli/reg/2013/885) – On the provision of information services for safe and secure parking places for trucks and commercial vehicles.
* [Commission Delegated Regulation (EU) No 886/2013](https://eur-lex.europa.eu/eli/reg/2013/886) – On the provision of road safety-related minimum universal traffic information.
* [Commission Delegated Regulation (EU) 2015/962](https://eur-lex.europa.eu/eli/reg/2015/962) – On the provision of EU-wide real-time traffic information services. *Partially superseded by 2022/670 but still relevant for transitional provisions.*
* [Commission Delegated Regulation (EU) 2017/1926](https://eur-lex.europa.eu/eli/reg/2017/1926) – On the provision of EU-wide multimodal travel information services.
* [Commission Delegated Regulation (EU) 2022/670](https://eur-lex.europa.eu/eli/reg/2022/670) – Updates and replaces parts of 2015/962; sets new specifications for real-time traffic information services.
* [Delegated Regulation (EU) 2024/490](https://eur-lex.europa.eu/eli/reg/2024/490) – Amends and updates the original 2017/1926 regulation, refining data categories, deadlines, and technical specifications for MMTIS implementation.

#### Regulation (EU) 2015/962 - RTTI

*Date Modified: 16.06.2025 16:25:52, GUID: {E17DBCA6-2A0E-44f6-9672-EC178E2081F6}*

**Type**: Legal

**Full Name:** Commission Delegated Regulation (EU) 2015/962 of 18 December 2014 supplementing Directive 2010/40/EU with regard to the provision of EU-wide real-time traffic information services

**Link:** <https://eur-lex.europa.eu/eli/reg_del/2015/962/oj>

**Description:** This regulation defined the initial technical specifications for the provision of EU-wide real-time traffic information (RTTI) services under Directive 2010/40/EU. It established requirements for the availability, accessibility, exchange, and re-use of static and dynamic road traffic data. It introduced the concept of a minimum level of service and required Member States to designate National Access Points (NAPs) for data publication. The regulation was repealed with effect from 31 December 2024 and replaced by Regulation (EU) 2022/670, which introduced updated data categories, performance requirements, and alignment with current ITS deployment practices.

**Additional details:** NAPs were required to provide machine-readable access to RTTI-relevant datasets, including road network attributes, traffic regulations, and real-time traffic status. The regulation mandated metadata publication, data quality assurance, and use of harmonised formats to support cross-border interoperability. It served as the legal foundation for early RTTI deployments and was superseded to reflect evolving data models and service expectations.

**Related Documents:**

* [Regulation (EU) 2022/670](https://eur-lex.europa.eu/eli/reg_del/2022/670/oj) – Successor regulation introducing revised RTTI specifications.
* [European Commission RTTI Guidance](https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan/safety-related-traffic-information-srti-real-time-traffic-information-rtti_en) – Implementation context and technical interpretation.
* [DATEX II Reference Profile for RTTI](https://docs.datex2.eu/recommended-profiles/rrp/rtti/) – Defines the harmonised data model for compliant RTTI data exchange.
* [NAPCORE RTTI Workstream Summary (PDF)](https://napcore.eu/wp-content/uploads/2025/05/DD_2022_670.pdf) – Overview of Member State alignment and implementation under the updated regulation.

## KPI Framework

To assess a NAP LoS based on a framework of Key Performance Indicators (KPIs) related to the offered NAP interoperability features and services. The tool is called **“NAP LoS KPI Framework tool” (NLKF)** and it is used by NAP operators as a self-assessment survey in periodic (yearly) scoring exercises (starting in spring 2023). NLKF helps NAP harmonization activities such as:

* Supporting the NAP operators with insights on current state and gaps on existing and new potential NAP features, that can be added to its roadmap in order to increase performance to a desired level;
* Supporting supervising bodies of European or national regulations and agreements;
* Creating NAP European benchmark reference based on the minimum, average and other statistic scores of all Member states.

NLKF is as bottom-up principle, as a state of practice in Europe going from individual KPIs. NLKF includes both quantitative and qualitative KPIs and differentiates the provided answers when a different platform (2 types) is operated for one or more Delegated Regulations supplementing the ITS Directive (2010/40/EC). The aggregated results for feature categories or for a NAP as a whole are expressed in quantitative manner (Grade of Achievement, GA) or qualitative (Maturity Level, LoS 1 to 5).



Figure: KPI Framework

### Requirements

Here are requirements created from KPI framework based on its minimum levels. For deeper understanding of the requirement please look at the associated KPI.



Figure: Requirements

#### K.1.1.1 On-line availability

*Date Modified: 28.05.2025 9:04:51, GUID: {8BFE2113-E64D-4e68-8B54-D066BB7A0999}*

The NAP shall be online available and with automated availability check at least every hour using some external service, such as the example mentioned in the note

Source: KPI 1.1 - “On-line availability”

#### K.1.11.1 Personal data protection

*Date Modified: 03.06.2025 11:00:06, GUID: {98803393-08B6-41af-BF7A-64B27C0FB955}*

The platform shall be compliant with GDPR.

Source: KPI 1.11 Personal data protection

#### K.1.12.1 inputting metadata or data

*Date Modified: 26.05.2025 13:17:03, GUID: {CC4B272E-7DCA-4084-AF3B-71E934E4BF43}*

The data providers shall inputting data and/or metadata themselves using some interface.

Source: KPI 1.12 Procedure for input of metadata or data to the NAP

#### K.1.13.1 Metadata output and access restrictions

*Date Modified: 16.06.2025 15:19:19, GUID: {5E6E9B2A-B90D-4b97-81D1-ECE9E45EDF5B}*

Consumers shall have to publicly available datasets. Consumers need to register to get access to specific metadata only for non-publicly available datasets.

Source: KPI 1.13 Metadata output and access restrictions

#### K.1.14.1 Authentication and security mechanisms for data upload

*Date Modified: 16.06.2025 15:19:45, GUID: {28E122D6-8DA1-4746-BA9B-01CEDB73BF9C}*

The platform shall support security and/or authentication mechanisms for data uploading (e.g., to ensure the trust in the data or restrict the access to the NAP)

At least 2 security mechanisms shall be in place to ensure the trust in the data or restrict the access for your platform:

**a.** Transport security (HTTPS)

**b.** Authentication by IP filter (access based on IP address of the provider)

**c.** Basic authentication according to RFC 7617 (https://tools.ietf.org/html/rfc7617)

**d.** Digest authentication according to RFC 7616 (<https://tools.ietf.org/html/rfc7616>)

**e.** Authentication by URL parameters

**f.** Authentication by client certificates (private keys, API-keys, certificates, incl. EU-wide common user authentication mechanism)

**g.** Authentication by tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0)

Source: KPI 1.14 Authentication and security mechanisms for data upload

#### K.1.15.1 Data security and access restrictions for data downloading

*Date Modified: 16.06.2025 15:19:53, GUID: {FF1FD326-276A-49ad-A615-783A959D7C6B}*

The platform shall support security and/or authentication mechanisms for data downloading (e.g., to ensure the trust in the data or restrict the access to the NAP)

At least 2 security mechanisms shall be in place to ensure the trust in the data or restrict the access for your platform:

**a.** Transport security (HTTPS)

**b.** Authentication by IP filter (access based on IP address of the provider)

**c.** Basic authentication according to RFC 7617 (https://tools.ietf.org/html/rfc7617)

**d.** Digest authentication according to RFC 7616 (<https://tools.ietf.org/html/rfc7616>)

**e.** Authentication by URL parameters

**f.** Authentication by client certificates (private keys, API-keys, certificates, incl. EU-wide common user authentication mechanism)

**g.** Authentication by tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0)

Source: KPI 1.14 Authentication and security mechanisms for data upload

#### K.1.16.1 Indication of data modification

*Date Modified: 26.05.2025 13:17:04, GUID: {0D51A185-39DD-41c0-AFC9-4FFC32EE8D97}*

At least one change/modification information about the data shall be provided:

**a.** Webserver uses “Last updated date and/or time” information (e.g., the DATEX XML includes the “publication time” which shows when the dataset has been updated)

**b.** NAP data interface uses If-Modified-Since header in conditional HTTP requests or timestamp parameters in API requests

**c.** NAP data interface uses If-None-Match (etag) header in conditional HTTP requests or custom tokens parameters in API requests

**d.** Webserver uses some other method for data modification indication (please specify the method used in the “Suggestions” box)

Source: KPI 1.16 Indication of provided data modification

#### K.1.18.1 API usage for data transfer

*Date Modified: 16.06.2025 15:21:31, GUID: {37F65E8F-2DCF-410e-BC8B-09B70FE6C162}*

The platform shall provide an API in a data platform NAP type:

Value+1 (for each of the following options): Which Application Programming Interfaces for automated data exchange are used for your NAP? You can select more options:

a. API for upload (data producers)

b. API for download (data consumers)

Source: KPI 1.18 API usage for data transfer

#### K.1.19.1 (meta)data load time

*Date Modified: 16.06.2025 15:33:00, GUID: {EFB0DAD6-19D9-481f-A839-5EBA8899F661}*

The load time for (meta)data shall be higher than 1 sec, max. 2 sec.

Source: KPI 1.19 Web performance - (meta)data load time

#### K.1.2.1 Compatibility

*Date Modified: 12.06.2025 14:31:48, GUID: {E60C5591-AB99-4a20-B975-9734FE18899F}*

The platform shall be compatible with the last versions of at least 4 web browsers (Mozilla Firefox, Google Chrome, Microsoft Edge and Apple Safari)

Source: KPI 1.2 “Compatibility with web browsers”

#### K.1.3.1 Load time website

*Date Modified: 16.06.2025 15:56:59, GUID: {A1BA8118-FD66-4705-9494-A432A308D211}*

The load time shall be lower than 1 sec on average, max. 2 sec.

Source: KPI 1.3 Web performance - homepage load time

#### K.1.4.1 Responsiveness

*Date Modified: 16.06.2025 15:22:10, GUID: {A619225B-8550-4dca-B6EE-0505006A4749}*

Responsive web design for different screen sizes on desktops/laptops

Source: KPI 1.4 “Responsiveness”

#### K.1.5.1 Simplicity / Usability

*Date Modified: 16.06.2025 15:34:22, GUID: {19537BDF-1852-45b1-A148-C47A90792691}*

Meta data shall be accessible with ten operations or less.

KPI 1.5 Web performance – simplicity / usability

#### K.1.7.1 Consistency and Navigability

*Date Modified: 16.06.2025 15:20:55, GUID: {4B3700B3-CF65-470c-83D9-B0FB0A7D7E69}*

The NAP shall follow at least 3 of the below defined usability rules:

a. Menus are in the same position

b. Use of same fonts and colours throughout the site

c. Availability of a search box on the main page (search means for navigation along the webpage and no data discovery)

d. Logo links back to the home page

e. Existence of a hierarchical arrangement of web subpages (“breadcrumbs” type also means hierarchical arrangement)

f. Existence of a “sitemap” page easing navigation (e.g., a tree structure with links to individual pages)

Source: KPI 1.7 Web performance – Consistency and navigability

#### K.1.8.1 Used Languages

*Date Modified: 16.06.2025 15:22:28, GUID: {69E72527-738E-4f0d-AB71-879AF126CC0A}*

The platform shall support the national language and English on platform-level and names of the datasets.

Source: KPI 1.8 Support of commonly used languages

#### K.1.9.1 Security – Technical

*Date Modified: 28.05.2025 9:14:33, GUID: {F1AE9278-2AB5-4ade-9476-7518D07969C2}*

The platform shall use up-to-date security certificates in the entirety of the NAP platform’s elements.

Source: KPI 1.9 Security – Technical

#### K1.10.1 providers verification

*Date Modified: 28.05.2025 9:23:10, GUID: {3F00CF71-2F41-413b-BAA8-CAF56CF80F39}*

Data provider shall be verified at least.

Source: KPI 1.10 Security – providers verification

### Access KPIs

NAPs (National Access Points) are publicly available online, allowing immediate access without authentication. They comply with web design standards, ensuring simplicity, navigability, and accessibility. NAPs are available in English to cater to international users and adhere to EU data protection policies. Data publishers must register to enhance security, while data consumers register for full access and customization. APIs facilitate automated data exchange, and visualization tools help users quickly understand data relevance.



Figure: Access KPIs

#### K.1.17.1 Data transfer optimization

*Date Modified: 03.06.2025 11:20:16, GUID: {025CAF43-3430-4650-B487-6B6AAF7E6C50}*

The data shall be provided (un)compressed per clients' request:

Value+1 (for each of the following options): You can select multiple options:

a. Data is (or can be) provided compressed in a transport layer as negotiated between client and server via the HTTP Accept-Encoding header or via tailored API request

b. Data is (or can be) provided compressed in an application layer as selected by the user when subscribing (e.g., in ZIP packages)

c. Data can be provided in a differential form, i.e., new data only and/or changes to the previous state where a relevant date/time/period can be set by the user

Source: KPI 1.17 Data transfer optimization

#### K.1.21.1 Metadata about data modification

*Date Modified: 16.06.2025 15:54:03, GUID: {4456CECE-D82D-45f3-B576-2BE6BAFBE615}*

Not mandatory!!!

#### KPI 1.1 Online availability

*Date Modified: 28.05.2025 9:03:56, GUID: {90B4918A-56A0-450f-942A-4C89D81A1CE9}*

“On-line availability” KPI assesses whether the NAP platform is online or not. For the online case, the KPI assesses if there is some automated check used, and an example of such a tool is provided in the Note. The REQ value is set to 1 to reflect that the online availability of a NAP constitutes a fundamental prerequisite. The ACC value is set to 2, i.e., there is a gap if the availability is not checked using some automated service.

*Note: The* [*https://www.downnotifier.com*](https://www.downnotifier.com/) *service checks any server availability free for every 10 minutes, or under paid versions for every minute or every 20 sec.*

Values:

0: No

1: Yes, but without automated availability check as defined under the following option.

2: Yes, with automated availability check at least every hour using some external service, such as the example mentioned in the note (please specify the service used in the “Suggestions” box)

**Minimum acceptable value for interoperability: 2**

#### KPI 1.10 Security – providers verification

*Date Modified: 28.05.2025 9:15:49, GUID: {94E8C3ED-218D-4df3-988C-AFB64008FBEA}*

**“Security – providers verification”** KPI assesses the extent to which the authenticity of provided data (e.g., input provided during the registration process) is verified. In case that a self-verification process is in place for data providers, this KPI takes a value equal to 1. On the other hand, when the authenticity of provided, data is doubled checked by both data providers and NAP operator, this KPI gets a value equal to 2.

Note: This is about metadata of a data provider regarding registration process (i.e., before obtaining username and password or other identity). It’s about trust/credibility of a provider

Values:

**N/A:** No data provider can use the NAP interface

**0:** No

**1:** Self-authentication of data providers (e.g., via e-mail)

**Value+1:** for each of the following options:

**a.** Authentication of data providers is double checked, i.e., by the data provider and by the NAP operator (e.g., via checking a state registry of legal bodies)

**b.** Usage of two-factor authentication and/or ID certificate (e.g., self-logging with secure national ID)

Minimum acceptable value for interoperability: 2

#### KPI 1.11 Personal data protection

*Date Modified: 26.05.2025 12:29:26, GUID: {A5A53223-42A8-41bd-8565-C583560DA902}*

**“Personal data protection”** KPI aims to assess whether personal data is stored in a manner compliant to GDPR norms. This KPI is not addressed as affecting the minimum level of service of a NAP; however, the existence of a GDPR-compliant procedure for handling personal data is associated with an increased level of service.

**Note:** This is not about data aimed to be published at the NAP but, e.g., about user personal information.

Values:

N/A: There is no user data stored at NAP

0: Non-compliance to GDPR

1: GDPR compliance at the platform level (i.e., “platform GDPR compliance”)

Minimum acceptable value for interoperability: 1

#### KPI 1.12 Procedure for input of metadata or data to the NAP

*Date Modified: 26.05.2025 12:37:26, GUID: {235B3D38-43EC-4777-A24C-68623BA95A3E}*

**“Procedure for input of metadata or data to the NAP”** KPI assesses whether data providers need to register to add (input) data/metadata. It gets a value equal to 0 when data or metadata is uploaded by the NAP operator, equal to 1 when data providers upload data/metadata by themselves, equal to 2 when there is some interface used by data providers. REQ level of service is associated with possibility on behalf of data providers to upload data/metadata by themselves with some interface.

Values:

**0:** No data or metadata can be provided by the providers via the NAP online/web interface (i.e., NAP is providing its own data/metadata only)

**1:** Data resource metadata and/or providers' data is added by the NAP operator (e.g., by changing the website code or using internal NAP interface)

**2:** The data providers are inputting data and/or metadata themselves using some interface.

Minimum acceptable value for interoperability: 2

#### KPI 1.13 Metadata output and access restrictions

*Date Modified: 26.05.2025 12:38:56, GUID: {2018AB6D-EDF5-49fd-BD61-4186E13F24E6}*

**“Metadata access restrictions”** KPI assesses whether NAP users/data consumers require to register to access the metadata of a NAP’s publications. The indiscriminate need of NAP users/data consumers to access any type of metadata is not addressed as a favourable condition for a NAP’s level of service, considering the imposed barrier to a NAP’s content discoverability. Therefore, it is assumed that a minimum level of service is associated with the possibility on behalf of NAP users/data consumers to freely access the metadata of publicly available publications.

Do data consumers need to register to search through the metadata information of the NAP?

0: No metadata is provided via the online/web NAP interface

1: Consumers need to register to view (search/get access to metadata) any NAP content

2: Consumers need to register to get access to specific metadata of any dataset

3: Consumers need to register to get access to specific metadata only for non-publicly available datasets

4: No registration necessary / consumers have full access to the metadata and the search functionalities

Minimum acceptable value for interoperability: 3

#### KPI 1.14 Authentication and security mechanisms for data upload

*Date Modified: 26.05.2025 12:44:42, GUID: {C0E52491-004E-469a-82E4-22707DA3827B}*

**“Authentication and security mechanisms for data upload”** KPI aims to assess the availability of security mechanisms controlling and restricting the possibility of data uploading. This KPI is addressed as making sense only if a NAP complies with the concept of a data portal. Given that several access and authentication control methods exist, the value of this KPI is increased by 1 for each method that is applied. The predetermined options include (a) the utilization of the HTTP Strict Transport Security (HSTS) mechanism that enables the interaction of a NAP’s server with other machines only through HTTPS connections, (b) the utilization of IP Address Authentication mechanism configuring the API Gateway of a NAP to allow its interaction with machines the IP address of which is included in the list of accepted IP addresses, (c) the Basic RFC 7617 Authentication mechanism which enforces the transmission of credentials (e.g., username and password) encoded according to Base64, (d) the utilization of the Digest RFC 7617 Authentication which enforces the transmission of credentials and any other requested information in an encrypted form, (e) the authentication by URL parameters enabling the provision of authentication information to a NAP in the form of query string parameters, (f) authentication through client certificates that allow a machine to communicate with a NAP only when a client certificate (e.g., a PKCS12 file) is loaded onto that machine, and (g) authentication using tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0).

**Note:** This KPI is for data platform NAP type only. For metadata directory NAP type, you answer the first option. Technically, the KPI is skipped in an on-line questionnaire after “metadata directory” NAP type selection.

Values:

**N/A:** Metadata directory case (No data can be uploaded via the NAP online/web interface)

**0:** No data can be uploaded via the NAP online/web interface in a data platform NAP type (e.g., data is received by e-mail and added by the NAP operator).

**0:** No security or authentication mechanisms are in place in a data platform NAP type for data uploading

**0:** Security and/or authentication mechanisms are in place for data uploading (e.g., to ensure the trust in the data or restrict the access to the NAP)

**Value+1** (for each of the following options):Which security mechanisms are in place to ensure the trust in the data or restrict the access for your NAP? You can select multiple options:

**a.** Transport security (HTTPS)

**b.** Authentication by IP filter (access based on IP address of the provider)

**c.** Basic authentication according to RFC 7617 (https://tools.ietf.org/html/rfc7617)

**d.** Digest authentication according to RFC 7616 (<https://tools.ietf.org/html/rfc7616>)

**e.** Authentication by URL parameters

**f.** Authentication by client certificates (private keys, API-keys, certificates, incl. EU-wide common user authentication mechanism)

**g.** Authentication by tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0)

**Minimum acceptable value for interoperability: 2**

#### KPI 1.15 Authentication and security mechanisms for data download

*Date Modified: 26.05.2025 12:49:18, GUID: {9A0925A5-B3B0-4403-99ED-B155ACDE45B7}*

**“Authentication and security mechanisms for data download”** KPI aims to assess the availability of security mechanisms controlling and restricting the possibility of data downloading. This KPI is addressed as making sense only if a NAP complies with the concept of a data portal. Given that several access and authentication control methods exist, the value of this KPI is increased by 1 for each method that is applied. The predetermined options include (a) the utilization of the HTTP Strict Transport Security (HSTS) mechanism that enables the interaction of a NAP’s server with other machines only through HTTPS connections, (b) the utilization of IP Address Authentication mechanism configuring the API Gateway of a NAP to allow its interaction with machines the IP address of which is included in the list of accepted IP addresses, (c) the Basic RFC 7617 Authentication mechanism which enforces the transmission of credentials (e.g., username and password) encoded according to Base64, (d) the utilization of the Digest RFC 7617 Authentication which enforces the transmission of credentials and any other requested information in an encrypted form, (e) the authentication by URL parameters enabling the provision of authentication information to a NAP in the form of query string parameters, (f) authentication through client certificates that allow a machine to communicate with a NAP only when a client certificate (e.g., a PKCS12 file) is loaded onto that machine, and (g) authentication using tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0).

**Note:** This KPI is for data platform NAP type only. For metadata directory NAP type, you answer the first option. Technically, the KPI is skipped in an on-line questionnaire after “metadata directory” NAP type selection.

Values:

**N/A:** Metadata directory case (No data can be uploaded via the NAP online/web interface)

**0:** No data can be uploaded via the NAP online/web interface in a data platform NAP type (e.g., data is received by e-mail and added by the NAP operator).

**0:** No security or authentication mechanisms are in place in a data platform NAP type for data uploading

**0:** Security and/or authentication mechanisms are in place for data uploading (e.g., to ensure the trust in the data or restrict the access to the NAP)

**Value+1** (for each of the following options):Which security mechanisms are in place to ensure the trust in the data or restrict the access for your NAP? You can select multiple options:

**a.** Transport security (HTTPS)

**b.** Authentication by IP filter (access based on IP address of the provider)

**c.** Basic authentication according to RFC 7617 (https://tools.ietf.org/html/rfc7617)

**d.** Digest authentication according to RFC 7616 (<https://tools.ietf.org/html/rfc7616>)

**e.** Authentication by URL parameters

**f.** Authentication by client certificates (private keys, API-keys, certificates, incl. EU-wide common user authentication mechanism)

**g.** Authentication by tokens (e.g., Bearer token – digitally signed JWT – OAuth 2.0)

**Minimum acceptable value for interoperability: 2**

#### KPI 1.16 Indication of provided data modification

*Date Modified: 26.05.2025 13:01:59, GUID: {A5032DDF-2E3D-44db-9828-F031F68674CA}*

**“Indication of provided data modification”** KPI assess the extent to data changes information. KPI 1.16 is regarding “on-line” information in the data coming with the latest version of data and belongs to data platform NAP type only. Thanks to this information, it is simple to find out if the actual content has changed in comparison to its previous state. In such a case, it is assumed that a minimum level of service is associated with the support of at least one of the possible methods. An advanced level of service is associated with the support of more methods. The pre-defined methods are “Last updated date and/or time” information included in the data and 2 applications of ability of a NAP’s webserver to use “etag” headers (the value of which supports the assessment of whether a change has been made or not) and return the changed part of the provided content. 4th option has been added as open for any other method that should be described in the feedback.

*Note: etag = a hash containing information about data modification that allows to download the data only if it is different from the previous version.*

Values:

**N/A:** Metadata directory case (No data is provided via NAP online/web interface)

**0:** No change/modification information about the data is provided

**0:** Some change/modification information about the data is provided

**Value+1** (for each of the following options):

**a.** Webserver uses “Last updated date and/or time” information (e.g., the DATEX XML includes the “publication time” which shows when the dataset has been updated)

**b.** NAP data interface uses If-Modified-Since header in conditional HTTP requests or timestamp parameters in API requests

**c.** NAP data interface uses If-None-Match (etag) header in conditional HTTP requests or custom tokens parameters in API requests

**d.** Webserver uses some other method for data modification indication (please specify the method used in the “Suggestions” box)

Minimum acceptable value for interoperability: 1

#### KPI 1.17 Data transfer optimization

*Date Modified: 03.06.2025 11:21:08, GUID: {099A9E7D-BCE9-44c6-93E8-523C40BF9ADE}*

**1.17 “Data transfer optimization”** KPI assesses the extent to which a NAP can optimize data transferring by compressing the requested content. This KPI is addressed as making sense only if a NAP complies with the concept of a data platform, since a metadata directory is not involved at all in the data transferring process. A value equal to 0 indicates that such a functionality does not exist, while a value “+1” indicates that some of the possible transfer optimization methods are available, i.e., compression possibility, compression client’s request (de)activation possibility or differential form of provided data.

**Note:** This KPI is for data platform NAP type only. For metadata directory NAP type, you answer the first option. Technically, the KPI is skipped in an on-line questionnaire after “metadata directory” NAP type selection.

N/A: Metadata directory case (No data is provided via the NAP online/web interface)

0: No data is provided via the NAP online/web interface in a data platform NAP type or no possibility of data transfer optimization there (i.e., no reaction to a client request, data is provided in an uncompressed form)

0: Data is provided (un)compressed per clients' request

Value+1 (for each of the following options): You can select more options:

a. Data is (or can be) provided compressed (may include compression in Geopackage, WFS/WMS API's, TN-ITS update messages)

b. The user can select if the data will be provided uncompressed or compressed

c. Data can be provided in a differential form, i.e., new data only and/or changes to the previous state where a relevant date/time/period can be set by the user

Minimum acceptable value for interoperability: 1

#### KPI 1.18 API usage for data transfer

*Date Modified: 26.05.2025 13:13:28, GUID: {E61697C0-BC50-440f-8560-4A1CB430C5E8}*

**1.18 “API usage for data transfer”** KPI investigates whether a NAP is equipped with an Application Programming Interface (API) service that allows clients of data consumers to request and download data content through external code or other resources matching specific queries. Moreover, it investigates whether such a service allows the clients of data providers to automatically upload and import (through external coding) new data content but also update it or even delete it.

This KPI is addressed as making sense only if a NAP complies with the concept of a data platform, since a metadata directory is not involved at all in the data transferring process. Given that the focus of NAPs is placed (or at least should be placed) on machine-to-machine communication and data exchange supporting the operation of ITS systems, a minimum level of service is associated with the existence of an API service allowing at least one of automated download or automated upload of data content.

**Note:** This KPI is for data platform NAP type only. For metadata directory NAP type, you answer the first option. Technically, the KPI is skipped in an on-line questionnaire after “metadata directory” NAP type selection.

Values:

N/A: Metadata directory case (No data is transferred via the NAP interface)

0: No data is transferred via the NAP interface in a data platform NAP type

0: No API, just the web-based interface is used in a data platform NAP type

0: API is available in a data platform NAP type

Value+1 (for each of the following options): Which Application Programming Interfaces for automated data exchange are used for your NAP? You can select more options:

a. API for upload (data producers)

b. API for download (data consumers)

Minimum acceptable value for interoperability: 1

#### KPI 1.19 Web performance – (meta)data load time

*Date Modified: 28.05.2025 9:12:19, GUID: {84B880BE-7D51-4838-9AF4-D7D220C3950F}*

The Web performance – (meta)data load time assesses the time response of a NAP’s website by loading the meta(data) the time in seconds needed to load a homepage). Tools are now added and some recommendations how to use them for this KPI.

What is the (meta)data average load time **in seconds**? This means loading the datasets information about any random metadata.

Please, measure load time from 3 different European cities other than your country, in daytime (8-16h), and make an arithmetic mean of the results. Use preferably one or both of the following free services:

* <https://www.uptrends.com/tools/website-speed-test>
* <https://tools.pingdom.com/>

*Note: If the mentioned services are not applicable to your NAP because of the web address structure, you can use the development tool in the web browser (Ctrl+Shift+I in Chrome or F12 in Firefox).*

Values:

**0:** higher than 4 sec

**1:** higher than 2 sec, max. 4 sec

**2:** higher than 1 sec, max. 2 sec

**3:** higher than 0.5 sec, max. 1 sec

**4:** max. 0.5 sec

**Minimum acceptable value for interoperability: 2**

#### KPI 1.2 Compatibility with web browsers

*Date Modified: 28.05.2025 9:06:20, GUID: {3B188BB9-2511-42f4-9415-5323B065A082}*

“Compatibility with web browsers” KPI refers to the compatibility of NAP with 4 different most-used web browsers and possibility of periodic compatibility verification. The ACC KPI value is set to 3 indicating that a NAP platform should be operational with at least 3 web browsers (or 2 browsers but with periodic verification), whereas the REQ required KPI value is set to 0 to indicate that NAP is operational with at least one web browser. This KPI is closely related to the previous one, considering that its quantification makes sense only when a NAP is available online.

Values:

0: No (i.e., with the last version of max. 1 web browser mentioned in the question)

1: Yes, with the last versions of 2 web browsers mentioned in the question

2: Yes, with the last versions of 3 web browsers mentioned in the question

3: Yes, with the last versions of at least 4 web browsers mentioned in the question

Value+1: NAP is using some service for periodical compatibility verification (please specify the service in the “Suggestions” box)

**Minimum acceptable value for interoperability: 3**

#### KPI 1.21 Metadata about data modification

*Date Modified: 03.06.2025 11:15:01, GUID: {0A1F8DA3-FE63-4a23-9FAB-30DE897B4B22}*

KPI 1.21 is regarding “off-line” metadata information about data changes (update frequency and/or expected regular times of data updates, each as “Value +1”). Higher evaluation (next “Value +1”) is applied if Mobility DCAT-AP is used in such metadata information.

*Note: Such information can be a part of metadata provided by the NAP even if that data is external.*

Values:

**N/A:** NAP is a data platform with no provision of data

**0:** NAP provides data but no change/modification metadata about the data is provided

**Value+1** (for each of the following options):

NAP provides change/modification metadata about the data:

**a.** NAP provides metadata about frequency of data changes

**b.** NAP provides metadata about typical dates/times of data change/modification

**c.** The metadata addressed in option “a” and/or “b” (above) is provided using Mobility DCAT-AP

Minimum acceptable value for interoperability: 1

#### KPI 1.3 Web performance - homepage load time

*Date Modified: 28.05.2025 9:10:01, GUID: {E031444D-D059-424f-9E51-C84E62D32391}*

The "Homepage load time" assesses the time response of a NAP’s website by assessing the time in seconds needed to load a homepage. Tools are now added and some recommendations how to use them for this KPI.

Please, measure load time from 3 different European cities other than your country, in daytime (8-16h), and make an arithmetic mean of the results. Use one or both of the following free services:

<https://www.uptrends.com/tools/website-speed-test>

<https://tools.pingdom.com/>

Values:

**0:** higher than 4 sec

**1:** higher than 2 sec, max. 4 sec

**2:** higher than 1 sec, max. 2 sec

**3:** higher than 0.5 sec, max. 1 sec

**4:** max. 0.5 sec

**Minimum acceptable value for interoperability: 2**

#### KPI 1.4 Responsiveness

*Date Modified: 28.05.2025 9:08:20, GUID: {57ACBB71-C816-4bf7-B215-D03D1CADF15C}*

“Responsiveness” KPI examines whether a NAP’s web design is adaptable to different devices and screen sizes. There is a tool provided in the Note. There are three possible values that this KPI may take. A value equal to 0 indicates that there is no responsiveness, a value equal to 1 indicates a basic responsiveness (for desktops/laptops), a value equal to 2 indicates that a NAP is responsive to more devices. Both necessary (REQ) and sufficient (ACC) levels of service are associated, in this case, with the basic responsiveness.

Note: You can test your NAP webpage responsiveness using some web-based tool.

Values:

0: No responsive web design

1: Responsive web design for different screen sizes on desktops/laptops

2: Responsive web design for different screen sizes and devices incl. mobile phones, tablets and TVs

**Minimum acceptable value for interoperability: 1**

#### KPI 1.5 Web performance – simplicity / usability

*Date Modified: 28.05.2025 9:11:22, GUID: {12439C13-0225-4311-9E29-36295AF46052}*

The "Web performance – simplicity / usability" is related to the average number of operations needed to gain access to specific information about a data resource (not necessarily involving the access to data itself). These operations may encompass mouse wheel movements, key presses, or mouse/screen clicks.

Note 1: The value should be relevant for getting access to “metadata language” or “metadata contact point” (if you are having both, please, use an average).

Note 2: The value should be relevant to a skilled user, i.e., who already knows the set-up of the website (where to find the metadata).

Note 3: The value refers to unregistered or already logged-in user, if login is a necessary condition for access to metadata (i.e., the logging process is not involved in this parameter).

Value **0** to **infinity**

**Minimum acceptable value for interoperability: 10**

#### KPI 1.7 Web performance – consistency and navigability

*Date Modified: 28.05.2025 9:11:55, GUID: {7B6333C0-106C-432e-B468-85C394A5788D}*

Web performance – consistency and navigability is related to the existence of a simple structure and the hierarchical arrangement of a NAP’s webpage. A value equal to 0 indicates the absence of a hierarchical arrangement, while a higher value indicates that a hierarchical arrangement exists (up to 6 options can be checked, see the values). This KPI also assesses the consistency of the layout of a NAP’s website. The adopted parameters for its assessment revolve around the position of menus during navigation, the utilized colours and fonts throughout the site, the availability of a search box, as well as the availability and position of a logo that links back to the home page. The value of this KPI is increased by one when a NAP complies with each one of the adopted parameters. It is assumed that a NAP should comply with at least (REQ) two of the adopted parameters to be addressed as exhibiting a minimum level of service (these parameters reflect elementary design principles of any web page/platform).

Initial value 0 and then +1 for each of the following options: You can select multiple options:

a. Menus are in the same position

b. Use of same fonts and colours throughout the site

c. Availability of a search box on the main page (search means for navigation along the webpage and no data discovery)

d. Logo links back to the home page

e. Existence of a hierarchical arrangement of web subpages (“breadcrumbs” type also means hierarchical arrangement)

f. Existence of a “sitemap” page easing navigation (e.g., a tree structure with links to individual pages)

**Minimum acceptable value for interoperability: 3 of them**

#### KPI 1.8 Support of commonly used languages

*Date Modified: 28.05.2025 9:13:00, GUID: {8C9DA946-6D31-43a2-BDB7-D9A3A7C74B26}*

**“Support of commonly used languages”** KPI may take four possible values. A value equal to 0 indicates that a NAP supports only the national language. A value equal to 1 indicates that although a NAP supports English, some of its content (e.g., metadata of included publications) is provided only in the national language. On the other hand, a value equal to 2 indicates that a NAP fully supports the English language.

*Note 1: This is relevant to the webpage and also to the metadata/data content.*

*Note 2: “To support some language” means to have appropriate interface and content available in that language version*

*Note 3: This KPI is about the output from the NAP: you also may consider the automatic translation of items depending on selected language, i.e., it is not necessary to have an item in a NAP saved in EN version if the NAP is able to export it in such a EN version if selected by the user*

Values:

**0:** Supports national language only, other than EN

**1:** Supports EN for platform (user interface) only

**2:** Supports EN for platform (user interface) and names of the datasets

**3:** Supports EN for platform (user interface) and all metadata content (all text content incl. data description)

Minimum acceptable value for interoperability: 2

#### KPI 1.9 Security – Technical

*Date Modified: 28.05.2025 9:13:53, GUID: {98C6793F-9D92-42de-8C08-A6269BC797E3}*

**“Security – Technical”** KPI addresses the existence of security features for access (i.e., security certificates). A value equal to 0 points out the absence of any security feature. A value equal to 1 indicates the existence of up-to-date security certificates in specific parts of a NAP’s website, while a value equal to 2 indicates the existence of up-to-date security certificates throughout the website of a NAP. In that case, a minimum level of service is assumed to be exhibited by a NAP when up-to-date SSL certificates cover at least the most critical (in terms of data protection) parts of a NAP’s website.

Values:

**0:** Absence of security certificates

**1:** Partial existence of up-to-date security certificates (e.g., in the landing page but not in the elements of the main sitemap)

**2:** Existence of up-to-date security certificates in the entirety of the NAP platform’s elements

Minimum acceptable value for interoperability: 2

### Communication KPIs

NAPs should offer help desks, email support, and messaging services to assist data publishers, preventing misunderstandings during data uploads. Promoting NAPs at national and international events is crucial for attracting more data providers and consumers. Direct communication between data consumers and providers is essential for resolving issues and building trust. Additionally, NAPs should send mass notifications about changes in content, functionality, procedures, and data exchange policies to keep users informed.



Figure: Communication KPIs

#### Function missing in the NRA for the KPI

*Date Modified: 16.06.2025 15:48:48, GUID: {A6EA45BA-53FF-4177-AA14-F282A8C55D0F}*

Function missing in the NRA

#### K.2.2.1 Related services monitoring functionality

*Date Modified: 16.06.2025 15:46:56, GUID: {57A18050-B4C1-42f9-881F-A8C6AE3EAF1A}*

The platform shall track the use of the data available at the NAP. This would normally be based on feedback from data users on which applications are using the data (e.g. end-user information services like website/web service or smartphone apps; but also applications/services to ease operations of any transport infrastructure or mobility service)

Source: KPI 2.2 Related services monitoring process

##### K.2.1.1 Support to users to register or add data/metadata

*Date Modified: 16.06.2025 15:31:48, GUID: {57015FD8-66C2-45e3-8AB9-93A0EAFB1656}*

The platform shall provide support information in English and at least one of following support functionalities:

**a.** contact form or E-mail

b. phone or web call (e.g., booking system for Teams call)

c. chat or chatbot

d. FAQ in national and English language

e. user forum

Source: KPI 2.1 Support to users to register or add data/metadata

#### K.2.4.1 NAP promotion – number of channels

*Date Modified: 28.05.2025 9:47:19, GUID: {1942245D-8D8A-425c-8364-D8364B8407EA}*

The platform shall support at least 3 communication channels:

**a:** NAP was promoted on a conference or trade fair (apart from NAPCORE MDD)

**b:** NAP was promoted with webinars

**c:** NAP was promoted on LinkedIn (or other social networks) with an own account and at least two news items

**d:** NAP was promoted with a dedicated paper in a journal

**e**: NAP was promoted through another channel (please specify in the “Suggestions” box)

#### K.2.6.1 Contact details

*Date Modified: 28.05.2025 9:48:01, GUID: {B16F5B80-17AC-48ed-9C43-CADE9CDCF62A}*

The platform shall provide Contact details of all data providers at least.

Source: KPI 2.6 Contact details

#### K.2.7.1 Mass notifications – data providers

*Date Modified: 16.06.2025 15:51:53, GUID: {1F17B282-6DF7-4368-8BF9-EB565BA7D4D5}*

The platform shall provide mass notifications of the data providers about at least legal (T&C) updates

source: KPI 2.7 Mass notifications – data providers

#### K.2.8.1 Mass notifications – data consumers

*Date Modified: 16.06.2025 15:52:51, GUID: {6069CE61-FD93-4212-A7EC-BA701EBE8A7E}*

The platform shall provide mass notifications of the data consumers about at least legal (T&C) updates

source: KPI 2.8 Mass notifications – data consumers

#### K.2.9.1 Monitoring and evaluation

*Date Modified: 16.06.2025 15:47:41, GUID: {1B5911BF-D7A2-4e07-A4CE-4DC33E7E5C26}*

The platform shall monitor and evaluate the success and impact of the NAP, by using at least one of following options:

1. Counting the access to the NAP, the number of search requests and/or the number of registered users
2. Collecting statistics on the consumption of datasets (e.g., downloads, subscriptions, page views)
3. Measuring performance of the system (e.g., downtime, consequences for other systems, etc.)

#### KPI 2.1 Support to users to register or add data/metadata

*Date Modified: 26.05.2025 13:56:02, GUID: {770CE787-3FCE-49dd-95B4-0A73605469E5}*

**“Support to users to register and add data/metadata”** KPI assesses whether a NAP provides information to support NAP users how to register and (more importantly) how to add data, metadata, or both (depending on the type of NAP under evaluation). It is assumed that a NAP shall at minimum provide written support information in the local language (on the website or downloadable). This condition is indicated by a value equal to 1. The availability of such information in English language is indicated by a value equal to 2. The value of this KPI is increased by 1, either when additional support can be provided text-based via contact form, e-mail, text messenger; or when such support can be provided via telephone or web calls which can be booked; or when such support can be provided via chatbot .

Values

**0:** No support or telephone number only is available

**1:** Instructions or support information is available on the site but not in English

**2:** Instructions or support information is available in English

**Value+1** (for the following option): Are there other types of support to register and add data/metadata?:

**a.** contact form or E-mail

b. phone or web call (e.g., booking system for Teams call)

c. chat or chatbot

d. FAQ in national and English language

e. user forum

Minimum acceptable value for interoperability: 3

#### KPI 2.2 Related services monitoring functionality

*Date Modified: 28.05.2025 9:45:25, GUID: {908FC14A-B863-404a-B25B-181CE863E7FF}*

**“Related services monitoring process”** KPI assesses whether there is an implemented **process** that monitors the external relations of a NAP to indicate its influence on the development and operation of ITS services.

Is there any monitoring process in place which tracks the use of the data available at the NAP? This would normally be based on feedback from data users on which applications are using the data (e.g. end-user information services like website/web service or smartphone apps; but also applications/services to ease operations of any transport infrastructure or mobility service)

**0:** No

**1:** Yes

Minimum acceptable value for interoperability: 1

#### KPI 2.3 Related services built on the data offered at the NAP

*Date Modified: 16.06.2025 15:31:02, GUID: {AF6A125B-C426-4fbb-ACD3-F3BC7975E5E3}*

**“Related projects built on the NAP data”** KPI is aims to assess how many external projects, platforms, or websites are based and benefited from NAP published in/accommodate through NAPs (irrespective of the utilized monitoring method). It is assumed that at least one project should be based on NAP data for achieving a minimum acceptable level of service.

How many related services (applications, websites, end-user information services, etc.), were built, according to your best knowledge, using data offered by NAP within the last calendar year?

N/A: The information is not monitored (KPI 2.2 is zero)

Value 0 to infinity

Minimum acceptable value for interoperability: 1

#### KPI 2.4 NAP promotion channels

*Date Modified: 28.05.2025 9:47:08, GUID: {18E9D69C-15A2-438b-ADA4-0095C6581C5A}*

**“NAP promotion channels”** KPI records the different official channels, such as conferences, webinars, and social networking, that are used by the NAP operator within the last calendar year for promoting NAP. The possible values range from 0 to 5. The value is increased by 1, if either the NAP was promoted on a conference or trade fair, e.g. with a paper, a presentation, a special booth, flyers on the booth of the NAP operator; or if the NAP operator has organised one or more webinars to promote or inform about the NAP; or if the NAP was promoted on LinkedIn with an own account and at least two news items (or comparable on other social networks); or if the NAP was promoted with a dedicated paper in a journal. Any other channel which can be specified, can also increase the value by 1. It is assumed that at least three different channels shall be utilized for achieving a minimum acceptable level of service.

Values: **0:** No

**Value+1:** Yes,

**a:** NAP was promoted on a conference or trade fair (apart from NAPCORE MDD)

**b:** NAP was promoted with webinars

**c:** NAP was promoted on LinkedIn (or other social networks) with an own account and at least two news items

**d:** NAP was promoted with a dedicated paper in a journal

**e**: NAP was promoted through another channel (please specify in the “Suggestions” box)

Minimum acceptable value for interoperability: 3

#### KPI 2.5 NAP promotion – number of publications

*Date Modified: 16.06.2025 15:29:24, GUID: {186E92C7-A397-45c0-AEB4-DA23BB390019}*

**“NAP promotion – number of publications”** KPI records the number of publications made by the NAP operator or national body within the last calendar year. It is assumed that at least three publications shall be made for achieving a minimum acceptable level of service.

How many publications were made by the NAP operator and/or national body within the last calendar year using the channels mentioned in KPI 2.4?

Publications mean: number of conference papers with NAP as main subject + webinars with NAP as main subject + social media posts with NAP as main subject + printed publications with NAP has main subject

Value 0 to infinity

Minimum acceptable value for interoperability: 3

#### KPI 2.6 Contact details

*Date Modified: 26.05.2025 14:06:42, GUID: {C2EFBDFC-046A-4c77-A9A9-45BC37032D73}*

**2.6 “Contact details”** KPI aims to assess whether a NAP provides contact information (at least email address or telephone number) of the data providers to data consumers. The possible values of this KPI range from 0 to 2 with a value equal to 0 indicating that there are no provided contact details, a value equal to 1 indicating that the contact details of some data providers are made available through the NAP web page, a value equal to 2 indicating that contact details of all data providers are published. It is assumed that a NAP shall provide contact information of all data providers for achieving a minimum acceptable level of service.

Values:

**0:** No contact details are available

**1:** Contact details of some data providers are published

**2:** Contact details of all data providers are published

Minimum acceptable value for interoperability: 1

#### KPI 2.7 Mass notifications – data providers

*Date Modified: 28.05.2025 9:57:15, GUID: {748F8C79-FC1E-4ad6-8023-E2D467E4DFA4}*

**2.7 and 2.8 “Mass notifications – data providers”** and **“Mass notification – data consumers”** KPIs assess whether a NAP can massively notify registered data providers and data consumers, respectively, about the latest updates and changes. Its value ranges from 0 to 3. A value equal to 0 expresses that no mass notification functionality or procedure is in place. A value equal to 1 expresses mass notifications encompassing only legal updates (e.g., changes in terms and conditions of data reuse). The value is increased by 1 if mass notifications are tailored to the needs of data providers or consumers respectively, e.g. (for data providers) new requirements for data provision like a new data profile or (for data consumers) substantial changes in already published datasets. It is assumed that this KPI does not relate to the minimum acceptable level of service of a NAP but expresses an advanced level of service when notifications encompass both legal and content updates.

Values:

**N/A:** No data providers accounts / no registrations

**0:** Mass notifications are not available to registered providers

**0:** Mass notifications are available to registered providers

**Value+1**

**a:** Mass notifications are possible for legal (T&C) updates

**b:** Mass notifications are tailored according to the data provider's needs, e.g. new requirements for data provision like data profile

**c:** Mass notifications are available on the NAP website to the registered data providers, e.g., pop-up information after logging in

Minimum acceptable value for interoperability: 1

#### KPI 2.8 Mass notifications – data consumers

*Date Modified: 28.05.2025 9:58:11, GUID: {E224C8FD-F129-4f78-A3C3-0BB45266A95C}*

**2.7 and 2.8 “Mass notifications – data providers”** and **“Mass notification – data consumers”** KPIs assess whether a NAP can massively notify registered data providers and data consumers, respectively, about the latest updates and changes. Its value ranges from 0 to 3. A value equal to 0 expresses that no mass notification functionality or procedure is in place. A value equal to 1 expresses mass notifications encompassing only legal updates (e.g., changes in terms and conditions of data reuse). The value is increased by 1 if mass notifications are tailored to the needs of data providers or consumers respectively, e.g. (for data providers) new requirements for data provision like a new data profile or (for data consumers) substantial changes in already published datasets. It is assumed that this KPI does not relate to the minimum acceptable level of service of a NAP but expresses an advanced level of service when notifications encompass both legal and content updates.

**N/A:** No data consumers user accounts / no registrations

**0:** Mass notifications are not available to registered users

**0:** Mass notifications are available to registered providers

**Value+1**

**a:** Mass notifications are possible for legal (T&C) updates

**b:** Mass notifications are tailored according to the data consumer's needs, e.g., content updates or change in the way the consumed data is provided

**c:** Mass notifications are available on the NAP website to the registered data consumers, e.g., pop-up information after logging in

Minimum acceptable value for interoperability: 1

#### KPI 2.9 Monitoring and evaluation

*Date Modified: 28.05.2025 9:58:29, GUID: {DF0026B0-043F-4952-A0C2-CAF90AA32B98}*

**“Monitoring and evaluation”** KPI assesses whether a NAP has implemented technical procedures for monitoring and evaluating its content. The value of this KPI is increased by 1, when a NAP complies with one of the following parameters. The first parameter involves the monitoring of the visibility of a NAP with counting the access, counting the number of search requests and/or the number of registered users. The second one involves the collection of statistics regarding the consumption of the datasets at a data platform NAP. The third one involves the measurement of the performance of the system (e.g., downtime, consequences for other systems, etc.), while the final one involves the assessment of the usefulness of a NAP (e.g., qualitative feedback on the re-use of the provided data, rating of quality, surveys, etc.). It is assumed that the current KPI is not related to the minimum acceptable level of service of a NAP.

**0:** No

**0:** Yes

**Value+1** (for each of the following options): Which technical procedures are established to monitor and evaluate the success and impact of the NAP? You can select multiple options:

**a.** Counting the access to the NAP, the number of search requests and/or the number of registered users

**b.** Collecting statistics on the consumption of datasets (e.g., downloads, subscriptions, page views)

**c.** Measuring performance of the system (e.g., downtime, consequences for other systems, etc.)

**d.** Measuring usefulness of the NAP (e.g., qualitative feedback on re-use, rating of quality, surveys, etc.)

Minimum acceptable value for interoperability: 1

### Data Discovery KPIs

NAPs should ensure the traceability of data through discovery services and search functionalities, such as engines and search masks for querying and filtering. Providing appropriate metadata is crucial for the reusability and discoverability of data resources, helping users understand data structure, usage rights, and license terms. Machine-readable metadata, exportable in formats like XML and RDF DCAT-AP, enhances discoverability for both humans and machines. Additionally, supporting map-based searches allows users to find data at national, regional, and local levels.



Figure: Data Discovery KPIs

#### K.3.1.1 Free-text search

*Date Modified: 28.05.2025 10:02:04, GUID: {4CE86A2C-C410-439b-AFFD-9793CCF8B41E}*

**The platform shall provide** free-text search to find datasets (e.g. considering text in title, description or in other metadata elements)

Source: KPI 3.1 Free-text search

#### K.3.2.1 filtering options

*Date Modified: 26.05.2025 14:22:30, GUID: {3EDFD1C1-DFC2-44f5-B31C-F85FBB99684A}*

The plattform shall support one of these search filtr options:

**a.** Delegated Regulation

**b.** Transport mode / category

**c.** Data provider (organisation)

d. data format, data model

e. data profile

f. type of interface or access option

g. license type

h. temporal validity

i. other (please specify in the “Suggestions” box)

#### K.3.3.1 Provision of machine – readable metadata

*Date Modified: 28.05.2025 10:06:50, GUID: {9BD4B8DE-4CA0-4a91-95F8-F0A7FD7CE558}*

**The platform shal p**rovide machine-readable metadata in a self-describing format complying to commonly agreed standard mobilityDCAT-AP

Minimum acceptable value for interoperability: 2

#### KPI 3.1 Free-text search

*Date Modified: 26.05.2025 14:18:44, GUID: {D5638BED-BC35-4427-86D6-838B5E3ECE40}*

**“Free-text search”** For data discovery, a free-text search is a common option to find relevant datasets. A NAP is expected to offer such a functionality which is related with a KPI value of 1. The value can be increased by 1 with three different options. The first option is smart processing of the search query which sorts the results according to how well they match the search query. This is probably often the case as some logic has to be implemented how the results are displayed. A second option for an increase of the KPI value is the free-text search of organisations as data providers. This becomes more relevant, the more data providers there are at a NAP. Further free-text search options can be described in the comments an can also raise the value by 1, e.g. the search for data profiles or delegated regulations, but also maybe AI-supported functionality to find the most suitable dataset. The best value of this KPI is already reached with a value of 3.

Values:

**0:** No available free-text search

**1:** Yes, free-text search can be used to find datasets (e.g. considering text in title, description or in other metadata elements)

**Value+1** (for each of the following options):

**a.** Smart processing of search query to sort the results according to how well the match the search query

**b**. Data providers (organisations) can be searched with free-text

**c**. Other search options with free text (e.g. search for data profiles or delegated regulations, but also maybe AI-supported functionality to find the most suitable datasets; please specify in the ”Suggestions” box)

Minimum acceptable value for interoperability: 1

#### KPI 3.2 filtering options

*Date Modified: 28.05.2025 10:04:14, GUID: {4BD42434-CDDD-427d-99D2-721245A7EFA2}*

**3.2 “Filtering options”** Filtering datasets can be used for discovering datasets (i.e. metadata descriptions of available content data) from the start, but also to narrow down results from a free-text search query. There are many possibilities according to which properties of a dataset can be filtered. The most important properties increase the value of this KPI by 1: Delegated Regulation (according to which regulation the data was provided), transport mode / category, data provider (organisation), data format or data model, data profile, type of interface or access option, licence type. One more option which can be described in the comments can increase the value again by 1. It is expected that at least two filtering properties are implemented. The maximum value is reached with 7.

**0:** Displayed datasets cannot be filtered

**Value+1** (for each of the following options):

**a.** Delegated Regulation

**b.** Transport mode / category

**c.** Data provider (organisation)

d. data format, data model

e. data profile

f. type of interface or access option

g. license type

h. temporal validity

i. other (please specify in the “Suggestions” box)

Minimum acceptable value for interoperability: 2

#### KPI 3.3 Provision of machine – readable metadata

*Date Modified: 28.05.2025 10:05:00, GUID: {78E9F008-05E0-438e-959D-FF82698CBB6E}*

**3.3 “Provision of machine – readable metadata”** KPI aims to assess the machine readability of a NAP’s metadata. A value equal to 1 indicates that machine-readable metadata of any description of data provided via the NAP (i.e. any metadata set represented in a common structured format (e.g., JSON, XML)) can be generated or downloaded , while a value equal to 2 indicates that metadata comply to a harmonized application profile and can be represented in a common format using the concept of Linked Data (e.g., RDF). A value equal to 3 indicates that the machine-readable metadata is provided as Linked Data using mobilityDCAT-AP.

**0:** No availability of machine-readable metadata

**1:** Provision of machine-readable metadata in a structured format (JSON, XML, …)

**2:** Provision of machine-readable metadata as Linked Data (“RDF” that also can be expressed in JSON-LD, ...) in a self-describing format

**3**: Provision of machine-readable metadata as Linked Data compliant to mobilityDCAT-AP

Minimum acceptable value for interoperability: 3

#### KPI 3.4 Map-based search

*Date Modified: 03.06.2025 11:29:18, GUID: {DB4A4825-A22D-49af-804A-54E7A0CC948E}*

As mobility data is always also geospatial data, a map-based search could be of use for some datasets offered at the NAP. This can be done either by displaying all available data on a map in order to find relevant data or by displaying the results from an earlier free-text search or filtering selection.

Values:

**0:** No

**Value+1** (for each of the following options):

**a.** Datasets are displayed on the map

**b.** A map or map section can be used to filter displayed search results

Minimum acceptable value for interoperability: 0

### Update and Maintenance KPIs

NAP services should be constantly maintained and updated, including software updates, backups, and hosting. Data providers must regularly check and update their publications to keep information current. Periodic monitoring and evaluation of NAPs are essential, focusing on data usage, system performance, and user feedback. Additionally, NAP operators should assess the platform’s impact on service and application development by calculating metrics and gathering feedback.



Figure: Update and Maintenance KPIs

#### K.4.1.1 IT services

*Date Modified: 16.06.2025 15:37:45, GUID: {074C6AF9-ECAC-4279-AFF2-82CE9E415FE6}*

**The platform shall support at least one of theset IT services:**

**a.** Common responsibilities established (signed SLA with IT company(s)) for the NAP services (system, software and hardware) maintenance and updates, backups, and hosting

**b.** Measures for the NAP services continuity in the long term and subsequent funding are foreseen

Source KPI 4.1 IT Services

#### K.4.2.1 Link checking frequency

*Date Modified: 26.05.2025 14:34:45, GUID: {0C2EEA46-1380-4551-AA7C-0AADCB4E42ED}*

**The platform should check links on functionality while publishing.**

**Source: KPI 4.2 Link checking frequency**

#### K.4.4.1 Metadata maintenance frequency

*Date Modified: 26.05.2025 14:37:03, GUID: {56CF5FF2-7112-4bd3-9E60-B10AE222362F}*

the platform shall established procedures for metadata maintenance or more than 1 year of interval between subsequent updates.

Source: KPI 4.4 Metadata maintenance frequency

#### K4.5.1 Data maintenance

*Date Modified: 28.05.2025 10:11:03, GUID: {EC2AF8AF-F8E6-44b1-9189-D1ED47BA5033}*

The platform shall provide some sort of quality checking/validation is performed (e.g., manual or automatic.

Source: KPI 4.5 Data (content) maintenance

#### KPI 4.1 IT services

*Date Modified: 26.05.2025 14:29:32, GUID: {0F3E274F-3549-4ef1-AE75-3552EDAA93AC}*

**“IT services”** KPI assesses whether there are established responsibilities for resolving as quickly as possible technical issues that may affect the operation of a NAP (both software- and hardware-related issues are encompassed). While a value equal to zero corresponds to the scenario where such responsibilities are not assigned, higher levels of service values depend on the establishment of responsibilities and the planning for the long run maintenance of the NAP

Values:

**0:** No, there are no responsibilities assigned or measures foreseen for the maintenance and update of the NAP IT services

1: Yes, there are maintenance and update procedures well-established

**Value+1** (for each of the following options)

How is the NAP continuity guaranteed?

**a.** Common responsibilities established (signed SLA with IT company(s)) for the NAP services (system, software and hardware) maintenance and updates, backups, and hosting

**b.** Measures for the NAP services continuity in the long term and subsequent funding are foreseen

Minimum acceptable value for interoperability: 1

#### KPI 4.2 Link checking frequency

*Date Modified: 26.05.2025 14:32:40, GUID: {0DDE3DD2-34FD-479a-B17F-18E67611EEA9}*

**“Link checking frequency”** KPI assesses the existence of predetermined processes and responsibilities among NAP operators, data providers for controlling the quality and maintaining the NAP links, inuring that they are functioning correctly. The difference between the possible values relates to the frequency of these checks.

Values:

**0:** no established procedures for link checking

1: Links are checked with publishing (i.e., once)

2: More than six months of interval

**3:** every six months

**4:** Monthly

**5:** Weekly or more often

Minimum acceptable value for interoperability: 1

#### KPI 4.4 Metadata maintenance frequency

*Date Modified: 26.05.2025 14:36:45, GUID: {30BA3504-2710-4e8c-83B8-CE51B9B7C24A}*

**Metadata maintenance frequency”** assesses the frequency on which metadata are maintained and updated. This is relevant since metadata specifications are often changed due to stakeholder needs and market developments, and these changes should be reflected on the NAPs to ensure data discoverability. The KPI’s possible values comprise difference options for the frequency of maintenance, where higher values correspond to higher frequency.

Values:

**0:** no established procedures for metadata maintenance or longer than 1 year of interval between subsequent updates

**1:** once a year

**2:** every six months

**3:** every three months or less

Minimum acceptable value for interoperability: 1

#### KPI 4.5 Data (content) maintenance

*Date Modified: 28.05.2025 10:08:06, GUID: {F98855F9-85A4-43be-A46D-33FB708EDE53}*

**4.5** “**Data (content) maintenance”** evaluates the existence of procedures for keeping the data up-to date by systematically assessing data (content) quality. This is a binary KPI that does not check the frequency on which the data quality is checked but only verifies if there are processes established in this regard.

**Note:** This KPI is for data platform NAP type only. For metadata directory NAP type, you answer the first option. Technically, the KPI is skipped in an on-line questionnaire after “metadata directory” NAP type selection.

Values:

**N/A:** Metadata directory case

**0:** No, there are no procedures in place

**1:** Yes, some sort of quality checking/validation is performed (e.g., manual or automatic; one time or regularly; please specify the procedure in the “Suggestions” box)

Minimum acceptable value for interoperability: 1

### Dataset information KPIs

Datasets should be described in detail to help data consumers understand and assess their relevance. This includes using standard vocabularies or dictionaries (e.g., DCAT-AP) to reduce ambiguity and enhance machine readability.



Figure: Dataset information KPIs

#### K.5.1.1 Documentation & description of datasets

*Date Modified: 28.05.2025 10:13:19, GUID: {DEAE1C7A-1D84-41ec-8301-E4726F387B6F}*

the platform shall foster high-level description of datasets including standard metadata elements.

The platform shall made links and supporting material in the form of XML schemas and samples availabe, where necessary.

Source: KPI 5.1 Documentation & description of datasets

#### K.5.2.1 Classification of datasets

*Date Modified: 28.05.2025 10:16:06, GUID: {83214B25-55CB-415c-B142-439C41EEF164}*

**The platform shall provide a classification of datasets based at least on formal terminology/keywords (vocabulary of the mobility-DCAT-AP) or coordinated metadata catalogues.**

**Source: KPI 5.2 Classification of datasets**

#### K.5.3.1 Quality indicators for datasets

*Date Modified: 28.05.2025 10:17:23, GUID: {E96E06AA-18A0-425d-8F5C-761F449E798C}*

The platform shall provide a metadata field where the data provider can describe the quality of the dataset and provide reference to applicable quality frameworks (e.g. EU-EIP and or NAPCORE) to support the data provider in quality assessment of the dataset.

Source: KPI 5.3 Quality indicators for datasets

#### K.5.5.1 Metadata Visualization

*Date Modified: 16.06.2025 15:45:29, GUID: {EA7E8A92-7AF9-4f91-A12A-44E1091AC517}*

The platform shall support at least one visualization of metadata like:

Value+1 (for each of the following options): What types of metadata visualization functionalities are available? You can select multiple options:

a. Visualization of numbers and charts derived from metadata records resp. information/news about datasets

b. Visualization of metadata on a map (may include location points, lines or areas)

Source: KPI 5.5 Metadata visualization

#### K5.4.1 Data visualization

*Date Modified: 28.05.2025 10:24:40, GUID: {AB431EDD-73E8-43c9-A219-2232A1745A55}*

The platform shall support at least one visualization of data like:

Value+1 (for each of the following options): What types of data visualization functionalities are available? You can select multiple options:

a. Visualization of numbers and charts derived from data records

b. Visualization of data on a map (may include location points, lines or areas)

c. Visualization can use animation of “a” or “b” options above, e.g., an animation or video for a time series of a selected period

Source: KPI 5.4 Data visualization

#### KPI 5.1 Documentation & description of datasets

*Date Modified: 28.05.2025 10:12:13, GUID: {0C85EE9E-FEEA-4e4c-A559-92D10421902A}*

**5.1 “Documentation & description of datasets”** KPI assesses whether the datasets of a NAP are accompanied by supporting material, such as documentation, high-level descriptions (included in a metadata filed), XML schemas or samples, or even further detailed documentation. The minimum level of service is associated with the provision of XML schemas or samples. In case there are available links with additional information about datasets, an advanced level of service is assumed.

Values:

**0:** Lack of dataset documentation and description

**1:** High-level description of datasets including standard metadata elements

**2:** Availability of links and supporting material in the form of XML schemas and samples, where necessary

**3:** High level description of datasets including standard metadata elements, XML schemas and samples, and further supporting material such as detailed documentation and protocol documentation

Minimum acceptable value for interoperability: 2

#### KPI 5.2 Classification of datasets

*Date Modified: 28.05.2025 10:13:30, GUID: {9857E39A-0D5D-4216-97B2-1F7D709865D9}*

**5.2 “Classification of datasets”** is the second KPI grouped into this category. Dataset classification can be based either on custom parameters such as parameters indicating the type of network or on formal terminology and coordinated metadata. A classification based on the former parameters is associated with a minimum acceptable level of service, while a classification based on the latter parameters is associated with a REQ required level of service.

Values:

**0:** Lack of dataset classification

**1:** Classification of datasets based on custom parameters only (e.g., transport mode/network covered)

**2:** Classification of datasets based at least on formal terminology/keywords (vocabulary of the mobility-DCAT-AP) or coordinated metadata catalogues

Minimum acceptable value for interoperability: 2

#### KPI 5.3 Quality indicators for datasets

*Date Modified: 28.05.2025 10:16:22, GUID: {A7375E0A-1CD4-4b46-B339-1C5DF44EDE52}*

**5.3 “Quality indicators for datasets”** KPI assesses the extent to which a NAP provides insight into the quality of the provided data/metadata. There are four possible values that this KPI may take. A value equal to 1 indicates that a NAP includes a description of the quality of the provided metadata (e.g., based on a pre-established metadata quality assessment scheme, or using the field available in the mobiltyDCAT-AP profile for the data provider to indicate the quality of the data). A value equal to 2 indicates that a NAP provides a description of general quality definitions to support its users to self-assess the quality of utilized data or high-level quality assessment statements in the metadata of hosted publications. On the other hand, a value equal to 3 indicates that a more detailed data quality description is provided in the metadata of hosted publications; however, provided details and values do not cover the entirety of quality fields that may relate to the nature of exchanged data. Finally, a value equal to 4 indicates that there is a solid description of all fields. It is assumed that a NAP shall at least provide metadata quality descriptions for achieving a minimum acceptable level of service.

Values:

**0:** No

**1:** Yes, the NAP provides a metadata field where the data provider can describe the quality of the dataset

**2:** Yes, in addition to the metadata field the NAP provides reference to applicable quality frameworks (e.g. EU-EIP and or NAPCORE) to support the data provider in quality assessment of the dataset

**3:** Yes, all datasets at the NAP have quality information indicated through the metadata field, using the reference quality frameworks provided by the NAP

Minimum acceptable value for interoperability: 2

#### KPI 5.4 Data visualization

*Date Modified: 28.05.2025 10:17:40, GUID: {8F6DC276-FEB9-42a5-A18C-8DEDFC5EFD21}*

**5.4 “Data visualization”** and **5.5 “Metadata visualization”:** These KPIs assess the extent to which a NAP can support the visualization of its exchanged content. This means extended view on dataset information. Visualization options are divided according to the form of visualization, namely numbers and graphs, map outputs, or animations (that are typically relevant for time series of data).

*Note 1: Data visualization means that NAP is providing visual information about data, e.g., showing the traffic flow, speed or congestions along the time or along the road network, map visualization with location of truck parking locations etc.*

*Note 2: Even if no data is provided via NAP interface (like in metadata directories), it is still possible to have visualization available, e.g., through WMS.*

*Note 3: Metadata is addressed in the following KPI.*

Values:

**0:** No visualization of data

**0:** Visualization is available

**Value+1** (for each of the following options): What types of data visualization functionalities are available? You can select multiple options:

**a.** Visualization of numbers and charts derived from data records

**b.** Visualization of data on a map (may include location points, lines or areas)

**c.** Visualization can use animation of “a” or “b” options above, e.g., an animation or video for a time series of a selected period

Minimum acceptable value for interoperability: 1

#### KPI 5.5 Metadata visualization

*Date Modified: 28.05.2025 10:17:45, GUID: {F40A299B-E3FE-45ec-BEB5-002C6A4E7FC8}*

**5.4 “Data visualization”** and **5.5 “Metadata visualization”:** These KPIs assess the extent to which a NAP can support the visualization of its exchanged content. This means extended view on dataset information. Visualization options are divided according to the form of visualization, namely numbers and graphs, map outputs, or animations (that are typically relevant for time series of data).

*Note: Metadata visualization means that NAP is providing visual information about metadata, e.g., showing the positions or areas in the map where the data is obtained (and their attributes) or bar chart with “how many organisations provide data to the NAP per year”.*

Values:

**0:** No visualization of metadata

**0:** Visualization is available

**Value+1** (for each of the following options): What types of metadata visualization functionalities are available? You can select multiple options:

**a.** Visualization of numbers and charts derived from metadata records resp. information/news about datasets

**b.** Visualization of metadata on a map (may include location points, lines or areas)

Minimum acceptable value for interoperability: 1

### Interoperability KPIs

Interoperability features ensure NAPs can efficiently communicate and exchange information. This includes adopting a Coordinated Metadata Catalogue for a common approach to metadata publication and the ability to harvest and index datasets from other NAPs, though the latter is not mandatory.



Figure: Interoperability KPIs

#### K.6.1.1 Metadata specification

*Date Modified: 28.05.2025 10:26:51, GUID: {808C630F-74B1-46ed-91AF-3A16E94E6616}*

The platform shall be full compliance/adopted with the MobilityDCAT-AP specification

Source: KPI 6.1 Metadata specification

#### K.6.2.1 Harvesting functionalities

*Date Modified: 26.05.2025 14:57:11, GUID: {3031B4C2-3C66-4139-BC26-B3914F8D3146}*

**The platform shall s**upport of harvesting functionalities through dedicated protocols or Application Programming Interfaces

**Value+1** (for each of the following options): Which kind of support is provided?

**a.** Provision of harvesting interface or protocols for exporting functionalities (e.g., RESTful API, CSW, CKAN), allowing other portals to query and index metadata

**b.** Existence of harvesting interface for integration (e.g., indexing) of data sets from other portals

Source:KPI 6.2 Harvesting functionalities

#### KPI 6.1 Metadata specification

*Date Modified: 28.05.2025 10:25:41, GUID: {BEE946BB-DA12-4e7b-94B2-0177BD4060AF}*

**6.1** “**Metadata Specification”** KPI indicates whether a NAP’s metadata follows the recommended specifications set. It gets a value equal to 0 it when the NAP adopts a proprietary or non-standardized metadata scheme, a value equal to 1 for when it adopts harmonised specifications other than mobilityDCAT-AP and and a value equal to 2 when metadata are completely compliant with MobilityDCAT-AP.

Values: **0:** The NAP adopts a proprietary or non-standardized metadata scheme

**1:** The NAP adopts harmonised metadata specifications other than mobilityDCAT-AP (e.g., the EU-EIP specification – the Coordinated Metadata Catalogue) or partially adopts the Mobility DCAT-AP

**2:** Full compliance/adoption with the MobilityDCAT-AP specification

Minimum acceptable value for interoperability: 2

#### KPI 6.2 Harvesting functionalities

*Date Modified: 26.05.2025 14:55:50, GUID: {42A19936-0BD4-4750-977F-441851A057FE}*

**6.2 “Harvesting functionalities”** assesses the ability of a NAP (National Access Point) to facilitate interoperability through the integration of metadata and/or datasets with other data portals and platforms. This involves the use of harvesting protocols and interfaces that enable the automated export of its metadata or datasets to external systems, and/or the import of metadata or datasets from external systems for integration and indexing. A value equal to 0 points out the absence of any harvesting functionalities. On the other hand, a value equal to 1 indicates the support of one-way harvesting functionalities, while a value equal to 2 indicates the support of two-way harvesting functionalities.

Values:

**0:** Absence of harvesting functionalities

**0:** Support of harvesting functionalities through dedicated protocols or Application Programming Interfaces

**Value+1** (for each of the following options): Which kind of support is provided?

**a.** Provision of harvesting interface or protocols for exporting functionalities (e.g., RESTful API, CSW, CKAN), allowing other portals to query and index metadata

**b.** Existence of harvesting interface for integration (e.g., indexing) of data sets from other portals

Minimum acceptable value for interoperability: 1

### Data Exchange and Operational KPIs

NAPs should clearly describe the terms and conditions for data re-use and their operational procedures to avoid disputes and facilitate impact estimation. This includes providing prespecified licenses for data providers and clear instructions on user roles, registration, and dataset updates. NAPs should also endorse high-quality data that complies with ITS Directive requirements, allowing data providers to indicate data quality. Promoting self-declarations from data providers can aid compliance activities. Additionally, NAPs should cover all data types in the ITS Directive, serving as a single access point for Intelligent Transport System services.



Figure: Data Exchange and Operational KPIs

#### K.7.1.1 Terms and conditions for reuse of metadata and NAP website content

*Date Modified: 28.05.2025 10:39:50, GUID: {D72070D6-9ECF-411a-8281-534019823FD6}*

**The platform shall**  provide a descriptive description e.g. “fair use” limit) of the terms of use and detailed description where necessary as terms and conditions and/or standardized licenses framework such as “CC (Creative Commons) License”.

Source: KPI 7.1 Terms and conditions for reuse of metadata and NAP website content

#### K.7.2.1 Data reuse – data provider

*Date Modified: 16.06.2025 15:39:26, GUID: {8A1CF06F-F5C9-4f65-B5F6-84DA47139132}*

**The platform shall provide** detailed terms and conditions is mandatory for all published data sets using standardized license framework.

Source:

KPI 7.2 Terms and conditions for data reuse from data providers

#### K.7.3.1 Operational procedure information

*Date Modified: 28.05.2025 10:41:45, GUID: {16AB0A17-9AC4-4aec-9EAA-7EA1F349055C}*

*The platform shall provide at least one information of operational procedure like:*

* *Terms and conditions for use of the NAP,*
* *Governance aspects of NAP,*
* *Processes for data quality assessment and maintenance,*
* *How a potential data provider/consumer becomes accredited,*
* *How the data is provided,*
* *Where to discuss the technical issues*

*Source: KPI 7.3 Operational procedure information*

#### K.7.4.1 Dataset compliance assessment indicator

*Date Modified: 26.05.2025 15:06:47, GUID: {78665FD8-6086-4226-8ABE-C8E96A54FE8C}*

**“Dataset indicators”** KPI examines whether a NAP provides information about the compliance of its datasets with the requirements set by the Delegated Regulations supplementing the ITS Directive (e.g., regarding the quality, accessibility, exchange timeframe, re-use, and update of the provided data). A value equal to 1 indicates that a NAP provides information about whether a self-declaration form has been submitted by the provider of a dataset, while a value equal to 2 indicates that a NAP provides information about the results of the compliance assessment process (if any). However, this KPI is assumed as not relating to the minimum acceptable level of service of a NAP.

Does the NAP provide information about the compliance of its datasets with the requirements set by the Delegated Regulations supplementing the ITS Directive (e.g., regarding the quality, accessibility, exchange timeframe, re-use, and update of the provided data)

0: No

1: Provision of information about whether a self-declaration has been provided

2: Provision of information about whether a positive compliance assessment has been executed

Minimum acceptable value for interoperability: 1

#### K.7.4.1 Dataset compliance assessment indicator

*Date Modified: 16.06.2025 15:39:02, GUID: {AE7773B3-5CFC-46bd-A7D5-1B8EB268C04D}*

The platform shall provide information on the results of processed self-declaration forms by the national body.

Source: KPI 7.4 Dataset compliance assessment indicator

#### K.7.5.1 Compliance assessment support by NAP

*Date Modified: 28.05.2025 10:46:26, GUID: {1941874B-D599-4a5b-A6EA-6209F7E72127}*

The platform shall provide self-declaration forms/templates without any additional involvement in process.

Source KPI 7.5 Compliance assessment support by NAP

#### K.7.6.1 Association of published datasets with Delegated Regulations

*Date Modified: 16.06.2025 15:40:54, GUID: {747DB3C3-C956-4030-9637-30756698054B}*

The platform shall associated dataset using European legislation identifier according to the mobiltyDCAT-AP profile.

Source KPI 7.6 Association of published datasets with Delegated Regulations.

#### K.7.7.1 Quality indicators for datasets

*Date Modified: 16.06.2025 15:44:41, GUID: {C344E742-01BB-4f58-B613-19C5B75E57B6}*

The platform shall provide at least metadata field where data provider can describe the quality of the dataset.

Source KPI 7.7 Quality indicators for datasets

#### KPI 7.1 Terms and conditions for reuse of metadata and NAP website content

*Date Modified: 28.05.2025 10:38:59, GUID: {C561632C-13DB-4e0c-A36F-A0513DBA378A}*

**7.1 “Terms and conditions for reuse of metadata and NAP website content ”** KPI assesses, from the perspective of a NAP operator, whether a NAP operator provides descriptive or detailed information about the terms and conditions for reuse of data or content to which NAP is the owner such as: metadata, or data originally provided by NAP, or other content displayed at the NAP. A value equal to 0 points out an absence of such a provision, a value equal to 1 indicates that there is a descriptive provision (e.g. “fair use” limit), while a value equal to 2 indicates that there is a detailed provision through standardized data licensing frameworks such as “CC (Creative Commons) License”. It is assumed that a NAP should at least provide descriptive information about the terms and conditions for data reuse.

Values:

**0:** No

**1:** Descriptive (brief text description e.g. “fair use” limit)

**2:** Detailed (where necessary – terms and conditions and/or standardized licenses framework such as “CC (Creative Commons) License”)

Minimum acceptable value for interoperability: 2

#### KPI 7.2 Terms and conditions for data reuse from data providers

*Date Modified: 28.05.2025 10:40:30, GUID: {0F26A7C7-9E7C-43dc-AC8C-25445DC81F39}*

**7.2 “Terms and conditions for data reuse from data providers”** KPI assesses, from the perspective of data provider, whether a data provider provides descriptive/detailed information about the terms and conditions of data advertised by the data provider at the NAP. A value equal to 0 points out an absence of such a provision, a value equal to 1 indicates that there is a descriptive provision, while a value equal to 2 indicates that there is a detailed provision through sample contracts or standardized data licensing frameworks such as CC – (Creative Commons) License. It is assumed that a NAP should at least mandate detailed provision through sample contracts or standardized data licensing frameworks about the terms and conditions for data reuse.

The difference between 7.1 " **Terms and conditions for reuse of metadata and NAP website content** " and 7.2 " Terms and conditions for data reuse from data providers " KPIs lies in perspective: 7.1 assesses whether the *NAP operator* provides clear information on terms and conditions for data reuse, while 7.2 evaluates whether *data providers* publishing on the NAP offer similar clarity regarding their data reuse terms.

Note: detailed terms and conditions means e.g. full sample contract conditions and/or standardized licenses framework such as “CC (Creative Commons) License”)

Values:

**0:** No

**1:** Descriptive (brief text description)

**2:** Detailed terms and conditions can be provided for datasets

**3:** Provision ofdetailed terms and conditions is mandatory for all published data sets

**4:** Provision ofdetailed terms and conditions is mandatory for all published data sets using standardized license framework

Minimum acceptable value for interoperability: 4

#### KPI 7.3 Operational procedure information

*Date Modified: 26.05.2025 15:05:45, GUID: {89B81099-FD89-4ebf-8572-DE630976006A}*

**Operational procedure information”** KPI assesses whether a NAP includes guidelines and operational procedures that need to be followed for becoming a data provider or data consumer of a NAP or, general responsibilities (who is responsible for doing what within or while using the NAP). In this case, the ACC value is set to 1 reflecting that NAPs provide such guidelines.

Values:

*Note: Examples of operational procedure information:*

* *Terms and conditions for use of the NAP,*
* *Governance aspects of NAP,*
* *Processes for data quality assessment and maintenance,*
* *How a potential data provider/consumer becomes accredited,*
* *How the data is provided,*
* *Where to discuss the technical issues*

Minimum acceptable value for interoperability: 1

#### KPI 7.4 Dataset compliance assessment indicator

*Date Modified: 26.05.2025 15:07:30, GUID: {A551D4D5-ECBC-44b6-B0BB-F40CF0A9A395}*

**7.4 “Dataset compliance assessment indicator"”** KPI examines whether a NAP provides information on the self declarations provided by data or service providers on compliance of its datasets or services with the requirements set by the Delegated Regulations supplementing the ITS Directive. These requirements include ensuring data quality (e.g. accuracy, timeliness and reliability), accessibility, adherence to specified exchange timeframe, support for data re-use (e.g. machine readable formats), and regular update of the provided data. A value equal to 1 indicates that a NAP provides information on the results (how many) of **processed** self-declaration form that ha been submitted by the provider of a dataset, attesting the compliance with these requirements. A value equal to 2 indicates that a NAP provides information about the results of **compliant** services and data sets, verifying adherence to these standards. However, this KPI is assumed as not relating to the minimum acceptable level of service of a NAP.

Values:

**0:** No

**1:** Provision of information on the results of processed self-declaration forms by the national body

**2:** Provision of information about compliant services and data sets

Minimum acceptable value for interoperability: 1

#### KPI 7.5 Compliance assessment support by NAP

*Date Modified: 28.05.2025 10:45:01, GUID: {682853C6-279C-49e4-9D39-B229D9D7D2D3}*

**Compliance assessment support by NAP”** KPI assesses whether a NAP facilitates the procedure of compliance assessment by providing self-declaration templates or by enabling data providers to submit self-declarations (to National Bodies). In the first case, the KPI is equal to 1, whereas in the second one the KPI is equal to 2. This KPI is once again assumed as not relating to the minimum acceptable level of service of a NAP.

Values:

**0:** No

**1:** NAP provides self-declaration forms/templates without any additional involvement in process

**2:** NAP facilitates the submission of self-declarations, in addition to providing the templates

Minimum acceptable value for interoperability: 1

#### KPI 7.6 Association of published datasets with Delegated Regulations

*Date Modified: 16.06.2025 15:24:49, GUID: {5744CC34-C7ED-4155-82D4-66460FA3F507}*

7.6 “Association of published datasets with Delegated Regulations” KPI assesses whether the metadata provided by a NAP can indicate the relevance of its datasets with the Delegated Regulations supplementing the ITS Directive (using European legislation identifier according to the mobiltyDCAT-AP profile). Both ACC and REQ value is set to 1, reflecting that such an association is necessary.

Values:

0: No

1: Yes

2: Yes, via metadata (using European legislation identifier according to the mobiltyDCAT-AP profile).

Minimum acceptable value for interoperability: 2

#### KPI 7.7 Quality indicators for datasets

*Date Modified: 16.06.2025 15:42:26, GUID: {6455CB4E-6526-4ec0-9975-706DBCDC70CE}*

**“Quality indicators for datasets”** KPI assesses the extent to which a NAP provides insight into the quality of the provided data/metadata. There are four possible values that this KPI may take. A value equal to 1 indicates that a NAP includes a description of the quality of the provided metadata (e.g., based on a pre-established metadata quality assessment scheme). A value equal to 2 indicates that a NAP provides a description of general quality definitions to support its users to self-assess the quality of utilized data or high-level quality assessment statements in the metadata of hosted publications. On the other hand, a value equal to 3 indicates that a more detailed data quality description is provided in the metadata of hosted publications; however, provided details and values do not cover the entirety of quality fields that may relate to the nature of exchanged data. Finally, a value equal to 4 indicates that there is a solid description of all fields. It is assumed that a NAP shall at least provide metadata quality descriptions for achieving a minimum acceptable level of service.

Does the NAP provide information or descriptions for data quality?

0: No

1: Yes, a metadata field where the data provider can describe the quality of the dataset.

2: Yes, description of general quality definitions

3: Yes, description of some of datasets (fields) quality

4: Yes, description of all datasets (fields) quality

Minimum acceptable value for interoperability: 1

## Recommendations

**Recommendation**: Provide guidelines or best practices that are not mandatory but are suggested to achieve optimal performance, compliance, or quality. These can include industry standards, advisory notes, or expert recommendations.

### Proposal Usability

*Date Modified: 11.02.2025 15:09:28, GUID: {FCEC8243-9F60-43ec-8978-F5EF5F50D1F3}*

TODO, what does this recommendation specify?

### Proposal User Registration

*Date Modified: 11.02.2025 15:09:36, GUID: {7C7859F2-12C2-47f5-A8E5-1EECCC1BE25D}*

TODO, what does this recommendation specify?

## Profiles

Datex II provides a set of Recommended Reference Profiles (RRPs) and Recommended Service Profiles (RSPs). While the RRPs establish minimum set of data-elements required to provide the information meant by the specific data categories in the specific delegated regulation (SRTI, RRTI and MMTIS), the RSPs support harmonised uses cases for the provision of data from the road operator’s point of view.

NeTEx, also a recommended profile – European Passenger Information Profile (EPIP), which is part of the CENT/TNS 16614 Standard and used for the following use cases:

* Provision of data for journey planners
* Provision of data to a path mapping software tool on an (interactive) map
* Provision of timetable printout data
* Provision of station information

In addition to these general profiles (RRPs and RSPs for Datex II and the EPIP for NeTEx), some MS build their own national profiles related those 2 Standards and SIRI as well.

### DATEX II Recommended Reference Profiles

*Date Modified: 11.02.2025 15:04:51, GUID: {0284859D-C83B-423b-909A-05291C3F0B08}*

Recommended Reference Profiles ([RRP's](https://docs.datex2.eu/recommended-profiles/rrp/)) give a harmonised interpretation of the data categories in the Delegated Regulations A, B, C and E of the EU ITS-Directive 2010/40.

This concerns the following Delegated Regulations:

* Delegated Regulation 886/2013 (SRTI, Action C)
* Delegated Regulation 962/2015 (RTTI, Action B)
* Delegated Regulation 1926/2017 (MTIS, action A)

### EIP Recommended Service Profiles

*Date Modified: 30.01.2025 18:41:06, GUID: {3D7BA083-1874-45c0-9B49-E81F3F261DF9}*

The **EIP Recommended Service Profiles** aim to update and harmonize service descriptions for Intelligent Transport Systems (ITS) in Europe. This effort incorporates the latest advancements in digitalization and Cooperative Intelligent Transport Systems (C-ITS), as well as insights from best practices and EU EIP activities.

Key goals include:

* **Modernizing service descriptions** to reflect current technologies and regulatory contexts.
* **Simplifying information** to make it more accessible and understandable.
* **Eliminating redundancies** by merging separate documents into a comprehensive guide.

The profiles, developed jointly by the EU EIP and DATEX II PSA, are available for free and provide guidance on data sharing for ITS services. They describe interfaces for communication between systems and vehicles, ensuring compliance with European regulations and standards like DATEX II.

You can get the Recommended Service Profiles at the [DATEX II webtool](https://webtool.datex2.eu/wizard/t_blank).

* [Forecast and Realtime Event Information](https://docs.datex2.eu/recommended-profiles/rsp/forecastandrtti/)
* [Traffic Condition and Travel Time Information](https://docs.datex2.eu/recommended-profiles/rsp/trafficconditition/)
* [Speed Limit Information](https://docs.datex2.eu/recommended-profiles/rsp/speedlimitinformation/)
* [Road Weather Information](https://docs.datex2.eu/recommended-profiles/rsp/roadweatherinformation/)
* [Multi-Modal Traveller Information](https://docs.datex2.eu/recommended-profiles/rsp/multimodal/)
* [Dynamic Lane Management](https://docs.datex2.eu/recommended-profiles/rsp/dynamiclanemanagement/)
* [Variable Speed Limits](https://docs.datex2.eu/recommended-profiles/rsp/variablespeedlimits/)
* [Ramp Metering](https://docs.datex2.eu/recommended-profiles/rsp/rampmetering/)
* [Hardshoulder Running](https://docs.datex2.eu/recommended-profiles/rsp/hardshoulderrunning/)
* [Incident Warning and Management](https://docs.datex2.eu/recommended-profiles/rsp/incidentwarningandmanagement/)
* [HGV Overtaking Ban](https://docs.datex2.eu/recommended-profiles/rsp/hgvovertakingban/)
* [Traffic Management for Corridors and Networks](https://docs.datex2.eu/recommended-profiles/rsp/trafficmanagementcorridors/)
* [Intelligent and Secure Truck Parking](https://docs.datex2.eu/recommended-profiles/rsp/intelligentsecuretruckparking/)

### EPIP Profile

*Date Modified: 30.01.2025 18:41:06, GUID: {483C3636-0B3E-4cf4-BCA0-788C9923AF24}*

The profile contains information such as details of used services, details of the objects used in an exchange, details on the options proposed by the standard, details on optional elements. NeTEx profiles are available to facilitate the implementation of the standard and to improve interoperability by focusing only on the elements that are needed and to fill small gaps voluntarily left by the standard to enable customisation. The European Passenger information profile (EPIP – NeTEx Part 4)6 is a profile focusing on minimum information required to be exchanged to feed passenger information systems (stop displays, mobile applications, journey planners etc.) based on DR MMTIS 2017/1926. The European Passenger Information Accessibility Profile (EPIAP- NeTEx Part 6)7 focuses on the accessibility facilities in stops, stations, vehicles (e.g., ramps, lifts, escalators etc.) for static data, according to MMTIS DR requirements. The respective real time data for both profiles are included in SIRI. The European profiles aim to facilitate the implementation of NeTEx but also to be the basis for the specification of national or local profiles, ensuring interoperability between countries and regions. The EU profiles consider also the existing national profiles, whenever exist, to focus on the common needs between countries and to adopt best approaches.

### IDACS Recommended Service Profiles

*Date Modified: 30.01.2025 18:41:06, GUID: {87698942-37BC-4e11-ABA4-EA4038A0791C}*

IDACS Recommended Service Profiles

Introduction

In the course of the Programme Support Action (PSA) “Data collection related to recharging/refuelling points for alternative fuels and the unique identification codes related to e-Mobility actors” that was subsequently given the name IDACS, or “ID and Data Collection for Sustainable fuels in Europe”, the 15 member states of the consortium mandatorily have to collect data related to alternative fuels infrastructures, namely electric charging points and hydrogen refuelling stations (HRS) as part of activity 2. Other alternative fuels, such as CNG, LNG, LPG and highly-blended biofuels can be covered optionally.

As data collection mandatorily has to take place via the National Access Points (NAP) as defined in directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport, it is the aim of these profiles to give guidance on how this can be achieved.

### UVARBox

*Date Modified: 30.01.2025 18:41:06, GUID: {C5FEBBBE-152B-47a6-8892-5C453997CEBA}*

UVARBox

UVARBox digitized five types of UVARs for which five profiles are available as RSP in the . The five UVAR types are: - low emission zones - limited traffic zones - pedestrian zones - congestion charging - parking zones

As these profiles are based on un unstable version of DATEX II Traffic Regulations users have to be aware of non-interoperable changes are expected in a stable future v3 release of TrafficRegulation and ControlledZone.

[UVARBox website](https://uvarbox.eu//t_blank)

## Technical specifications

**Technical specifications are used to specify:**

**Performance**: Outline the required performance metrics, such as speed, capacity, and reliability. They strictly define the measurable criteria that the system must meet, without specifying the functions or design details.

**Technical**: Provide detailed technical information, including materials, dimensions, and manufacturing processes. They focus exclusively on the technical aspects and physical characteristics of the system or component.

**Design**: Detail the design aspects, including drawings, schematics, and design principles. They concentrate on the visual and structural design elements, without specifying the technical details or performance metrics.

**Interface**: Define how different systems or components will interact with each other, including communication protocols and data formats. They focus on the interaction and integration points, without detailing the functions, performance, or design aspects.

### DATEX II

*Date Modified: 16.06.2025 15:15:07, GUID: {F9A9AFD3-AF4D-4391-9AE4-2FB290C7C9F9}*

**Type:** Technical Standard

**Full Name:** DATEX II – CEN/TS 16157: Road Traffic and Travel Information Exchange

**Link:** <https://datex2.eu/specifications/>

**Description:** DATEX II is the European standard for the structured exchange of road traffic and travel information between traffic management centres, service providers, and other ITS actors. It defines a modular, extensible data model and exchange framework for publishing real-time and static data on traffic conditions, incidents, roadworks, parking, regulations, and energy infrastructure. DATEX II is mandated or recommended under multiple EU delegated regulations (e.g. RTTI, SRTI, SSTP, AFIR) to ensure semantic and syntactic interoperability across Member States.

**Additional details:** Highly relevant for the publication of National Access Point (NAP) data under multiple delegated acts. DATEX II Reference Profiles define required content and encoding rules for RTTI, SRTI, AFIR, and SSTP implementations. It supports machine-readable, versioned XML payloads, structured metadata, and standardized update frequencies. NAPs must enable pull or push access using Exchange 2020 protocols, and ensure conformance to regulation-specific subsets derived from the CEN/TS 16157 series.

**Related Documents:**

* [DATEX II Documentation Portal](https://docs.datex2.eu/) – Official reference for content specifications, profiles, and implementation guidance.
* [DATEX II Exchange Specification (Exchange 2020)](https://docs.datex2.eu/exchange-2020/) – Defines the protocol for data delivery and subscription.
* [DATEX II Reference Profiles](https://docs.datex2.eu/recommended-profiles/) – Harmonised subsets for delegated regulations (e.g. RTTI, SRTI, SSTP, AFIR).
* [DATEX II Schema Generation Wizard](https://webtool.datex2.eu/wizard/) – Interactive tool for generating custom DATEX II XML schemas based on selected profiles and extensions.
* [NAPCORE DATEX II Workstream](https://napcore.eu/standards/) – Coordination of DATEX II evolution and cross-domain alignment under the NAPCORE project.
* CEN/TS 16157 p1- p15: Part 1: Context and framework; Part 2: Location referencing; Part 3: Situation publication; Part 4: Variable Message Sign (VMS) publications; Part 5: Measured and elaborated data publications; Part 6: Parking publications; Part 7: Common data elements; Part 8: Traffic management publications and urban extensions; Part 9: Traffic signal management publications; Part 10: Energy infrastructure publications; Part 11: Publication of machine interpretable traffic regulations; Part 12: Facility related publications; Part 13: Status & Fault; Part 14: TN-ITS (Upcoming); Part 15: JSON Mapping (Upcoming)

### CKAN API

*Date Modified: 16.06.2025 15:05:31, GUID: {B4E47D3C-D1FF-49d5-AF14-7E82F76D74E6}*

**Type:** Technical Standard / Open API

**Full Name:** CKAN Action API – Comprehensive Interface for Open Data Portals

**Link:** <https://docs.ckan.org/en/2.9/api/>

**Description:** The CKAN API is a powerful, RPC-style interface that exposes the full functionality of CKAN-based open data portals. It allows external applications to create, read, update, and delete datasets, resources, organizations, and metadata records. The API supports JSON-based requests and responses and is widely used for automating data publication, harvesting, and integration with third-party systems. CKAN’s modular architecture also includes APIs for FileStore and DataStore extensions, enabling file uploads and structured data querying.

**Additional details:** Highly relevant for National Access Points (NAPs) and mobility data portals built on CKAN. The API enables programmatic access to metadata records (e.g. mobilityDCAT-AP), supports dataset harvesting and federation, and allows integration with validation pipelines and monitoring tools. It is often used in conjunction with DCAT-AP-compatible metadata schemas and can be extended via plugins to support domain-specific workflows (e.g. transport, environment, energy).

**Related Documents:**

* [CKAN API Guide – Official Docs](https://docs.ckan.org/en/2.9/api/) – Full reference for Action API endpoints and usage
* [CKAN FileStore & DataStore APIs](https://docs.ckan.org/en/2.9/maintaining/datastore.html) – Interfaces for file uploads and tabular data access
* [CKAN GitHub Repository](https://github.com/ckan/ckanext-harvest) – Source code, issue tracking, and plugin ecosystem
* [CKAN Harvesting Extension](https://github.com/ckan/ckanext-harvest) – Plugin for federated metadata harvesting across portals

### Delegated Regulation (EU) 2024/490 – MMTIS (Amendment)

*Date Modified: 16.06.2025 15:05:31, GUID: {E1524B08-D6A6-42b4-8B5C-0136C4A9D6D4}*

**Type:** Legal

**Full Name:** Commission Delegated Regulation (EU) 2024/490 of 29 November 2023 amending Delegated Regulation (EU) 2017/1926 supplementing Directive 2010/40/EU with regard to the provision of EU-wide multimodal travel information services

**Link:** https://eur-lex.europa.eu/eli/reg\_del/2024/490/oj

**Description:** This regulation amends Delegated Regulation (EU) 2017/1926 by expanding the scope of mandatory data accessibility for EU-wide multimodal travel information services (MMTIS). It introduces new obligations for the availability of dynamic, historic, and observed datasets, and strengthens requirements for data quality, update frequency, and interoperability. The amendment supports the European Green Deal and Sustainable and Smart Mobility Strategy by enhancing the usability of multimodal travel services and enabling better integration of active modes (e.g. walking, cycling) and real-time operational data.

**Additional details:** NAPs must ensure machine-readable access to newly mandated datasets, including dynamic data (e.g. delays, disruptions), historic performance data, and observed occupancy levels. The regulation reinforces the use of harmonised formats and metadata, and requires service providers to maintain data accuracy and timeliness. The amendment also introduces provisions for monitoring compliance and supporting cross-border continuity of MMTIS services.

**Related Documents:**

* [Delegated Regulation (EU) 2017/1926](https://eur-lex.europa.eu/eli/reg_del/2017/1926/oj) – MMTIS – Original legal act establishing the MMTIS framework.
* [DATEX II MMTIS Profile (Draft)](https://docs.datex2.eu/recommended-profiles/rrp/mmtis/) – Defines the data model for compliant multimodal travel information exchange.
* [NeTEx European Passenger Information Profile (EPIP)](https://data4pt-project.eu/wp-content/uploads/2024/09/D.3.2-Profile-Preparation_v.f1.pdf) – Defines the subset of NeTEx (CEN/TS 16614) elements required for compliance with MMTIS obligations, including static, dynamic, and accessibility-related data.
* [NAPCORE MMTIS Data Dictionary](https://github.com/NAPCORE/Data-dictionary) (NeTEx/SIRI Mapping) – Provides alignment between MMTIS data categories and NeTEx/SIRI elements, supporting harmonised implementation across Member States.
* [DATA4PT National Implementations](https://data4pt.org/w/index.php?title=National_Implementations) – NeTEx Profiles Overview – Inventory of national and transnational NeTEx and SIRI profiles, including the Czech Republic’s specification status. It outlines profile alignment with the European Passenger Information Profile (EPIP) and categorises data coverage by Level of Service (LOS) in accordance with MMTIS Regulation (EU) 2024/490.

### deployEMDS

*Date Modified: 16.06.2025 15:05:31, GUID: {7E203B2F-A441-4204-A6A1-9B2B669C5C12}*

**Type:** Technical Framework / Project Specification

**Full Name:** deployEMDS – Technical Specifications for the European Mobility Data Space

**Link:** <https://deployemds.dev/>

**Description:** deployEMDS is a European project co-funded under the Digital Europe Programme that defines the technical architecture, governance, and interoperability mechanisms for the **European Mobility Data Space (EMDS)**. It aims to enable secure, sovereign, and standardised data sharing across public and private mobility actors. The specifications support real-life implementations in nine cities and regions and are aligned with the European Data Strategy and Sustainable and Smart Mobility Strategy.

**Additional details:** The deployEMDS technical specifications define common building blocks for **data interoperability**, **data sovereignty**, and **data accessibility**. They include reference architectures, metadata vocabularies, trust frameworks, and APIs for federated data exchange. The framework supports integration with existing standards (e.g. DCAT-AP, mobilityDCAT-AP, DATEX II, OCPI) and enables cross-domain use cases such as multimodal routing, traffic management, and SUMI monitoring. The specifications are being piloted in 16 use cases across 9 EU countries.

**Related Documents:**

* [deployEMDS Technical Documentation](https://deployemds.dev/) – Architecture, components, and implementation guidance
* [deployEMDS Project Portal](https://deployemds.eu/) – Project overview, use cases, and governance
* [EU Transition Pathways](https://transition-pathways.europa.eu/projects/deployemds-transforming-european-mobility-data-sharing) – deployEMDS Summary – Strategic context and policy alignment
* [Digital Europe Programme – EMDS Objectives](https://digital-strategy.ec.europa.eu/en/policies/data-spaces) – Background on European data space initiatives

### GBFS

*Date Modified: 16.06.2025 14:56:44, GUID: {B33AF3D7-0DE6-4244-975F-A8E2E508930F}*

**Type:** Technical Standard

**Full Name:** General Bikeshare Feed Specification (GBFS)

**Link:** <https://www.gbfs.org/>

**Description:** GBFS is an open, real-time data standard for shared mobility systems (e.g. bikeshare, scooters, mopeds). It defines a uniform JSON-based structure for publishing system status, vehicle availability, pricing, and station metadata. GBFS is designed for public consumption by trip planners, mobility apps, and data aggregators. It is read-only and does not support transactional operations.

**Additional details:** -

**Related Documents:**

* [GBFS GitHub Repository](https://github.com/MobilityData/gbfs) – Specification source, schemas, governance model.
* [GBFS v3.0 Specification](https://github.com/MobilityData/gbfs/blob/master/gbfs.md) – Latest stable version with feed definitions and field requirements.
* GBFS Validator Tool – Online tool for schema validation and feed diagnostics.
* [GBFS Systems Catalog](https://github.com/MobilityData/gbfs/blob/master/systems.csv) – List of known GBFS-compliant deployments.
* [GBFS website](https://gbfs.org/): GBFS specification web site

### GTFS

*Date Modified: 16.06.2025 14:57:10, GUID: {CAEF2437-B0BA-4aac-BFEB-3A8CE86835D6}*

**Type:** Technical Standard

**Full Name:** General Transit Feed Specification

**Link:** <https://gtfs.org/>

**Description:** GTFS is an open, machine-readable data format for publishing public transport schedules, routes, stops, and associated geographic and fare information. It enables transit agencies to share static and real-time data with developers, trip planners, and mobility platforms. GTFS consists of two components: **GTFS Schedule (static)** and **GTFS Realtime**, both defined using structured text or protocol buffer formats.

**Additional details:** *(none)*

**Related Documents:**

* [GTFS Schedule Reference](https://gtfs.org/documentation/schedule/reference/) – Defines required and optional files (e.g. stops.txt, routes.txt, trips.txt) and field-level specifications.
* [GTFS Realtime Specification](https://gtfs.org/documentation/realtime/reference/) – Protocol buffer-based format for vehicle positions, trip updates, and service alerts.
* [GTFS Community Forum](https://groups.google.com/g/gtfs-changes/about) – Governance and change proposal process.

### GTFS-RT

*Date Modified: 16.06.2025 14:57:35, GUID: {BD5ADEA6-B249-4fad-ACB8-298D1542C33F}*

**Type:** Technical Standard

**Full Name:** General Transit Feed Specification – Realtime

**Link:** <https://gtfs.org/realtime/>

**Description:** GTFS-RT is an open data format for sharing real-time public transport information. It extends the static GTFS Schedule specification by enabling transit agencies to publish live updates on vehicle positions, trip progress, and service alerts. GTFS-RT uses Protocol Buffers for compact, efficient data exchange and is designed for integration with trip planners, mobility apps, and real-time dashboards.

**Additional details:** *(none)*

**Related Documents:**

* [GTFS Realtime Reference](https://gtfs.org/documentation/realtime/reference/) – Defines feed types (TripUpdates, VehiclePositions, Alerts) and message structure.
* [GTFS Realtime Best Practices](https://gtfs.org/documentation/realtime/realtime-best-practices/) – Implementation guidance for latency, update frequency, and feed architecture.
* [GTFS Realtime GitHub Repository](https://github.com/MobilityData/gtfs-realtime-bindings?tab=readme-ov-file) – Official bindings and protocol definitions.
* [GTFS Realtime Libraries & Demo Apps](https://gtfs.org/resources/gtfs-realtime/): Tools and applications for producing and consuming GTFS-RT feeds.

### IATA SSIM

*Date Modified: 16.06.2025 14:57:53, GUID: {EEC79522-E329-4da9-89B6-82617E53E335}*

**Type:** Technical Standard

**Full Name:** IATA Standard Schedules Information Manual

**Link:** <https://www.iata.org/en/publications/manuals/standard-schedules-information/>

**Description:** SSIM is the authoritative IATA standard for the structured exchange of airline schedule data, slot coordination messages, and minimum connecting time (MCT) information. It defines message formats, data elements, and transmission protocols used by airlines, airports, and slot coordinators to ensure consistency and interoperability in global aviation scheduling systems.

**Additional details:** *(none)*

**Related Documents:**

* [SSIM Format Overview](https://en.wikipedia.org/wiki/Standard_Schedules_Information_Manual) – Wikipedia – Summary of SSIM structure, use cases, and data hierarchy.
* [IATA Publications Portal –](https://www.iata.org/en/store/publications/manuals-standards-and-regulations/standard-schedules-information-manual-ssim__ssim/?code=9179-35) Access to the latest SSIM editions and related manuals (subscription required).

### INSPIRE

*Date Modified: 16.06.2025 14:58:14, GUID: {5A823122-0DEE-44ec-A7CC-E8C8B7ED8F8D}*

**Type:** Technical Standard

**Full Name:** Infrastructure for Spatial Information in the European Community (INSPIRE) – Data Specifications and Implementing Rules

**Link:** <https://knowledge-base.inspire.ec.europa.eu/data-specifications-technical-guidelines_en>

**Description:** INSPIRE defines a harmonised framework for the interoperability of spatial datasets and services across the EU. It provides legally binding Implementing Rules and non-binding Technical Guidelines covering metadata, data models, network services, and data sharing. The specifications apply to 34 spatial data themes grouped under Annexes I–III of Directive 2007/2/EC and are aligned with ISO 19100-series standards.

**Additional details:** INSPIRE’s Transport Networks theme is referenced in Delegated Regulation (EU) 2022/670 as the normative basis for describing road network links and their physical attributes (e.g. geometry, width, number of lanes, gradients, junctions). Implementers of RTTI services may use INSPIRE-compliant representations (e.g. GM\_Curve objects from ISO 19107) to encode road topology and ensure semantic consistency across Member States.

**Related Documents:**

* [INSPIRE Transport Networks – Road Theme](https://knowledge-base.inspire.ec.europa.eu/publications/inspire-data-specification-transport-networks-technical-guidelines_en) – Guidance for representing road links, nodes, and attributes.
* [INSPIRE Registry](https://inspire.ec.europa.eu/registry) – Central repository for code lists, application schemas, and metadata elements.
* [INSPIRE Metadata Guidelines](https://knowledge-base.inspire.ec.europa.eu/publications/inspire-metadata-implementing-rules-technical-guidelines-based-en-iso-19115-and-en-iso-19119_en) – Based on EN ISO 19115 and EN ISO 19119.
* [NAPCORE RTTI Workstream Summary (PDF)](https://napcore.eu/wp-content/uploads/2025/05/DD_2022_670.pdf) – Clarifies INSPIRE’s role in RTTI data provision.

### mobility DCAT-AP

*Date Modified: 16.06.2025 14:58:38, GUID: {E2577D77-AFB9-46e3-818C-9764DC209E14}*

**Type:** Technical Standard

**Full Name:** mobilityDCAT-AP – Metadata Specification for Mobility Data Portals

**Link:** <https://w3id.org/mobilitydcat-ap/releases/>

**Description:** mobilityDCAT-AP is a metadata specification tailored for describing datasets and services in the mobility domain, particularly those published via National Access Points (NAPs) and other transport data portals. It extends the general-purpose DCAT-AP standard to support harmonised, machine-readable metadata for Intelligent Transport Systems (ITS) and mobility-related datasets. The specification enables cross-border discoverability, semantic interoperability, and metadata exchange across the European mobility data ecosystem.

**Additional details:** Highly relevant for structuring and publishing metadata on National Access Points (NAPs). It enables consistent representation of transport datasets, data services, access conditions, update frequency, and conformance indicators — all essential for delegated ITS regulations. It supports RDF serialisation and is aligned with the EU Metadata Core Vocabulary, ensuring compatibility with the European Data Portal and NAPCORE interoperability targets.

**Related Documents:**

* [mobilityDCAT-AP Specification (current version)](https://mobilitydcat-ap.github.io/mobilityDCAT-AP/releases/index.html) – Official release with RDF schemas, usage notes, and conformance rules.
* [NAPCORE Metadata Workstream](https://napcore.eu/metadata/) – Coordination activities and governance of mobilityDCAT-AP under the NAPCORE project.
* [mobilityDCAT-AP GitHub Repository](https://github.com/mobilityDCAT-AP/mobilityDCAT-AP/wiki/Chapter-2:-Recommendations-for-the-deployment-of-mobilityDCAT%E2%80%90AP) – Source files, issue tracking, and version history.
* [mobilityDCAT-AP Vocabularies](https://github.com/mobilityDCAT-AP/controlled-vocabularies) – Repository – source files for the vocabularies used in mobilityDCAT-AP
* [mobilityDCAT-AP Generator Tool](https://mobilitydcat-ap.github.io/mobilitydcatap-ui/) – Web interface for generating RDF metadata records.
* [mobilityDCAT-AP wiki](#2-when-should-i-implement-mobilitydcat-ap) - official recommendation for implementation and guidelines

### NeTEx

*Date Modified: 16.06.2025 15:11:40, GUID: {477B7D19-AF4F-483d-BF7D-70FEBB8AE8BB}*

**Type:** Technical Standard

**Full Name:** Network Timetable Exchange (NeTEx) – CEN/TS 16614

**Link:** <https://transmodel-cen.eu/index.php/netex/>

**Description:** NeTEx is a modular XML-based CEN technical standard for exchanging public transport data, including network topology, timetables, and fare structures. It is based on the Transmodel conceptual framework and supports multimodal, multilingual, and versioned data exchange between systems. NeTEx is designed for use in journey planning, timetable publishing, fare calculation, and real-time information systems.

**Additional details:** *(none)*

**Related Documents:**

* [NeTEx Overview](https://transmodel-cen.eu/index.php/netex/) – Transmodel – Official CEN portal with schema structure, parts, and implementation guidance.
* [NeTEx GitHub Repository](https://github.com/NeTEx-CEN/NeTEx) – XML schemas, UML models, and example datasets.
* [DATA4PT NeTEx Wiki](https://data4pt.org/w/index.php/NeTEX) – Implementation support, validation tools, and national profile references.
* [NeTEx European Passenger Information Profile (EPIP)](https://data4pt-project.eu/wp-content/uploads/2024/09/D.3.2-Profile-Preparation_v.f1.pdf) – Subset of NeTEx elements required for MMTIS compliance.
* [NeTEx National Implementations – DATA4PT](https://data4pt.org/w/index.php?title=National_Implementations) – Overview of country-specific profiles and Level of Service (LOS) alignment.
* CEN/TS 16614 p1 – p6: Part 1: Public Transport Network topology; Part 2: Scheduled Timetables; Part 3: Fare Information; Part 4: European Passenger Information Profile – EPIP; Part 5: Alternative Modes Exchange Format; Part 6: European Passenger Information Accessibility Profile – EPIAP

### OAI-PMH

*Date Modified: 16.06.2025 15:05:31, GUID: {B2EDFAA0-DF8A-4744-A9E6-FBEBA0011D75}*

**Type:** Technical Standard

**Full Name:** Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)

**Link:** <https://www.openarchives.org/pmh/>

**Description:** OAI-PMH is a low-barrier, HTTP-based protocol developed by the Open Archives Initiative for harvesting structured metadata from distributed repositories. It enables service providers to collect metadata records from data providers using a standardised set of six verbs (e.g. ListRecords, GetRecord, Identify). OAI-PMH supports XML-based responses and is widely used in digital libraries, research infrastructures, and open data portals to enable metadata federation and interoperability.

**Additional details:** Highly relevant for metadata harvesting across National Access Points (NAPs) and open data ecosystems. OAI-PMH allows third-party services to synchronise metadata records (e.g. mobilityDCAT-AP) from CKAN-based or custom portals. It supports selective harvesting using datestamps and sets, and is compatible with Dublin Core and other metadata schemas. While not domain-specific, it provides a foundational mechanism for metadata aggregation and cross-portal discoverability.

**Related Documents:**

* [OAI-PMH Specification v2.0](https://www.openarchives.org/OAI/openarchivesprotocol.html) – Core protocol definition and XML schema
* [OAI-PMH Implementation Guidelines](https://www.openarchives.org/OAI/2.0/guidelines.htm) – Best practices for data and service providers
* [OAI-PMH Static Repository Specification](https://www.openarchives.org/OAI/2.0/guidelines-static-repository.htm) – Lightweight approach for small metadata collections
* OAI-PMH Community Resources – Tools, validators, and registration services
* [OAI-PMH Metadata Harvesting Overview (CLARIN)](https://www.clarin.eu/sites/default/files/oai-pmh_PRAGUE_final.pdf) – Presentation on protocol structure and use cases
* [Technical Recommendations for Member States – Harvesting Guidelines (PDF)](https://data.europa.eu/sites/default/files/course/v1.3_ERPD_Technical%20recommendations%20for%20member%20states_Harvesting%20guidelines.pdf) – EU guidance on metadata harvesting for open data portals and NAPs

### OCPI

*Date Modified: 16.06.2025 14:59:27, GUID: {4472B597-2F44-461b-B7B1-74BCACB02E64}*

**Type:** Technical Standard

**Full Name:** Open Charge Point Interface (OCPI)

**Link:** <https://github.com/ocpi/ocpi>

**Description:** OCPI is an open, modular protocol that enables seamless communication between electric vehicle (EV) charging infrastructure operators (CPOs) and eMobility service providers (eMSPs). It supports roaming, real-time availability, pricing transparency, smart charging, and billing interoperability. OCPI is maintained by the EVRoaming Foundation and is widely adopted across Europe to facilitate cross-network EV charging access.

**Additional details:** OCPI is commercially focused and used for direct exchange between CPOs and eMSPs, but its data structures are often reused to populate **DATEX II-compliant datasets** required for publication via **National Access Points (NAPs)** under **RTTI** and **AFIR** delegated regulations. Static and dynamic data from OCPI (e.g. connector types, availability, tariffs) can be programmatically mapped to the DATEX II EnergyInfrastructure and Parking publications. This ensures regulatory compliance without duplicating data sources. Field-level mappings and data transformation practices have been standardised by IDACS and NAPCORE profiles.

**Related Documents:**

* [OCPI GitHub Repository](https://github.com/ocpi/ocpi) – Official specification, modules, changelogs, and implementation resources.
* [OCPI Guide](https://www.ampeco.com/guides/the-complete-ocpi-guide/) – AMPECO – Practical overview of OCPI modules, roles, and use cases.
* [EVRoaming Foundation](https://evroaming.org/) – Governance body responsible for OCPI development and stakeholder coordination.
* [OCPI–DATEX II Mapping Guidance](https://docs.datex2.eu/recommended-profiles/rrp/mmtis/ls2b-availability-publicly-accessible-charging-and-refueling-stations/function2rsp/) – NAPCORE – Field-level correspondence for NAP-compliant integration.

### OJP

*Date Modified: 16.06.2025 14:59:46, GUID: {77DBDD7C-6A16-4195-AFE6-3D44A30E8033}*

**Type:** Technical Standard

**Full Name:** Open Journey Planner – CEN/TS 17118: Open API for Distributed Journey Planning

**Link:** <https://transmodel-cen.eu/index.php/ojp/>

**Description:** OJP is a CEN technical specification that defines a standardised XML-based interface for distributed, multimodal journey planning. It enables real-time and scheduled trip planning across multiple transport operators and regions by allowing systems to exchange routing requests and responses. OJP is based on the Transmodel conceptual framework and aligned with NeTEx and SIRI data models. It supports cross-border interoperability and is referenced in Delegated Regulation (EU) 2017/1926 (MMTIS), as amended by Regulation (EU) 2024/490.

**Additional details:** Highly relevant as a standardised API for National Access Points (NAPs) under the MMTIS delegated regulation. OJP enables NAPs to expose distributed journey planning services in a harmonised, machine-readable format, allowing third-party applications to query multimodal routes across borders. It supports integration of real-time and scheduled data using NeTEx and SIRI structures. OJP’s distributed architecture allows interlinking of journey planning services across adjacent or remote regions, enabling systems to forward routing requests and compose seamless itineraries from multiple sources — a capability already demonstrated in cross-border deployments such as LinkingAlps

**Related Documents:**

* [OJP Specification – Transmodel Portal](https://transmodel-cen.eu/index.php/ojp/) – Overview of the standard, architecture, and use cases.
* [Swiss OJP Implementation](https://opentransportdata.swiss/de/cookbook/routing-cookbook/open-journey-planner-ojp/) – OpenTransportData.ch – National profile and deployment example.
* [OJP GitHub Repository (Unofficial)](https://github.com/VDVde/OJP) – Sample implementation and interface bindings.

### OpRa

*Date Modified: 16.06.2025 15:05:31, GUID: {1240A1C8-FD0D-4239-8295-88D948622D90}*

**Type**: Technical Standard

**Full Name**: Operational Raw Data and Statistics for Public Transport – CEN Technical Report (OpRa)

**Link**: https://transmodel-cen.eu/index.php/opra/

**Description**: OpRa is a CEN initiative focused on the identification, collection, and exchange of raw operational data in public transport systems. It defines the conceptual framework and data requirements for recording actual, measured events — such as delays, cancellations, and vehicle movements — to support performance monitoring, service quality analysis, and strategic planning. OpRa complements Transmodel by formalising the “recorded reality” of operations, enabling consistent statistical reporting and historical analysis.

**Additional details**: OpRa is highly relevant for transport authorities and operators seeking to analyse operational efficiency and service reliability. It supports the study and control phase of the public transport lifecycle, bridging the gap between real-time data (e.g. SIRI) and strategic planning (e.g. NeTEx). OpRa data can be used to generate KPIs, inform policy decisions, and optimise resource allocation. It is aligned with Transmodel Parts 4 and 8 and is being developed into a full Technical Specification under CEN governance.

**Related Documents:**

* [OpRa Overview – Transmodel Portal](https://transmodel-cen.eu/index.php/opra/) – Scope, use cases, and conceptual alignment
* [DATA4PT OpRa Workstream](https://data4pt-project.eu/data-models/transmodel/) – Coordination of OpRa evolution and implementation support

### SIRI

*Date Modified: 16.06.2025 15:13:29, GUID: {E14C46B0-7A08-4284-BF7D-294B3FD4373B}*

**Type:** Technical Standard

**Full Name:** Service Interface for Real-time Information (SIRI) – CEN/EN 15531

**Link:** <https://transmodel-cen.eu/index.php/siri/>

**Description:** SIRI is a European CEN standard for the exchange of real-time public transport information between distributed computer systems. It defines a modular XML-based interface for delivering updates on vehicle positions, estimated timetables, service disruptions, and facility status. SIRI is aligned with the Transmodel conceptual framework and complements NeTEx by providing the dynamic counterpart to scheduled data. It supports both request/response and publish/subscribe architectures.

**Additional details:** *(none)*

**Related Documents:**

* [SIRI Overview – Transmodel Portal](https://transmodel-cen.eu/index.php/siri/) – Specification structure, parts, and use cases.
* [DATA4PT SIRI Wiki](https://data4pt.org/w/index.php/SIRI) – Implementation support, national profiles, and validation tools.
* [SIRI–NeTEx Integration Guidance](#SIRI_and_NeTEx) – Explains how SIRI complements NeTEx in real-time data ecosystems.
* SIRI Parts (EN 15531-1 to -7): Part 1 Context and Framework; Part 2 Communications; Part 3 Functional Service Interfaces; Part 4 Functional Service Interfaces: Facility Monitoring; Part 5 Functional Service Interfaces: Situation Exchange; Part 6 Functional Service Interfaces: Control Actions; Part 7 the European Real Time Passenger SIRI Information Profile

### TAP-TSI

*Date Modified: 16.06.2025 15:00:33, GUID: {682395F9-50B7-41f0-A637-3327735690CE}*

**Type:** Technical Standard

**Full Name:** Telematics Applications for Passenger Services – Technical Specification for Interoperability (TAP-TSI)

**Link:** https://www.era.europa.eu/domains/technical-specifications-interoperability/telematics-applications-passenger-service-tsi\_en

**Description:** TAP-TSI is a legally binding EU technical specification that governs the interoperability of telematics applications for passenger rail services across the trans-European rail system. It defines common procedures, message formats, and data exchange protocols for timetable publication, reservation, ticketing, real-time information, and intermodal coordination. TAP-TSI ensures that railway undertakings, infrastructure managers, and ticket vendors can exchange data in a harmonised, machine-readable format.

**Additional details:** *(none)*

**Related Documents:**

* [TAP-TSI Overview](https://www.era.europa.eu/domains/technical-specifications-interoperability/telematics-applications-passenger-service-tsi_en) – European Union Agency for Railways – Scope, implementation phases, and governance structure.
* [Commission Regulation (EU) No 454/2011](https://eur-lex.europa.eu/eli/reg/2011/454/oj) – Legal basis for TAP-TSI adoption and enforcement.

### TN-ITS

*Date Modified: 16.06.2025 15:00:49, GUID: {8DC75ED7-5F93-4ef6-A530-A0751B86F9D9}*

**Type:** Technical Standard

**Full Name:** Transport Network ITS Spatial Data Exchange – CEN/TS 17268

**Link:** <https://tn-its.eu/standardisation/>

**Description:** TN-ITS is a CEN Technical Specification (TS 17268) that defines a harmonised framework for the exchange of static road attribute changes (e.g. speed limits, access restrictions, lane configurations) between road authorities and map providers. It enables near real-time updates of digital maps by providing trusted, machine-readable notifications of authoritative changes to road infrastructure. TN-ITS supports safety-critical ITS applications, such as ADAS and automated driving, by ensuring that digital maps reflect the latest road conditions.

**Additional details:** Highly relevant for National Access Points (NAPs) as a mechanism for publishing authoritative road attribute updates. TN-ITS enables road authorities to deliver structured change notifications to map makers and service providers, improving data freshness and regulatory compliance. It is referenced in NAPCORE and supported by schema files, code lists, and API definitions hosted by the TN-ITS platform.

**Related Documents:**

* [TN-ITS Standardisation Overview](https://tn-its.eu/standardisation/) – Specification background, governance, and CEN/TS 17268 scope.
* [TN-ITS Schema Files](https://spec.tn-its.eu/schemas) – XML schemas for message structure and validation.
* [TN-ITS API Description (WADL)](https://spec.tn-its.eu/api/) – Interface definition for data exchange.
* [TN-ITS GitHub Repository](https://github.com/ERTICO-TN-ITS/TN-ITS-Open) – Open source tools and implementation examples.
* [NAPCORE TN-ITS Workstream](https://napcore.eu/tn-its/) – Coordination of TN-ITS deployment and integration with NAPs.

### TOMP API

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**Type:** Technical Standard

**Full Name:** Transport Operator to Mobility-as-a-Service Provider API (TOMP API)

**Link:** [https://github.com/TOMP-WG/TOMP-API](https://github.com/tomp-wg/tomp-api)

**Description:** TOMP API is an open, modular interface specification that standardises communication between Transport Operators (e.g. bikeshare, carshare, public transport) and Mobility-as-a-Service (MaaS) Providers. It enables seamless integration of planning, booking, trip execution, support, and payment services across diverse mobility offerings. TOMP API facilitates interoperability, reduces integration costs, and supports the development of MaaS platforms by providing a common “language” for service orchestration.

**Additional details:** Highly relevant for enabling NAP-aligned MaaS ecosystems. TOMP API allows mobility providers to expose their services in a harmonised, machine-readable format, supporting integration with journey planners, booking platforms, and real-time service aggregators. While not mandated by delegated regulations, it complements standards like NeTEx, SIRI, and OJP by enabling transactional MaaS interactions. National profiles (e.g. Switzerland) and pilots under NAPCORE explore its role in federated MaaS architectures.

**Related Documents:**

* [TOMP API GitHub Repository](https://github.com/TOMP-WG/TOMP-API) – Specification, OpenAPI definitions, and implementation resources
* [TOMP Working Group Website](https://tomp-wg.org/¨) – Governance, use cases, and stakeholder engagement
* [TOMP API Swiss Profile (PDF)](https://www.tp-info.ch/sites/default/files/2023-03/tomp-api-skiprofil-0.5.pdf) – National implementation guidance
* [TOMP API SwaggerHub Documentation](https://app.swaggerhub.com/apis/Ximedes/tap_connect_tomp_api/1.1.4) – Interactive OpenAPI interface

### Transmodel

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**Type:** Technical Standard

**Full Name:** Public Transport Reference Data Model – EN 12896 (Transmodel)

**Link:** <https://transmodel-cen.eu/>

**Description:** Transmodel is the European conceptual data model for public transport information systems. It provides a harmonised, implementation-independent framework for representing transport networks, timetables, fares, operations, and real-time information. Transmodel defines entities, relationships, and attributes in Unified Modeling Language (UML), serving as the semantic foundation for derived standards such as NeTEx, SIRI, and OJP. It supports multimodal, multi-operator, and multilingual transport systems, enabling consistent data exchange and system interoperability across Europe.

**Additional details:** Highly relevant as the semantic backbone for multiple NAP-aligned standards. Transmodel underpins NeTEx (scheduled data), SIRI (real-time data), and OJP (distributed journey planning), ensuring conceptual consistency across their implementations. It enables NAPs to align data structures, terminology, and integration logic across domains. Transmodel is also referenced in the ITS Directive and supports harmonisation of TAP-TSI rail standards with other modes.

**Related Documents:**

* [Transmodel Overview – Official Portal](https://transmodel-cen.eu/index.php/siri/) – Conceptual structure, functional areas, and standard evolution
* [Transmodel on Data4PT](https://data4pt-project.eu/data-models/transmodel/) – Strategic role in EU public transport data harmonisation
* [Standards for Implementation – Transmodel](https://transmodel-cen.eu/index.php/standards-for-implementation/) – Mapping to NeTEx, SIRI, OJP, and OpRa